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## **ASYMMETRIC INFORMATION, TOURIST SATISFACTION AND QUALITY IN TOURISM**

**VINCENZO ASERO, SEBASTIANO PATTI \***

**ABSTRACT:** *Quality is adopted by the market to resolve asymmetric information problems concerning the relationships between sellers and buyers. Also in the tourist market the quality assumes a particular importance, although its measurement needs different identification criterions. Tourism firms invest in quality and use it as mechanism of signalling, because of increasing market competitiveness. Nevertheless, it is argued in this paper that tourist satisfaction cannot depend directly on high quality good/services, but on the relationship between their expectations and satisfactions. This can explain why tourism market is characterized by different quality standard services.*

**KEY WORDS:** *Asymmetric information, Quality, Utility, Tourism market competitiveness, Tourist expectations*

### **1. INTRODUCTION**

Quality constitutes an essential component of good and services produced in different sectors of the economy. Moreover, the quality represents one of the procedures adopted by the market to resolve asymmetric information problems concerning the relationships between sellers and buyers. The firms, in fact, invest in quality and use it as mechanism of signalling to reveal information about their offered good and services. The consumers entrust instead a particular value to its recognition, that although not quantifiable, is able to drive and, in some cases to condition, their purchasing decisions.

Generally, it is possible to distinguish at least three quality's types: the *certified* one, which is recognized and documented through a system of marks and protocols; the *expected* one, directly tied up to the consumer's expectations; and the *perceived* one, recognizable either from the consumption side, as a result of the consumer experience, or from the production side, as a value attributed by the producer

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to his goods and services, in absence of special certifications set to the market's protection.

Also in the tourist market the quality assumes a particular importance, although its definition and measurement introduce different problems, because of the compound nature of the tourist product. As a matter of fact, in the tourist market "quality" is used with different meanings, which are linked to categories of different goods and services, for which of time in time it is necessary to define identification criterions. The attention given to tourist satisfaction, such as quality of different categories of goods and services and holistic dimension of the tourist product, is the most important factor of competition and contributes to confirm the image of a tourist destination in the market. In fact, it is fundamental to maintain and improve the quality of the supply to achieve and develop higher positions in the market. To such end, the quality needs an integrated approach, which involves all the stakeholders and includes supply's policies, tourist's needs and expectations and their evaluations.

The paper focuses, from a theoretical point of view, on the asymmetric information problem within the tourism sector. Moreover, it faces the theme of the quality as mechanism of regulation, taking into consideration either tourists' or entrepreneurs' perspectives. The study shows that although quality represents an important component for the firms' and tourist destinations' competition in the market, the tourist could be satisfied also when there is no quality. In fact, what is important, for the tourist, is to maximize the utility in terms of relationship between utility value, recognised to the tourist goods and services, and level of satisfaction. That can be explaining the tourist market diversification in terms of segments and different quality standards supplied by tourist firms.

## **2. QUALITY AND ASYMMETRIC INFORMATION**

One of the main problems concerning the purchasing behaviors of goods and services regards the complete and correct information from all the subjects involved into the trading process. This topic represents a typical asymmetric information problem, that is, situations where one economic agent knows something that another economic agent doesn't. Asymmetric information problems bring to another important economic concept, which is referred to the principal – agent problem, known also like the theory of agency. According to this theory, one individual hires another to take some action for him as his agent. Therefore, in this relationship there is an asymmetric information problem, because principal and agent do not know the aim of each other.

Also in the tourism sector the relationship between sellers and consumers is characterised by asymmetric information. If we consider, also, that tourist product has made by more goods and services, asymmetric information problems increase. In fact, just when tourist chooses the travel he can incur in some problems (for example, travel type and duration) concerning asymmetric information. Tourist, at the moment of his purchase, does not know what will happen during the travel; he can trust his travel agent and tour operator only. If not, he can trust a well-known brand and his fame or a friend judge and door to door.

To solve asymmetric information problem, sellers can invest in quality. So, a firm that has built its reputation by investing in quality uses to maintain and empower its position trying to avoid going down over the minimum level of the quality standard already offered. On the other hand, the consumer appraises good and services quality comparing their quality standard offered with the that observed in the past (Brosio, 2004).

The quality can be evaluated applying to different methodologies, all of them bringing back to the study of relationship between consumers' expectations and satisfactions (Parasuraman, Zeithaml, and Berry, 1985). Within tourism framework it is implied that the operators try to provide quality services and to adopt strategies that improve their standards according to tourists' expectations and opinions (Gustafsson and Johnson, 2003).

However, it is important to remember that in tourism services are divided in categories, usually associated to different quality standards. This means that it is often possible recognise quality not only in the high standard services, but also in the lower standard ones. Then, how the empirical evidence confirms, tourists could be equally satisfied when they evaluate as adequate the relationship between the quality perceived and their expense for goods and services, independently from the standard of the goods and services that they have purchased, and *vice-versa* (Asero and Gozzo, 2007).

### **3. QUALITY AND TOURIST EXPECTATIONS**

Economists assume the consumer is rational and will thus maximize his total utility that is the satisfaction gained from consuming a given amount of goods or services. Nevertheless, according to the economic behavioural approach, to be rational does not necessarily mean to maximize how much more possible the utility. In fact, the search of the best combination of that amount of products rather than a particular one involves some information costs. Therefore, the individuals take decisions "almost good" and not perfect, because their rationality is limited (Simon, 1955).

In addition, the consumer's behaviour is determined by satisfaction expectations involved through goods purchasing. About that, the consumer recognises to each product a certain "use value", which he will compare every time with the achieved level of satisfaction. By following this approach, it is clear that individual choices can be taken not only because of goods and services characteristics, but also as a consequence of a set of elements, tangible and intangible, which affect the satisfaction of individual needs. These elements are also linked to the quality concept and refer to informal protocols more than to formal rules. All of this implies that each consumer has an own evaluation of the quality, which is connected to his consuming experience.

In the tourism sector, quality assumes a relevant importance to direct consumers' choices, in the sense that it guarantees the market. This purpose become much more important considering that tourism products have prevalently the nature of *experience goods*, defined by Nelson (1970) as ones whose quality cannot be determined by consumer before purchase. In these cases, then, quality, particularly certified by law and trademark, represents a signalling mechanism either for

consumers, which are interested to know goods and services quality to purchase or for producers, which want to be recognised in the market because of their product's quality. This is true either when tourist purchases his holiday by distance or on the place, although information costs will be different.

Another aspect concerns tourist expectations within tourism experience. Also in this case, the quality exhibited by the sellers regarding the tourist services and goods can represent a mechanism of signalling (Stigler, 1961). Generally, in fact, goods and services of higher quality have major probabilities to be sold; because sellers will want to communicate the quality and therefore inform the consumers. In case of tourism as *experience good*, tourist could consider the quality/price relationship as a sign, preferring higher price purchases. This kind of estimation method, however, presumes that consumer behave in a rational way, considering a positive relationship between quality and price of the product.

Moreover, it is important to highlight the strategic role played by quality systems in the tourism sector, like ISO, labels and trademarks. All of these represent a way to guarantee the consumers and contribute to increase quality standard supplied by the market, since these systems oblige enterprises to adequate their products to determined quality standards.

On the base of these observations, it is possible to comprehend the relationship between the consumers' quality expectations and his perceptions regarding the product he consumes. Therefore, the post-purchasing satisfaction/dissatisfaction relationship will be clear (LaBarbara and Mazursky, 1983). Thus, consumers formulate their expectations according to their past experiences, the messages they received from producers, from friends and other general information. Larger is the gap between expectations and perceptions of quality product, higher is the level of dissatisfaction that is perceived. Consumers' reactions, in this case, can be various going from the customer complaints to the consumer associations' protection or more simply discouraging the future purchases of friends and family (Kotler, Bowen, and Makens, 2007).

These considerations can be made also for the tourism sector, where disappointed expectations determine negative effects that can be amplified because of tourism product nature and the value tourist confers to the holiday. It is therefore possible to distinguish different circumstances, all of them with negative implications. A case could be the description of the lack of quality services offered which could be taken for an example of the characteristics of a given destination. Similarly, another example is the negative experience caused by a tourism firm. However, in this case the unsatisfactory experience will affect the credibility of that firm rather than the destination itself. Each of these situations requires a constant attention towards tourist satisfaction regarding both the quality standards offered by the tourism firms and also relating to holistic tourist product of a given destination. This helps to improve market competition and destination image of a place.



#### 4. QUALITY AND CONSUMER UTILITY

In some circumstances the asymmetric information problems between sellers and consumers develop from the difficulty to evaluate the difference between the quality perceived and the quality expected. In fact, certain situations may arise when the producer, or seller, has information on the quality of products and services offered which they do not reveal to the customer.

On the other hand, as the consumers have their own idea of what to expect, they compare this to the effective value obtained from the products/services purchased. Again in this case, the lack of adequate information on the products and services quality could compromise the market relationship. All this is evident in the tourist sector where in the case of consumer disappointment the negative effects are amply propagated, producing repercussions on the operators directly involved and indirectly on the other operators of the tourist market and consequently on all tourist destination. Moreover, asymmetric information underlining the difference between the quality perceived by the tourist and the quality offered by the producers could influence negatively the value of the entire tourist experience even when the lacking satisfaction interest only a single element of the offer.

Quality and competition are linked to each other highlighting the quality investment that could become competition investment. Therefore, firms that achieve higher quality standards can improve their market position. Quality can be defined through a set of requisites that tourist products/services must have, including the capacity to satisfy tourist expectations. Although not always a single product/service is able to satisfy all tourist expectations, its quality is always defined by a set of different requisites that apply to the implicit and explicit tourist needs.

It is possible, at this time, to relate the quality with the utility received by the tourist, who plays a very important role when selecting and then purchasing a product. The assumption is that each product/service determines a utility level for the tourist, always depending on its characteristics. Higher level of quality will create a higher utility. This relationship also involves a link between the utility and the structure of the tourists' preferences. Thus, a larger amount of utility associated to the tourist's product/service, concerning ones individual wellness, makes that product/service a preferential choice. This hypothesis is based on microeconomic theory of choice that we can synthesize in:

$$i \text{ is preferable to } j \text{ Iff } U_i > U_j$$

Every consumer chooses among two options on the base of maximum utility. The utility does not derive from the product, by depends on the attributes that characterise the options of choice. In other words, if the decision maker is perfectly informed about the alternatives which he evaluates, including quality, then he will choose the option that maximises his utility (Lancaster, 1966; McFadden, 1974). Therefore, tourist satisfaction affects his system of preferences and his perceived quality of tourist product consumed. Moreover, the satisfaction deriving from past consuming quality tourism experiences increases the probabilities to be satisfy in the future.

A tourist, after having valued the possible alternatives between two products/services, chooses after evaluating whether the utility value assigned to the first is higher than the second one. The problem arises when the tourist evaluates tourist product as an *experience goods* or *search goods*, in other words evaluates *ex post* or *ex ante*. In the first case, the tourist evaluation follows after the consumption on the base of individual's basic tastes, which do not change over time but through experience improve and consolidate, as the experience is a cumulative process (*exogenous preferences*) (Becker and Stigler, 1977). Therefore, when the product purchase is repeated over time the tourist acquires quality information. In case of dissatisfaction he will not repeat the purchase. On the other hand, the *ex ante* valuation of the tourist product is taken basically assuming that tourist preferences can be taken as given (*endogenous preferences*), they change over the time on past purchase decisions, usually on account of social conventions or through advertising firms: "*habits creates habits*" (Galbraith, 1963). The tourist could prefer a high quality product for *ex ante* information either through "free sampling" or through direct contact with an already acquired reputation tourist company.

## 5. QUALITY AND TOURISM CONSUMPTION

Another aspect of tourism to consider is the purchasing decisions are influenced by a set of external events on which the tourist has no power of control. In fact, an individual may dispose of a limited amount of information that one may not foresee events or anticipate the outcome of any decisions. In other words, the tourist moves in a world of uncontrollable situations, which are known as *state of nature*. Consumer decisions are, therefore, influenced by uncertainties and state of nature (McKenna, 1986).

In addition, it should be mentioned a particular category goods and services, defined as *contingent goods and services*, characterised by the fact that their value is conditioned by external events and which the consumer thinks of as pertaining to state of nature. Most times, the consumer is well disposed to pay high prices for these products/services, to avoid the negative impact on the state of nature. In the tourism sector, this problem can be resolved through an insurance policy against problems arising when travelling, or by the tourist himself purchasing quality services guaranteed by trademarks and specialised guides.

To better understand the various mechanisms that regulate the tourist purchase decision, we must consider the example of a tourist looking for a policy to cover all possible inconveniences while travelling and, therefore, willing to pay a higher price for a quality certified service, rather than saving on a lower quality purchase. For this reason to simplify matters we have set up a matrix of choices where one can read the results of a possible combination of actions for the tourists and the state of nature.

Firstly, one supposes that the correspondence between the expected quality (EQ) and the perceived quality (PQ) could be explained in terms of satisfaction or dissatisfaction, therefore:

$$EQ \equiv PQ \rightarrow \text{Satisfaction} ; \text{if } EQ \neq PQ \rightarrow \text{Satisfaction} / \text{Dissatisfaction}$$

Considering the case of tourist in a situation of uncertainty, who has to decide whether he should or not buy a service with a quality certification. Uncertainty is a fact he cannot know about before the purchase and consumption of the service, whether he will be satisfied or dissatisfied. Still, it is to be seen whether the purchase of the service with a quality certification will give full satisfaction. If  $EQ$  and  $PQ$  are equal, then, the tourist will receive 100% satisfaction. However, before the purchase of the service may not know if this condition is satisfactory. It will be necessary, therefore, to wait and verify *ex post*.

The choice of buying a service with a quality certification and one without certification depends on individual requirements, payment possibility, but also on verifying state of nature, which in this case represent the equality and inequality between expected quality ( $EQ$ ) and perceived quality ( $PQ$ ) explained in terms of satisfaction or dissatisfaction as shown below in table 1.

**Table 1. Matrix of tourist choices**

	State of nature	
<b>Possible actions</b>	$EQ = PQ$ - Satisfaction	$EA \neq PQ$ - Dissatisfaction
Purchase of quality certified service	70	30
Purchase of non certified quality service	30	70

The only thing possible tourist can do before purchasing the service is put forth some conjecture. On the base of his information and consuming habit, tourist can only guess the state of nature considering that he cannot know the results *ex ante*.

The tourist has 50 probabilities on 100 to obtain satisfaction and *vice-versa*; he can choose between a quality certification service ( $QC$ ) and one without certification ( $QNC$ ). We indicate with  $y$  the probability that  $EQ$  is equal to  $PQ$  and with  $(1-y)$  the probability that  $EQ$  is not equal to  $PQ$ . We define, moreover,  $x$  the tourist satisfaction's expectation and  $(1-x)$  the dissatisfaction's expectation. Whatever the tourist chooses a product with  $QC$  or with  $QNC$ , he thinks that there will be  $y$  probabilities to get a certain satisfaction's level  $x$ , when the event ( $EQ = PQ$ ) happens and  $(1-y)$  probabilities to obtain dissatisfaction's level  $(1-x)$ , when the opposite event happens. It is possible to see what happens when tourist chooses to consume a quality certification service ( $QC$ ) or a quality not certification one ( $QNC$ ) by simplifying and using numerical values.

We assume, then, the tourist considers a numerical range between 1 and 100 and chooses a number, which is representative of his satisfaction or dissatisfaction expectation. If the tourist purchases a quality certification service, he will assign a satisfaction's expectation ( $x$ ) equal to 70 and then his dissatisfaction expectation  $(1-x)$  will be equal to 30, as shown before in the table n. 1. On the contrary, when the tourist purchases a quality not certification service, the satisfaction's expectation ( $x$ ) will be equal to 30 because he will assign an higher value to the dissatisfaction's expectation

( $1-x$ ), that in our example will be equal to 70. It represents, for instance, the case where tourist chooses to purchase a travel with a low cost air flight company, well known for its delays, but for sure chipper. The traveller actually knows to risk much more and then he has inferior satisfaction's expectations.

Finally, we have that in the first case, (perspective A) the tourist has 50/100 probabilities to get a certain satisfaction's level (equal to 70) and 50/100 probabilities to obtain a certain dissatisfaction's level (equal to 30).

$$\text{Perspective A} = \{(0.50, 70); (0.50, 30)\}.$$

In the second case (perspective B), the tourist risks more and more in term of dissatisfaction, purchasing a product with *QNC*.

$$\text{Perspective B} = \{(0.50, 30), (0.50, 70)\}.$$

At this point, how can the tourist choose among two perspectives? To answer, it is necessary to remember the concept of expected value; it means the value obtained when the tourist chooses of buying a service with a quality certification and one without certification more and more times. The expected value can be calculated summarising, for all the state of nature, the amount of satisfaction/dissatisfaction levels and their probability:

$$x * y + (1 - x)(1 - y).$$

On the base of the numerical example we already saw, we will have:

$$\begin{aligned} \text{Expected value of A} &= 0.50 * 70 + 0.50 * 30 = 50 \\ \text{Expected value of B} &= 0.50 * 30 + 0.50 * 70 = 50 \end{aligned}$$

The two equations present the same expected value and it means that the tourist face a game defined equitable. If he precedes many times to purchase a quality certification service and one without certification, at the end he will get the same result in average. In other words, the tourist before purchasing has an expectation that only after consuming the service could valuate in terms of satisfaction/dissatisfaction. Thus, the expected value is indifferent if service has quality certification or not. On the other side, the tourist can verify the satisfaction of his expectations in terms of quality only when consumes the product purchased. After that, it is possible to enhance that tourist is satisfied when expectations are equal to satisfaction, independently by the choice of quality certification service. It could mean that the tourist can be satisfied also when purchases a product without quality certification or *vice-versa* he can be unsatisfied when consumes a quality certification service.

This condition is useful to explain why in the tourist market there is a strong segmentation, first of all for what concerns single element of tourist product as transport, accommodation and restaurants, which are characterised by different quality's standards.

It is clear, however, that the result can be varied if we take into consideration, for instance, the kind of tourist service, the time to travel, the fidelity to the tour

operator, etc. The choice depends on tourist behaviour *versus* the risk and the state of nature. It needs, therefore, to understand if tourist is opposed, inclinable or neutral to the risk. From what has been affirmed so far, in case of asymmetric information problems there are variables, which influence individual choices. Some of them depend on the state of nature and influence the choice in relationship to the probability that certain events happen or not.

## 6. TOURISM FIRMS AND INVESTMENT IN QUALITY

The firms' decisions to invest in quality to improve their market reputation are influenced by the consumers' behaviour. Consumers, in fact, become more informed about goods/services offered by firms and compare among them different firms' products. Particularly, if the consumer can observe the quality *ex post* as it happens in the tourist sector, sellers will invest in quality only if their profit's expectations exceed the costs supported for doing it (Klein and Leffer, 1981; Shapiro, 1983). However, sellers are free to choose if invest or not in quality; if they choose to invest, they can also choose among different quality's levels and prefer to produce with low or high quality comparing maximum profit deriving by a certain level of quality and maximum costs saving linked to a low quality.

In a competitive market, firms have incentives to invest in quality. But, because of quality is expensive the increasing competition may lead to lower quality and consequently reduce prices (Kranton, 2003; Bar-Issac, 2005). In the tourist market, sellers are usual to have this approach when they want to gain or maintain market's share, fixing their strength on low prices. But, naturally, something different happens when sellers prefer to invest in quality to maintain the reputation of the tourist destination or because they want to have a good market's position, independently by the price (Asero, Gozzo, and Patti, 2008).

This can be specified in analytical way. We consider that a firm can offer a product with two different quality levels,  $s = 0$  (low quality) and  $s = 1$  (high quality), their costs will be respectively equal to  $c_0$  and  $c_1$ , with  $c_1$  more than  $c_0$ . Every consumer takes utility by consuming the product, which is equal to  $qs - p$  (achieves 0 if he does not consume the product). Discount factor is  $d = 1/(1+r)$ . Consumers know the good's quality produced at  $t$  time, at the beginning of  $t+1$  period. How the information concerning the quality at  $t$  time is used by consumers, which have it at the  $t+1$  period? We suppose consumers think that firm at  $t+1$  time supplies the same quality offered at  $t$  time ( $s_{t+1} = s_t$ ). The firm fixes a price  $p$  and always offers a high quality: however, if the opposite occurs and a low quality service or product is produced and this is a constant; if the firm fixes a price equal to 0 ( $0 = \text{constant}$ ), consumers will stop purchasing the product as a result. When enterprise produces high quality, profits will be equal to:

$$(p-c_1)(1+d+d_2+\dots) = (p-c_1)/(1-d); \quad (1)$$

when it produces lower quality, profits will be equal to:

$$p - c_0. \quad (2)$$

High quality is produced when:

$$(p-c_1)/(1-d) = (1+r/r)(p-c_1) \geq p - c_0 \text{ or } p - c_1 \geq r(c_1 - c_0); \quad (3)$$

where  $r$  is the interest rate during the time among different purchasing.

The firm is interested to produce higher quality when achieves a prize  $p - c_1$  at least equal to  $r(c_1 - c_0)$ . The prize depends on the firm's price  $p < q$ , the difference among production costs of two quality levels and on interest rate  $r$ . Bigger is the time interval among different purchasing), bigger will be  $r$  value; while the incentive to produce with higher quality will be minor. At this point, considering a fixed time period  $T$ , the firm will be choosing lower quality: at  $T$  time the firm does not have any interest in producing high quality, at  $T-1$  time, the firm knows that its choice won't influence the quality in the future period and so will choose low quality and so on.

Nevertheless, it is evident that the local background in which tourist firms operate plays a fundamental role in the choices of quality investment. In fact, as empirical evidence shows, in some destinations, firms choose not to invest in quality or not to give importance to it. In these cases, firms tend to influence each other, according to an isomorphism process (Powell and DiMaggio, 1991), making homogeneous standard offers. It happens, for instance, where the accommodation offer is made up of houses to let for which quality is guaranteed by the common good sense of the owners or in unknown areas by the tourism market. The same way, the isomorphism process could lead the firms to invest in quality which increase the quality of the destination offer and consequently its competition.

Finally, the investment decision in quality by firms is given by the speed with which unsatisfied consumers identify a new firm to which turn to. In this case, the more informed consumers are able to find firms with a better reputation, the less forgiving of unsuccessful enterprise they are. If this firm is not given a "second chance" options to show the product/service quality, the consumers' reaction could induce her to reduce incentive to invest in quality and consequently to reduce its quality offer. This investment choice is linked, also in this case, to the consumer's reaction, which in the case of tourism, is usually very strong due to its value not only economical that the holiday has. However quality investment is a opportunity to ameliorate enterprises market position.

## 7. CONCLUSIONS

Quality represents an important characteristic of the tourist market either for what concerns the supply side, because increases firms' goods/services competitiveness, or for what is the demand side, characterised by consumers more exigent and well informed. The actual evolution of care tourist legislative system underlines the necessity to produce tourist products and services of high quality. It is a point even in the tourist sector to stimulate operators to be attentive to consumers' needs and, at the same time, to correct the negative effects deriving by asymmetric information which the tourists most of the time cannot control.

Quality either as a mean of consumer guarantee or as method adopted by firms to be recognised in the market, tends even in the tourist market to be submitted to certification's system and to trademarks. However, it is true that, also without guarantees, it is possible to find another important quality dimension: the perceived quality. Tourists and operators have their idea of quality that is not measurable. It can be identified by the judges on quality expressed by the operators of a destination, which is a *proxy* of the standard offered on their territory.

On the other hand, tourists identify quality also as result of their tourism experience. Then, for higher satisfaction it is possible to associate higher perceived quality of goods and services consumed and, therefore, higher quality will characterise higher utility's levels. It follows that tourist satisfaction cannot depend directly on the goods/services certified quality, but on the relationship between their expectations and satisfactions.

This, according to us, offers an explanation why tourist market is fragmented in relation to the different service categories. These are characterised by different quality standard that not always are recognised by either certifications or trademarks.

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## **THE DEVELOPMENT OF KNOWLEDGE AND INFORMATION NETWORKS IN TOURISM**

**GHEORGHE AXINTE** \*

**ABSTRACT:** *The development processes in information and communication technology and the internet particularly, have revolutionized the entire tourism industry, generating new models of business, changing the structure of distribution channels used by tourism industry and redesigning all processes connected to this industry and last but not least, influencing the suppliers with touristic packages, destinations and stakeholders. The E-tourism is joining some of the fastest growing technologies such as the communications and information technology the hospitality industry and management, the marketing and the strategic planning.*

**KEY WORDS:** *e-tourism, destination, electronic commerce, technologies, web site, reservation system*

E-tourism is the keyword that brings out the effects and consequences of the tourism industry which we have not expected a few years ago. "E" indicates the state of electronic and represents "e-marketplace", where the e-business meets the e-consumers, the e-governance, the e-partners and many others e-business sites on electronic platforms.

The E-tourism is a part of area "operations" of electronic commerce, and has a grown number of travel agencies and tourism enterprises in global, national and regional levers that provide travel services through online transaction. They offer to the users' hotel information, flights, trains and restaurants in order to help them to plan their business and holidays.

Currently, is gaining ever more the ground reconstruction present tourist destinations, and "placing" in the circuit of tourist destinations and moments disappeared with the help of VR (virtual reality) technologies, thanks to PC 's technologies, and some accessories - headset and glove - cyber glove, CAD technology - to create virtual models, the boom (binocular Omni-orientation monitor), CAVE (Cave Automatic Virtual Environment), VRLM - Virtual Reality Modelling Language,

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3Dglasses and thanks to a great reconstruction work from many specialists such as architects to developers [7].

The largest companies (including those in Romania) use the PC reservation systems (CRS - computer reservation systems, Galileo International, Sabre, Amadeus, World span, System One, Abacus), which are characterized that they unify the information systems, reservations and sales systems. The tourist who appeals to an agency which uses such kind of system benefits from a tour of safe, high quality and an optimal rate.

With the introduction of the first computerized reservation systems (Computer Reservation System-CRSs) in the early of 1960, there have identified four stages in the application of the information technology into tourism.

These are the following [9]:

- the data processing era, from 1960;
- the era of information systems for management, from 1970;
- the era of strategic informational systems, from 1980;
- the era of network systems, from 1990.

Due to the development of information technology, many of these systems have changed their native for. As a consequence, new technological tools have developed to use arising advantages in management, communication, marketing and promotion of products and offers.

The fast expansion of the Global Distribution System (GDS) and the reservation via PC (CRS), are the reflection of today advanced technology. Unlike other tourism related services where a physical presence is required, GDS and CRS are characterized by a bid-based international service. The CRS is the typical system used to verify the availability of the flights the reservation and, often the issue of the tickets. The same system is often used to reserve book hotels rooms or to rent a car [7].

On the other hand, GDS are the system used to group and display neutral information from a specified domain of the CRS system. Some holders of the Global Distribution System have expressed concern that their data could be forged or presented in a subjective manner, so different codes of utilisation have been issued to protect both the integrity and the neutrality of the data contained inside the GDS [2].

An additional problem is that some CRS are presumed to have one-way rights over the distribution and thus prevent the distribution of certain product through GDS. The international tourism development is based on effective marketing of tourism products to consumers in the countries issuing travel. Most of the countries with touristic attractions are developed countries with full access of technology and use the constant computerized reservation system and the internet.

The Global information networks and distribution-CRS-Computers Reservation System, GDS-global distribution system and the internet play a decisive role in international tourism because they put in contact the producers and the consumers of tourism products. These systems are the backbone of international information networks, which offer to the tour operators, travel agencies, airlines, facilities to obtain and process the information, make reservations and sell the products.

If in the beginning the CRS sites were developed (1970) by the large airlines to process flight reservation, have subsequently evolved and were developed to provide additional services related with air transportation such as: the storing of information in a word basis, the issue of the tickets, marketing - by informing the passengers about the costs, cut-offs and other specific conditions, or setting the products and services.

They cover today, among the services offered by airlines those on the ground which offer to the tourist travel packages (transportation accommodation meals sightseeing's and performances) or car rental. Due to broadening of the range of services they become known as global distribution systems which allow the significant improvement of the business efficiency of travel agencies. Because of strategic alliances and other forms of cooperation they occur on the most important markets and allow the minimizing of the costs, reducing the need for the direct trade.

On the international tourist market are in use some global distribution systems well recognized and with an international prestige, their number of users and services provided evolve permanently.

We will stop of some of the most important [4].

- AMADEUS - provides marketing - distribution service, and sales tools for all companies from the transport industry. It was established in 1987 with the following founding members: Air France, Iberia, Lufthansa and SAS. There are 155.000 agents connected to its system.

Amadeus is the only system that allows airlines to use the facilities for sale, of the airports. It offers to its clients the process management and sale softwares and the network of agents. Amadeus is a leader in Europe and South America, with a major share on the US market, Asian and African.

- SABRE - was established as a holding company (Sabre Holding Corporation) taking the system with the same name from American Airlines adding through the purchase of 35% of shares the distribution system ABACUS from Asia.

This holding sells touristic arrangements and software for the agents in work with. Sabre also owns the Travelocity site which provides on line services for potential consumers.

- GALILEO INTERNATIONAL - originally were the name Apollo, being the propriety of Covia company from U.S.A. Covia was allied with the European consortium Galileo (the four founding members were: Alitalia, British Airways, KLM, Swissair), then merged and formed Galileo International.

Soon after Canada has been associated in consortium, in 1997, the 11 companies of the Galileo system sold 35% of the company, the company became a public society. Galileo offers booking services, information and other products such as Wireless Galileo, Galileo e-cruise, XML, Select and Galileo View Trip. Galileo provided the Rail Master service which is an arrangement of reservation on French railways last year.

- WORLDSPAN - is another global distribution system which offers a huge range of additional service connected with air travel. The holder system is organized in such a way that it can conduct three types of activities: the

distribution itself of the travel and tourism service, e-commerce and consulting service offered to the travel agencies.

The World span reservation system offers travel information for more than 20000 travel agents and users around the world. World span is the leader in the sale in transport industry its sales are 50% of online sales. This system, relatively recently created (1990) has 3200 employees and its activity is spread in 70 countries.

The birth of Destination Management Systems (DMS) at the end of years 1980 has enabled the new comprehensive complex and updated information on various tourist destinations and offered optimal opportunities for planning, management and marketing for regional companies and travel agencies in this way. DMS is an important tool of promotion distribution and operation for travel agencies.

Buhalis [2] took the DMS concept further and has introduced the Destination Integrated Computer Information Reservation Management Systems (DICIRMS), a strategic tool used to maximize economic benefits, social, cultural and environmental tourist destinations. It stressed the fact that the DICIRMS systems are easier to use, having a friendly interface, easier access and more advantageous to purchase products and services. The information technology and the database infrastructure are used by touristic management organizations to support a wide range of activities and services.

The informational services are used for booking and other services from the system can be accessed and operated by web users. Today, the tourism is one of the most important applications on the World Wide Web. Initially, the access to the Internet appeared to be related to young people and those with training in the field. Today, there is a wide range of user who wants to know travel information or to purchase travel services using the Internet. As a fact, the era of networks modifies the importance of location and of quantities in the delivery process of the products.

As is known these information systems come to manage the activities of travel agencies or individual agents globally. It is good to take into account that at present, the "bulk air transportation is directed to the business travel or for the pleasure. People travelling for business do so for economic reasons and expenses are supported by the companies for which they work. As a result, there is a need for flexibility in achieving an arrangement taking into account that may be willing to be treated as "friendly" [6]. To know these are required more complete information, faster and easier to perform. All these are offered by information systems that use the Internet.

The Internet has the potential to have a major effect on how the hospitality and tourism product are distributed, redefining the modality in which the tourists discover and buy tourist products. It has the potential to overcome many problems associated with the traditional electronic distribution. Addressing to the consumer directly, it bypasses the GDS, giving rise to much lower costs and making possible the distribution of cheap products.

The absence of requirements in terms of structure gives the flexibility to distribute heterogeneous products, while the simplicity and the general acceptance of the user interface introduces consistency in how the information is accessed a necessary prerequisite in tourism [6]. The freedom of entry, low costs and the fact that one does not need any special equipment to make it attractive as a medium distribution

for the small tourism operations while the multimedia capabilities and global scope make it very effective as a marketing medium. Its potential has been officially by the tourism sector. It has predicted that the Internet will be the key of leadership future in the national tourism sector.

Only those operations that will exploit the technology to properly identify the consumers' needs and provide proper products will survive. The entrepreneurs' market in tourism it is not a small one and they know to use informational solutions and applications. The Internet is the main virtual gate which enterprises can promote their services and attract customers but the extent to which it is operated is still a little one [3].

Thus, one can say that, at present, the tourism is partially on-line. Few of the companies on the Internet offer real functionalities even at the booking on-line level. Neither in terms of selling things are not better, the situation is similar with the existing one in on-line commerce, in that area are running a large number of e-shops, which can be proud that they overcame the "virtual window" level, but not the "online delivery" level. It is obvious that the Internet has become for most tourist operators in Romania as a catalyst for promotion and branding. These companies begin to understand the great benefits of online direct marketing and direct communication with potential customers. This thing becomes an advantage for any tourism company if the image that is created on its site is impeccable [1].

Many firms are wrong if they believe that only a website which is good-looking is sufficient for their image on the Internet. For a website to reach its purpose it must provide structured information about the offers of travel agencies and about individual providers in the branch and to have a correct, index to make it known and in this way to attract so many more visitors. The visitors mean potential customers and they mean a source of revenue for the region. This means that the website has achieved its aim of the promoter of tourism and the region.

The role of a website must not stop here. The idea of a website is not only the full presentation of travel offers but their actual sales to customers. Thus the implementation of solutions that allow the user to buy online the offer saw on the website is the great advantage that a travel agency or on enterprise from this branch can obtain from on website. This means the full using of the resources that posting on the Internet can be offered.

The firms seen to realize (as the dynamic online presentation of the offer in recent years) with the idea that the migration to online is beneficial, but the practice continues to leave desired. At the moment, most website of this kind offers to the clients only the possibility of the study online of the offer which is on the market and to compare with the competition. The payment and other services are unfortunately still in the classic way.

A little better is the chapter of online bookings, but, in this case the processing of the application (or the necessity of telephone confirmation) makes that the advantage of operation processing in real time to be lost. The website that accepts credit cards can make reservations in real time.

Well, to realise this system, each kind of accommodation which is on website must have an installed system which is transmitting in every moment how many free

rooms there are (how it is, in every country, even in the touristic offers of our neighbour's Bulgarian people).

Only in this way one can make reservations in real time. Most of them have application forms in which the command is transmitted by e-mail and the hotel/tourist agency rings the client. The non-use of maximum benefits brings on relationships with other agencies and companies from abroad and deepens the gap between the companies from and outside.

The western companies have adapted the new trend requires adding more touristic services in one online package:

- booking the air ticket;
- hotel booking;
- the confirmation of reservation;
- payment;
- rent a car, etc.

According to specialists, the customers whom access this kind of offsets are the category of Internet users with a minimum experience of two years in terms of shopping online. Therefore the actual situation existing in Romania e-commerce and in the region, the launch of such offers by local tour operators could mean targeting a limited number of customers.

The initiative may be considered as one with low profitability only if the offer is viewed from the perspective of attracting customers exclusive from the county, and not abroad, more familiar with the purchase of such products. In this case also, the mechanism of money collection is quite complicated. For example, a foreign tourist, he paid the money to the company by bank transfer is much greater.

One of the factors considered to be the basis of the limitation of the development of the online tourism in Romania is the poor understanding of the benefits that online credit card payments offers. There are 7.1 million cards in Romania, there are a billion of users of the Internet in the world and foreign buyers are educated in payment for travel services online. In these circumstances it is not clear that backs request. The agencies and companies from the region put the blame on the trading commissions which they like at the level of transactions through the POS.

**Conclusions.** The future of tourism seems to belong entirely to the Internet. According to a recent estimation of the main actors from American tourist market in maximum 10 years the online companies will be majority, the tourism will practically became the biggest industry on the Internet [5]. A forecast justified by the scale on which the Internet has become in recent years in the tourism industry all over the world not just overseas.

Even if Americans are leaders in e-tourism, the Europeans have not left behind. Europe has quickly adapted to new trends, the constant increase of the number of internet users worldwide, the expanding capacity of distance payment instruments having a direct impact on this international industry. Even so, it is estimated that Europe will reach the level of American online tourism in 3-5 years.

The offer that the IT companies have for tourism is varied and starts with dedicated websites to internal applications. One of them is ARoBS Transylvania Software which has completed the implementation of informational solution for

Eximtur SA, the biggest travel operator in Transylvania [1]. The solution is that created a complete automat reservation system which manages the whole process from a travel agency, from contracting places to money collection.

All subsidiaries of the Eximtur agency from the country and also the resellers successfully use the online booking of tickets. Epicor Software Romania by Epicor iScala Hospitality meet the requirements of hotel industry offering an ERP solution with a great capacity of adaptability and flexibility, being able to cover a very wide range of actives, from those of catering, to warehouse management, service, accommodation, etc.

Epicor iScala Hospitality is an ERP solution fully integrated, which include the financial management, the management of materials, multiple sites financial consolidation and tool instruments for budget and report.

The system also includes interfaces with the main systems Property Management System (PMS) and Point of Sales (POS). Epicor iScala Hospitality is developed starting from iScala solution, with additional functionality to meet the unique requirements of the Tourism Industry. The application has demonstrated its utility, being used by 14 of the 20 top hotels in the world, more than 300 hotels in over 60 countries, as well as local restaurants and independent locations.

In terms of website Software Generator provides a website dedicated to tourism business. Thus, w.w.w.pensiunituristice.ro became an instrument of business development for those who have got hostels all over the country. What is more along whit this is added the development of dedicated web sites, assistance and consultancy for the companies in the field.

There is not a unique technology (such as computers, internet, phones, and videotext) which is widespread in the tourism sector, but a whole system of these technologies. In addition, the technology is not only used by airlines, hotels or travel agents, but all of them. The developments in the application of development technologies in tourism sectors are made in a fast way. However, these subjects seem not to attract the imagination of the tourism industry, which in some limits, been overcome by the development of technology.

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## OVERALL ANALYSIS ABOUT THE EVOLUTION OF REAL ESTATE MARKET IN ROMANIA

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**ABSTRACT:** *Currently, the estate market in Romania is characterized by instability, limited demand, the increased aversion to risk and very sensitive to price component, the determinants factors being the global financial tensions and the attitude of banks that have frozen the crediting. In the last year, due largely to the global financial crisis had raised questions such as: To what extent the international financial crisis will affect this market? This analysis is like an overall analysis of the causes that determine the evolution of the estate market as a whole. To this end we started to explain the evolution of demographic aspects of the country, reaching financial factors, sociological, and stressing foreign influence on the evolution of this market.*

**KEY WORDS:** *estate market, demographic situation, socio-economic situation, evolution of credit risk*

### 1. DEMOGRAPHIC SITUATION

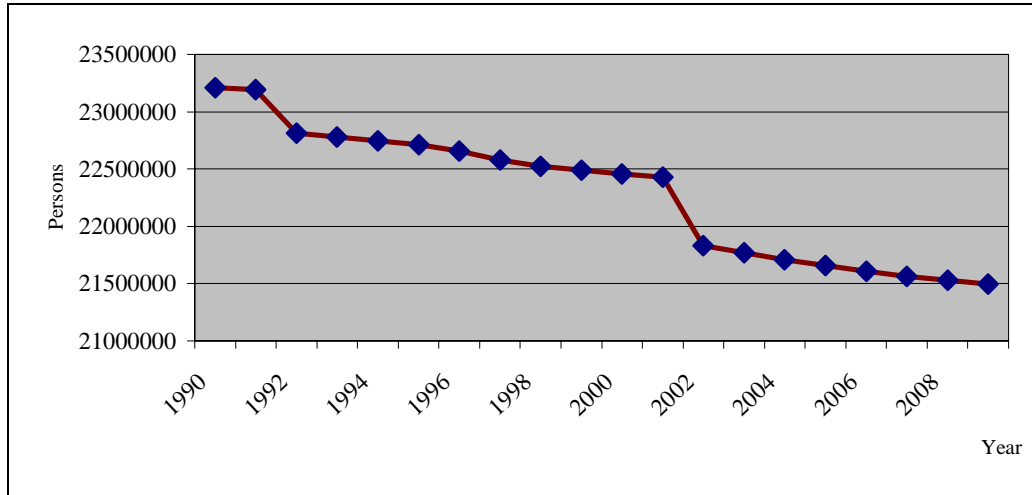
The political, economic and social changes which know Romania after December 1989 put their hardness mark on population development and demographic phenomena. The rapid and significant decrease of fertility, mortality and migration resurgence of negative external size of which still do not know, have dramatically changed the demographic landscape of Romania. Year 2009 is the 20th year by demographic decline, during which Romania lost almost two million inhabitants, which means that 9% of the population it had in the early 1990 years.

The need explaining of current demographic status of the country, characterized as a population decline, lies in knowing the implications of this state of affairs, and in need of finding solutions for the future. On the demographic interested in two aspects: the total population and population structure. In terms of numbers in

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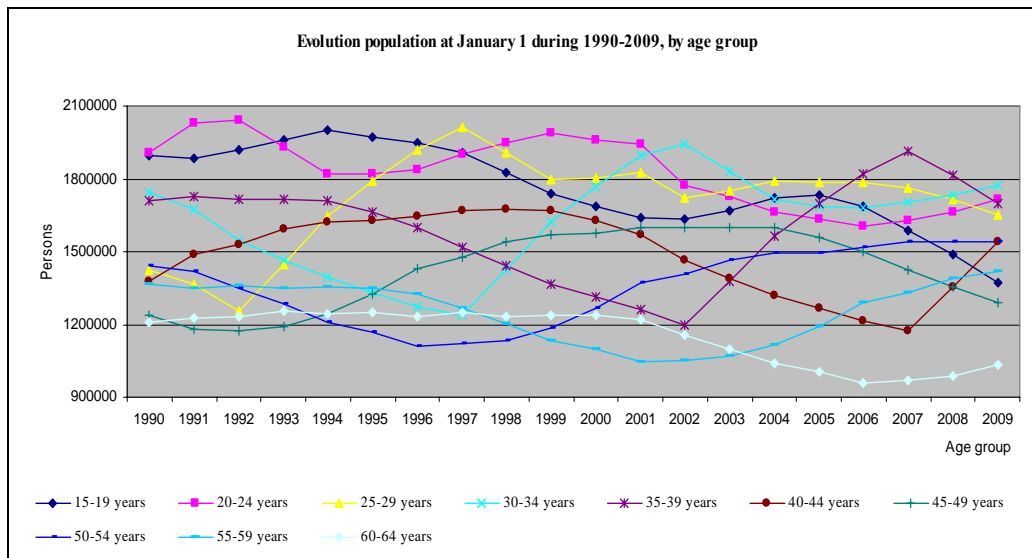
recent years, the population of Romania registered a downward trend as a result of unfavourable birth, mortality and migration.



Source: N.I.S

**Figure 1. Evolution of population in Romania during 1990-2009**

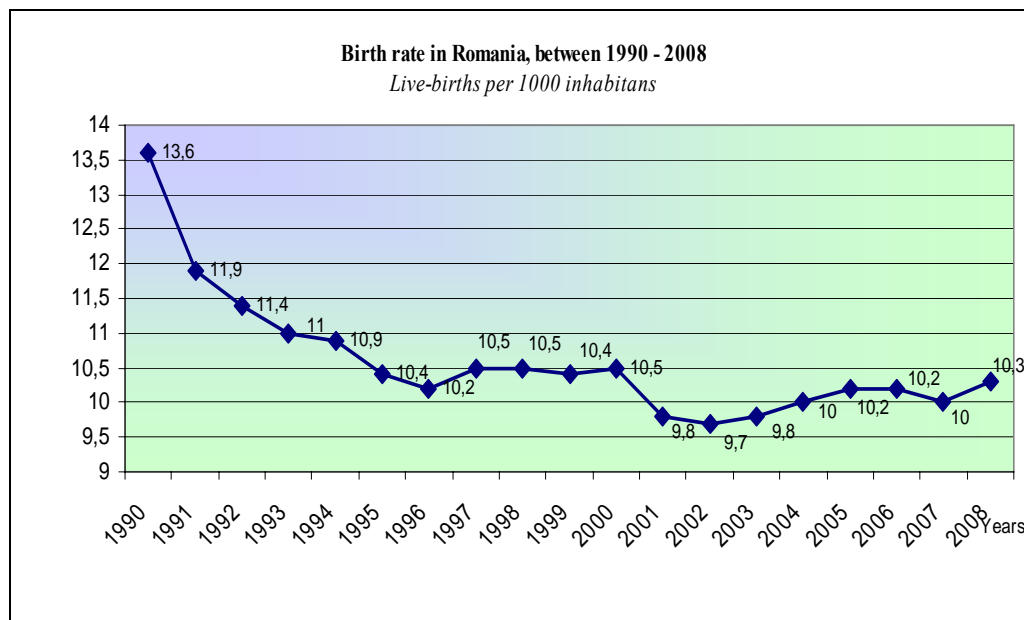
The population structure by age groups reflects the continuation of slow aging population (especially due to falling birth rates), which have reduced absolute and relative youth population, aged up to 14 years and increase the share of elderly population, respective population for 60 years and over. Demographic effects, but those economic developments will be seen in time, especially regarding issues of school population, the population of childbearing age and working age population.



Source: N.I.S.

**Figure 2. Evolution of population at January during 1990-2009, by age group**

The main demographic phenomena affecting the total number and structure of the population are: birth and fertility, mortality, marriage, divorce and migration.



Source: N.I.S.

Figure 3. Birth rate in Romania during 1990-2008

The main causes of lower birth rates and fertility are considered to be the economic and social. Thus, low income levels, insufficient supply of jobs and the difficulty of obtaining a residence are often invoked as a fundamental cause of lower birth and fertility. The role of these factors is undoubtedly important, but it will never be fully explained by falling birth rates and fertility without taking into account the cultural factor, the change of values and mentality.

Analyzing the current situation characterized by levels and demographic trends in recent years the birth rate, mortality and migration, many studies have been conducted foreshadowing of immediate and future evolution of demographic phenomena.

Such a prediction was made by Basil Ghetau in his "Demographic decline and the future of Romania's population. A perspective of 2007 the Romanian population in the 21st Century". Below is reproduce the scenario made of this author about the birth rate, death rate and evolution general population while maintaining current fertility (1.3 children per woman) [2].

Thus, while maintaining current fertility is projected demographic installed an inevitable slippage after years 2025-2030, with ages 20-40 years to achieve the small generations born after 1989. The ratio of adults and the elderly would have dramatic values. Among these causes can be: worsening living standards, expressed by decreasing real incomes, unemployment, inflation, healthcare underdeveloped housing.

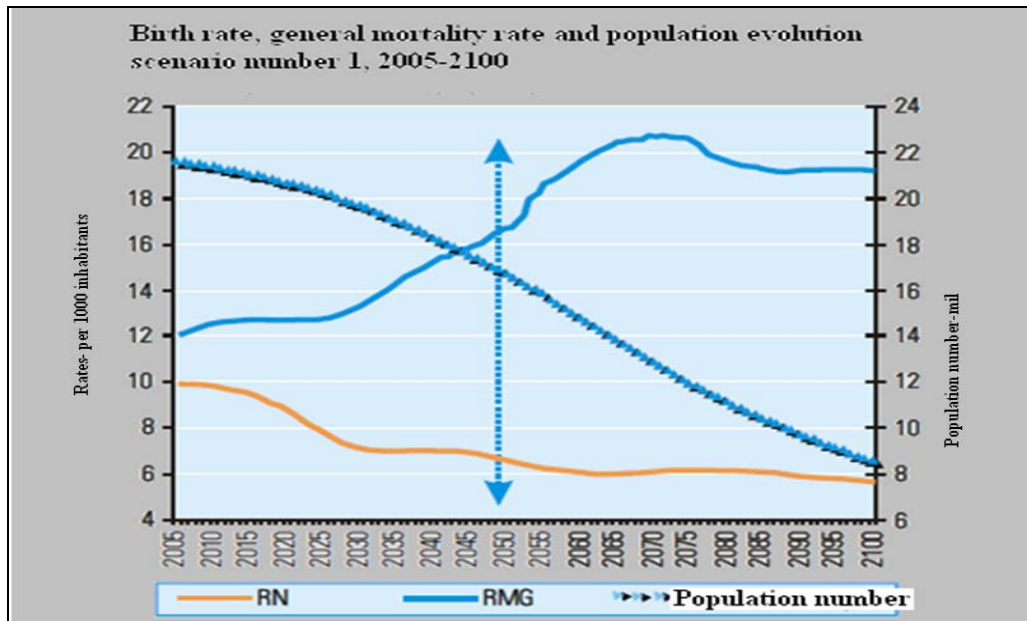


Figure 4. Birth rate, general mortality rate and population evolution scenario number 1, 2005-2100

## 2. SOCIO-ECONOMIC SITUATION

According to preliminary data published by the National Institute of Statistics [3] results that the gross domestic product contracted by 2.6% (seasonally adjusted data) in Q1 2009 over Q4 2008. Given the contraction of GDP of 3.4% in Q4 2008 from Q3 2009, we are officially in recession.

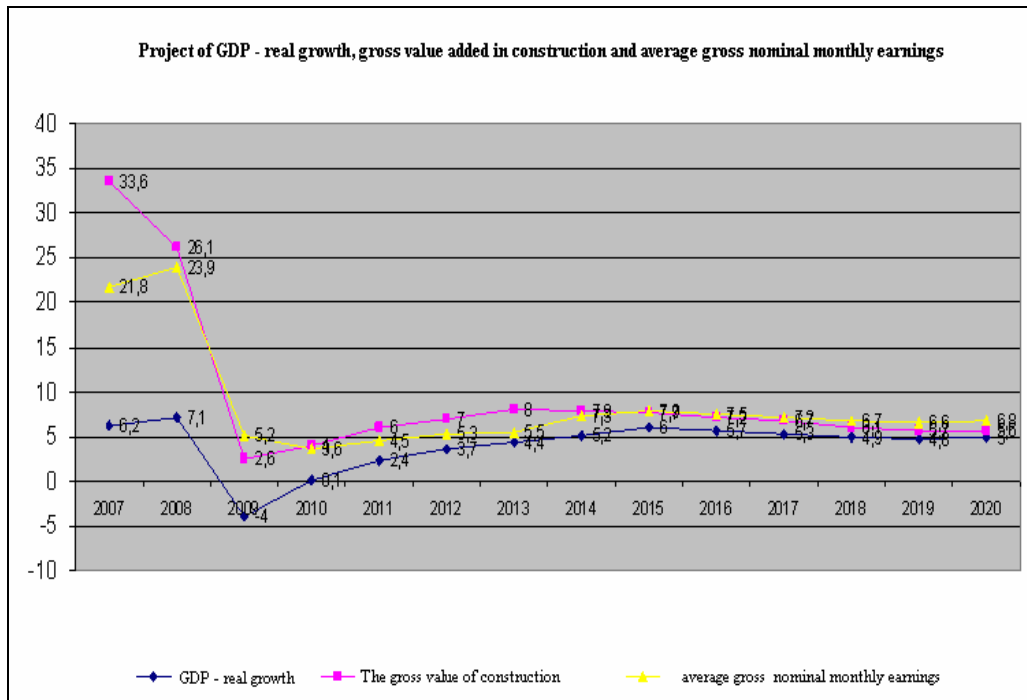
Reductions in the level of activity were recorded in agriculture, forestry and fisheries (-7.6%), industry (-1.4%), trade, repair of cars and household articles, hotels and restaurants, transport and communications (-3.7%) and construction (-0.3%).

With regard to annual data, Romania's GDP contracted by 6.4% in Q1 2009 to Q1 2008, data are not adjusted.

According to early estimates of the evolution of GDP in the second quarter of 2009, it was reduced compared with first quarter 2009, with 1.2% (seasonally adjusted data). Compared to the corresponding period in 2008, according to first estimates, gross domestic product (raw number) decreased by 8.8% in second quarter 2009 and 7.6% in first half 2009 [4].

The National Commission for Prognosis has made the projection of major macroeconomic indicators 2020 [7]. In figure 5 is reproduced projection of three macroeconomic indicators, namely: GDP - real growth, gross value added in construction and average gross nominal monthly earnings.

As you can see and the graph above, in 2008-2009 periods has been a major loss of the three indicators analyzed, after which, as forecast by the National Commission for Prognosis, version Spring 2009, follows a slow their recovery.



**Figure 5. Project of GDP - real growth, gross value added in construction and average gross nominal monthly earnings**

In 2008 there was most pronounced economic contraction after 2000, economic slowdown becoming a reality. Due to the volume of activity in services and construction starting this year will see a significant drop.

According to the preliminary data published by the Institute of Statistics [5], in the first half of 2009, compared with first half 2008, the construction works, series adjusted for the number of working days and seasonality, decreased by 5.0%.

On elements of structure, the construction work in November was an increase of 2.0%. Decreases were recorded in current maintenance and repair (-17.1%) and in the work of major repairs (-13.8%).

According to a study of real estate company Cushman & Wakefield Romania in the first half of this year, Romania has recorded a volume of real estate transactions of 62 million Euros, 92% lower than in the first half of last year, when property transactions amounted 815.3 million Euros and the lack of transactions is difficult to determine actual yields for property. Until now Romania does not have an official index of the estate market. It will be released by the National Institute of Statistics (NIS) with data from the National Union of Public Notaries from Romania (N.U.P.N.R) and in collaboration with the National Bank of Romania (N.B.R.) until 2010. This index can be considered a major element in the analysis of living in the households sector.

To purchase a home, most people call to get a mortgage that has a significant impact on household spending on long-term. The evolution of house prices is an

important indicator for assessing the possibility of obtaining credit as well as to investigate the impact have these types of loans available on the net income of households.

At the macroeconomic level, the housing market index may be considered important for analysis of financial stability, given that a steep rise or fall in prices can have a negative impact on the financial sector.

The population informing with the help of various specific sites that offer information on real estate prices of apartments in the cities of Romania, but all this information refer to price list, and not actual transaction prices, but most of them have only a speculative role.

Exposure of banks to construction and real estate sectors is relatively high compared with growing importance in the economy (21 percent of loans granted in March 2009) and heterogeneous in the credit institutions. Rates arrears generated by firms in real estate and construction sectors (3.2 percent in March 2009) are higher than that of the whole economy (2.7 percent in March 2009, figure 6).

According to banks, real estate, followed by construction, has seen the most marked deterioration in the credit risk in the last year [6].

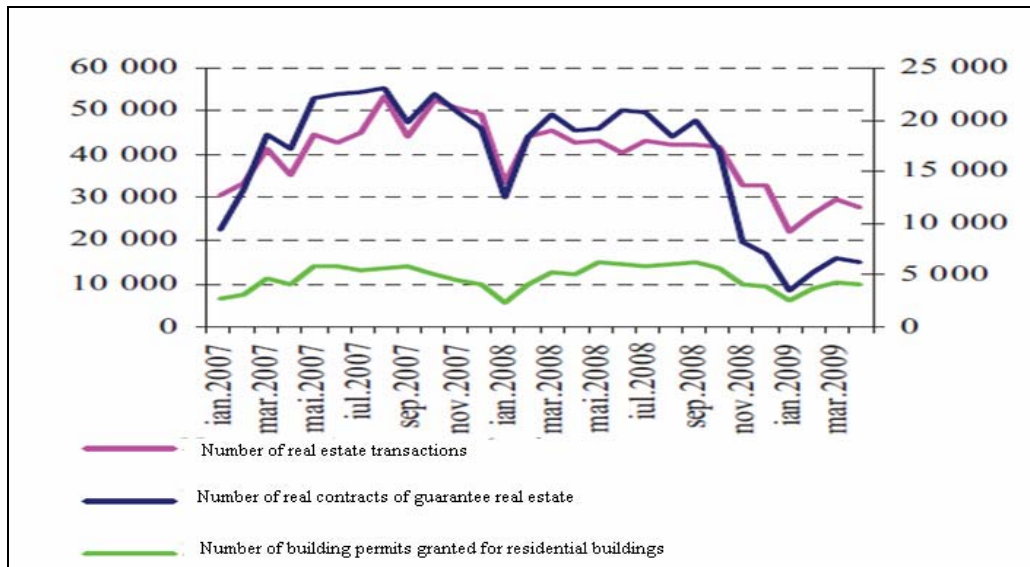


Figure 6. Exposure of banks to construction and real estate sectors

Rate and volume of amount of arrears on credit have seen a substantial increase in the last year (arrears rate is 0.32 percent in March 2009).

The perception of banks across the credit risk of companies has deteriorated, the riskiest firms are considered the real estate sector, construction, transport, communications, post and tourism which will expensive financing (figure7).

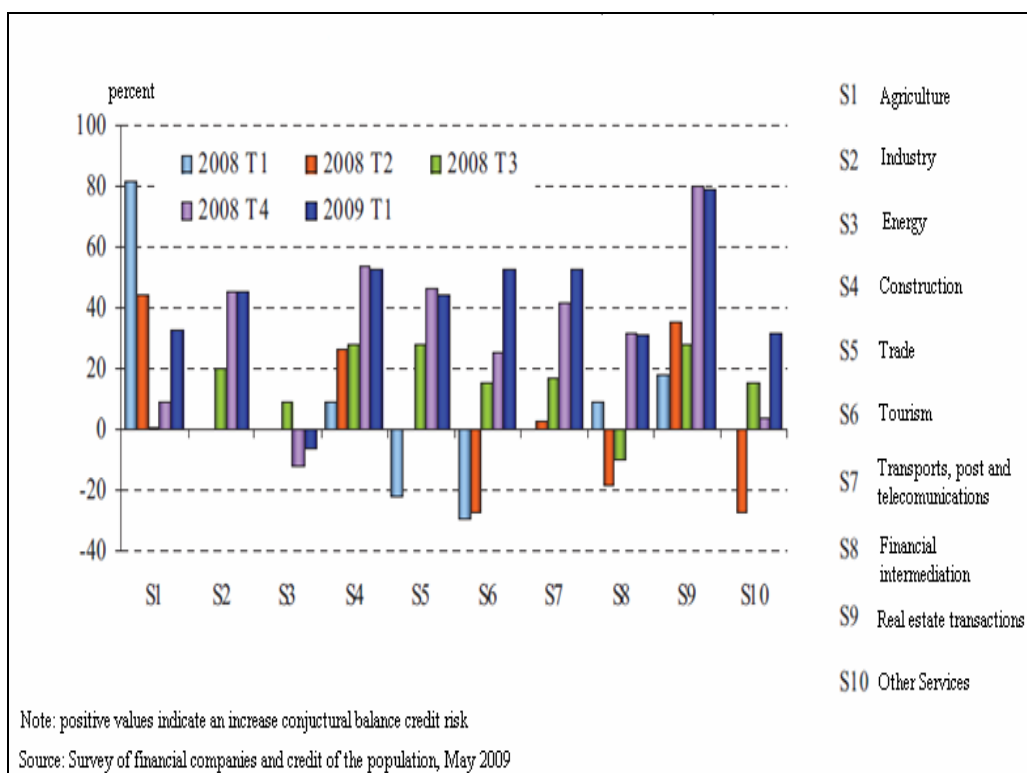


Figure 7. The evolution of credit risk by industry

Under these conditions, real estate prices should fall by about 35 percent of the purchase price (and not to the peak achieved in the market), recorded and international situation (respective 29 percent [1]).

As regards interest on loans from the beginning of 2009, N.B.R's key rate down 1.25 percentage points from 10.25% to 9% a year, hoping in the cooling trend of decreased demand for mortgage loans.

### 3. CONCLUSIONS

The need of estate in Romania is real, but the offer should be consistent with the request. Considering the evolution of revenue (figure 5), real estate prices and interest rate on mortgage loans (9%) is very difficult for a Romanian with average earnings to buy a home. Residential property market is currently addressed in high-income population. Real estate prices in Romania do not have any relation to incomes, and even the country's overall development.

Increasing costs of refinancing of banks combined with the increased need for external financing and domestic currency depreciation may lead to higher risk and a marked deterioration. To restart the market, developers must find alternative financing and investment funds, increased involvement of partners or use equity or banks to waive some conditions, such as prepay rent, which can not be met, and to accept risks.

Return the property market in Romania will be very slow, real estate experts estimate that it will require a minimum of five years to reach the yields recorded in 2007 year. A major advantage of the real estate market in Romania is the low value of the stock of existing facilities for all segments. With the return of demand for space, you may witness the growth of business development, but the situation in national and international context, will materialize over some time.

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## **EXPLORING TOURISM DYNAMICS: CHALLENGES IN TIMES OF CRISIS**

**VIRGINIA BĂLEANU, ANDREEA IONICĂ,  
SABINA IRIMIE \***

**ABSTRACT:** *This article aims to present an overview of tourism flows evolution in Romania during the last decade and discuss its recent dynamics, taking into account challenges of the global economic crisis. Accordingly, we synthesize the results of some comparative analyses of the main indicators reflecting the flows of visitors (foreigners and residents) based on official statistics. Thus, after presenting the trends of yearly evolution in 2000-2008 comparative with 1990, we analyze monthly dynamics in 2007, 2008 and the first seven months of 2009 looking for the early signs of crisis. In addition, we point out the main evolutions and challenges of the tourism industry, as identified by recent studies of some representative organizations in the world and EU.*

**KEY WORDS:** *tourism industry; tourist flow; arrivals of foreign visitors (inbound tourism); departures of visitors abroad (outbound tourism); overnight stays; international tourist arrivals; global economic crisis*

### **1. INTRODUCTION**

The various stakeholders in Romanian tourism have increasingly spoken over the past two decades about the considerable potential justifying the efforts for supporting the development of this industry. In addition, many works, studies, also official papers in the field have pointed out this potential, the need for its unlocking, and possible ways of approaching the specific issues at the national and regional level (e.g. Olaru, 2005; Popescu et al., 2005; Băleanu et al., 2006; MT, 2007).

Unfortunately, implementing some effective actions had a slowly pace if we consider the tourism evolutions as reflected by the main indicators statistics. As a barometer of the degree of capitalizing on tourism potential, the tourist flow in Romania registered significant variations, with a tendency to decrease comparative

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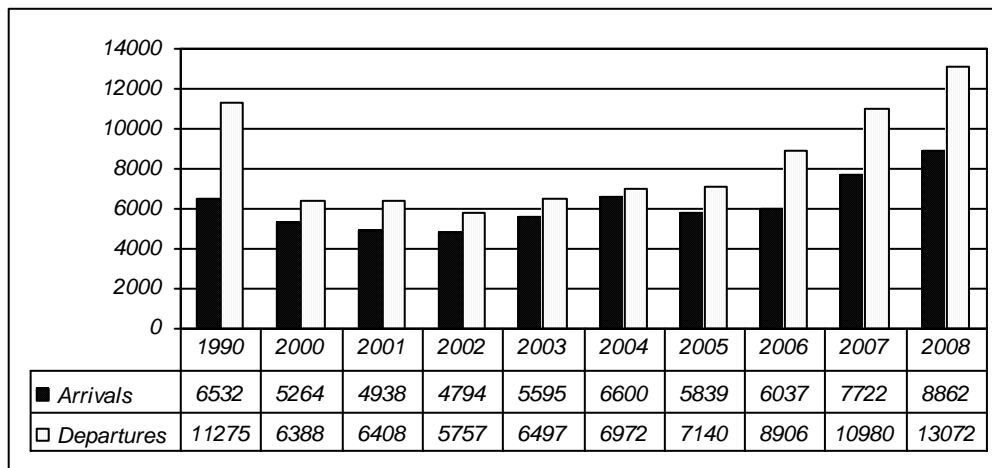
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with 1990, mainly explained by the specific context of socio-economic and political changes during transition period. A positive sustained trend appeared only after 2005. This allowed an optimistic reconsideration of chances for the so long expected revitalization, implicitly related to the expectations of some new opportunities in Romanian tourism, following the integration into the European Union (EU).

After presenting an overview of the general evolution previously described on brief, our paper investigates and discusses the recent dynamics of tourism flows, in an attempt to find how and when were felt some early signs of global economic crisis. Finally, the paper synthesizes the main international evolutions and challenges of tourism industry relative to the crisis, as recently described by representative organizations in the world and EU.

## 2. AN OVERVIEW OF THE ROMANIAN TOURISM FLOWS OVER THE LAST TWO DECADES

The tourist flow or the flows of visitors that define inbound and outbound tourism of Romania (arrivals of foreign visitors in the country and departures of Romanian visitors abroad) visible fluctuated after 1990, with an overall decrease tendency kept also during the first years of the current decade. The evolution of these two indicators in 2000-2008 period show some differences, but the number of departures registered at border points (in thousand) exceeds constantly the number of arrivals. This fact is visible also in 2007 and 2008 when their levels become comparable with, and respective higher than, those attained in 1990 (see figure 1).

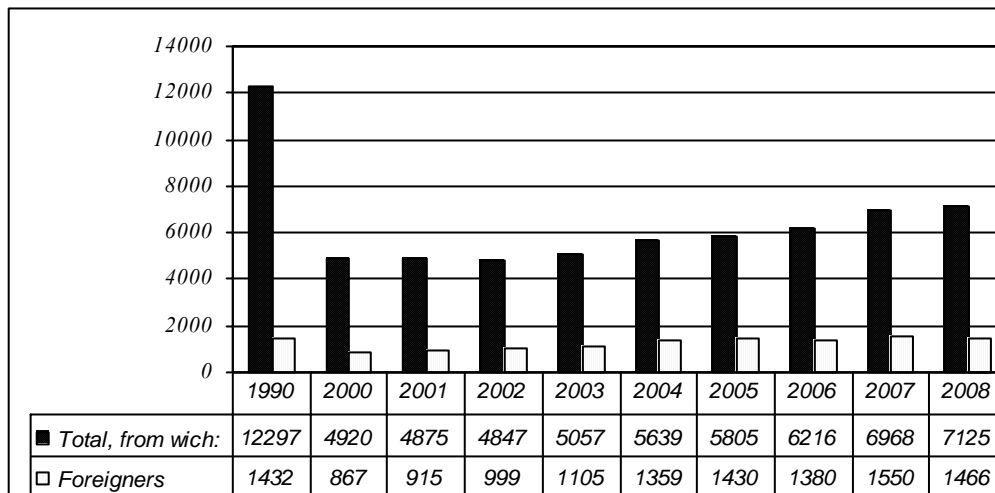


Primary data sources: NIS, 2007a; 2007b; 2008b

**Figure 1. Tourist flow in Romania (arrivals & departures at border points) – yearly evolution 2000-2008, comparative with 1990**

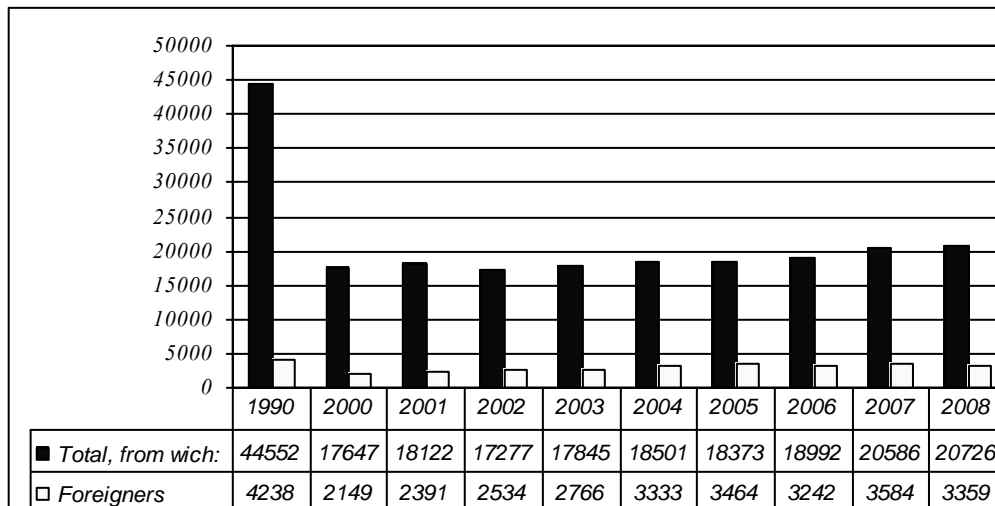
The positive dynamics of arrivals and departures, outlining an increase tendency during the last part of the considered period (2005-2008), could relate to the January 2007 moment, when Romania became member state of EU. In order to verify

if this tendency is consistent with other important tendencies for tourism activity, we extended analysis on the statistics about the main indicators of using tourist accommodation capacity. Accordingly, our attention focused on yearly evolutions of arrivals and overnights stays registered in the main establishments of tourist reception with functions of tourist accommodation during the same period, by total and by foreign tourists (figure 2 and figure 3).



Primary data sources: NIS, 2007a; 2007b; 2008b

**Figure 2. Arrivals in the main establishments of tourist accommodation, 2000-2008 evolution, comparative with 1990**



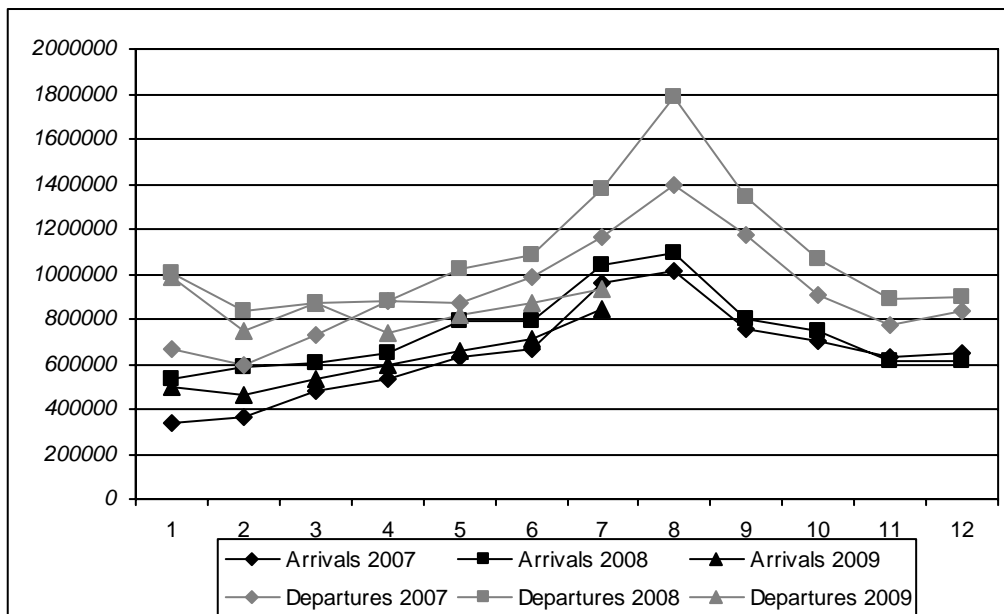
Primary data sources: NIS, 2007a; 2007b; 2008b

**Figure 3. Overnight stays in the main establishments of tourist accommodation, 2000-2008 evolution, comparative with 1990**

As it can be seen in the two precedent graphs (figure 2 and 3), the main customer segment of the tourist accommodation activity in our country is that of the resident tourists (Romanians). Both in the case of arrivals and overnight stays, foreigners represent less than 1/3 of total, in each year of the 2000-2008 period (with an average of 22% in the first case and 16% in the second). On the other hand, even if the overall evolution of the two indicators shows a similar increasing trend starting from 2005, the growing rates are obviously smaller than the ones of the flows of visitors at border points. Moreover, the figures in the last year (2008) show that the number of foreigners' arrivals and overnight stays decreased against precedent year. This suggested us that beyond the appearances of maintaining the positive trend (as resulted from overall analysis of yearly evolutions), a shift in demand of the foreign tourists segment occurred somewhere during 2008.

### 3. DYNAMICS OF TOURIST FLOWS AFTER INTEGRATION OF ROMANIA INTO THE EU

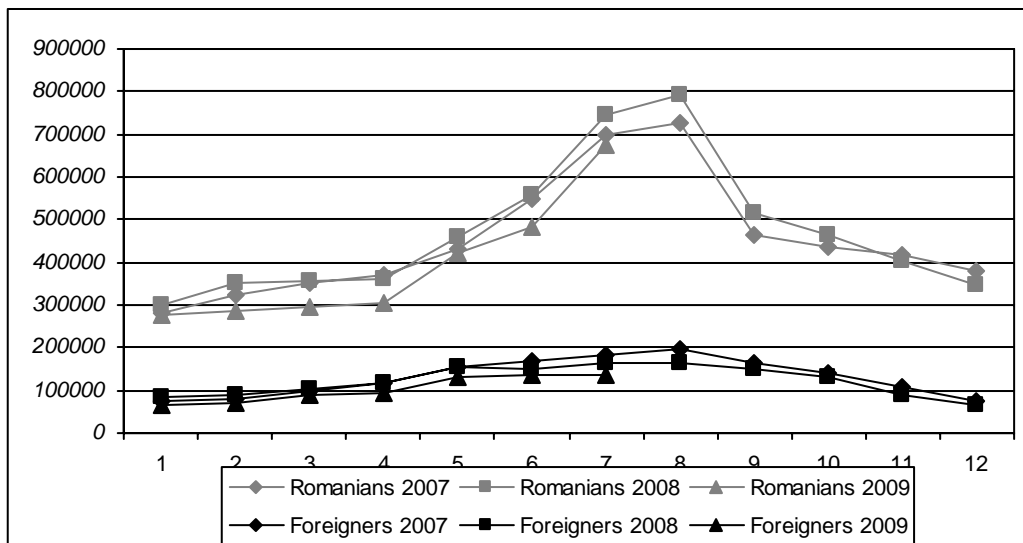
Based on the aspects revealed in the previous section, we considered useful a more deeply approach, through a comparative analysis of monthly dynamics, since 2007 (when Romania became member state of EU) until now (2009, available data on seven months). Dynamics of first two indicators analyzed (number of arrivals and departures registered at border points, in thousand) is shown in the graph below (figure 4).



Primary data sources: NIS, 2007b; 2008b; 2009

**Figure 4. Monthly dynamics of arrivals and departures registered at border points in Romania (01.01.2007 - 31.07.2009)**

At the same way, we graphically represented dynamics of the other indicators previously analyzed on a yearly basis. These graphs reveal relative similar shapes of the monthly evolutions in number of arrivals and overnight stays corresponding to the two customer segments of tourist accommodation activity (Romanians and foreigners). Based on this observation and considering the limited space available for the paper, we present below just one of these graphs, of dynamics arrivals in the main establishments of tourist accommodation (as number, in thousand) grouped by Romanian and foreign tourists (figure 5).

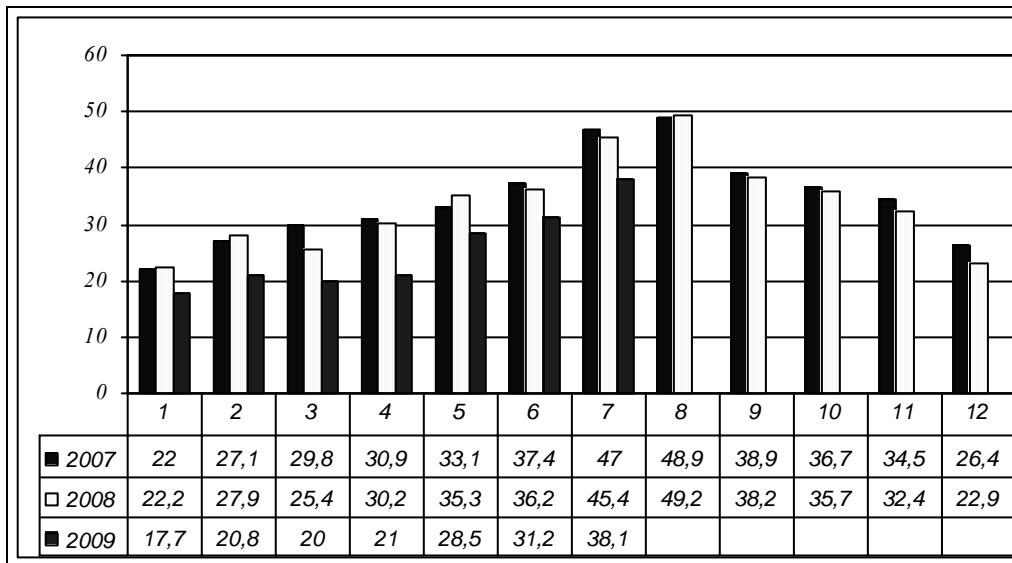


Primary data sources: NIS, 2007b; 2008b; 2009

**Figure 5. Monthly dynamics of Romanians and foreigners arrivals in establishments of tourist accommodation (01.01.2007 - 31.07.2009)**

To substantiate our analysis with more data about the concrete results of tourism activity, we investigated also the way of using the existent tourist accommodation capacity, based on the idea that this can complete the picture so as the interpretations to be more realistic. Thus, we considered and another indicator used in Romanian tourism statistics, namely "index of net use of tourist accommodation bed places" (expressed as percentage) having the comparative monthly evolutions presented in the next graph (figure 6).

All the results of analysis show that the overall obvious decline of tourism evolution in the current year was preceded by some slower rates of monthly dynamics related to the foreign tourists, in the last 4-5 months of 2008 as against same period of 2007. This is consistent with our above-mentioned idea of occurrence a shift in demand of the foreign tourists segment, and admits as a rational explication the difference between foreign and Romanian tourists as concerns the timely understanding of the crisis dimensions. In addition, what we wish to point out is that a more careful analysis of the main indicators of tourist flows would be able to reveal the early signs of crisis.



Primary data sources: NIS, 2007b; 2008b; 2009

**Figure 6. Index of net use of accommodation bed places - monthly evolutions from 01.01.2007 to 31.07.2009**

The effects are facts beyond the figures of recent statistics, as resulted from our comparative analysis and visible in the graphs of dynamics presented in figure 5-7. Among these (to mention just a few), we can notice the followings:

- The departures of Romanian visitors abroad registered at border points decreased by 3.3% during the first seven months of 2009, as against the same period of 2008, but the arrivals of foreign visitors decreased by 13.9% at the same conditions.
- The total arrivals registered in the main establishments of tourist accommodations had a decrease of 13.6% over the first seven months of 2009, comparative with the same period of 2008. In the case of Romanian tourists, the decrease was around 12.7%, while in the case of the foreign tourists the decrease was about 16.5%.
- The index of net use of accommodation bed places was 26.9% per total tourist accommodation establishments during the first seven months of 2009, decreasing by 6.5 percentage points as against the same period of 2008. Moreover, in 2009 each monthly index is under the levels attained in the same month both in 2008, and in 2007.

#### **4. IN PLACE OF CONCLUSIONS: CHALLENGES OF TOURISM INDUSTRY IN TIMES OF CRISIS**

Discussing on brief the results of our analysis, we could say that because 2008 was the second year after Romania became member state of the EU, was expected to maintain the increasing trend of tourism flows, that seemed to be started in 2005. This,

the more so as the EU tourism industry has become over the last decade a sector of major importance in the European economy, which can play an important role in attaining the goals of Growth and Jobs set in Lisbon Strategy. However, at the same time tourism has become a global phenomenon implying that Europe has to compete with other destinations worldwide (ECORYS SCS Group, 2009).

Europe has maintained its position of the leading tourism destination in the world during 2000-2007 years having a growing number of international tourist arrivals. It was an increase from 393.5 millions in 2000 to 484.4 millions in 2007 (comparative with the 903 millions per total in world) resulting in a market share of 53.6%. The dynamics of international tourist arrivals in different regions in the world between 2000 and 2007 years as reflected by the growth (number, in millions) and change in market share (as percentage) is presented in table 1.

**Table 1. Dynamics of international tourist arrivals in the world  
(in 2007 against 2000)**

Region (number/market share in 2007)	Dynamics 2007/2000 as:	
	Growth in number (millions)	Change in market share (%)
Total world (100%)	+220.0	*
Europe (53.6%), of which:	+90.9	-4.0
- EU-27 (42.2%)	+54.7	-5.6
Asia and the Pacific (20.4%)	+75.0	+4.4%
Americas (15.8%)	+14.3	-3.0
Middle East (5.3%)	+23.2	+1.7
Africa (4.9%)	+16.5	+0.8

Source: Adapted from ECORYS SCS Group, 2009, p.11

As we can see in table 1, despite keeping their top rankings in terms of international tourist arrivals, EU-27 and Americas have lost from market share in 2007 as against 2000. On this background, for the most part of world, 2008 was the year when the rumours of global economic crisis began to transform in visible signs and effects. This, because “Growth in international tourism is closely aligned to economic variables, which at a microeconomic level influence the consumer’s decision to undertake overseas travel” (Chaiboonsri & Chaitip, 2008, p.7).

According to United Nations World Tourism Organization (UNWTO), “...tourism has been seriously impacted, although resisting comparatively better than other sectors. Tourism demand experienced a sharp turn in trend in the middle of 2008, accumulating a decrease of 1% between July and December 2008, after a very sound start of the year, with worldwide growth in international arrivals at around 6% in the first six months.... Following negative results since September last year, all of the first seven months of 2009 showed negative growth: January -8%, February -10%, March -13%, April -1%, May -10%, June -7% and July -4%” (UNWTO, 2009, p.1).

In these times, competitiveness of the tourism industry becomes more important and some of the challenges such as sustainability, branding or diversification strategies should receive more attention than before the crisis. In particular, the

competitiveness of EU tourism industry was related to six key challenges as follows: (1) reinforce the industry as a high quality service sector; (2) better position the EU as the leading tourism destination in the world; (3) make the tourism industry part of knowledge economy; (4) develop EU tourism in a sustainable manner; (5) increase the value generated from available resources; (6) ensure sufficient „oxygen” for tourism businesses (ECORYS SCS Group, 2009, p.163).

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## **WORLD MARKET OF INVESTMENT FUNDS - DEVELOPMENTS AND TRENDS**

**FLAVIA BARNA, DAN-CONSTANTIN DĂNULEȚIU,  
PETRU-OVIDIU MURA \***

**ABSTRACT:** *Institutional investors - including mutual funds, pension funds, hedge funds, and insurance companies - are a growing force in developed capital markets. We are in an environment in which investors, regulators and legislators have a dramatically reduced tolerance for risk. Rules and regulations can provide additional investor protections, but can also reduce market efficiency at a great cost to borrowers and investors alike. Finding the right balance is the challenge, and is one that necessitates a wide-ranging discussion of proposals on the table. Our role as economists and researchers is to engage in this discussion on behalf of funds and their investors.*

**KEY WORDS:** *mutual funds, emerging markets, crisis impact, asset volume, development factors*

### **1. LITERATURE REVIEW**

Many recent studies have increased our understanding of mutual fund performance by trying to find some of its determinants. These studies mainly analyse the relation between fund performance and fund properties, such as fund size, fees, trading activity, flows, and past returns. Different data sources are needed to study the role of institutional investors. Unlike the data on capital flows, which the World Bank collects on a regular basis, no agency has complete information on institutional investors. Companies and institutions like the OECD, the Securities and Exchange Commission (SEC), the Investment Company Institute, Morningstar Emerging Market Funds Research, Frank Russell, AMG Data Services, Lipper Analytical Services, and State Street Bank have partial information on institutional investors. One can obtain a

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general picture only by analysing and combining the different pieces of data, coming from various places.

Institutional investors - including mutual funds, pension funds, hedge funds, and insurance companies - are a growing force in developed capital markets. When individual investors choose their portfolio allocation to emerging markets, they typically make their purchase via mutual funds. In actively managed funds, it is the fund manager who ultimately determines the portfolio allocation, by choosing how the fund invests its assets (within the limits of the fund's defined scope). In index funds, the manager's role is passive, aimed at replicating a predetermined index.

Though mutual funds are commonly included among institutional investors, they differ from hedge funds, pension funds, and insurance companies in the degree to which underlying investors control portfolio size. Funds' behaviour is thus determined by the decisions of both managers and investors. This hybrid nature certainly affects mutual funds' flows to countries and regions. Mutual funds have become one of the main instruments for investing in emerging markets. The first funds, in the 1980s, were closed-end funds; they are well suited to invest in illiquid markets, because their shares cannot be redeemed. With increasing liquidity in emerging markets, open-end funds have become the most widely used instrument. It is important to recognize that mutual fund investors include other types of institutions as well. For example, more than half of pension funds invest in emerging markets through existing mutual funds. This is considered better for liquidity reasons and is also less expensive than giving specific mandates to managers. Therefore, by looking at mutual funds, one is counting much of pension fund investment in emerging markets as well.

International mutual funds are one of the main channels for capital flows to emerging economies. Although mutual funds have become important contributors to financial market integration, little is known about their investment allocation and strategies. Kaminsky, Lyons and Schmukler (2001) provide an overview of mutual fund activity in emerging markets. First, they describe international mutual funds' relative size, asset allocation, and country allocation. Second, they focus on fund behaviour during crises, by analysing data at the level of both investors and fund managers. Among their findings: Equity investment in emerging markets has grown rapidly in the 1990s, much of it flowing through mutual funds. Collectively, these funds hold a sizable share of market capitalization in emerging economies. Asian and Latin American funds achieved the fastest growth, but are smaller than domestic U.S. funds and world funds.

When investing abroad, U.S. mutual funds invest more in equity than in bonds. World funds invest mainly in developed nations (Canada, Europe, Japan, and the United States). Ten percent of their investment is in Asia and Latin America. Mutual funds usually invest in a few countries within each region. Investments in Asian and Latin American mutual funds are volatile. Because redemptions and injections are large relative to total funds under management, funds' flows are not stable. The cash held by managers during injections and redemptions does not fluctuate significantly, so investors' actions are typically reflected in emerging market inflows and outflows.

Mutual funds with a more diversified portfolio perform somewhat better than funds with a less diversified portfolio. (Engstrom, 2004) He finds no evidence to

indicate that investment outside the fund's primary investment universe will enhance performance. Moreover, the effects of cash holdings on performance are explored, and some weak evidence suggests that large cash holdings imply better tactical decisions. However, extending the funds' investment universe and investing in non-listed stocks can achieve diversification. Elton, Gruber, Das and Hlavka (1993) show that funds investing in these types of assets might achieve superior performance simply because these assets are not captured within the benchmark model.

In this paper we'll analyse the concept of mutual funds, their most important development factors and their recent evolutions registered worldwide, especially the case of U.S. and Europe. We will also show how the actual financial crisis is affecting the number of mutual funds and their net cash flows.

## **2. EMPIRICAL ANALYSIS OF THE WORLD MARKET FOR INVESTMENT FUNDS**

### **2.1. Factors of investment fund's development**

The development of investment funds emerged as a result of the growing desire of people to invest on the capital market, phenomenon that was influenced by a number of general factors and market specific factors. Some of the general factors are: economic growth, the evolution of the saving process, the evolution of the capital markets, pension system's problems. The specific factors are: legal framework, fiscal policy, the funds' advantages.

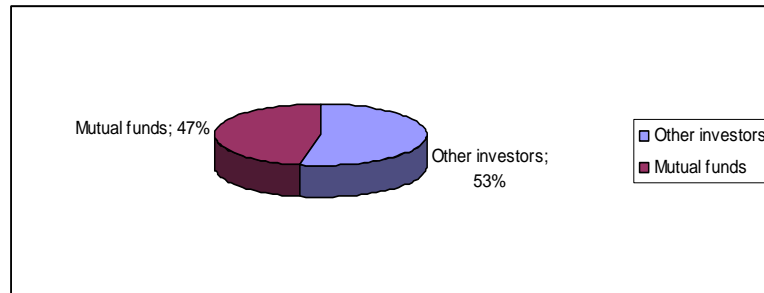
**A. *Economic growth.*** The development of investment funds has been closely linked with the economy's development, specific situations in various countries pointing out that capital market develops only in a strong and efficient economy. Economic growth helps the development of investment funds, and these, in turn, can be a driver for economic growth, in terms of managed assets and the assets traded. „ Capital is the lifeblood that feeds the economy and whether the channels through which the sap flow is inadequate, missing or incorrectly cut, economic progress are questioned.” (Anghelache Gabriela, 2000).

**B. *The saving process evolution.*** The global saving process is influenced by demographic trends worldwide (rate of aging, fertility, etc.), changes in interest rates, tax regime applied to the saved and placed resources, changes in financial markets, which by enhancing or limitation of imposed restrictions on lending have led to encouraging consumption and reducing of saving, or vice versa.

**C. *Capital markets evolution.*** Investment funds appear if the existent capital markets are contoured, liquid, transparent and credible. „ A modern economy, competitive, able to adapt to the existing requirements of globalisation is not conceivable without the existence and operation of efficient capital markets.” (OCDE, 2002)

**D. *The pension system problems.*** Traditional pension crisis can be considered a factor of funds' development because the resources saved for retirement will move to private management provided by various specialized intermediaries including mutual funds. Pension reform is a topical issue in almost all economies, given the

demographic trends of falling birth rates, increasing life expectancy, withdrawal from employment before the legal retirement age. These trends are some of the factors leading to imbalances of pension systems.



Source: *Mutual Fund Fact Book, ICI, 2009*

**Figure 1. Pension market in USA at the end of 2008**

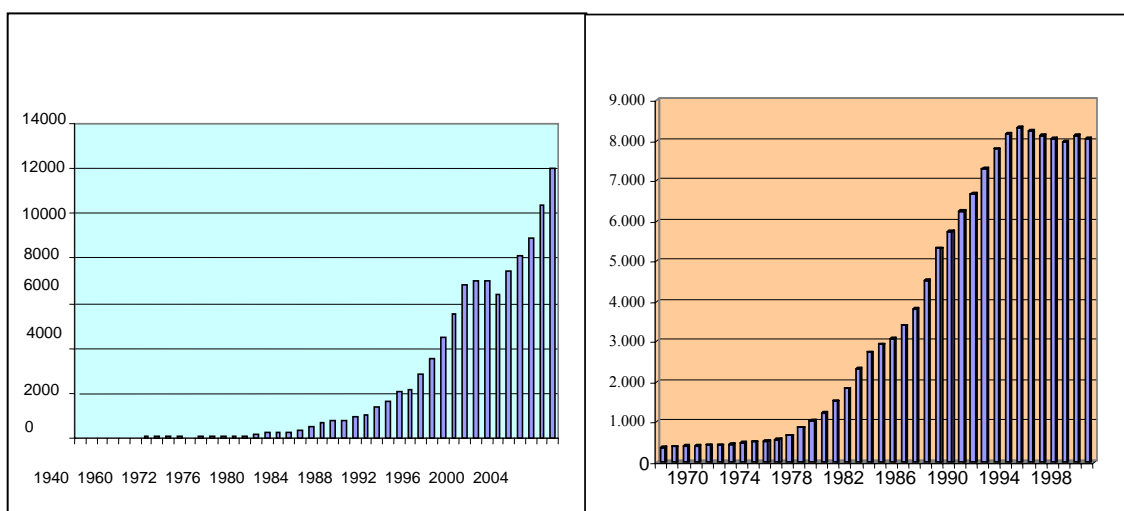
**E. Legal framework.** Investment funds are organized and managed by the management company, which is considered an open society and must fulfil legal requirements. In almost all countries were created supervisory authorities that have the role of issuing regulations regarding the way that financial tools are managed and investors are protected. Evolution of funds has shown that as the regulations are more stringent and the penalties imposed for violations are more severe the greater there is the investors' confidence.

**F. Fiscal policy.** Taxation acts on the structure of assets and reduces the performance of funds; this is why fund managers should include in their asset allocation and title acquisition strategies, the incidence of taxation on the return generated by the issued securities. Application of tax on the funds can be made according to the process of saving and its structure. In Europe, the dominant idea is that taxation is a barrier to unique market development, differences in taxation, unfavourable terms for foreign funds is a question of market fragmentation. To stimulate investment in shares, in France, there are tax reductions (25%) and levels within Defaults (7000-14000 francs) for net long-term investment realized by individuals in SICAV and FCP (Corduneanu, Barna, 2001).

## 2.2. Analyse of the development of investment funds in U.S.

USA is currently the world leader in the development of managed investment industry, holding 50% of their total. In this context an overview of characteristics and players in this market is a need. American concern today is to secure financial resources for the children's' education and the needed resources after the termination of the active period. This phenomenon is due to two reasons, first is that members of the Baby Boom generation are approaching retirement age and the second is the increase of longevity. To meet these events people must save, phenomenon that contributes to the diversification of investment alternatives. From this perspective it is worth noting the dramatic evolution of U.S. mutual funds, this being a reason why U.S.

is a milestone in this area. The variation of funds' number and managed assets reveal the investors' preference for this form of investment.



Source: Annual Report, ICI, 2007

Source: Annual Report, ICI, 2007

**Figure 2. The evolution of fund managed assets in USA (billions dollars)**

**Figure 3. The mutual funds number evolution in USA 1970-2007**

Managed investments in U.S. industry are based on four types of investment funds: Mutual Funds; Closed End Funds; Unit Investment Trusts; Exchange Traded Fund - ETF.

**Table 1. Assets managed by fund category**

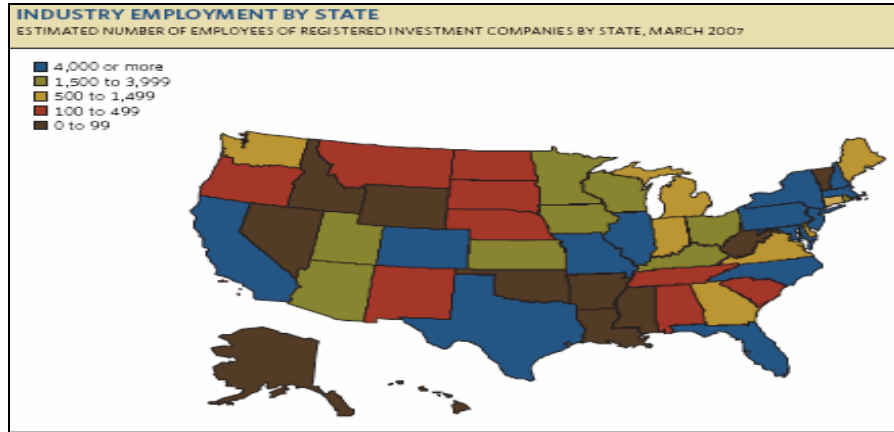
billions of dollars

Year	Mutual funds	Closed End Funds	EFTs	UITs
2000	6965	143	66	74
2001	6975	141	83	49
2002	6390	159	102	36
2003	7414	214	151	36
2004	8107	254	228	37
2005	8905	276	301	41
2006	10412	298	423	50
2007	12021	315	608	53

Source: Total Investment Company Assets, ICI, 2007

For many industries, employment tends to be concentrated in locations of the industry's origins, and investment companies are no exception. Massachusetts and New York served as early hubs of investment company operations, and remained so in 2007, employing nearly one-third of the workers in the fund industry (Figure 4). As the industry has grown from its early roots, other states have become significant centres of fund employment. California, Pennsylvania, and Texas also have significant

concentrations of fund employees. Fund companies in these states employed about one-quarter of all fund industry employees as of March 2007.



Source: 2009 Investment Company Fact Book, 49th edition

Figure 4. Industry employment by state

The average fees and expenses that investors paid on mutual funds fell in 2008 to their lowest levels in more than 25 years. Investors paid 99 basis points, on average, to invest in stock funds, a 2 basis-point decline from 2007. Average fees and expenses on bond funds dropped 3 basis points to 75 basis points. Fees and expenses on money market funds averaged 38 basis points. The reduction in mutual fund fees and expenses in 2008 continued a downward trend that has been in place since at least 1980. The decline has been most pronounced among stock and bond funds, where the average fees and expenses paid have dropped by more than 50 percent in each category since 1980. The expenses of money market funds, which are lower than those of stock and bond funds, have fallen more than 30 percent since 1980.

FEES AND EXPENSES DROPPED FOR STOCK, BOND, AND MONEY MARKET FUNDS IN 2008																		
Basis points, 2003–2008																		
	Stock funds						Bond funds						Money market funds					
	2003	2004	2005	2006	2007	2008	2003	2004	2005	2006	2007	2008	2003	2004	2005	2006	2007	2008
Fees and expenses	122	118	110	106	101	99	95	92	87	82	78	75	44	42	42	41	39	38
of which:																		
Load fees (annualized)	23	23	20	18	16	15	21	20	17	15	13	12	*	*	*	*	*	*
Total expense ratio	99	95	90	88	85	84	74	72	70	67	65	63	44	42	42	41	39	38

Sources: Investment Company Institute; Lipper; Value Line Publishing, Inc.; CDA/Wiesenberger Investment Companies Service; Data © CRSP University of Chicago, used with permission, all rights reserved (312/263-6400/www.crsp.com); Primary Datasource and Strategic Insight Simfund.

Figure 5. Fees and expenses for stock, bond and money market funds in 2008

Funds of funds are mutual funds that invest in other mutual funds. The market for funds of funds has expanded considerably in recent years. By the end of 2008, there were 865 funds of funds with \$490 billion in assets (Figure 6). Over 80 percent of the assets of funds are in hybrid funds of funds, which are funds that invest in a mix of stock, bond, and hybrid mutual funds.

FUNDS OF FUNDS HAVE GROWN RAPIDLY IN RECENT YEARS						
Number of funds of funds						
	Total	Equity	Hybrid	Bond	Memo	
					Lifestyle <sup>1</sup>	Lifecycle <sup>2</sup>
1996	45	24	19	2	9	0
1997	94	41	48	5	30	3
1998	175	75	91	9	60	7
1999	212	83	115	14	78	8
2000	215	86	119	10	88	9
2001	213	85	123	5	86	15
2002	268	104	159	5	115	15
2003	301	112	184	5	115	26
2004	375	111	259	5	123	64
2005	475	129	334	12	160	91
2006	604	161	430	13	201	154
2007	723	178	533	12	222	222
2008	865	186	663	16	243	289
Total net assets of funds of funds, billions of dollars						
	Total	Equity	Hybrid	Bond	Memo	
					Lifestyle <sup>1</sup>	Lifecycle <sup>2</sup>
1996	\$13.4	\$4.6	\$8.7	\$0.1	\$2.4	0.0
1997	21.5	7.6	13.8	0.1	5.9	0.3
1998	35.4	12.2	23.0	0.1	11.8	2.8
1999	48.3	18.7	29.5	0.2	17.0	5.4
2000	56.9	16.2	40.5	0.2	20.0	7.2
2001	63.4	15.8	47.3	0.3	21.5	10.7
2002	69.0	14.5	53.9	0.6	24.4	13.5
2003	123.1	28.6	93.6	0.9	43.0	23.7
2004	199.6	41.8	156.7	1.1	71.9	40.5
2005	306.0	58.6	246.8	0.7	116.1	66.0
2006	471.0	96.4	372.8	1.8	171.2	108.1
2007	639.8	122.9	513.8	3.1	220.2	175.0
2008	490.1	80.3	406.2	3.6	164.1	153.5

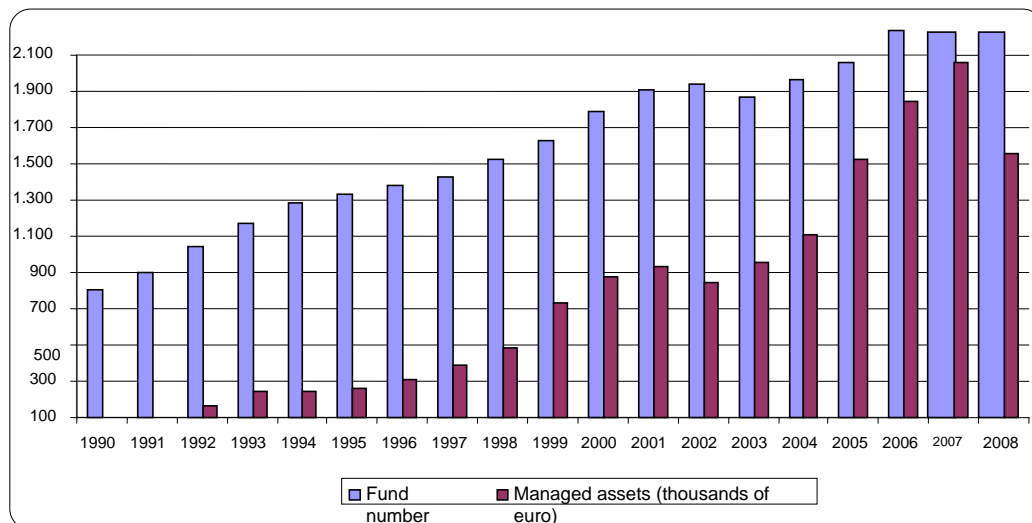
Source: Investment Company Institute

Figure 6. Number and assets of funds of funds

### 2.3. European investment funds

European investment fund industry has proved in the 1990s one of the components with the highest rate of increase in financial sector. Investment instruments issued by investment funds represent a significant percentage of the public savings in almost all European countries and constitute an important vehicle used by banks and other financial intermediaries, with an increasing role in accumulating assets

for retirement. Luxembourg has recently become the leader in cross-border marketing of investment funds, to accumulation of "savoir-faire" over the years due in terms of distribution of funds. The Lipper Analytical Services study made in London reveals that of 20 European investment funds, sold its 18 investment instruments at least to 2 foreign countries, from which one is Luxembourg, and from the 10 funds that sell their securities in more than 5 European countries, 9 are residing in Luxembourg. Since the emergence of the first investment fund in 1959, was reached in 1970 to over 100 funds; in the 8<sup>th</sup> decade, their number dropped to a third due to a Luxembourg fund scam.



Source: [www.alfi.lu/](http://www.alfi.lu/) Evolution des actifs nets et du nombre des OPC, 2008

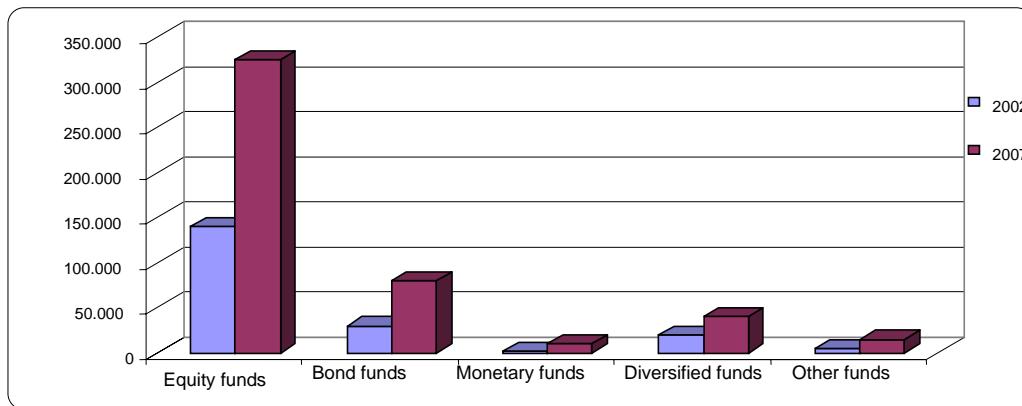
**Figure 7. The number of funds and managed assets**

British industry began to expand strongly until after the October 1987 Stock Market Crash, although they were established long after (1931), and the Unit Trusts haven't developed until after the European tax harmonization (Directive 85/CEE, 20 December 1985). Financial Services Act in 1986 set conditions for high investor protection by improving their information, defining the authorities' role of control, establishment of market self-regulatory bodies, defining the rules for calculating the rates etc.

Assets managed funds have evolved dramatically during the analyzed years, so in 1996 the assets managed by investment funds valued 131.762.000 £, and in 2005 the assets managed by funds reached the amount of 347.288.000 £, a 37,94% growth.

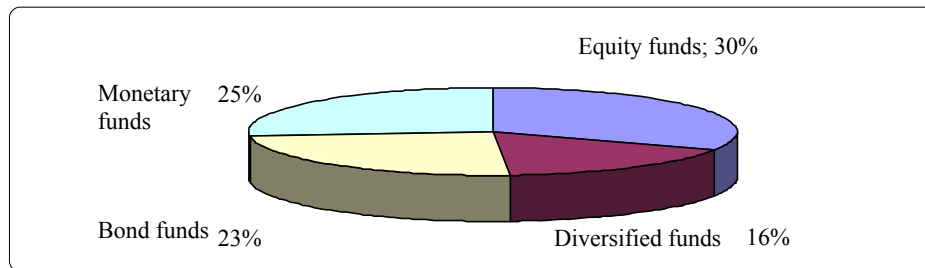
Investment fund market in 2008 was dominated by equity funds, which holds 30% market share, followed by money funds 25%, bond funds with 23% and diversified funds with 16%. In absolute terms, 90 percent of total assets in 2008 come from five countries: Luxembourg (106 bil. EUR), Italy (73 bil. EUR), Spain (57 bil. EUR), France (45 bil. EUR) and Germany (19 bil. EUR).





Source: [www.investmentuk.org/statistics/funds under management by asset type](http://www.investmentuk.org/statistics/funds_under_management_by_asset_type)

**Figure 8. The fund's market's evolution**



Source: [www.BVI.de/statistics](http://www.BVI.de/statistics)

**Figure 9. Structure of the funds in 2008**

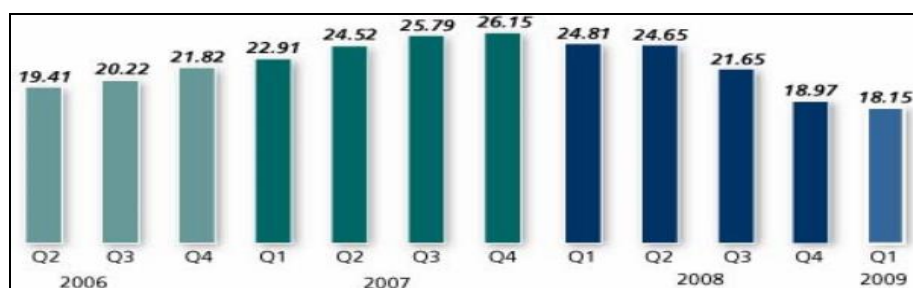
### 3. IMPACT OF THE CRISIS ON MARKET DEVELOPMENTS OF INVESTMENT FUNDS

The behaviour of mutual funds can be consistent with contagion, either because they generate spillovers or due to their feedback trading. First, international mutual funds can contribute to spreading crises across countries if, for example, investors holding fund shares might decide to sell their Asian funds when Russia devalues its currency. Or fund managers of Latin American funds may sell assets in Brazil when a crisis hits Mexico. These need not be irrational responses: new theories of rational herding explain the transmission of crises through financial links. These models are based on elements like asymmetric information and cross-market hedging. Alternatively, if mutual fund investors or managers follow past or current returns, their behaviour will appear consistent with contagion even though mutual funds are not main force driving the spillovers. On the other hand, it is also possible that institutional investors, like mutual funds, can be a stabilizing force. If investors buy mutual fund shares for long-run gains, they might not withdraw their investments when there is a temporary crisis. For example, Marcis et al. (1995) and Rea (1996) claim that

shareholders did not redeem shares during crisis periods. Rather, they argue that net inflows to emerging markets are usually steady, and crisis-period outflows are small and short-lived (at least during Mexico's crisis). Froot, O'Connell and Seasholes (2000) present a related picture, but without focusing on institutional investors. They analyse, among other things, aggregated net flows into individual emerging markets.

During periods of financial crisis, stock and bond spreads and volume are more volatile and become more highly correlated; moreover, at these times, money supply positively affects financial market liquidity, albeit with a lag of two weeks. During normal times, increases in mutual fund flows enhance stock market liquidity and trading volume, but during financial crises, U.S. government bond funds see higher inflows, resulting in increased bond market liquidity (Chordia, Sarkar, Subrahmanyam, 2001). Liquidity, a fundamental concept in finance, can be defined as the ability to buy or sell large quantities of an asset quickly and at low cost. Equilibrium asset pricing models do not consider trading and thus ignore the time and cost of transforming cash into financial assets or vice versa. Recent financial crises, however, suggest that, at times, market conditions can be severe and liquidity can decline or even disappear.<sup>2</sup> Such liquidity shocks are a potential channel through which asset prices are influenced by liquidity. Amihud and Mendelson (1986) and Jacoby, Fowler, and Gottesman (2000) provide theoretical arguments to show how liquidity impacts financial market prices.

Mutual fund assets worldwide decreased 4.0 percent to \$18.15 trillion at the end of the first quarter of 2009. Net cash flow to all funds was \$45 billion in the first quarter, compared with \$95 billion of inflows experienced in the fourth quarter of 2008. Net outflows from long-term funds slowed to \$18 billion in the first quarter after an average outflow of \$296 billion per quarter in the second half of 2008. Net outflows from equity funds were \$41 billion and net outflows from balanced/mixed funds were \$22 billion in the first quarter, down from \$121 billion and \$56 billion of outflows, respectively, in the fourth quarter. Bond funds experienced net inflows of \$59 billion in the first quarter compared with net outflows of \$157 billion in the fourth quarter. Net flows into money market funds fell to \$63 billion in the first quarter of 2009 from \$444 billion of net inflows in the fourth quarter of 2008.



**Figure 10. Worldwide Mutual Fund Assets, Trillions of U.S. dollars, end of quarter**

Net cash flow into mutual funds worldwide was \$45 billion in the first quarter of 2009. Net outflows from equity funds worldwide were \$41 billion in the first

quarter, compared with net outflows of \$121 billion in the fourth quarter of 2008. The pace of net outflows from American equity funds slowed in the first quarter, with \$37 billion of outflows compared with \$76 billion of outflows in the fourth quarter. European equity funds experienced \$5 billion in outflows compared with \$36 billion in outflows in the fourth quarter.

The Asia and Pacific region reported small net inflows of \$821 million in the first quarter, compared with \$10 billion of net outflows reported in the fourth quarter. Worldwide net outflows from balanced/mixed funds also slowed in the first quarter of 2009. Outflows were \$22 billion in the first quarter, compared with \$56 billion of net outflows in the fourth quarter of 2008. Net outflows from balanced/mixed funds in Europe fell to \$13 billion in the first quarter from \$33 billion of net outflows in the fourth quarter. American balanced/mixed funds registered \$7 billion of net outflows in the first quarter after reporting \$19 billion of net outflows in the fourth quarter.

Bond funds experienced \$59 billion in net inflows in the first quarter of 2009, reversing some of the \$157 billion of net outflows in the fourth quarter of 2008. American bond funds had net inflows of \$72 billion in the first quarter, more than offsetting the \$67 billion of net outflows in the fourth quarter. Net outflows from European bond funds slowed to \$6 billion in the first quarter from \$92 billion of net outflows in the fourth quarter. Bond funds in the Asia and Pacific region had \$7 billion of net outflows in the first quarter compared with net inflows of \$1 billion in the fourth quarter. Net flows into worldwide money market funds slowed considerably, with \$63 billion of inflows in the first quarter of 2009 compared with \$444 billion of inflows in the fourth quarter of 2008. American money market funds experienced net outflows of \$9 billion in the first quarter after registering \$388 billion of net inflows in the fourth quarter. Inflows into Asian and Pacific money market funds slowed to \$2 billion in the first quarter from \$58 billion of net inflows in the fourth quarter. In contrast, flows to European money market funds strengthened, with \$68 billion in net inflows in the first quarter compared with \$3 billion in net outflows in the fourth quarter.

#### **4. CONCLUSIONS**

The development of investment funds emerged as a result of the growing desire of people to invest on the capital market, phenomenon that was influenced by several factors, such as: economic growth, development of capital markets, taxation etc. USA is currently the world leader in the development of managed investment industry, holding 50% of their total. Recent developments on the American market were influenced by the negative response of investors to the crisis, which manifests itself in the financial system. The average fees and expenses that investors paid on mutual funds fell in 2008 to their lowest levels in more than 25 years. Investors paid 99 basis points, on average, to invest in stock funds, a 2 basis-point decline from 2007.

In Europe, the investment fund market in 2008 was dominated by equity funds, which holds 30% market share, followed by money funds 25%, bond funds with 23% and diversified funds with 16%. Due to the actual financial crisis, mutual fund assets worldwide decreased 4.0 percent to \$18.15 trillion at the end of the first quarter of

2009. Net cash flow to all funds was \$45 billion in the first quarter, compared with \$95 billion of inflows experienced in the fourth quarter of 2008.

Critical analysis of the investment fund market shows the impact of financial crisis on managed investments and the existing gap between the two poles, the U.S. and Europe, but the process of financial globalisation will lead to bridge this gap and will force the emergent markets to adapt structurally and functionally, so that they wouldn't have to face a migration of foreign and local investors.

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## **THE EMERGENCE OF THE JIU VALLEY COAL BASIN (ROMANIA) - A CONSEQUENCE OF THE INDUSTRIAL REVOLUTION**

**MIRCEA BARON, OANA DOBRE-BARON \***

**ABSTRACT:** *The Jiu Valley, or Petrosani coal basin, is an important economic region of Romania, situated at the springs of the Jiu River, between the Eastern Carpathians. It is a geographical area that emerges and develops from a social, economic and cultural point of view after mid-nineteenth century, as a result of the industrial revolution. The influence of the industrial revolution on this mountain area will occur on two coordinates: the extraction of the most important natural assets in the underground - coal - the energy resource that underlies the development of the first stage of the industrial revolution; the implementation of technical methods and technologies without which the coal deposits in the Jiu Valley could not be turned to account by primary extraction and processing. As a Transylvanian region, it will be part of the Habsburg Empire by the end of 1918 - the Austrian - Hungarian Empire since 1867 - and the industrial revolution, the political and economic interests of the state and of private capital will boost development. The state will be involved by developing a stimulating legislation - primarily the General Mine Law of 23 May 1854 - and through direct investment, and private capital by mining companies: Mine și Cuptoare Company in Brașov; "Salgótarján"; "Uricani-Valea Jiului", "Valea Jiului de Sus". Work force will come from different parts of the Empire - which will trigger a population increase from 6670 inhabitants in 1854 to 50,015 inhabitants in 1910. This population will live in workers neighborhoods from which the present day cities will develop. Being highly professionalized, it will change the social, economic and cultural characteristics of the Jiu Valley by developing a modern industrial complex, production coal increasing from 853 tons in 1868 to 2,229,850 tons in 1913. The Jiu Valley coal will be used mainly for railway propulsion, in steel works, for household heating, etc., contributing to the development of other industries and to the comfort population.*

**KEY WORDS:** *Romania, Transylvania, Jiu Valley, industrial revolution, coal*

### **1. JIU VALLEY – GEOGRAFIC REFERENCE POINTS**

The Jiu Valley or Petroșani coalfield represents an important region in the Romanian economy located at the source of the Jiu River. Geographically, the latitude

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of the Jiu Valley 45°25'N and the longitude is 23°22'E; morphologically, it is a narrow and deep depression and it is among the few depressions that can be found in the Southern Carpathians. It has the shape of an asymmetrical triangular - shaped synclinal, orientated ESE – WSW, with the peak orientated towards the Western part and the base orientated towards the Eastern part; its length reaches 46 km and width varies between 2 and 9 km and it covers an area of 137.6 km<sup>2</sup>.

The base of this depression is relatively thick - 556 m - within the area where the Eastern Jiu joins the Western Jiu and 800 m towards the Eastern and Western borders. This depression is surrounded by three mountains: Retezat Mountains to the NW and W part and Vâlcan and Parâng Mountains to the South<sup>1</sup>. Nature first and then people have produced magnificent gorges and passes that cross all these mountains covered by widely spread leaf – bearing and coniferous forests; these gorges and passes have facilitated the connections inside the depression and towards the North so as to get easier to Transylvania and towards the South to another Romanian province: Oltenia.

The area of the Jiu Valley took shape and developed both from a social and economic point of view and from cultural point of view during the second half of the 19<sup>th</sup> century as a consequence of the industrial revolution. The influence of the industrial revolution over the destiny of this mountain area focused on two trends: mining the most important wealth hidden in the underground of this area – coal – a power – generating source that represented the basic raw material during the first stage of the industrial revolution; implementing modern engineering methods that supported an efficient coal mining, without which it would have been less possible to capitalize it (during primary mining and processing) in the Jiu Valley.

The Jiu Valley, as component area of Transylvania, remained part of the Hapsburg Empire until the end of 1918 – starting from 1867, called the Austrian-Hungarian Empire; the industrial revolution, together with the political and economic interests of the state and of the private owners boosted this development.

## **2. SPECIFIC FEATURES RELATED TO THE GEOLOGY OF THIS AREA AND TO THE LOCAL DEPOSITS**

The occurrence of coal in outcrops stirred up the interests of certain entrepreneurs and almost the whole literature issued up to now reckons that, around the year 1840, Hoffmann brothers and later on, Carol Maderspach, mine operators at Rusca Montană (Banat) performed the first explorations in order to get the coal necessary used by metallurgic working shops. All these activities had had a strictly economic character (coal mining), but gradually, it became obvious the need of certain geological researches that would include the whole basin of the Jiu Valley. Hungarian and Austrian geologists drew up numerous geological and paleontological study reports until I World War; also, the Romanian geologists drew up studies on these aspects starting with 1897 and until the '80s of the 20<sup>th</sup> century. All these studies have allowed an accurate shaping of coal deposits, both their volume and quality and at last but not in the last, the economic

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<sup>1</sup> V. Tufescu, C. Mocanu, *Depresiunea Petroșanilor*, Editura Științifică, București, 1964, p. 11; Societatea „Petroșani”, *Monografie* (hereinafter, *Monografia Societății „Petroșani”*, 1925), Editura „Cartea Romnească”, București, 1925, p. 5.

importance of the Jiu Valley.

As we have said above, the geologist Karol Hoffmann, Ph.D.<sup>2</sup> carried out the first geological research studies that relied on scientific grounds. These researches dated back in the years 1867-1870: they settled the first stratigraphic benchmarks and provided the first geological overview of the Jiu Valley coalfield. We may say that, basically, these data are still valid: the upper level, the production level and the base level<sup>3</sup>. After through studies on fossil flora and fauna, Karol Hoffmann, Ph.D. concluded that the coal seam in the Jiu Valley coalfield derived from the coalification of the marsh flora, which situates the productive level in Oligocene<sup>4</sup>.

Beside geological and laboratory analyses, the Jiu Valley saw also exploratory operations, mostly drillings. The first drillings were performed during the last quarter of the 19<sup>th</sup> century, especially by the Hungarian state. The most part of the drillings were performed at Lonea and the rest were made at Livezeni and Petroșani<sup>5</sup>. Between 1870 and 1877, a 729 m drill hole was made at Livezeni and the following levels were reached: between 0 m and 325 m – the upper level with rare and insignificant coal intercalations; between 325 m and 669 m – the production level with 15 coal seams; between 672 m and 729 m – the base level<sup>6</sup>. All these researches were continued by mine companies and by the state until the 80s of the 20<sup>th</sup> century; at the same time, there were drawn study and analysis reports<sup>7</sup>. The conclusions on the geology of the Jiu Valley and on the possible related economic development of this area relied on the results of the researches.

- Within the proper sedimentation package of the Jiu Valley basin, the most important seams levels from an economic point of view are the following ones: first of all, there is the lower marly - clayish production level and secondly, there is Sălătruc marly - clayish level. These two levels cover almost all coal seams, having a thickness that can be suitably mined all through the Jiu Valley field<sup>8</sup>.
- As a result of numerous modifications occurred during the sedimentary and the tectonic processes suffered by the coal-bearing sedimentation layer, the coal deposits in the Jiu Valley displays specific geological and deposit conditions. Some of these conditions are listed below:
  - a. There is a large number of coal seams;
  - b. Strong tectonics characterized by a system of faults that divide the whole field

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<sup>2</sup> K. Hoffmann, *Bericht über die im Auftrage der durchgeführten geol. Untersuchungen des Sieben tertiären Kohlenbeckens im Zsital*, Magyar Föltari Társulat Munkálatai, vol. IV, 1868; Idem, *Das Kohlenbecken im Zsital*, loc. cit, vol. V, 1870.

<sup>3</sup> T. Borș, *Raport de sinteză asupra geologiei și perspectivelor economice ale bazinului cu cărbuni Valea Jiului*, Trustul de Prospectiuni și Explorări Miniere, București, 1964, p. 23.

<sup>4</sup> Andreics Janos, Blascheck Aladár, *A Salgótarjáni kőszénbánya reszv. -tars. Zsilvölgyi bányáinak*, Budapest, 1903, p. 12; vezi și Winkler Bela, *A Zsilvölgyi kőszénmedenczeröl*, Bányászati es Kohászati Lapok (B. K. L.), III, 1870, nr. 7-8, p. 54.

<sup>5</sup> *Ibidem*, p. 25.

<sup>6</sup> Andreics János, Blascheck Aladár, *op. cit.*, p. 7-12; at Hunedoara County Department of the National Archives (hereinafter called DJANH), *Fond Societatea Petroșani, D. M. Confidențiale*, file. 1/1919, f. 67-68, one considered that, following the researches carried out until I World War, the main seam = 3 could extend to 20 km in length.

<sup>7</sup> Bujor Almășan, *Zăcămintele minerale. Exploatare, Valorificare*, Editura Tehnică, București, 1989, p. 157.

<sup>8</sup> T. Borș, *op. cit.*, p. 106.

into around 240 tectonic blocks of different shapes, sized and orientations<sup>9</sup>.

- Of the total of almost 21 coal seams, only the seams nos. 3, 4, 5, 7, 8/9, 12, 13, 14, 15 and 17/18, at the production level, display at the best, thicknesses that can be suitably mined and are being considered for mining operations.
- The thickness of coal seams ranges from several tens of centimetres and can reach even tens of meters, in the seam no. 3m; they display an average inclination angle of 32° to the Northern side of the Western area, 68° to the Eastern area and 10-15° within the central area, and the average distance among them is of 40 m<sup>10</sup>.

Long debates were on the volume of coal deposits in the Jiu Valley. Carol Papp, PhD. in geology, states in a study presented during the 12<sup>th</sup> International Congress on Geology that the Jiu Valley possesses, a coal reserve reaching 493,850,000 to<sup>11</sup> than can be appropriately mined.

After I World War, the Commission on electrification in Romania and on coordinating the use power-generating natural deposits plotted up a map with the natural deposits of fossil fuels. They reached an amount of 2,241,500,000 to of hard coal, brown coal and lignite; the coal deposits in the Jiu Valley registered 1.6 billion to<sup>12</sup>. A close value, i.e. 1.5 billion to of coal for the Jiu Valley of a total of 2,792,000,000 to which represent the Romanian coal reserves, was submitted by Prof. Ludovic Mrazec<sup>13</sup>, on of the most important geologist, in a study report drawn up in 1931.

At present, one considers that the Jiu Valley sees reserves of 2.1 billion to of coal: hard coal and brown coal of which half constitutes industrial reserves; the main seam (seam no. 3) holds 48%; the seam no. 5 holds 16%; the seam no. 13 holds 10%; the seams nos. 4, 6, 7, 8, 12, 14, 15, 17 and 18 holds 1-3% each; the seams nos. 1, 2, 10, 11, 19 and 20 are not taken into consideration in the balance deposits<sup>14</sup>.

By taking into consideration the petrographic analysis and the physical, chemical and industrial specific features of the Jiu Valley coal, the experts have concluded that we speak here about brown coal and hard coal. The classification criterion is the caloric efficiency at the limit of 5,700 kcal/kg.

By taking into consideration the specific features and their intended use, hard coals are classified into coking hard coal and power generating hard coal. Coking hard coal is located in Central - Western part of the Jiu Valley: Câmpu lui Neag, Uricani, Bărbăteni, Lupeni, Paroșeni and Vulcan and displays coking features ranging from very low to excessive. The power-generating coal and brown coal, can be found in the Eastern part of the Jiu Valley: Aninoasa, Livezeni, Dâlja, Petrila and Lonea<sup>15</sup>.

Due to these specific features, the Jiu Valley coal has been used in different domains: it has been used under its raw form or it has been processed into prism-shaped or

<sup>9</sup> Bujor Almășan, *op. cit.*, p. 158

<sup>10</sup> Bujor Almășan, *Exploatarea zăcămintelor minerale din România*, vol. I, Editura Tehnică, București, 1984, p. 84.

<sup>11</sup> DJANH, *Fond Societatea „Petroșani”*. D. M. *Confidențiale*, file 1/1919, f. 71.

<sup>12</sup> Ion E. Bujoiu, *Cărbunii*, Buletinul Societății Politehnice, XLV, 1931, nr. 12, p. 2119-2121.

<sup>13</sup> *Ibidem*, p. 2120.

<sup>14</sup> Bujor Almășan, *Exploatarea zăcămintelor minerale din România*, vol. I, p. 87-88; in, Gh. Giuglea, Gh. Mihuț, Paki Ernest, Roman Petru, *Centenarul exploatării industriale a cărbunelui în bazinul carbonifer Valea Jiului*, 1968, p. 8, specifies a geological coal reserve of amounting 1.8 billion to.

<sup>15</sup> Bujor Almășan, *op. cit.*, p. 80-83



ovoid briquettes for house heating; it was also used as driving agent on steam locomotives, locomobiles, in order to put to work different types of equipment during the first stage of the industrial revolution. Coal has also been used to power up the electric-generating turbo-generators. By means of incarbonization, at high temperature, coal turns into coke which is later used in metallurgy and iron and steel industry, etc.

### **3. INDUSTRIAL REVOLUTION AND MINING ACTIVITIES IN TRANSYLVANIA**

The coal mining at industrial scale started in the Jiu Valley at the midst of the 19<sup>th</sup> century. This process marks the entrance of the Jiu Valley into the stage of its modern development. Why did the coal mining in the Jiu Valley start only during the second half of the 19<sup>th</sup> century? Nobody knew about it one is it at the moment when it became important for certain industries? Coal has been used since ancient times<sup>16</sup>. The first hard coal mining in Europe started in 1113 year; it was recorded officially at Kerkrade, at the border line between Holland and Germany where the monks at Klosterrede monastery started the mining at coal surface, in Wurmatal Valley<sup>17</sup>. In Romania, there was discovered mineral coal in Banat between the '70 and the '80 of 18<sup>th</sup> century and the first coal mining started at Steierdorf - Anina<sup>18</sup> at the beginning of 1792.

The progress in mining and especially, in coal mining are due to the boosting process occurred at the end of the 18<sup>th</sup> century and during the 19<sup>th</sup> century; this process covered all the aspects of social and economic life when mankind reached an acme and the large doors for progress opened. The triggering factors of the capitalist-type economic revolution were: a liberal legislative framework that stimulated the free spirit; technical and scientific discoveries; there was a large amount of money on the market together with a cheap loans; demographic expansion.

These factors tailored the framework of the industrial revolution during the last quarter of the 18<sup>th</sup> century; this revolution succeeded to change the whole face of the world in such a manner that no other event has made. It was a real leap that broke the slow run of economic and social life and boosted all the industries. First of all, it was a revolution in the technical domain that led to an increased efficiency and output.

The industrial revolution divides into two distinct stages:

- the first stage is characterized by the exclusive use of coal, as power-generating source, the development of textile industry, the use of cast iron in the construction of metal elements, less developed transportation means, etc;
- the second stage definitely belongs to steel, textile industry suffers an involution in favour of metallurgy, the use of other power sources: electricity and oil, the development of chemical industry, mechanical driving in transportation.

This process had specific features from one country to another, depending on a

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<sup>16</sup> A. Semaka, *Istoricul cercetărilor despre cărbuni. Din cele mai vechi timpuri până în 1900*, Revista Minelor, XIII, 1962, nr. 2, p. 83-86; Nicolae Maghiar, *Din Istoricul exploatării și utilizării cărbunilor minerali*, Revista Minelor, XXII, 1971, nr. 2, p. 88-89.

<sup>17</sup> A. Semaka, *op. cit.*, p. 84.

<sup>18</sup> C. Feneșan, R. Gräf, V.M. Zaberca, I. Popa, *Din istoria cărbunelui. Anina 200*, Reșița, 1991, p. 12-15.

series of issues related to social, economic, political and cultural life<sup>19</sup>. First of all, the industrial revolution occurred due to the existence of important resources: money, manpower, an inventive spirit and a strong spirit of entrepreneurship, exploitation of mineral resources (especially coal and iron ore); there was also a revolution in agriculture that allowed a demographic expansion and a good food supply to industrialized areas; at least but not a least, there was implemented one new power-generating source: water vapours. All these important elements triggered subsequent progress that fulfilled this whole process.

Water vapours supplemented the other power-generating sources used up to that moment: power generated by man and by the force of animals or the power provided by natural resources. It was discovered that heat can be turned into a driving force; later on, this driving force turned into electricity. This discovery introduced certain flexibility in demands vs. offers on the market. In order to obtain this secondary energy, it was necessary to generate the primary energy; at that moment coal became more and more important due to its multiple uses, the result of researches carried out during a long period of time<sup>20</sup>. Coal was the element that boosted the industrial revolution and continued to be used at a large scale for a long period of time until the introduction of liquid and gaseous fuels of electricity and of the atomic power<sup>21</sup>.

Gradually, the industrial revolution penetrated the Hapsburg Empire, first of all in the Czech part and in Austria and reached later in Hungary, Transylvania and Banat.

Due to strong economic, social, etc interests and due to the official policy that was under the influence of these interests, the Hapsburg Empire divided into several areas: Transylvania and Banat were considered mainly as important sources of raw material and markets for the products manufactured in the Austrian and Czech part. In 1850, the Austrian government removed the customs barrier and introduced Transylvania into the unique customs system of the Empire. This unilateral development gave birth to a mono - industrial system that relied mainly upon the interests of groups of persons involved in the industrial and financial domains; they intended both to try and preserve their status and to gain new leading positions and places. The mining represented an important asset during the industrial revolution: it represented a domain for the implementation of the technical and scientific accomplishments<sup>22</sup> and a supplier of raw materials necessary for the development of different industries, transportation, etc.; it was a crucial element in the development of certain regions. It is very interesting the opinion of the Austrian Gunter B.L. Fetweis who claimed that mining influenced: state and policy; economy and society; technical development; arts; science<sup>23</sup>.

In this area, mining has been for a long period of time, but at that moment coal

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<sup>19</sup> Ilie Puia, *Istoria economiei*, Centrul Editorial A.S.E., București, 1993, p. 93-102.

<sup>20</sup> *Dicționar cronologic al științei și tehnicii universale*, Editura Științifică și Enciclopedică, București, 1979, p. 361-370; I. Simionescu, *Ce se scoate din cărbune?*, Gazeta Jiului, II, 1923, nr. 37, p. 3.

<sup>21</sup> Henri Morsel, *Energie*, în, *Dictionnaire d'histoire economique de 1800 à nos jours*, Hatier, Paris, 1987, p. 123-124.

<sup>22</sup> L. Vajda, *Începuturile revoluției industriale în minierul și metalurgia din Transilvania*, Anuarul Institutului de Istorie Cluj, X, 1967, p. 173-195

<sup>23</sup> Gunter B.L. Fetweis, *Reflexion uber den Bergbau im Ostalpenraum zur Zeit des Georgius Agricola*, Res Montanorum, Leoben, 1994, nr. 9, p. 7.

and iron extraction became very important. Between the years 1740 and 1745 the Hapsburg Empire lost the rich Silesian region of in favour of Prussia; as a result, the Hapsburg Empire was forced to start looking for new areas with rich natural resources. The Austrian state involved in this activity through the institutions previously founded to this special purpose, through the investments made in the mining field<sup>24</sup>, through the approved legislation, with direct reference to the Austrian Law of Mines – also called the General Law on Mining<sup>25</sup> - issued on May 23, 1854.

The Austrian Law of Mines put the mine deposits under the authority of the principle *res nullius*. This law allowed the state to assign freely and on permanent basis the mine property to the one who discovered the deposit, in compliance with the regalian right. According to the art.3 in the Law, „in compliance with the regalian right means that supreme right according to which certain minerals found under the form of natural deposits shall be made available exclusively to the supreme ruler. All the metal, sulphur, potash alum, sulphuric acid or salt mines that can be mined belong to the mine regalian right; this is also valid for the cementing waters, graphite and ozokerite, together with all types of hard and brown coals”<sup>26</sup>.

The Austrian Law of Mine forced the small undertakers to join together into mine companies on shares and subordinated the management of mines to the Ministry of Finance and to the Inspectorates (called *Căpitanate* in the Romanian language; the Jiu Valley region was allocated to Zlatna Mine Inspectorate). This system was also preserved during the Austrian – Hungarian dualist Empire (1867-1918)<sup>27</sup>, etc. There was also some stock available which could be invested in an efficient industry; the investments increased after the implementation of the Austrian Law of Mines on May 23, 1854<sup>28</sup>

There were also small undertakers, especially involved in the mining of gold that organized themselves in mine associations on mine shares; all the same, there were persons who were interested to large sums of money in the mining filed in Transylvania and Banat. The penetration of these large sums of money was positively influenced by the selling of state owned properties on the market and the industrial bourgeoisie which provided support for the import of capital. One other major aspect was a large offer of cheap manpower, as the imperial decrees issued between 1853 and 1854 stated the abolition of serfdom<sup>29</sup>.

There were several means through which the „big” capital entered the

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<sup>24</sup> Ludovic Vajda, *Începuturile dezvoltării mineritului de cărbuni în Transilvania*, Acta Musei Napocensis, I, 1964, p. 397-419.

<sup>25</sup> *Legea generală minieră din mai 1854*, in vol., *Legea Minelor austriacă. Din 25 mai 1854*, Tip. „Lupta” Nicolae Stroilă, București, 1923, p. 5-83. On July 21, 1861, Hungary also adopted the Austrian Law of Mines instally approved on May 23, 1854, and „it was to remain in force until the drawing up of a definitive law of mine” (*Legea minieră ungară*, in vol., *Legea Minelor austriacă. Din 25 mai 1854*, p. 87-90).

<sup>26</sup> *Legea generală minieră din mai 1854*, p. 5.

<sup>27</sup> From among the prerogatives of Mine Inspectorates: granting the right for exploration and use, surveillance of mines and penalties for possible infringements etc. (Ioan Popa, *Administrația minieră și prosperitatea mineritului din Ardeal*, *Miniera*, VII, 1932, nr. 7-8, p. 2338-2339).

<sup>28</sup> L. Vajda, *Începuturile revoluției industriale în mineritul și metalurgia din Transilvania*, Anuarul Institutului de Istorie Cluj, X, 1967, p. 174.

<sup>29</sup> L. Vajda, *Capitalul străin în industria minieră și metalurgică a Transilvaniei (1867-1900)*, Acta Musei Napocensis, IX, 1972, p. 231-232.

Transylvania and Banat markets: either directly, through capital investments of banks or of foreign financial groups, or in an indirect manner, by getting important shares in Hungarian banks that owned mine companies in Transylvania or when the German, Austrian, French money founded industrial undertakings in Transylvania together with the industrial capital and large Hungarian banks<sup>30</sup>. The first bankers interested in investing both in Transylvania and in Banat regions brought there Austrian capital, partly associated with the French capital: The House of Rothschild, the Austrian bank aristocracy under the management of Creditanstalt and the French bank aristocracy in relation to Société Générale de Credit Mobilier; between 1848 and 1867 they took hold of the most important mineral resources previously discovered and commissioned<sup>31</sup>. After the year 1867, the Austrian and the French capitals maintained and strengthened their positions, Transylvania and Banat becoming more dependent on Austria who exported intensively capital in these regions. They focused mainly on the production of raw materials, railway construction, banking operations. If at the beginning, Transylvanian bourgeoisie was almost completely excluded from the mining and metallurgy of Transylvania and Banat, in late 19<sup>th</sup> century and early 20<sup>th</sup> century, it were more than one situation when the bourgeoisie in Hungary, especially the one in Budapest associated with the Austrian capital<sup>32</sup>. From the middle of the '80s of the 19<sup>th</sup> century, the German capital obtained a significant position that entered, especially in the extractive industry of precious metals, either through Austrian banks, or alone. Also, the French capital maintained its position and conquered other new positions, by the help of the banks in Budapest, and especially by Credit Lyonnais, the English and Belgian capital, but the Austro-Hungarian capital held the leading position<sup>33</sup>.

On this basis, few large companies that dominated economically for a long period time were founded in the mining and metallurgical industry of Transylvania and Banat, together with other undertakings or state-owned companies:

- StEG (The Imperial - Royal Austrian Company of the State – Owned Railways) was founded in December 1854 in Paris by a group of bankers<sup>34</sup>, mostly French and Austrians. On the first day of January 1855, StEG purchased the mining domain of the Hapsburg state in Banat for the sum of 11,123,046 florins comprising an area of 133,168 ha; subsequently, the company also bought other mining and metallurgical assets within the mountain area of Banat;
- Societatea de Mine și Cuptoare de la Brașov (Company of Mines and Furnaces in Brașov), founded in 1858, which invested in iron mines located in the regions of Banat and Transylvania, and in the Jiu Valley coal mining<sup>35</sup>. The company was founded by Czech and Austrian capital, with the support of the Austrian Wiener

<sup>30</sup> *Ibidem*, p. 232-233.

<sup>31</sup> Vajda, *Cu privire la pătrunderea capitalului austriac în industria minieră și metalurgică a Transilvaniei între 1848-1867*, Studia Universitatis Babeș-Bolyai, series Historia, fasciculus 2, 1965, p. 63-77.

<sup>32</sup> Idem, *Capitalul străin în industria minieră și metalurgică a Transilvaniei (1867-1900)*, p. 229-230

<sup>33</sup> *Ibidem*, p. 231.

<sup>34</sup> N. Maghiar, Șt. Olteanu, *Din istoria mineritului în România*, Editura Științifică, București, 1970, p. 200-211; 230-236; L. Vajda, *Începuturile dezvoltării mineritului de cărbune în Transilvania*, p. 403-408; Rudolf Grăf, *Domeniul bănățean al StEG. 1855-1920*, Editura Banatica, Reșița, 1997.

<sup>35</sup> N. Maghiar, Șt. Olteanu, *op. cit.*, p. 211.

- Bankverein bank which, in turn, attracted the Hungarian Commercial Bank of Pest; this one had links with Deutsche Bank and Banque de Paris et des Pays-Bas, to where Wiener Bankverein had interests<sup>36</sup>;
- between 1884-1899 the gold quadrilateral of Apuseni Mountains of Transylvania was founded with in the town of Brad in its center; it was an industrial complex, known under the name of „Ruda 12 Apostoli” Mine Association that belonged to a German corporate in Gotha, and at the end of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century, it became the most important undertaking involved in gold mining in center and south-eastern part of Europe<sup>37</sup>;
  - the mining companies that used to mine the coal in the Jiu Valley.

#### **4. SHAPING AND DEVELOPING THE INDUSTRIAL COMPLEX IN THE JIU VALLEY**

##### **4.1. Initial investments and leases**

I have outlined here the framework in which the coal mining industry in the Jiu Valley started in the middle of 19<sup>th</sup> century and which gives good reason for such a process. It goes without saying that the existence of coal in the Jiu Valley is known before the mid-nineteenth century. Coal, which outcropped in many areas, was easy to discover by local people.

The Hapsburg Emperor Joseph II (1780-1790) wrote in his official travel journal in Transylvania in 1773 that „at the end of the valleys (Crivadia – our commentary) on the left side, a ridge was mined and coal was discovered there, but it doesn't not worth much in a country rich in wood...”. Also, the story of Emperor Joseph II goes with the following lines „close to the narrow pass, among the above mentioned large pieces of rocks (in Vâlcan Pass – our commentary), one can see the mine hole dug by Prince von Lobkowitz, which is covered by trees, and by younger forests”<sup>38</sup>. In the year 1782, a mineralogist, Benkő Janos, told that he saw how „coal has been ignited and burned for a long period of time”<sup>39</sup>. In 1788, during the last Turkish attack in the Jiu Valley, the imperial border guards tried to stop the invaders by igniting a large amount of coal in Arsului Valley, around Vulcan, thus delaying their advance<sup>40</sup>. An explorer, Solyom-Fekete Ferencz said in 1888 that „not once and not in one place, the miners of that time used to dig wells to bring to surface the greenish color mud that were bore gold nugget and they crossed coal beds whose use

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<sup>36</sup> Alexandru Toth, *Începuturile exploatării cărbunelui din Valea Jiului și dezvoltarea acesteia până la sfârșitul secolului al XIX-lea*, Studii. Revistă de istorie, XVI, 1963, nr. 6, p. 1304-1305.

<sup>37</sup> Ion Rusu Abrudeanu, *Aurul românesc*, Editura „Cartea Românească”, București, 1933, p. 256; Mircea Baron, *Societatea „Mica”. 1920-1948*, Editura Universitas, Petroșani, 2006, p. 223-243.

<sup>38</sup> Ileana Bozac, Teodor Pavel, *Călătoria împăratului Iosif al II-lea în Transilvania la 1773*, vol. I, Centrul de Studii Transilvane, Cluj-Napoca, 2007, p. 585-586.

<sup>39</sup> Silvestru Moldovan, *Țara noastră. Descrierea părților Ardealului de la Mureș spre miazăzi și Valea Mureșului*, Tipografia Arhidieceșană, Sibiu, 1894, p. 77.

<sup>40</sup> Iacob Radu, *Istoria vicariatului greco-catolic al Hațegului*, Tipografia Gutenberg, Lugoj, 1913, p. 13, 341.

was unknown but they seemed familiar with it"<sup>41</sup>. Perhaps occasionally, the native people used coal for heating purposes and Transylvanian historian Teglas Gabor said that blacksmiths in the villages of the Jiu Valley or in the neighboring villages used it in workshops in place of charcoal<sup>42</sup>.

Ion D. Sirbu (1919-1989), known Romanian playwright, born in Petrila, in the Jiu Valley, wrote a beautiful book entitled „Povestiri petrolene” („Stories of Petrila”); the Part I includes 23 old stories related to the mining activity. One of these stories is called „Omul și muntele” („The Man and the Mountain”) is worth to be told here because it is a beautiful fantasy about beginnings of mining in the Jiu Valley: „The time when there was no mine or a factory in Jiu Valley and the local shepherds were earning a living hardly. With their sheep, the surrounding forests ... And from amidst these kind and meek persons, a haughty, proud lad raised. He didn't care much about the mountain and he was afraid of nothing and nobody. He used to cut down the wood without requiring permission, and went hunting and fishing as everything around him was his property. Mount kept mum, endured a lot and said to itself: You just wait until I grab you. When he married, custom required that any lad should introduce his mistress to the old mountains. Retezat Mts., Vâlcan Mts. and Șurianul Mts. received her respects. Only Parâng Mts., the mountain he earned his living, rejected her.

- I shall neither accept her nor you.
- Very well; not matter that, I shall still marry her. But I am going to settle the accounts with you first.

This fierce fight with the stubborn mountain has been going on starting from that very moment"<sup>43</sup>.

Of course, a nice story, which relies on early searches, but the real life, in most cases, outstripped fiction, and the elderly mining of mountains in search of coal began in the more prosaic manner: the need to support progress and prosperity of a society with the help of this mineral, and the shepherds and hunters, who ventured into this area as other people have had to face the alternative to remain faithful to their ancestral occupations or to attach to modern development.

It is well-known the fact that in 1840, Hoffmann brothers and later on, Carol Maderspach, performed exploratory activities in the Jiu Valley and they laid the base of some rudimentary workings at surface, probably in the areas of Petroșani, Vulcan, Petrila, that continued operating during sixth decade of the 19<sup>th</sup> century<sup>44</sup>. The Austrian Law of Mines of May 23, 1854 required a unification of these small undertakers and, to this end, they merged with the Mine Union of Western Ardeal; between 1858 and 1859 they got the first mining perimeters (reaching an area of 45.116 m<sup>2</sup>) recorded in the Land Registration Book for Mines of Alba Court of Law.

Later on, these perimeters were purchased by the Company of Mines and Furnaces in Brașov. This Company, who was the forth manufacturer of cast iron in the Hapsburg Empire, took also the metallurgic plant in Călan (nearly the area of the Jiu

<sup>41</sup> Solyom-Fekete Ferencz, *Sylvölgy a benepesitese valomint annak egyeb törteneitei*, în, *A Hunyadvármegyei történelmi es regeszeti tarsulat evkonyve*, 1888, p. 76.

<sup>42</sup> Teglas Gabor, *Hunyadvármegye közgazdasági leirása*, Budapest, 1903, p. 22.

<sup>43</sup> I.D. Sirbu, *Povești petrolene*, Editura Junimea, Iași, 1973, p. 35-36.

<sup>44</sup> A. Schreiber, *Valea Jiului. 1840-1926*, Montanistică și Metalurgie, V, 1926, nr. 9 și 10, p. 8.

Valley). They provided the metallurgically processed items necessary for mining purposes. The Company of Mines and Furnaces in Braşov was the first powerful company that operated in the Jiu Valley. For around ten years, the Company made serious investments and broad researches; consequently, serious coal deposits were discovered at Petroşani, Livezeni and Petrila and as a result, the Company got a large number of mining rights. These researches and preparatory operations created a suitable framework for the development of industrial activities but this process slowed down due to the lack of efficient transportation means<sup>45</sup>.

There were also other private owners who had made investments in the Jiu Valley. Beside these private undertakers, there was also the Austrian state, and after the year 1867, the Hungarian state became interested in the underground richness of the Jiu Valley. It involved in several mining areas and performed exploratory operations in accordance with the Austrian Law of Mines of May 23, 1854<sup>46</sup>.

On December 30, 1858, Maximilian Egon Fürstenberg et Comp. was granted the first mining right within Petrila area; the next eight mining rights were granted to the Mine Union of Western Ardeal<sup>47</sup> on March 15, 1859. They were in the perimeter of Vulcan, Petroşani and Livezeni villages.

More and more undertakers became aware of the economic value of the Jiu Valley coal basin, if taking into consideration the results of geological surveys, and exploratory operations that confirmed the existence of an important high quality coals. Consequently, they intended to get exploration permits and mining concessions and at the end of 1876, there was franchised a surface of 66,690,076 m<sup>2</sup> in the Jiu Valley<sup>48</sup>.

As these small undertakers didn't possess the necessary finance to capitalize the concessions that had been granted to them, gradually, they had to give up in favour of powerful companies – at the beginning the Company of Mines and Furnaces in Braşov. Thus in 1909, there were four powerful companies which were involved in production in the Jiu Valley<sup>49</sup>: „Salgótarján” Company holding a leased surface of 31,619,329.3 m<sup>2</sup>; „Uricani–Valea Jiului” („Uricani-Jiu Valley”) Company holding a leased surface of 27,672,966 m<sup>2</sup>, the State Mines of Lonea = 24,109,448.8 m<sup>2</sup> and „Valea Jiului de Sus” („The Upper Jiu Valley”) Company = 6,271,124 m<sup>2</sup>.

Generally, the mine perimeters were leased between 1858 and 1916; minor changes that didn't alter the predetermined structure were made after I World War and both the size of perimeters, together with their names were maintained after II World War.

Beside this vast land registration operation that favoured the development of the industrial area in the Jiu Valley, there were the big losers that had been adversely affected by the modernization trend; i.e. the inhabitants of the villages founded at the beginning of the 19<sup>th</sup> century. The native countrymen lost the land they held possession, either, through expropriation means or selling this land at prices lower than the real value of them<sup>50</sup>.

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<sup>45</sup> L. Vajda, *Începuturile dezvoltării mineritului de cărbuni în Transilvania*, p. 410-411.

<sup>46</sup> A. Schreiber, *op. cit.*, p. 8.

<sup>47</sup> *Ibidem*.

<sup>48</sup> *A Magyar Korona Országainak szentelepei es szembányászata*, Budapest, 1878, p. 272.

<sup>49</sup> Henrich Victor, *A Zsilvölgy bányászatának roved ismertétése*, în, *Hunyadvármegyei Almanach*, Kroll Gyula könyvnyomdájá, Deva, 1910, p. 115

<sup>50</sup> Sebastian Stanca, *Monografia istorico-geografică a localităţii Petroşani*, Editura Fundaţiei Culturale „Ion D. Sârbu”, Petroşani, 1996, p. 60.

The mine companies had exclusive exploration permits for the leased land in the Jiu Valley. Some of these surfaces were mined based on the mining rights; other surfaces of land didn't change their status and the permits were renewed every year. In spite of the fact that these coal companies, which exist before and after I World War, owned the whole mining perimeter of the Jiu Valley, they didn't capitalize the whole perimeter and preserved it; these companies didn't allow other private undertakers to enter this area and when this thing happened, these coal powerful companies used to incorporate them.

It was not enough to know the economic value of the coal deposits located in the Jiu Valley. There were a series of elements, such as isolation of this region, the existing connecting routes with Hațeg County and with Romania, unreliable internal communication routes, coal transportation to the blacksmith's shop with the help of the horse, that turn inefficient coal mining and after its capitalization, there wasn't enough money left to cover the expenses related to exploratory and opening operations. Consequently, it became imperiously necessary to settle the matter of transportation, both inside the Jiu Valley area and mostly to and from Jiu Valley.

Subsequently, the most important investment was the construction of the railway that connected Petroșani to Simeria. It was a gate opened to whole Transylvania. At the same, it was necessary to construct a modern road that connected the Jiu Valley to Romania. Yearly, 60.000 - 70.000 cows used to cross Petroșani from Romania and went to the Hapsburg Empire. After the year 1874, the Hungarian Government understood the huge opportunity involved by coal mining and drew up the plan for a large and solid road that had to cross the Jiu gorge; this road was marketing coal to the south area of the Carpathians. The construction of the road that connects Transylvania to the Southern Romania ended in 1890. This road represents the result of common action initiated by Romania and Hungarian authorities and its grand opening was on September 4, 1894<sup>51</sup>.

The railway that connects Simeria to Petroșani was constructed between 1868 and 1870 and the Company of Mines and Furnaces in Brașov played an important part in this respect. The Company of Mines and Furnaces in Brașov was granted the construction of the railway between Arad and Alba Iulia – constructed between April 1867 and December 1868 - and of the branch Simeria – Petroșani, on August 1866. The construction of the railway between Simeria and Petroșani started in the spring of 1868 and they employed both the local labour force and workers brought from different parts of the Hapsburg Empire, including from the Northern part of Italy; from the very beginning the designers studied the idea to extend the route of the railway, through the Jiu gorge, to Romania. Between 1919 and 1948 the Romanian state brought this idea to an end.

On August 18, 1870, the above - said railway of 78,8 km in length (of which only 5,7 km with horizontal layout) was commissioned temporarily; the whole construction cost 12 million florins and if there was added the subsequent equipment, one km of railways cost 136.850 florins. Both the main and secondary railways were operated with 21 locomotives, 64 passenger cars and 513 goods wagons of which 126 wagons were for coal transportation<sup>52</sup>. The construction of the railway that connected Simeria and

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<sup>51</sup> *Ibidem*, p. 62.

<sup>52</sup> Ludovic Vajda, *Prima cale ferată din Transilvania*, Acta Musei Napocensis, VIII, 1971, p. 287-298; Ilie Popescu, *Căi ferate. Transporturi clasice și moderne*, Editura Științifică și Enciclopedică, București, 1987, p. 88-91; Horváth Ferenc, *Az erdélyi vasútépítészeti előzményei. Az Első Erdélyi Vasút Arad-Gyulafehérvár*



Petroșani, together with the construction of the 19 km railway that connected Petroșani to Lupeni (between 1891 and 1892) created a suitable infrastructure for a rapid progress of the mining and of the whole Jiu Valley.

#### **4.2. State as industrial investor**

As a matter of fact, state entered the Jiu Valley in 1865 through the Treasury House for the Management of Mountain Riches (called *Tezaurariatul Montanistic* in the Romanian language). At the beginning there were exploration operations and there followed opening operations. The first properties of the Treasury House for the Management of Mountain Riches dated back in 1865 when the Austrian Ministry of Finance took possession of the surfaces necessary for coal mining in the Jiu Valley, with the view to increasing the selling price of the items made by steel factors on Hunedoara.

As there were a lot of important persons who had economic interests in the area of Jiu Valley, including the Hungarian minister of finance, and the mine experts became more and more aware of the value embedded by the coal deposits, the authorities invested a large sum of money to start the operations necessary for the creation of state-owned mines in the Jiu Valley. In November 1868, the Temporary Office of Mine was founded in the Jiu Valley; all the investments in this area were taken out from the jurisdiction of the steel plant in Hunedoara and were directly subordinated to the Hungarian Royal Department of Mines in Cluj.

There is a lot of literature on the operations of the state, carried out through the Treasury House for the Management of Mountain Riches, in the Jiu Valley between 1865 and 1879.<sup>53</sup> The researches carried out in the Eastern part of the East Jiu revealed, with the help of natural outcrop, 21 coal seams, some of them thicker and others thinner; consequently, it was possible to start the first important operation: the mining of the adit at Deak Mine (Petrila) on December 24, 1868 at the level 634.3 m.<sup>54</sup> At the end of August 1869, the seams 1, 2, 3, 5, 13 and at the end of October 1869, the main seam no. 3 (of 37 m in thickness) was penetrated. In the month of June 1869, the project of the double industrial railway Deak Mine/Petrila – Petroșani of 2,570 m was finalized; its construction was finalized in the month of December 1869 but it was extended with a simple railway from Jiet Mine to Deak Mine / Petrila. The estimates said that 218,995 forints were spent on these operations, aspect that „shows the rapid advance of these activities...”. Lonea adit was started and it had to advance 1,500-1,700 m up to the coal seam.

The year 1870 is under the sign of hopes due to the finalization of the railway that connected Simeria to Petroșani; nevertheless, it couldn't provide a capacity for the transportation of coal of 300 tons/day or 600 wagon/month, so the mining operations had to be stopped because large amount of coal piled-up on the loading platforms. Mining and supporting operations were carried out on the gallery at Răscoala and researches within the area of Sălătruc were performed, operations that allowed the granting of certain

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*fővonala és Piski-Petroszény szárnyonala*, *Műszaki Szemle*, IV/15, 2001, p. 5-9; Horváth Ferenc, Kubinszky Mihály, *Ibidem*, IV/16, 2001, p. 3-5.

<sup>53</sup> Kantner Ianos, *A zsilvölgyi m. kir. kincstári szénbányászat*, B.K.L., XXXVI, 15 august 1903, vol. II, nr. 16, p. 235-258.

<sup>54</sup> Winkler Benő, *A zsilvölgyi kősenmedencéről*, B.K.L., III, 1870, nr. 7-8, p. 52.

perimeters for their further mining. The activity concentrated around Deak Mine/Petrila but a fire broke out after a while; consequently, the focus turned to the coal mining at surface and there was started the uncovering of coal seams in the valley of Jiet creek and in the neighbouring valleys; there were also opened two pits for stone and lime which were to be used for construction purposes and in the month of November 1870 the first steam machine for the production of bricks was commissioned in the Jiu Valley; a steam-power driven saw machine was installed at Petrila and it was used for the processing of wood cut down from the forests on Auşelu Mountain.

Deak Mine/Petrila saw an intensive activity during 1872; opening ways were being mined in the following mine fields: Jieţ (started production in the month of December 1873), Răscoala and Sălătruc. Unfortunately, during the night of December 10, 1872 an explosion of methane and coal dust burst at Deak Mine/Petrila; thus, a fire broke on the seam no. 3 and the mine became too hazardous for mining. On this occasion, the upper side of the shaft and the housing of the extraction machine were affected by the fire.

Unfortunately, the results of the explosion occurred in the month of December 1872 had a negative effect over the state-financed mining in the Jiu Valley; consequently the surface mining of the seam no. 3 (Deak Mine/Petrila) ceased in the month of June 1874 and in August 1874 the underground mining was also ceased. There were also stopped the mining of the cross way at Lonea Mine, the working on the main shaft at Jieţ, the opening mining at Răscoala and Sălătruc which had already 391.8 m and 407.8 m, respectively.

The reasons for these decisions were the probable financial losses because there was registered a negative balance of 324,297 forints at the end of the financial year 1874. The coal output diminished because Deak Mine/Petrila was the mine that had the highest coal output. After the accident occurred in the month of December 1872, the mining in the Jiu Valley reached back to the first stage in the mining of coal deposits because these wasn't taken into consideration the idea to open and prepare coal seams at other mines or at surface. The researches and the exploratory operations of other mine fields were in the buds or there were not enough information on the location of coal seams.

Opening mining from Lonea and Jieţ could have brought the Jiu Valley mining in a favourable situation but the economic crisis broken in 1873 brought about a serious shortage of material means of social support given by the higher managing departments. As a result, the year 1874 saw 59,208 tons of coal (compared to 1873 when 79,390 tons of coal were mined out) and the coal output continued to decrease in 1878 when 53,096 tons of coal were mined: 26,813 tons of coal at Lonea Mine, 14,478 tons of coal at Jieţ Mine and 11,805 tons of coal at Deak Mine/Petrila.

All those information led to a predictable decision. According to the Order issued by the Hungarian Ministry of Finance on March 5, 1875, the iron ore mines in Hunedoara County and the coal mines in the Jiu Valley belonging to the Hungarian Royal Treasury House, evaluated for 11,428,571 forints, were put on sale. This is not surprisingly because ever since the foundation of state-owned mines in the Jiu Valley, the idea was that most mining rights would be granted to private undertakings. The area that could be granted laid Eastern of Jiet creek, located in the Eastern part of Jiu Valley.

On August 31, 1879 the Mine Department in the Jiu Valley received a copy of the contract for the leasehold of state-owned mines in the Jiu Valley, according to which the

coal mining was leased for a period that started on the 1<sup>st</sup> of August 1879 and ended on December 31, 1896 for an amount of 100,000 forints per year.<sup>55</sup> This transaction ended a period when state-owned capital was present in the mining activity of the Jiu Valley. This presence was beneficial because it created a solid base for the mining activities performed in the Jiu Valley through industrial and social activities.

The evaluations said the state-owned coal deposits reached around 370 million tons in 1903 and the inventory value of the assets reached 94,307,948.99 crowns.

### 4.3. The Company of Mines and Furnaces in Braşov

The Company of Mines and Furnaces in Braşov held its position in the Jiu Valley until 1894. They possessed their own mining rights and in 1879 they held on lease the state-owned mines. After 1882 the society succeeded to get, with no expenses, the mining rights from Vulcan given up by the state.<sup>56</sup> After more than ten years of exploratory operations, the company started the opening and preparatory operations between 1867 and 1869.

East Jiu River removed the earth from its bed and uncovered the outcrops of the coal deposits leased by the Company of Mines and Furnaces in Braşov; this stage can be considered the starting point of *Petroşani Est (East Petroşani) Mine*. Between the years 1867 and 1868 the mining of the Eastern way started at the level 621.7<sup>57</sup> and this operation opened the mine at its upper side and crossed the seams 3 and 5<sup>58</sup>.

The mining of the main adit - Gustav - started on the right bank of West Jiu River in 1869, operation that laid the foundation of *Petroşani Vest (West Petroşani) Mine*<sup>59</sup>.

The Society of Mines and Furnaces in Braşov got its first coal production from these two mines. In 1871, the daily coal output could hardly fill in a couple of wagons but, it increased gradually and reached 30 wagons between 1872 and 1873. These were the highest coal output ever registered and they were celebrated in a special manner.<sup>60</sup>

*Dâlja Mine* was opened in the second part of 1890 as an extension of West Petroşani Mine through the main adit located at the level 610 m and extended along 2,000 m<sup>61</sup>.

The Company of Mines and Furnaces in Braşov also supported the opening of *Cimpa Mine* around the year 1885. The mining operations didn't last long due to the difficult transportation and the low quality of coal. This mine, together with Lonea and Jieţ Mines, opened by the Treasury House for the Management of Mountain Riches were closed down. In spite of the fact that these mines were leased to the Company of Mines and Furnaces in Braşov and later on to „Salgôtárján” Company which committed itself to uncover other coal beds, coal mining in these mines started only after 1908. Deak Mine/Petrila was the only mine taken on lease by the Company of Mines and Furnaces

<sup>55</sup> . Poporogu, *Pătrunderea capitalului străin în industria minieră a Văii Jiului în a doua jumătate a secolului al XIX-lea*, Sargetia, XV, 1981, p. 254.

<sup>56</sup> A. Schreiber, *op. cit.*, Montanistică şi Metalurgie, VI, 1927, nr. 5, p. 6.

<sup>57</sup> DJANH, *Fond Societatea „Petroşani”*, D.M. *Serviciul Tehnic*, file 81/1930, f. 4.

<sup>58</sup> *Monografia Societăţii „Petroşani”, 1925*, p. 74-75.

<sup>59</sup> A. Schreiber, *op. cit.*, Montanistică şi Metalurgie, VI, 1927, nr. 1 şi 2, p. 5.

<sup>60</sup> *Ibidem*.

<sup>61</sup> *Monografia Societăţii „Petroşani”, 1925*, p. 83-85; Andreics Janos, Blascheck Aladar, *op.cit.*, p. 21.

in Braşov from the Treasury House for the Management of Mountain Riches that would remain operational and would continue to develop<sup>62</sup>.

Another important achievement of the Company of Mines and Furnaces in Braşov was the opening of *Aninoasa Mine* around 1890, within the area of Iscroni village. Previously, the Company of Mines and Furnaces in Braşov had mined the outcrop from the Eastern and Western sides of Aninoasa creek. Later, as the open cast mines exhausted the surface coal, there followed into the underground mining into the mountainsides that bounders Aninoasa creek valley, and thus the underground mine was open, first above the level of these galleries<sup>63</sup>. In order to remove the coal output from Aninoasa, the Company of Mines and Furnaces in Braşov installed in 1892 a rope car equipment, with a total length of 4,200 m, up to West Petroşani Mine; the rope car was driven with a steam engine, it was made at „Obach” plants in Vienna<sup>64</sup>; in 1914, a second rope car was installed in parallel with the first one.

All this activity increased the coal production from 93,182 tons in 1879 to 136,546 tons in 1880 and 242,007 tons in 1894. In 1892, 77.2% of the hard coal extracted in the Austro-Hungarian Empire came from the production of the Company of Mines and Furnaces in Braşov, therefore from the Jiu Valley<sup>65</sup>.

#### 4.4. „Uricani - Jiu Valley” Company

During the last decade of the 19<sup>th</sup> century, there was a fierce fight over the important coal-bearing riches of the Jiu Valley between the Austrian capital, which had become predominant, and the French and the allied Hungarian capital, as well as the German one. The assault of foreign capital to the Jiu Valley mining industry materialized into a gradual conveyance of the Austrian and Hungarian capital towards the German, French, Belgian and British control.

An example was represented by what was happening in Lupeni, where the mining activity entered a modern stage in the '80s of the 19<sup>th</sup> century. The contribution of Hoffmann Rafael, a mining rights owner, was very important as he brought in foremen and workers from Styria and Galicia; he sent coal samples to Germany for analysis, the results showing that the coal had coking potential. Thus the value of the mining rights from Lupeni increased and among the first private companies that tried to buy mining rights in this region was the Company of Mines and Furnaces in Braşov, unsuccessfully though.

On February 9, 1891 *Uricani-Jiu Valley Anonymous Coal Mine Company* was founded, with an initial capital of 3 million forints, subscribed by nine persons, members of the Hungarian Parliament, capitalists from Budapest and from countryside and the main object of activity was coal mining from the perimeters of the mines that had been obtained<sup>66</sup>.

During that time, Hoffmann Rafael sold his mining properties to a group made

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<sup>62</sup> *Ibidem*, p. 16-17

<sup>63</sup> *Monografia Societăţii „Petroşani”, 1925*, p. 88-89.

<sup>64</sup> Andreics Janos, Blascheck Aladar, *op. cit.*, p. 39.

<sup>65</sup> Ludovic Vajda, *Capitalul străin în industria minieră şi metalurgică a Transilvaniei (1867-1900)*, p. 236.

<sup>66</sup> I. Poporogu, *op. cit.*, p. 255-256.

of French capitalists, supported by the French Credit Lyonnais Bank; the group brought in its own experts who worked in Lupeni<sup>67</sup> for several years.

The two groups merged in 1892 under the name of *Uricani- Jiu Valley Anonymous Hungarian Coal Mine Company*, which became the second largest private company in the Jiu Valley, giving birth to „a mining boom of great importance for the local industry”<sup>68</sup>. The company was set up with a capital of 6 million crowns, which increased to 10 million crowns in 1896; the Company’s group of French capitalists entrusted the representation of their interests to the Hungarian General Bank of Credit in Budapest, and starting with 1897, the Bank was entrusted with the selling of the mined coal as well<sup>69</sup>.

In 1895 and 1902 the company bought other surfaces<sup>70</sup>; in 1903 it managed to own 27,672,966 m<sup>2</sup> of mining rights, plus 90 mining perimeters<sup>71</sup>, and before I World War, it owned mining rights with a surface of 27,890,061.4 m<sup>2</sup>, taking over the entire mining sector in Lupeni.

Researches focused on the coking characteristic of the coal in Lupeni and led to the conclusion that it coked better if damped coal was used. Based on these conclusions, in 1899 „Uricani-Jiu Valley” Company created *Uricani-Jiu Valley Anonymous Coke Manufacturing Company*, with a capital of 200,000 forints, having the Hungarian General Bank of Credit and Oberschlesische Kokswerke-und Chemische Fabriken A.G. in Gleiwitz as main shareholders; this company drew up the project for a coking plant in Lupeni. It was a small-sized installation, commissioned in September 1900, and it comprised the installation of the coking plant, with 30 coking cells for 0-18 mm coal; the coal washing plant, with a capacity of 200 tons/10 h.; the installation for the drying of the coal dust. The length of burning reached 42-44 hours and a silvery, soft, frail-type coke was obtained, which was well below the quality of the one obtained in Silesia<sup>72</sup>.

#### 4.5. „Salgótarján” Company

The penetration of the financial and industrial capital into the Jiu Valley coal basin before I World War was broadly brought to an end through the *Anonymous Coal*

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<sup>67</sup> A. Schreiber, *op. cit.*, Montanistică și Metalurgie, VI, 1927, nr. 5, p. 6.

<sup>68</sup> I. Poporogu, *op. cit.*, p. 256.

<sup>69</sup> Margareta Toth-Gaspar, *Condițiile de muncă și viață ale minerilor din Valea Jiului și luptele lor greviste până la sfârșitul secolului al XIX-lea*, Acta Musei Napocensis, I, 1964, p. 258; Alex. Toth, *Mineritul din Valea Jiului în faza trecerii la capitalism și dezvoltarea lui până la primul război mondial*, Studia Universitatis Babeș-Bolyai, Series Historia, Fasciculus 2, 1963, p. 83.

<sup>70</sup> A. Schreiber, *op. cit.*, Montanistică și Metalurgie, VI, 1927, nr. 5, p. 6.

<sup>71</sup> Krizko Bohus, *Az Urikány-Zsilvölgyi magyar köszénbánya-resz-tars. Lupényi bányatelepének rövid ismertetése*, Budapest, 1903, p. 4.

<sup>72</sup> I. Poporogu, *Din istoricul exploatării miniere și începuturile luptei revoluționare a minerilor din Lupeni*, Sargetia, V, 1968, p. 287-288; a presentation of the factory can be found in, DJANH, *Fond Societatea „Petroșani”*. D.M. *Serviciul Tehnic*, file 45/1932-37, f. 157. The factory functioned with breaks until August 1925, when it was completely shut down, after on August 18th, 1920 the benzol shop had been shut down.

*Mine Company from Salgótarján*<sup>73</sup>; as it was in the German capital's sphere of influence, it acquired important mining perimeters.

As the business of the Company of Mines and Furnaces in Braşov began to go wrong, it seemed that it was not able to renew the lease on the state - owned mines, which had expired at the end of 1896. The Company of Mines and Furnaces in Braşov tried to save itself by contracting a 2 million forint loan from a company in Düsseldorf, but the negotiations were not successful; the problem was taken over by the Wiener Bankverein, which represented the German financial capital and by the Hungarian Commercial Bank in Budapest. Finally, „Salgótarján” Company bought the mines and the mining permits valid for the Jiu Valley of the Company of Mines and Furnaces in Braşov, together with other coalmines owned by this company in Hungary, and the lease contract signed with the Treasury House for the Management of Mountain Riches, on its mines in the Jiu Valley for 3.5 million forints<sup>74</sup>.

On January 2, 1895 „Salgótarján” Company took over all mines in the Jiu Valley that belonged to the Company of Mines and Furnaces in Braşov, and starting with January 1, 1898, for a better administration of the mines, two Mining Departments were set up, in Salgótarján and in Petroşani. In 1897 „Salgótarján” Company extended the lease contract for the mines in the Jiu Valley belonging to the Treasury House for the Management of Mountain Riches for another five years, namely until 1901, and in 1898 the validity of the lease contract was extended until 1906<sup>75</sup>; also in 1897 an agreement was signed with the Hungarian State, according to which the Deak/Petrila Mine remained in the full property of „Salgótarján” Company<sup>76</sup>. This way, in 1903 „Salgótarján” Company owned in the Jiu Valley 55,728,778.1 m<sup>2</sup> of mining rights<sup>77</sup>, and before I World War, 34,983,372.6 m<sup>2</sup>. Due to these surfaces, the existing equipment and the investment policy, „Salgótarján” Company became the strongest mining company in the Jiu Valley and, together with „Uricani-Jiu Valley” Company, dominated the Jiu Valley and the Transylvanian coal mining.

#### 4.6. „The Upper Jiu Valley” Company

On May 17, 1900 a contract of foundation was signed, according to which two owners of mining perimeters in the Jiu Valley laid foundation of a mining association, divided into 128 parts (mine shares): *Coal Mines Company of the Upper Jiu Valley*, located in Vulcan. The two owners transferred to the new Company the land surfaces

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<sup>73</sup> Andreics Janos, *A „Salgótarjáni köszénbánya Resz.-Tars”, szénbányászatainak rövid ismertetese*, B.K.L., XXXII, 1899, nr. 21, p. 408-410. The „Salgótarján” Company was the largest coal producer in Hungary. It was set up in August 1868 when it took over the coal mines in Salgótarján. Its shareholders were traders and manufacturers from Pesta, but also Austrians, and later Germans. The company's banker was the Hungarian-English Bank, and it also had connections with the Hungarian General Credit Bank (DJANH, *Fond Societatea „Salgótarján”*, file 52/1920, f. 7; Alex. Toth, *Începuturile exploatării cărbunelui din Valea Jiului și dezvoltarea acesteia până la sfârşitul secolului al XIX-lea*, p. 1309).

<sup>74</sup> I. Poporogu, *op. cit.*, p. 257-258.

<sup>75</sup> Andreics Janos, *op. cit.*, p. 409.

<sup>76</sup> *Monografia Societăţii „Petroşani”, 1925*, p. 9.

<sup>77</sup> Andreics Janos, Blascheck Aladar, *op. cit.*, p. 14.

owned in Câmpu lui Neag, Uricani, Vulcan<sup>78</sup>. The production activity was carried out in the area of Vulcan, inside the perimeters of Arpad, Terezia, Carolus Gerbert mining rights. The development was made towards the Northern part of the coal ore on both banks of Crividia creek, and it aimed the mining of the surface coal, as well of those parts from the coal seams located closer to surface. The investment effort materialised into an increase of extracted coal output from 10,995 tons of coal in the second half of 1895 to 80,189 tons of coal in 1902<sup>79</sup>. On December 15, 1903, due to hardships in selling coal, the mine and all its mining rights, namely 50/50% - 64/64 mine shares - was sold to „Salgótárján” and „Uricani–Jiu Valley” Companies<sup>80</sup>. „The Upper Jiu Valley” Company continued to carry out its activity but under a new coordination and with other perspectives, which led to a production of 124,300 tons of coal in 1913.

#### 4.7. The State Mines of Lonea

The last necessary organizational and technical development started in 1907 when, due to the coal crisis experienced by the Austro-Hungarian Empire, the Hungarian State decided the termination of contract with the „Salgótárján” Company and the re-opening of the mine which belonged to it in the Jiu Valley. This also happened because the Company of Mines and Furnace in Braşov, together with the „Salgótárján” Company, who leased the state mines – except for the Deak/Petrila Mine, which remained with the „Salgótárján” Company – had made no investments or opening, preparation and mining operations.

Based on a previously established program, new explorations were made in order to establish exactly the layout of the ore and an impressive investment program consisting of industrial buildings, mining works, and special endowments was implemented. The government was willing to invest 16 million crowns between 1908 and 1911<sup>81</sup>, aiming: the opening of three mining fields through shafts, which shape the mining perimeter of Lonea today; the construction of the Petroşani Power Plant by 1912, equipped with two turbo-generators of 3,700 HP; the construction of the North Petroşani coal separation unit, with an output of 230 tons/hour; lamp rooms for 1,336 safety lamps on gas, Friemann-Wolf model; housing for clerk and workers, etc.<sup>82</sup>.

We can see how, for forty years, the Jiu Valley mining tried to find the most adequate organizational and development methods. At the beginning of the 20<sup>th</sup> century the structures to be found in the Jiu Valley with certain changes until the end of the period between the two world wars and even in the first years after II World War.

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<sup>78</sup> DJANH, *Fond Societatea „Valea Jiului de Sus”*, file 12/1925, f. 1-3.

<sup>79</sup> xxx, *A „Felső-zsilvölgyi kőszénbánya Társulat” vulkáni bányaműveinek rövid ismertetése*, B.K.L., XXXVI, vol. II, 1903, nr. 20, p. 538, 540.

<sup>80</sup> DJANH, *Fond Societatea „Valea Jiului de Sus”*, file 1/1922-26, f. 12; Papp Karoly, *A zsilvölgyi oligocen mence szentelepei Hunyad vármegyében*, în *A magyar biradalom kőszénkészletete*, Budapest, 1915, p. 707-708, 721.

<sup>81</sup> Alex. Toth, *Mineritul din Valea Jiului în faza trecerii la imperialism și dezvoltarea lui până la primul război mondial*, p. 87.

<sup>82</sup> A. Schreiber, *op. cit.*, *Montanistică și Metalurgie*, VI, 1927, nr. 6-7, p. 5; DJANH, *Fond Societatea „Petroşani”*. *D.M. Serviciul Tehnic*, file 81/1930, f. 8 -10.

## 5. THE EVOLUTION OF THE INDUSTRIAL COMPOUND AT THE END OF THE 19<sup>TH</sup> CENTURY AND THE BEGINNING OF THE 20<sup>TH</sup> CENTURY

The mining companies and the state, as industrial investor, did not limit themselves only to a physical presence in the Jiu Valley; they were mainly interested in finding the most adequate technical solutions to mine the coal out with as high efficiency as possible and with bearable costs. We saw that after 1907-1908, the State Mines could spend significant amounts of money for opening and modernization purposes, but the two major mining companies in the Jiu Valley, „Uricani-Jiu Valley” and „Salgótarján” were most involved. As distinctive elements we could mention: the transition from the opening of the mine through adits to vertical shafts; the implementation of certain mining methods that took into account the size and configuration of the coal seams; an ever increased use of steam energy and of electric power; an increased use of the means and driving power used for transportation, from hand-barrows and carts to carriages, winches, rope cars driven by human, animal or mechanical force. Unfortunately, the previous practices were continued, i.e. the mining of the thin covering layers was which involved higher coal outputs with smaller costs. However, this was done at the expense of the main layer’s mining and this policy generated great problems in the mining activity during the period between the two world wars.

In order to develop the mines from Lupeni, „Uricani-Jiu Valley” Company made significant investments. Gradually, opening and preparing operations were carried out, which allowed for the opening of the following mines: *Nord (North)*, *Ștefan*, *Victoria*, *Ileana*, *Carolina*, on the Northern side of the basin, and of the *Sud (South)* and *Ella* mines, on the Southern side. Between 1892 and 1902 the coal mined from the North and South mines, and starting with 1900 from Ștefan Mine; it continued later with the development of the other mines<sup>83</sup>.

According to the policy held for the opening of mining perimeters, a trend that determined an increase of the coal production, there were major concerns for the introduction of modern elements. With respect to transportation, we can notice that constant mechanization was intended. It was believed that the force of arms could be used only when the amount of transported material did not exceed 1 ton/man/km in one day; when it exceeded 1 ton/man/km the use of horses and mechanization was profitable. In Lupeni it was believed that the electrically-driven transportation installation in the underground was the best one and this system was designed since 1898. In 1903 there existed electricity on 1,450 m in Ștefan Mine and 1,400 m in North Mine, such an electrical line existed in the main gallery of the Southern pit; five electrical locomotives were used for traction that were manufactured in the Lupeni mines’ workshops.

Installations for vertical transport were introduced, the first extraction machine was installed at the South shaft, initially having an electric engine of 65 HP and later another one of 120 HP<sup>84</sup>; five rope car installations were built mainly for the coal

<sup>83</sup> *Ibidem*, file 45/1932-37, f. 23-24, 31-32, 47, 144; file 23/1929, f. 2-16.

<sup>84</sup> Krizko Bohus, *op. cit.*, p. 26.



transport to the four coal separation units<sup>85</sup>, where coal was mechanically classified into five categories: small = 0-10 mm, carbon dust = 10-18mm, nut = 18-35 mm, cube = 35-120mm, lump = > 120 mm<sup>86</sup>.

The ever increasing demand for electric power of the mines from Lupeni was solved by building in 1900 year, of the Electric Power Station near Ștefan Separation Unit; this station was extended in the '20s of the 20<sup>th</sup> century, when it was equipped with four generators that delivered 11,800 kW<sup>87</sup>.

The most important achievement of „*Salgótárján*” Company was the opening of the mines in *Vulcan* in 1900.

The coal reserve and its quality placed these mines on the first places among the mines of the company only three years after opening. It looks like nature helped this opening as well as any erosion produced by the waters that frequently used to wash the steep valley brought to the surface coal layers of considerable sizes. The layers cropped out one after the other so that there was almost no need for research expenses. The main layer was revealed on all its thickness, which allowed for a surface mining along 700 m at least.

The three mines opened here were:

- *Vulcan Vest (West Vulcan) Mine*, which was opened through the main adit of 1,580 m long. It was started in 1902 in the valley of Crividia creek, at 630 m ground elevation;
- *Vulcan Est (East Vulcan) Mine*, which was opened through a cross-cut way of 600 m in length from Arsului Valley, at 630 m ground elevation. It crossed the coal seams nos. 13, 9, 8, 7, 6, 5, 4 and 3, thus marking the main level.
- *Chorin Mine*, which developed through the opening of deep levels, where it was believed that the coal seams were horizontal or less steep. This layout gave hopes that the old mining wouldn't be influenced by the new ones all together. The lower level of the West Vulcan and East Vulcan mines was considered to be the separation line between them and Chorin Mine.

The mine opened by excavating the main shaft situated in the Crividia creek valley, at 580 m north of the bank of the West Jiu River. The excavation of the shaft started before I World War and it finished shortly after the war ended. The shaft was 352 m deep – it was excavated between the levels 619.2 m and 267 m – it had a diameter of 5.72 m, and its walls were built with prismatic concrete blocks of 0.45 m thick. This shaft was the deepest in the Jiu Valley, with a metal extraction tower of 30 m height; the shaft had a steam - driven extraction machine – initially of 600 HP, and later of 1,000 HP – able to extract four cars of 700 kg of coal, namely 500,000 tons of coal per year on every cage from a depth of 500 m and with a speed of 20 m/s. The shaft crossed the coal seams nos. 18, 17, 15, 13, and the two longitudinal ways, starting from the surrounding area of the shaft at level 480 m, one going towards east of 1,400 m long and another towards west of 1,600 m long, excavated mainly in coal, which

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<sup>85</sup> Krizko Bohus, *op. cit.*, p. 27; DJANH, *Fond Societatea „Lupeni”*.  *Direcția Minelor*, file 4/1925, f. 27-28;.

<sup>86</sup> Krizko Bohus, *op. cit.*, p. 28.

<sup>87</sup> DJANH, *Fond Societatea „Petroșani”*. *D.M. Serviciul Tehnic*, file 81/1931, f. 26.

allowed for the opening of seams nos. 15, 13, 8/9, 7, 5, 4, 3<sup>88</sup>.

Besides the opening of the Vulcan Group following the direction of the deposit, there were concerns for the creation of the technical conditions required by the extractions and enrichment of coal.

In the Crividia creek valley, near Chorin Mine, a central mechanical separation unit was built, with a capacity of 125 tons/hour, driven by an electric motor of 40 HP. The separation unit took over the entire production of the three mines in Vulcan, and starting with 1909 the production of the mine belonging to „The Upper Jiu Valley” Company; it also classified coal into five categories<sup>89</sup> after the removal of the shale.

In 1900 the building of the old Electric Power Station in Vulcan began. The Station had a 100 kVA generator driven by a 130 HP steam engine; in 1905 it was supplemented with a second 190 kVA turbo-machine. The installation was not enough in the supplying of mines belonging to „Salgótarján” Company with electric power, and in 1909 the building of a new power station began in Vulcan; this one could provide power to all the electric equipment of the Company. The Electric Station in Vulcan was commissioned in February 1910: it had two Siemens-Schuckert turbo-generators of 1,080 kVA each, driven by a 1.200 HP Zoelly turbine. In 1913 the third Siemens-Schuckert turbo-generator of 2,500 kVA was ordered. It was driven by a Melms-Pfenniger turbine of 2,700 HP. The entire installation was supplied with steam at 300 °C and 13 atm obtained in five boilers with a burning surface of 409.5 m<sup>2</sup>. In 1910 the Vulcan-Petroșani<sup>90</sup> power line was mounted as well.

Activity intensified at mines and the related activities of Petroșani Group of „Salgótarján” Company. The Group was made of the following mines: *Petrila, East Petroșani, West Petroșani, Dâlja, Aninoasa*. The surface installations were technically improved and they tried to relocate them so that they would become fit for a rational coal mining system. Similarly to Lupeni and Lonea, the Vulcan and Petroșani Groups gradually switched to opening through galleries when opening through shafts, an activity that required new installations once the mines became deeper.

Thus, at Petrila mine, former Deak, in 1912 the prospecting and exploration of the main coal seam came to an end; Deak shaft was deepened to 207 m until 1913, in comparison with 143 m in 1910. The old 60 HP extraction machine, mounted in 1872, was replaced with a more powerful machine, a metal tower for the shaft was built now; extraction or ventilation shafts were mined at the other mines<sup>91</sup>.

Besides the opening and preparation works, which enable the increase of production, we could also mention the introduction of hydraulic embankment, used instead or together with dry embankment at Petrila mine in 1900, with a capacity of 33 m<sup>3</sup>/oră, and in the Vulcan mining compound since 1915<sup>92</sup>. For the sorting of the extracted coal, „Salgótarján” Company used two coal separation units in Petroșani. East Petroșani separation unit, built in 1910, with a capacity of 70 tons/hour, driven by

<sup>88</sup> *Monografia Societății „Petroșani”, 1925, p. 95-112.*

<sup>89</sup> *Ibidem, p. 120.*

<sup>90</sup> DJANH, *Fond Societatea „Petroșani”. D.M. Serviciul Tehnic, file 81/1931, f. 11.*

<sup>91</sup> Papp Karoly, *op. cit.*, p. 711- 715.

<sup>92</sup> *Monografia Societății „Petroșani”, 1925, p. 73, 112.*

an electric engine of 26 HP, separated the coal from East Petroșani and Petrila mines with the help of Westfalia system of mobile screens. The Western Separation Unit, built between 1896 and 1897, had a separation capacity of 90 tons/hour; it was driven by an electric engine of 124 HP and took over the production from the West Petroșani and Dâlja<sup>93</sup> mines.

The electric energy necessary for the mines of the Petroșani Group came from the Electric Power Station, which had a capacity of 500 kVA. The Company of Mines and Furnaces in Brașov built it in 1894 in Petroșani and the same company developed it between 1898 and 1901<sup>94</sup>. The Electric Power Station functioned until 1916, being less used after 1910 and mainly serving as a back up installation<sup>95</sup>.

We presented part of the technical investments carried out in the Jiu Valley. Technical endowment can be considered a prerogative of the Jiu Valley mining activity, which allowed it to attain a level of mining similar to the one practiced in other parts of the Austria-Hungarian Empire and especially to represent a starting point for the following period. Statistics provide us with an image of the achieved progress. Thus, according to an approximate calculation, in 1896 all Jiu Valley mines had tools and machines with an installed power of approximately 1,400 HP.

The mining companies had the following technical utilities:

- The State Mines, leased to „Salgótárján” Company had 1.5 km of underground railroad for transport; 1.7 km surface railroad with horse traction and 7.2 km with locomotives; 4 locomotives of 70 HP; 1 extraction machine of 60 HP; 1 fan, 670 cars;
- „Salgótárján” Company had 25 km of underground railroad, 2.5 km of surface railroad with horse traction and 9 km with locomotives; 5 locomotives with 400 HP; 2 extraction machines of 160 HP; 4 rope car installations; 14 steam boilers of 535 HP; 2 pumps for water drainage; 1 fan; 3 coal separation units;
- „Uricani-Jiu Valley” Company had 22.1 km of underground railroad and 0.8 km of surface railroad with mechanical traction; 4 steam boilers with 90 HP; 2 locomotives; 4 fans; 3 coal separation installations; 502 cars;
- „The Upper Jiu Valley” Company had 1.3 km of underground railroad; 2 km of surface railroad with horse traction; 6 cars.

During the following years, technical means had a more accentuated penetration, and the electric power was used on a large scale, in parallel with the use of pneumatic energy.

It goes without saying that at „Uricani-Jiu Valley” Company the power of the machines used increased from 130 HP in 1896 to 2,161 HP in 1903, 2,492 HP in 1906 and 4,485 HP in 1910, therefore resulted an increase of 34.5 times during 14 years. Significant increases can be noticed at „Salgótárján” Company as well.

According to a presentation in an almanac of Hunedoara county for 1910, in 1909, in the Jiu Valley mines had: 160,142 m of galleries; 14,732 m of car rope transportation; 145,410 m of railroad and an installed power of 6,360 HP; in order to obtain a coal production of approximately 1.5 million tons 10,049 people worked, of

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<sup>93</sup> DJANH, *Fond Societatea „Petroșani”*. *D.M. Serviciul Tehnic*, file 81/1931, f. 14-15.

<sup>94</sup> Andreics Janos, Blascheck Aladar, *op. cit.*, p. 47-48.

<sup>95</sup> DJANH, *Fond Societatea „Petroșani”*. *D.M. Serviciul Tehnic*, file 81/1931, f. 11-12.

which: 44 technical clerks; 81 administrative clerks; 20 foremen; 81 deputies; 3,228 miners; 2,626 car drivers; 3,959 unskilled labourers<sup>96</sup>.

According to a Report drawn up in 1911 by the Mining Inspectorate in Petroșani - institution created that year – there can be noticed that the Jiu Valley used 268.7 km of industrial railroads, of which: 45.6 km for steam locomotives, 8.9 km for electrical conveyance and 16.7 km rope car transportation routes; there existed 23 vertical shafts and seven inclined shafts; there were in operation 11 electric generators with an installed power of 9,853 kVA = 13,400 HP; the power of the steam engines was of 2,900 HP<sup>97</sup>.

The number of tools used in the Jiu Valley mining increased and improved. Besides traditional tools such as: hammers, drills with a diameter of 35 mm, two headed hammers, large hammers, hook to remove the dust from holes, pole, coal shovel, saw, axe etc. Starting with 1902-1903 - in Lupeni, for instance - Hardy percussion drilling machines, Hardy and Elliot drilling machines, drilling machines manufactured in the „Uricani-Jiu Valley”<sup>98</sup> Company’s workshops were used. In 1907, in Lupeni five pneumatic drills and five coal-cutting machines were used and in 1909 the high capacity Diamond coal-cutting machine was tried out, unsuccessfully, mainly because of the ore conditions; in 1911 In the Jiu Valley 30 coal-cutting machines and 217 coal pick hammers were used, the compressed air required for their driving being supplied by 17 compressors<sup>99</sup>.

This technological development was meant from the very beginning to facilitate coal extraction, and gradually production increased from 853 tons in 1868 – the first known production in the Jiu Valley - to 2,229,855.3 tons in 1913, a level of production not to be attained again until the ’40s of the 20<sup>th</sup> century.

At the same time, it needs to be told that this development couldn’t have been carried out without the existence of a labour force able to put into practice a project state-owned or private capital, and the needs of the industrial revolution.

Until the beginning of the industrial exploitation of coal, the Jiu Valley population wasn’t very large. The Jiu Valley population results, besides the natural increase, from two colonisation processes: the first one, of agricultural-pastoral type, takes place between the 16<sup>th</sup> and 18<sup>th</sup> centuries, when the settlements which form the Jiu Valley habitual space today are formed; the second one, of industrial type, starting with the second half of the 19<sup>th</sup> century and through to the ’90s of the 20<sup>th</sup> century. Each of these stages brought to the Jiu Valley groups of population of certain specificity that were to create the ethno-demographic characteristic of the area and would determine quantity and structural changes both in respect of population and in respect of habitat: settlements and houses. Industrial colonisation brought in, during the first stage which lasted until the beginning of the 20<sup>th</sup> century, workers from Transylvanian mining areas, but from other parts of the Austro-Hungarian Empire as well: Romanians, Poles, Ruthenians, Czechs, Slovaks, Austrians, Germans, Hungarians, Serbs, Bosnians etc.

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<sup>96</sup> Henrich Victor, *op. cit.*, p. 115-119.

<sup>97</sup> Alex. Toth, *op. cit.*, p. 89 -90.

<sup>98</sup> Krizko Bohus, *op. cit.*, p. 13.

<sup>99</sup> Alex. Toth, *op. cit.*, p. 90-91.

**Table 1. Coal output of the mines in the Jiu Valley (tons) 1868-1914<sup>100</sup>**

Year	Company		Jiu Valley	Year	Company				Jiu Valley
	The Company of Mines and Furnaces in Braşov <sup>1</sup>	The State Mines			The Company of Mines and Furnaces in Braşov <sup>1</sup>	Uricani-Jiu Valley <sup>2</sup>	The Upper Jiu Valley	The State Mines of Lonea <sup>3</sup>	
1868	852.9	-	852.9	1892	234,856.7	24,567.5	-	-	259,424.2
1869	3,431.3	-	3,431.3	1893	234,434	90,724.5	-	-	325,158.5
1870	10,680.3	16,700	27,380.3	1894	242,007.2	120,761.5	-	-	362,768.7
1871	48,306.2	118,780	167,086.2	1895	299,816	215,151.5	10,995	-	525,962.5
1872	83,117.2	170,992	254,109.2	1896	372,742.6	230,721.7	44,719.2	-	648,183.5
1873	80,920	141,769.1	222,689.1	1897	357,514.4	190,069.7	44,641.4	-	592,225.5
1874	75,859.9	105,730	181,589.9	1898	423,316.8	231,081.2	55,247.1	-	709,645.1
1875	70,110.1	66,430	136,540.1	1899	405,212	220,508.8	66,216.8	-	691,937.6
1876	77,220	63,975	141,195	1900	516,890	288,240.1	75,366.3	-	880,496.5
1877	87,025.6	60,231	147,256.6	1901	563,970	300,082	65,441.3	-	929,493.3
1878	78,108.7	53,096	131,204.7	1902	567,340	298,437.8	80,189.4	-	945,967.2
1879	93,182.4	26,624	119,806.4	1903	687,070	344,918.3	80,000	-	1,111,988.3
1880	136,546.5	-	136,546.5	1904	715,480	349,593	73,460	-	1,138,533
1881	141,613.2	-	141,613.2	1905	819,830	329,158	98,070	-	1,247,058
1882	146,680	-	146,680	1906	821,710	385,005	120,000	-	1,326,715
1883	161,160.5	-	161,160.5	1907	891,100	371,663	112,680	-	1,375,443
1884	189,372.2	-	189,372.2	1908	963,740	400,170	111,800	12,206.1	1,487,916.1
1885	180,322.4	-	180,322.4	1909	1,034,120	475,630	101,800	153,558.5	1,765,108.5
1886	198,422	-	198,422	1910	1,055,830	452,660	94,100	210,782.9	1,813,372.9
1887	187,846	-	187,846	1911	1,102,810	506,280	108,400	204,037.1	1,921,527.1
1888	192,735.9	-	192,735.9	1912	1,208,750	513,750	114,900	134,440.2	1,971,840.2
1889	198,880.6	-	198,880.6	1913	1,282,540	643,000	124,300	180,015.3	2,229,855.3
1890	228,487.4	-	228,487.4	1914	1,156,900	548,500	62,900	171,163.5	1,939,463.5
1891	233,519	-	233,519						

Why would such a process occur? Because the native population, the peasants, represented a numerically insufficient, unskilled labour force for the industrial activity to be developed and which, with small exceptions, refused to get a job in the mining industry. Under these circumstances, the state and the mining companies involved in coal extraction brought in the labour force from other areas, a usually skilled labour force, with a certain professional and cultural standard, able to put to good value the riches of the soil and to form here an industrial and working area with a specific feature.

Gradually everything in the Jiu Valley will be dedicated to mining, but this activity inevitably determined the appearance in the Jiu Valley of other activities, some directly, some indirectly connected with the work in the underground. This will determine the arrival, besides of the miners and of their families, from the same or different areas, of other social and professional groups, the basin developing as an integrated industrial group, with both positive and negative consequences on population: dynamic, structure, living standard etc., according to the mining activity's evolution.

<sup>100</sup> C. Hoiescu, *Minele de cărbuni din Valea Jiului (Petroşani)*, Analele Minelor din România, III, 1920, nr. 2, p. 114; *Monografia Societăţii „Petroşani”*, 1925, p. 142-143.

1. Until 1894, the Company of Mines and Furnaces in Braşov; between 1895-1920, the „Salgôtárján” Company; between 1921-1948, the „Petroşani” Company.

2. Between 1892-1924, the „Uricani-Jiu Valley” Company; between 1925-1931, the „Lupeni” Company.

3. Between 1908-1925, the State Mines of Lonea; between 1926-1948, the „Lonea” Company

Censuses, as well as other statistical data indicated a constant increase of population<sup>101</sup>.

**Table 2. Population evolution**

Year	1854	1870	1880	1890	1900	1910	1920
Population	6,770	12,671	16,001	18,701	28,711	49,971	60,053

And the labour force used in mining evolved from 65 employees in 1868 to 1,005 employees in 1882; 4,652 employees in 1900; 10,049 employees in 1909 and 13,860 employees in 1913<sup>102</sup>. All those who came to the Jiu Valley, beyond the motivation offer by work, did it to earn money and for the standard offered by the Jiu Valley's urban endowment. Many of those who came to the Jiu Valley, especially during the first period, came not only from mining areas, but also from areas with a certain living standard and those who brought them here were aware that they had to ensure for them at least the same conditions as they had in the place they left if not higher.

That is why the state and the mining companies were preoccupied to create an urban space through social, cultural and municipal endowments such as: workers' neighbourhoods (colonies) and housing for clerks, administrative and industrial buildings, hospitals, schools, churches, rest and relaxation locations etc. that would support mining in order to develop an integrated industrial compound, with a specialised labour force, able to answer the requirements of a complex activity, the land hiding secrets difficult to unveil and at the same time dangers that make the miner's work difficult and risky. From this development the Jiu Valley industrial complex is gradually created, which will play an important role in the general progress of the Romanian society during the past 150 years.

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<sup>101</sup> *Buletinul guberniului provinciale pentru Marele Principatu Transilvania*, Cursul anului 1854, Secțiunea II, Mănunchiul IV, p. 110-111; *A magyar szent korona országainak. 1910. Evi. Nepszámlálása*, Budapest, 1912, p. 858; C. Martinovici, N. Istrate, *Dicționarul Transilvaniei, Banatului și celorlalte provincii alipite*, Institutul de arte grafice „Ardealul”, Cluj, 1921, p. 29-30.

<sup>102</sup> *Monografia Societății „Petroșani”*, 1925, p. 142-143.

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## **COUNTRY RISK WITHIN CEE AREA: EMPIRICAL PERSPECTIVE ON CORPORATE COST OF EQUITY**

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CRISTINA MARIA TRIANDAFIL\***

**ABSTRACT:** *This paper studies corporate exposure to country risk from the perspective of the cost of equity. Indeed, corporations located into emerging countries are perceived as being riskier; therefore, investors require higher returns which increase the financing costs. Under these circumstances, financial managers face the challenge of quite a tough balance to keep up with: valorising the growth potential offered by the emerging countries on the condition of implementing powerful financial strategies, capable of protecting the corporation from the macroeconomic volatility. This research develops a practical approach on the way exposure to country risk impacts company's financial balance, with a deep keen on the operational support offered by various methodologies that analysts get use of within the assessment process.*

**KEY WORDS:** *country risk, corporate, exposure, equity, financing*

### **1. INTRODUCTION**

In the context of the actual borderless world, capital flows have directed towards the most attractive spaces in terms of return. As higher return is equivalent always to higher risk, new techniques have been implemented in order to assess in a more accurate way credit risk. The strongest points that are always pointed out as for the emerging countries imply strong currency, budget surpluses and a high rate of local consumption. The lack of correlation between their financial systems and the largest capital markets enabled specialists to conceive them as an important element in case of financial crises since investors have the opportunity to direct the capital inflows towards them in order to get a higher protection.

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The negative aspects imply higher volatility, lack of transparency and liquidity. At the global level, there is a keen interest directed towards emerging countries because of the potential growth perspectives offered to the multinational companies and to the low labour cost. Outsourcing became one of the most important strategies developed by all world-wide level corporations.

Emerging countries are considered to be riskier than developed ones. The additional risk consists of macroeconomic volatility deriving from exchange rate depreciation, inflation, unpredictability of the fiscal system or institutional and political instability.

Nevertheless, corporations are attracted by the higher growth potential and it is quite challenging for the financial manager to accurately assess and manage the additional country risk premium. The cost of equity characteristic to corporations from emerging countries must integrate the company exposure to country risk.

This research points out the way cost of equity varies under the impact of the country risk premium characteristic to corporations located into East European emerging countries. Section 2 contains a literature review and section three integrates the case-study and the conclusions.

## **2. SECTION 2**

The actual literature on the international cost of equity represents various approaches either on the possibility to adapt CAPM in order to integrate company exposure to country risk (Ferson and Harvey, 1995), either on the opportunity to compute international cost of equity by the integration of the additional country risk premium to the risk-free rate and to the volatility characteristic to the industry the company activates in (Godfrey and Espinosa, 1996, Pereiro and Galli, 2000, Damodaran, 2003).

Lee, Ng. and Swaminathan (2005) elaborated an implied cost of capital based on the market prices. Cash-flows are forecasted and the discount rate that makes the present value of these cash-flows equal to the market prices represents precisely the cost of equity.

Analysts criticized the low degree of certainty relative to the forecasted cash-flows. Many studies pointed out that country risk premium can be quantified by the spread relative to the corporate bonds issued on the international capital market. The problem consists of the fact that bond spreads are not available for all the emerging countries. Erb, Harvey and Viskanta (1996) proposed to run a regression of observed sovereign spreads on country risk ratings in order to determine the implied sovereign spread for a country which does not have government bonds.

Damodaran criticizes the fact that bond spreads are used in order to quantify the cost of equity since bonds represent debts. He proposes to assess the cost of equity using as country risk premium the link between the equity markets reflected into the covariance of the most representative capital market indices.

This paper valorises Damodaran approach in terms of international cost of equity assessment. The research points out the difference between the international cost of equity which integrates country risk premium and the idiosyncratic cost of equity,

computed at the firm level variables. The novelty of the approach consists of the orientation towards the East European emerging countries. Previous researches on this topic concentrated on the Latin American emerging countries. The findings reveal out that company exposure to country risk has an important impact on the corporate financial soundness. An increase of at least 1% of the cost of equity by the integration of the country risk premium proves that macroeconomic environment acts as a key element as for the profitability of the company.

### 3. SECTION 3

This section contains a research on a panel of industries located into emerging countries. There have been considered 101 industries - from utility to advertising- for which there has been determined the cost of equity from the perspective of the corporate delocalization into the East European emerging countries. Practically, there has been developed the perspective of a potential delocalization of the corporations into the East European emerging countries from the point of view of the impact of the country risk on the cost of equity.

Valorizing the database posted on the Damodaran site, there has been computed the cost of equity by the integration of the country risk premium.

**Table 1. Descriptive statistics of the cost of equity integrating the country risk premium characteristic to companies delocated into East European emerging countries**

	<b>Bulgaria</b>	<b>Slovakia</b>	<b>Hungary</b>	<b>Poland</b>	<b>Romania</b>
Mean	0.127749	0.108442	0.115175	0.109927	0.118903
Median	0.123489	0.103989	0.110789	0.105489	0.114015
Maximum	0.189627	0.170127	0.176927	0.171627	0.179927
Minimum	0.042300	0.042300	0.042300	0.042300	0.089327
Std. Dev.	0.020460	0.019725	0.019963	0.019776	0.018664
Skewness	0.110157	0.534860	0.401384	0.506846	0.982582
Kurtosis	5.768.272	4.361.443	4.745.497	4.436.943	3.738.971
Jarque-Bera	3.245.412	1.261.587	1.553.379	1.301.376	1.836.647
Probability	0.000000	0.001822	0.000424	0.001493	0.000103
Sum	1.290.264	1.095.264	1.163.264	1.110.264	1.189.034
Sum Sq. Dev.	0.041862	0.038906	0.039852	0.039107	0.034488
Observations	101	101	101	101	100

*Source own processing*

Then there will be computed the differences between the costs of equity determined according to the methodology that integrates country risk premium and the cost of equity that does not consider for it. A deep analysis at the level of the descriptive statistics characteristic to the differences will reveal out the impact of country risk premium on the cost of equity. The methodology that has been used in

order to determine the cost of equity by the integration of the country risk premium is represented by the Beta approach depicted in the Damodaran working paper of 2003.

$$\text{Cost of equity} = \text{Riskfree rate} + \text{Beta} (\text{Mature Market Premium} + \text{Country Risk Premium})$$

The risk free rate will be considered the interest rate corresponding to the European government bonds – 4.23% while the mature market premium will be scaled around 4.53.

Analyzing the output enclosed into the first table, it is obvious that Bulgaria appears to impose the highest cost of equity, followed up by Romania and Hungary. The highest level is supported also by the standard deviation indicators which points out the idea that the cost of equity is the most volatile in the case of Romania and Bulgaria.

The cost of equity distribution seems to be leptokurtic, underling the idea that the probability for an extreme event, with disturbing consequences on the East European emerging markets is higher.

As for the idiosyncratic dimension, closely related to the industry level risk, banking, oil processing and food industry are the lowest risky industries while e-commerce, entertainment and equipment are the riskiest.

**Table 2. Descriptive statistics of the differences between the cost of equity integrating the country risk premium characteristic to companies delocated into East European emerging countries and the cost of equity which does not integrate the country risk premium**

	<b>Bulgaria</b>	<b>Hungary</b>	<b>Poland</b>	<b>Romania</b>	<b>Slovakia</b>
Mean	0.028848	0.016148	0.010848	0.019148	0.009348
Median	0.029104	0.016404	0.011104	0.019404	0.009604
Maximum	0.030727	0.018027	0.012727	0.021027	0.011227
Minimum	0.025227	0.012527	0.007227	0.015527	0.005727
Std. Dev.	0.001095	0.001095	0.001095	0.001095	0.001095
Skewness	-0.966299	-0.966299	-0.966299	-0.966299	-0.966299
Kurtosis	3.755.725	3.755.725	3.755.725	3.755.725	3.755.725
Jarque-Bera	1.794.190	1.794.190	1.794.190	1.794.190	1.794.190
Probability	0.000127	0.000127	0.000127	0.000127	0.000127
Sum	2.884.837	1.614.837	1.084.837	1.914.837	0.934837
Sum Sq. Dev.	0.000119	0.000119	0.000119	0.000119	0.000119
Observations	100	100	100	100	100

Source own processing

The difference between the cost of equity integrating the country risk premium and the cost of equity which did not integrate it reveals out the fact that macroeconomic environment stability is a key element within the process of cost of equity assessment. The difference between the two indicators lies between 1% and 2%.

The highest difference is recorded in the case of Bulgaria while the lowest one is recorded in the case of Slovakia. Romania holds quite a medium position.

These findings point out the fact that country risk premium is a key element that must be considered in the design and implementation process of the financial management strategies adopted by the corporations which delocate their activity in East European emerging countries. Growth perspectives are higher, but risks are correlated with, which implies the fact that company exposure to country risk, together with industry volatility becomes another important part of the cost of equity architecture. Therefore, relative to corporations located into developed countries, financial management developed within emerging countries located corporations is more challenging, implying additional efforts in terms of quantification and management strategies.

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## **RESEARCH AMONG MANAGERS OF AGIP STATIONS IN ADMINISTRATION FROM ROMANIA, REGARDING THE DISTRIBUTION SYSTEM EFFECTIVENESS AND EFFICIENCY**

**MĂDĂLINA BRUTU \***

**ABSTRACT:** *The present work brings forward a research performed at the level of the managers of Agip stations from Romania, which are in administration, regarding the distribution system efficiency and effectiveness. By means of such research we aimed at: a clearer comprehension of the partnership between S.C. Agip Romania S.R.L. and the managers who administrate the stations, regarding the distribution system; the accurate identification of the system of supply with merchandises of the stations found in administration, of its efficiency and effectiveness; the observation of the efficiency or inefficiency of the transport, manipulation and merchandises storage activities; the analysis of clients satisfaction degree related to the method of acquisition of the merchandises in these stations etc. In order to fulfil the research objectives, we used as data collection instruments the observation on site, the discussions with the stations managers, the investigation of the documents placed at by dealers and the questionnaire.*

**KEY WORDS:** *research, managers, Agip, station, administration, distribution, study*

### **1. AGIP LTD ROMANIA - MEMBER OF THE GROUP ENI**

"Azienda Generale Italiana Petroli" (A.G.I.P.) was established in 1926 at the initiative of Italian government to trade products of mineral oils (Agip Manual for the operation of service stations and fuel distribution). In 1953 the company was restructured and its field of activity widened. Agip, the core company of the Eni energy holding is active in the Downstream (supply, refining and disposal of products of mineral oil) in the world.

In 1952, in Italy, to Cortemaggiore was found oil. The president of Agip at that time, Enrico Mattei, decided to designate the fuel "Supercortemaggiore" and represent the

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name with a symbol. There was a contest and of all drawings and graphs presented it was elected this “dog with six legs” of the Italian drawer Giuseppe Guizzi. Since then, **the dog with six legs** wish welcome at Agip gas stations to millions of drivers around the world. The energy holding was founded in 1953 as a state-Italian enterprise (Ente Nazionale Idrocarburi). Eni is one of the leading companies from Mineraloil branch and methane gas, and since 1995 is listed on international stock exchanges (Milan and New York). Until today (after four sale stages) 63.4% were privatized. With 36.6% of the shares, the Italian state is still in possession of the "golden share" (Agip Manual for the operation of service stations and fuel distribution).

**Agip Romania Ltd** is present in Romania since 1995 and has as main activity the construction and operation of service stations and fuel stores, the management of stores in stations, the marketing of lubricants, greases and maintenance of AGIP products, and LPG commercialization. Agip is a company owned by Eni SpA in Eni International BV Amsterdam (99.95%) and by private associates (0045%) ([http://www.agip.ro/ro/html/folder\\_1757.shtml](http://www.agip.ro/ro/html/folder_1757.shtml)).

One of the main objectives of the company Agip Romania is the expanding of the network of service stations and fuel distribution in order to achieve a market share of 10% nationally, through the purchase or construction of Class A stations and through a policy of total quality services.

- *Name of organization:* Agip Romania
- *Headquarters:* Headquarters of Agip Romania is in Bucharest, Barbu Văcărescu Street, nr. 162, District 2.
- *History:* Agip Romania was established in 1994 and begun its activity in 1995.
- *Useful information:* Agip România is established under Law 31/1990 and has the following identification data: unique registration code: 6811583; tax attribute: RO; order number in the trade register: J40/27493/23.12.1994; no. Associate: 1 associated with the social parties 100%.
- *Filed activity:* areas in which it operates are the distribution of petroleum products and the retail.

The main activity according to the certificate of registration tax is: *Retail trade of fuels for motor vehicles - CAEN code 5050.*

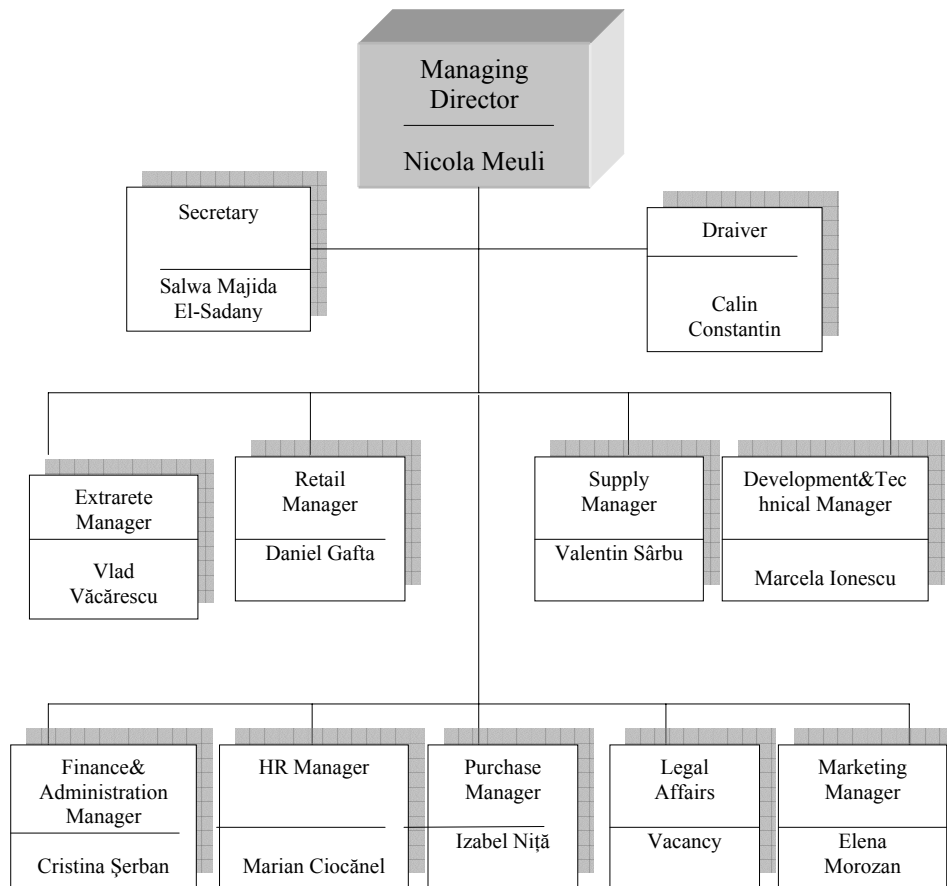
The main range of products and services that our society accomplishes are:

- retail distribution of motor fuel through the network of own stations and the associated ones;
- auxiliary services for motor vehicles;
- sales of goods and non-food goods in stores associated to fuel distribution stations;
- activities of bar and restaurant in their own stations;
- distribution and transportation of LPG for heating and auto traction through their own and associated networks;
- transport and distribution of automotive and industrial lubricants;
- distribution and transportation of fuels and motor fuels in the Wholesale.



Agip Ltd. Romania changed its legal form of organization in 2006, becoming Agip Ltd Romania; this was announced in a communication of the company. "The change does not have an impact on contracts and commitments of Agip Romania, which are still valid for the duration specified, it was reported in a communication of the company. The sole administrator of the new companies registered at the Registry of Commerce, is **Nicola Meuli**.

Agip Ltd. Romania has a pyramidal organization chart as seen in Figure 1.



**Figure 1. Organization Chart of AGIP Ltd Romania (S.C. Agip Romania S.R.L.)**

Therefore, the General Manager Nicola Meuli coordinates the activities of nine managers who operate a number of departments. The organization of Agip Ltd Romania successfully contributes to the achievement of an effective and efficient leadership and coordination, reflected in economic and financial results.

## 2. INTERNATIONAL ACTIVITY

AGIP, the core company of the Eni energy holding is active in the Downstream (supply, refining and disposal of products of mineral oil) in the entire world.

Eni is active in 75 countries around the world with over 79,000 contributors, and produces approx. 653,000 barrels oil per day and sells over 58 billion m<sup>3</sup> of gas per year.

In international rankings of Mineral oil companies listed on stock exchanges, Eni occupies the following positions:

- position 8<sup>th</sup> in the world in total production;
- position 7<sup>th</sup> in global reserves;
- position 4 in Europe in refining;
- position 2<sup>nd</sup> in quantities of gas sold on the European market;
- position 1<sup>st</sup> in Europe in petroleum chemistry.

Under the brands of "Agip" and "IP", it has in Italy a network of over 10,000 service stations and fuel distribution, i.e. a market share of over 40%, being the leader on the Italian market in downstream. To these, it also adds 6 own refinery, which processes annually approx. 40 million tones of crude oil and semi-processed products.

Outside Italy, Agip has, through its subsidiaries and branches, a network of approx. 3,000 service stations and fuel distribution in Europe, Africa and Latin America. Agip is part of the few companies that cover the entire production cycle of lubricants: from receipts and the industrial production of additives and base oils to reconditioning of waste oils. The premises for these are the permanent research, at all levels of processing oil. Research is done in the research center Agip EURON - one of the most modern in Europe - in San Donato Milanese near Milan.

## 3. THE RESEARCH AMONG MANAGERS FROM AGIP STATIONS IN ROMANIA, WHICH ARE ADMINISTERED AS REGARDS THE EFFECTIVENESS AND EFFICIENCY OF THE DISTRIBUTION SYSTEM

Agip in Romania has established a network of 37 petrol stations. Of the 37 petrol stations, 6 are in administration: 2 in Bucharest, 2 in Pitesti, one in Craiova and one in Targu Jiu. These stations and more precisely their distribution system, have been at the centre of an author's concerns, being realized a comprehensive research among those who manage these petrol stations.

*a. Purpose and objectives of the research* consisted in identifying the correct and comprehensive efficiency and effectiveness of distribution system, as well as the importance Agip Ltd Romania (on the one hand) and Agip Ltd Romania -stations in the administration (on the other hand) are conferring to the system.

Starting from their objective, by the research it was aimed the achievement of the following *objectives*:

- Clearer understanding of partnership between Agip Ltd Romania and managers who manage the stations, as regards the distribution system;
- Appropriate identification of the supplying system of goods in stations in administration and more specifically, of its efficiency and effectiveness;
- Observing the efficiency or inefficiency of the transport, handling and storage of goods;
- Analysis of the degree of satisfaction of customers about how to buy goods from Agip stations;
- Identifying the degree of satisfaction of Agip dealers in connection with the partnership agreement concluded with Agip Ltd Romania.

*b. Research methodology.* Marketing research (Balaure, 2003, p. 126) represents the formal work through which, by means of concepts, methods and techniques of scientific investigation, are carried out the specification, measurement, data collection, analysis and interpretation of marketing information for leadership to know the economic environment in which they work, identifying opportunities, evaluating action alternatives of marketing and their accomplishment. The literature of specialty, a modality of approaching reality and the nature of the goal, notes the existence of two types of marketing research: quantitative (that is studying the objective reality, in accordance with the principles of positivism, aiming to identify its representative aspects) and qualitative (which approaches reality through a naturalistic and interpretive manner, aimed at highlighting its significant aspects) (Cătoi, 2002, p. 191).

In order to meet the research objectives, as instruments for collecting data on the spot observation, the discussion with station managers, research documents available from dealers and questionnaire, were used. The questionnaire is a formalized set of questions designed to generate the necessary data for accomplishing objectives of marketing research. It has the advantage that it is an inexpensive way to gather information. (Cătoi, 2002, p.311) Information obtained on the basis of questionnaires are quantitatively and qualitatively, can be detailed according to certain criteria, to enable a thorough knowledge of some aspects of the market that can not be approached based on data from secondary sources (Colibaba, 2001, p.62).

The investigated unit is represented by all managers of stations Agip Ltd Romania, which are in the administration. They are: Mr. Andrei Brutu (an economist by profession), which manages two stations located in Pitesti (Agip Pitesti Balcescu and Agip Pitesti Republicii), Mr. Calin Dumitrescu (an engineer by profession), which manages two stations located in Bucharest (Agip Rahova and Agip September 13) Mr. Florin Nărmzoiu (an engineer), which manages a plant in Craiova and Mr. Nicolae Chilea (an engineer), who manage an Agip station located in Targu Jiu.

*c. Results of research.* The conclusion of the research revealed that all managers from Agip stations are satisfied or very satisfied with the partnership Agip Ltd Romania, which is obviously a happy prerequisite for the success of their business. From the questionnaires, it resulted the fact that Mr. Chilea Nicolae, manager of Agip station in

Targu Jiu was first involved in the partnership with Agip Romania, being at the same time, the most pleased with this collaboration (the years when the stations were put into administration are presented in table below).

**Table 1. Years in which Agip stations were put into the administration**

<b>Critical no.</b>	<b>Station put into administration</b>	<b>Year in which it was put into administration</b>	<b>Manager of the station</b>
1	Agip-Târgu Jiu	2001	Chilea Nicolae
2	Agip-Craiova	2001	Nărămzoiu Florin
3	Agip-Pitești, Bălcescu	2002	Brutu Andrei
4	Agip-Pitești, Republicii	2005	Brutu Andrei
5	Agip-București, 13 Septembrie	2007	Dumitrescu Călin
6	Agip-București, Rahova	2008	Dumitrescu Călin

The table shows that the last one who concluded partnerships with Agip is Mr. Calin Dumitrescu, who manages two stations in Bucharest. This happened because until 2007 the policy for Agip stations in Bucharest did not provide their putting into administration. However, based on the good results of the stations in Pitesti, Craiova and Targu Jiu, since 2007, the leadership of Agip found as appropriate the administration of stations in Bucharest, too (for the moment only two such stations were put into administration).

The main problems that the dealers are copying with in managing the business are: excessive centralization of business; lack of clear demarcations of each person who is developing their tasks in the headquarter; cumbersome communication with Agip Romania headquarter; inefficient sustaining of the activity in the territory, in comparison with stations in Bucharest; competitive advantage of the other direct competitors (in particular, OMV and Rompetrol) arising from their marketing campaign/ image, and also, from a better coverage of the territory of Romania (as compared with Agip).

Regarding the policy of imposing the providers by Agip Ltd Romania, 50% of managers consider it a very good fact, 25% that is a good fact and 25% that it is not a very good fact. 75% of managers are satisfied with the Agip providers (i.e. managers in Pitesti, Craiova and Targu Jiu), the manager from Bucharest being displeased.

Working with a single system provider is considered appropriate by half of the managers, the other half finding it as inappropriate, preferring the collaboration with other providers (in particular with alcohol beverage suppliers, automotive accessories and video). The research revealed that all managers consider the supplied goods as being of a good and very good quality, which is an important argument for the success of the distribution and in general, for the success of the business.

Some of the managers have complained, however, of the supply variety. Agip Ltd Romania does not allow but the purchase of listed goods, which, unfortunately, is quite limited. Managers of the stations in Bucharest and Pitesti argue that they made a series of

surveys among customers, the result being that many of them would like the offer of products to be more varied. The managers mentioned above explain this shortcoming in that the stations are working non-stop, especially at night, and are required a series of products, which, unfortunately, are unlisted. These managers have said that complaints were often made in the office, concerning the desire of diversification in the range of goods, but unfortunately the reactions were not as expected.

Another minus of the distribution policy of Agip Ltd Romania -stations which are in administration is represented by the fact that goods happen to get damaged in the station (in the station in Craiova this is happening very often). This is due to improper storage or supplier, or handling or transport.

In what concerns the conditions of storage of goods in the stations, three managers consider them as appropriate, the only problems existing in the station in Craiova, which does not amount to Agip standards, requiring, according to his manager, modernization actions. Mr. Florin Nărămzoiu believes that if these actions are not taken soon, the station results will be increasingly weak, especially because of the fact that in Craiova, the system competition is fierce, and Rompetrol stations and, especially, OMV seem to increase their market position, obviously to the detriment of the station that he manages.

All Agip dealers conducted surveys among customers, and it emerged that they prefer Agip stations, in particular, because of proximity and diversity of the supply. It happens however that a portion of customers to buy products here because of the brand, but they are especially Italian persons or employees of Italian companies, which typically have concluded cooperation agreements.

*d. Conclusion of the research.* As a consequence of the research, it was revealed that all managers of Agip stations in administration consider the distribution policy as having an essential role in the business that they manage (business of which they are satisfied and very satisfied). Also, all these managers consider the goods supplied as a qualitative one- an essential argument to the success of the business. The vast majority of Agip stations put into administration, benefit from optimal conditions of storage, the only problem existing in Craiova stations which require investments to modernize.

Concerning the collaboration with a single provider system, views are divided: 50% finding this as the appropriate solution, 50% finding it as inappropriate (preferring collaboration with other suppliers).

The main minuses of the distribution policy (in addition to the problems faced by the station in Craiova) are determined by: quite limited offer of listed products and the incapacity of purchasing other products; rigidity of the distribution system, excessively centralized, which are limiting their processes at the level of stations put into administration.

The main advantages of the distribution policy are represented by: strong operativity of the made processes concerning the supplying activity; good quality of goods; efficiency of transport, handling and storage; special attention given to customers and their needs by Agip Ltd. Romania and by Agip stations put into administration. During

the research, an aspect has consistently being shown out: that all managers consider customers as an essential element of their business. They are permanently concerned with their needs, convinced that the degree of customer satisfaction directly influences the success of their business.

In conclusion, the research revealed that the distribution policy occupies an essential role in the business. The distribution system of Agip Ltd. Romania stations (which are in administration) is an effective one, but there are a number of minuses that need to be fixed.

#### **4. CONCLUSIONS OF THE STUDY**

Agip Ltd. Romania is a member of the group ENI, whose main activity is *Retail trade of fuels for motor vehicles - CAEN code 5050*. The distribution network consists of 37 petrol stations of which 6 are in administration. These stations were found at the centre of the author's preoccupations and more precisely, their distribution policy. In this sense, complex research at the level of the managers was accomplished, and it revealed that the policy distribution incubates many advantages, but, unfortunately, also, some minuses that need to be remedied.

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## **DEVELOPMENT OF ENTREPRENEURSHIP IN MARKETING GROUPS IN AGRIBUSINESS IN THE LIGHT OF THE LITERATURE**

**ANNA BRZOWSKA, ARKADIUSZ NIEDZIÓŁKA \***

**ABSTRACT:** *A marketing group is an association of producers who agreed to sell their farms jointly, as a group. The group takes responsibility for widely understood marketing of agricultural products I.E. preparation, supply, promotion, and distribute of these goods. Farmers' groups, in order to generate possibly highest profits, usually merge production-related and marketing functions, which leads to rise in.*

**KEY WORDS:** *group, marketing group*

### **1. INTRODUCTION**

First attempts to organize joint entrepreneurship in Poland made by individual agricultural producers were initiated after the year 1989. Difficulties in the market of agricultural products and growing costs of production resulted in intensification of this process after 1994.

Farmers' organizations combine two attributes: self-help and co-management, which generate a variety of essential functions: integration, self-government, coordination as well as initiation and implementation of economic changes. Particular emphasis is on self-government function of farmers' organization, which manifests in four areas [Kuśmierz-Gozadalik 2003]:

- active approach to organization,
- operation of the organs that are self-elected,
- business activity based on economic account, ensuring benefits to the members, mainly through economies of scale,
- protecting and representing of the members' and consumers' interests.

Currently more and more farmers' organizations emphasize the necessity of performing of a new function, i.e. combined social and educative function in terms of

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impact of the organization of local society. The process of organization of people and creation of organizations had already been known long before the first considerations on the subject appeared [Skowron-Grabowska 2006].

According to Zieleniewski [1976], this process has been in existence since living organisms, through conditioned reflexes, started organizing their individual activities and then established the order for component activities and also since human race started uniting in groups in order to achieve joint goals. Kotarbinski argues that the term *organization* denotes an idea whose all components contribute to its success.

Gliniski and Lutoslawski [1976] emphasize duality of the meaning of *organization* as an institution and as a solution created as a result of organizational activities. A more precise approach to the concept of organization was described by Bernatene [1958], who claimed that *organization* is an entirety of the principles, methods and means which enable optimal use of all elements that take part in the process of production, i.e. workers, materials, raw-materials, space, time and capital.

Wider importance of an organization was observed by Ashby [1962], who argued that an essence of a concept of *organization* is the concept of conditioning. Hence theory of organization, according to that scholar, partially converged with the theory of function with more than one variable. March and Simon [1964] treated an organization as a system of interrelated social behaviour of a particular number of persons, who are termed as members of the organization and as a form of peoples' uniting in order to reach common goals.

These definitions are still fresh, also in contemporary times. The organization can be based on a variety of ordering principles, giving rise to the development of different models. The model that is most frequently referred to in the literature is a Leavitt's [2001] model. It comprises six subsystems: goals realized by an organization and resulting from their actual activities, persons with their individual and joint tendencies and behaviour patterns, material, technical and technological equipment with particular rules for using them, formal structure, i.e. adopted rules for division of tasks and responsibility for performance of these tasks, management and the management-related responsibility for the organization, system of information.

The group is usually established where a person or a group of persons perceives an opportunity to improve its financial standing through rise in products' sales figures within the group [Pudelkiewicz 1990]. Economic needs are thus a main reason for setting up a group. Its efficiency typically depends on individual persons that coordinate the activities of the group. According to S. Mika [1984], a group means two or more persons with direct interaction between each other, who follow jointly established standards, set common goal, exist within a developed group structure and have a sense of independence of their group in relation to other groups.

In order for particular persons to be accepted by a group, they must keep in regular contact with each other. Participation to a particular social group creates some ties and relationships between its members, which results from e.g. communication. Impact of a group on individual members is usually very strong.



## **2. DEFINITIONS, SCOPE AND FUNCTIONS IN MARKETING GROUPS**

There are a number of definitions of marketing groups in the literature which are used interchangeably. In practice, however, the scope of their activities and the function slightly differ. The meaning of *producer teams* has gradually evolved into a *marketing group*. This results from transition of a single distribution channel into local and superregional wholesale markets and commodity exchange, including national and international markets. The most important change results from the switching from distribution management to marketing management. Direct contact with the market causes switching from vertical integration, focused on finding profitable markets, into horizontal integration with its goal of possibly best adaptation of supply to demand [Brzozowska 2002].

*Producer groups* (producer teams) are specific farming associations and organizations which associate farmers who produce different products and which often have social and political goals.

A *marketing group* is an association of the producers from a particular branch, who belong to the group mainly for business or commercial reasons, in order to jointly solve economical problems. Marketing groups are typically initiated by agricultural producers in order to [Pudełkiewicz 1999] ensure: promotion and concentration of supply as well as stabilization of the prices on an expected level, producer for one or several products, popularization of scientific progress in production and marketing among the members, sales of the whole production as a group, using of common commercial policy within the group. Therefore, a marketing group is an organization created in order to concentrate the supply of particular agricultural products and implementation of coherent commercial standards and common commercial policy.

A marketing group is also an association of producers who are obliged to sell all or a part of their products through their own organization. The members must obey the adopted obligation to use a specific production technology and follow quality standards. Coherent, in terms of quality, products reach the market under the trademark (a company, logo) of the marketing group in a way and in quantities determined according to the adopted commercial strategy in the group (Fig.1).

Therefore, a marketing group is an organized (even if not registered in court) group of producers, mainly of one product or a group of products, whose goal is to organize joint sales of products and purchase means of production. A marketing group is a voluntary association of producers who expressed the wish to sell their products jointly, as a group. These groups are usually connected with the marketing of a single agricultural product or a single type of products [Brzozowska, 2002].

## **3. ENTREPRENEURSHIP AMONG MARKETING GROUPS**

A marketing group operates on the basis of a precisely adopted set of rules which encompass all the aspect of the business. An essential condition here is adopting of the Statutes that define the rules for operation by the farmers that make up the group. The agreement between the members might oblige each of them to sell the whole or a part of the agricultural commodities through the group.

FARMS PRODUCENT GRUP	
Specialization and simplification of production - limitation of the variety - extended scale - reduction in types of expenditures	
Joint organization of counselling	Uniform manufacturing technologies and products - determination of the market and recipients - definition of the product - manufacturing using uniform technologies and standards
Negotiations Organization of deliveries Purchase financing	Joint purchase of means of production
Storage rooms sorting, packaging and processing lines	Creation of large batches of uniform commodities Joint preparation of the product with uniform standard (sorting, cleaning, packaging, storage)
Negotiations Organization of marketing and sales	Common market offer, marketing and sales, trademark
Organization of the transport	Product distribution: - wholesale market - supermarket chain - street markets - retailers - processing companies

Source: own study

**Figure 1. Diagram of activities in a marketing group**

Farmers set up marketing groups in order to strengthen their position during commercial negotiations and also in order to reduce distribution costs through sharing these costs over a bigger number of products and striving for uniform rise in production value both through approaching the final consumers and through processing of the products before sales.

“Groups allow farmers to reinforce their market position through extension of the scale of their offer, which, on the other hand, helps them reduce dependency between the market and individual producers. Flexibility provided by a marketing group reinforces its position in the market through more coherent and reliable adaptation to the producer group and their supplies. Marketing group, through combining its means, must ensure its members the access to wide range of new market opportunities. Focus of one or a few members on the sales, frequently with aid of a marketing expert, should improve understanding of the market rules and should permit to improve efficiency of marketing decision-making. Therefore, in well-organized groups, the risk of low prices should be reduced while the risk of problems with sales can be eliminated through implementation of distribution of the products to different markets” [Gurgul, Brzozowska 2002; Kot 2001].

Marketing activities in a group can be focused e.g. on selection of best markets and support to its members to meet the expectations imposed by these markets so that a rise in profit for each farmer can be obtained. A marketing group is typically created in order to sell products produced by its members, but also in order to provide counselling, trainings and purchase of means of production. The success requires involvement of each member, confidence in the group’s managerial staff, and adoption

of fundamental principles of cooperativeness - collectiveness, responsibility and co-financing. Therefore, a marketing group can be understood as a voluntary association of the producers who agreed to sell the products from their farms jointly, as a group, since the group ensures widely understood marketing of agricultural goods, relating to: preparation, supply, promotion, distribution.

The groups of farmers, in order to generate maximal profits, usually merge production and marketing functions, which, in consequence, determine this producers' organization as a producer marketing group. The members of this group are obliged to cooperate and to be loyal, which excludes competition within the group. Such relationships within the marketing group are conducive to success. Therefore, these organizations should focus on adaptation of agricultural production to ever-changing expectations and tastes of the recipients and common sales [Górka 2000].

A marketing group is an association of the producers from one branch, who belong to the group for business and commercial reasons in order to cope with economical problems as a group. Marketing group is a result of the evolution from producer group, which, having left the primary market, processes its own raw materials, sells them from its own retail chain or exports by means of its own export agency [Pudelkiewicz 1999]. Marketing groups are supposed to facilitate production processes and to increase its efficiency in order to improve farmers' income on their own production, since improvement in income rates is an overriding goal, obtained through indirect benefits that result from joint activities. The most important activities include [Boguta 1997]: opportunities of higher prices for the products, opportunities to purchase means of production at lower, wholesale prices, joint investments, sales costs reduction through elimination of agents, rise in share of agricultural producers in trade margin through increase in value added for the sold agricultural commodities.

Participation in marketing group brings a lot of benefits and opportunities to the farmers. What they can benefit from is e.g. [Kuczek 2000]:

- higher prices for their products as compared to those which can be reached by an individual producer,
- opportunities of common purchase of quality fodder and other means of production at lower prices,
- opportunities of concluding long-term contacts with wholesale recipients, which guarantees sales of the commodities produced by the members of the group,
- joint transactions and sales of large batches of properly prepared and standardized goods,
- easier access to preferential loans and subventions from a variety of sources,
- opportunity of joint investments,
- opportunity of joint investment in non-agricultural areas,
- creation of marketing channels integrated with food processing companies,
- elimination of the need for employing agents,
- reduction of costs of production and distribution of the products,
- easier access to legal information,
- improved opportunities of co-financing and access to specialized education,
- partnership-based cooperation between producers,

- opportunity to use full production potential and the experience of all the members of the group,
- distribution of the business risk among all the members of the group as compared to risk by a single producer,
- opportunity to employ a manager/expert on marketing,
- opportunity to purchase shares in agricultural companies (joint investments),
- enhanced access to updated market information,
- improved exchange of experience and achievements in terms of livestock raising,
- joint promotion and distribution of the products or preserves,
- extension of own manufacturing stock, support and cooperation within the group,
- conditions conducive to reaching a position of ‘strong hands’ in the market,

The time of initiation of a group and beginning of its activity is essential for future functioning of the group. This typically includes particular expectations of the members of the group, risk during activities, subordination to the leaders, existence of specific sympathies and antipathies within the group. In order to survive and to be successful in the market, the group should set the goals adapted to their actual possibilities. Too ambitious or too unrealistic goals might be the reason for future failure. It is also very useful if the group that supports the activities can anticipate support from the outside, e.g. support in solving current strategic problems. In consideration of the abovementioned definitions one can observe that organizing of the farmers into groups and functioning within those groups can be seen as a sign of entrepreneurship. This, however, is connected with the necessity to make a range of important decisions, using the opportunities and chances and taking the responsibility for the activities and their consequences. Departure from previous, traditional patterns of management, setting new goals and methods for realization of the goals determine a market success.

#### **4. CONCLUSIONS**

A marketing group can also be understood as an association of the producers who sell products, purchase means of production, implement similar manufacturing technologies and manufacture products with specific quality and standards. From the marketing point of view, a marketing group should carry out analyses of the current market and indexes that impact on consumers’ preferences, use a variety of forms of promotion and adapt supply to the customers’ expectations. It is generally accepted that the activities of a marketing group allow for reorientation of the members of the group in terms of technology, goals and entrepreneurship, as compared to a single farm. In marketing groups, more emphasis is put on marketing than on technologies, the strategic goals are properly set, specialization is implemented instead of the variety, and the members of the group are susceptible to innovation.

Another issue is an organizational and legal form of marketing groups. In practice, there are informal groups, partnerships, associations and cooperatives that can be observed. Selection of a form of legal status depends on the available capital and the tax calculation principle. An organizational scheme of a marketing group reveals three aspects of organizational activities within the group: area of production, sales and

purchase and the area of accounting and organizational services. Each producer processes the products independently while farmers work jointly in groups during purchase of means of production and sales of their products.

Therefore a marketing group can be defined as an entity that is established on the agricultural producers' initiative in order to ensure [Kuczek 2000]:

- promotion and concentration of supply as well as stabilization of the prices on a particular level,
- popularization of scientific progress in production and marketing among the members, sales of the whole production as a group,
- using of common commercial policy within the group. The benefits that are brought by farmers organized in marketing groups include: increase in market power (prices, market risk), stabilization of production (contract-based production, quality), availability of the finance (credits, loans, guarantees and advance payments), enhanced access to market information, avoiding redundant internal competition within the marketing group created by the farmers. In order to sell their goods better and more efficiently, three main assumptions that change market position and income status are realized [Kuczek 2000].
- market power, i.e. tenders-related position of the marketing group is enhanced as compared to the position of a single farmer,
- marketing and sales costs are reduced through increase in the scale of operation and cooperation of the members within the marketing group.

Transformation of the producer group into a marketing group occurs in an evolutionary way, through delivery of a number of channels of distribution. A marketing group does not sell their products only to one company and delivers them also to other markets (e.g. supermarkets, local wholesale markets, commodity exchanges) [Malysz 1996]. Group work is usually sparked among farmers as they are afraid of the competition from the outside and being eliminated from the market as well as they want to control market through concentration of the supply.

Transformation of the producer group into marketing group occurs when the operation of the group exceeds primary market. The distribution of the products is then realized through several distribution channels [Kuczek 2000]. Marketing group tasks include e.g.: concentration of the supply of agricultural products as a result of combining them into uniform batches, improvement in quality of the manufactured products, searching for new sales markets, concluding agricultural procurement contracts with recipients, increasing incomes of each member of the group, access to technology, economic and legal counselling, joint promotion and advertising, easier access to credits, opportunities to obtain financial support in case of implementation of the legal acts on producer groups.

A marketing group is an association of the producers who agreed to sell their products from their farms jointly, as a group, since the group ensures widely understood marketing of agricultural products, encompassing preparation and processing, supply, promotion and distribution. Farmers' groups, in order to generate maximal profits, usually merge production and marketing - related functions, which, in consequence, leads to enhanced entrepreneurship among the marketing group.

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## USING COST-VOLUME-PROFIT ANALYSIS IN DECISION MAKING

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**ABSTRACT:** *The cost-volume-profit study the manner how evolve the total revenues, the total costs and operating profit, as changes occur in volume production, sale price, the unit variable cost and / or fixed costs of a product. Managers use this analysis to answer different questions like: How will incomes and costs be affected if we still sell 1.000 units? But if you expand or reduce selling prices? If we expand our business in foreign markets?*

**KEY WORDS:** *cost-volume-profit, marginal contribution, break-even, the equation method, the marginal contribution method, graphical method*

The cost-volume-profit is a necessary tool for forecasting also for management control. The method includes a number of techniques and methods of solving problems based on understanding patterns of evolution characteristics of business costs. The techniques express the relationship between incomes, sales structure, costs, production volume and profits and include break-even analysis and profit forecasting processes. This relationship provides a general model of economic activity, which management can use to short-term forecasts for business performance evaluation and analysis of decision alternatives.

*The marginal contribution* is the difference between total revenue and totals variable costs and explains how changes the operating profit as changing the number of units sold. Can be calculated thus:

$$\text{Marginal contribution} = \text{Marginal contribution per unit} * \text{Number of units sold} \quad (1)$$

$$\text{Marginal contribution per unit} = \text{Selling price} - \text{Unit variable cost} \quad (2)$$

Marginal contribution can be expressed as a percentage, called the marginal contribution rate, being equal to the ratio of the marginal contribution per unit and

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selling price. *The break-even* is the amount of production sold for that total revenues equal total costs. This indicator tells managers how much the minimum production must sell for no loss.

In economic theory and in practice has imposed the cost-volume-profit analysis and as the critical point or threshold of profitability. This type of analysis is a very effective tool in risk analysis, since break-even can be defined as a measure of flexibility and enterprise in relation to fluctuations in its business. The result of the company is subject to unforeseen events that accompany work in all areas. The concept of "risk" is most often substituted by "flexibility". Regardless of economic or financial capacities of predominantly assigned, flexibility can be defined by the ability of business to adapt and to respond effectively to environmental changes.

The break-even is the point where incomes from operations cover the entire amount of operating expenses, operating result was nil. It represents the minimum level at which the company must work in order not to record a negative result (loss). The work undertaken by the company above that level evolve a positive result (profit). By several criteria, determining the break-even may be in physical or value units, and the level of a product or group of products or the whole of the work.

The methodology for analysis of operational critical point in the case of single-productive enterprises or when we refer to a single product (product group). Implicit assumptions underlying the analysis are: can not be changed the price to buy production factors, can not influence the price of goods manufactured and sold, fixed costs do not vary over time, the expenditure variables are proportional to the level of activity

Therefore, the only lever that can be driven by the enterprise to mitigate the effects of operating risk, to increase profitability, remains the level of activity. In order to determine the break even it uses three methods: method of equation, the marginal contribution method and graphical method.

*The equation method* involves expression of the results Account as the following equation:

$$(PV * Q) - (CV_U * Q) - CF = PE \quad (3)$$

where:

PV - sale price

Q - quantity of product units manufactured and sold

CV<sub>U</sub> - unit variable cost

CF - fixed costs

PE - operating profit

This equation gives the most general way to address/approach the cost-volume-profit analysis.

*The marginal contribution method* first involves reformulating the first method as:

$$(PV * Q) - (CV_U * Q) - CF = PE \quad (4)$$

$$(PV - CV_U) * Q = CF + PE \quad (5)$$



$$CM_U * Q = CF + PE \quad (6)$$

$$Q = \frac{CF + PE}{CM_U} \quad (7)$$

where:

$CM_U$  – unit marginal contribution,

$$CM_U = PV - CV_U \quad (8)$$

Considering that the break-even operating profit is by definition zero, we get:

$$Q = \frac{CF}{CM_U} \quad (9)$$

$$\text{Break-even in units number} = \frac{\text{Fixed costs}}{\text{Unit marginal cost}} \quad (10)$$

The graphical method representation involves costs and total revenues as of right on a graph. Point where these two lines intersect corresponds to the threshold of profitability. At this point, total revenues equal total costs. Evolution of revenue and total costs is shown in figure 1.

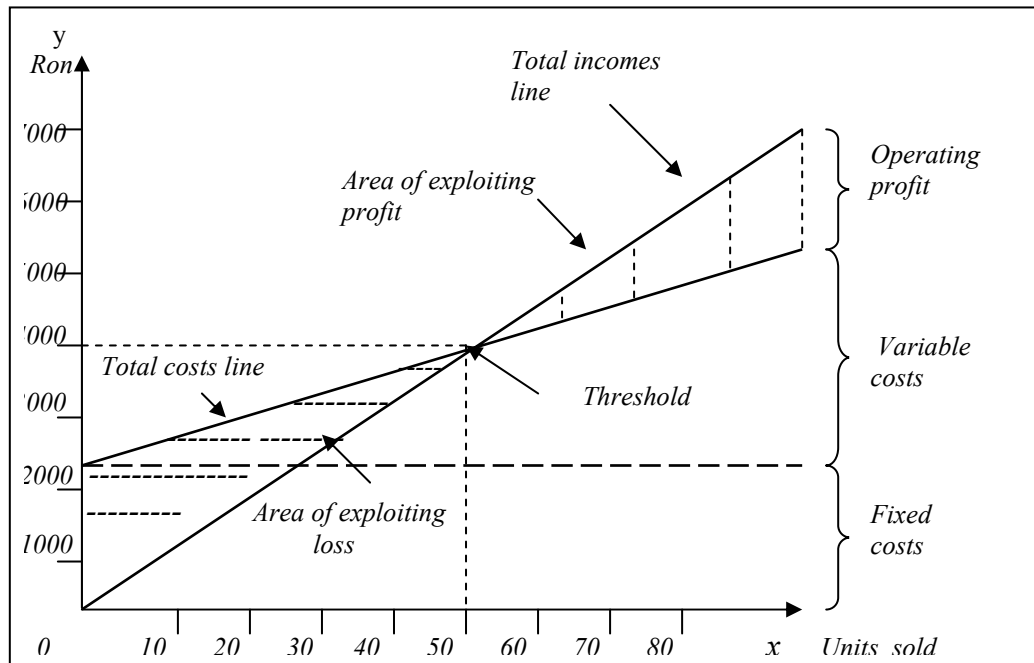


Figure 1. Total incomes and costs evolution

The cost-volume-profit analysis is useful only in certain circumstances and only when certain assumptions are valid:

- revenue and cost changes resulting solely due to changes in the number of units of goods or services produced and sold;
- total costs can be decomposed into a fixed component that does not vary with production volume and a component which varies with the size of production;
- developments in total revenues and total costs are linear in relation to volume production within a relevant period;
- selling price, unit variable cost and fixed costs are known and constant within a relevant period;
- analysis refer either to a single product, being assumed that the proportion of different products in total will remain constant as change in the total number of units sold;
- all revenues and costs can be aggregated and compared without taking into account the time value of money.

If one or more of these assumptions are lacking, the cost-volume-profit analysis may give wrong results. In sum, cost-volume-profit model is useful because it provides an overview of business management. In order to forecast, management can use the cost-volume-profit analysis for profit calculation for a given volume of sales or settle the sales to the level necessary in order to achieve planned profits. In addition, cost-volume-profit analysis is used increasingly in the budget process.

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## **STAFF RECRUITMENT - A QUALITATIVE ASPECT OF THE HUMAN RESOURCE MANAGEMENT**

**MARIA BUȘE** \*

**ABSTRACT:** *The aim of this paper is to present some aspects of the staff recruitment like a qualitative framework of the human resource management at the University of Craiova. Our research demonstrate that if the organisation manages to recruit highly qualified staff, this will require less preparation and the recruitment process will be simplified because the new employees will be prepared according to the new circumstances with less expenses in a short time. Finally under these circumstances the new employees oriented or integrated in adequate jobs register a low fluctuation and a higher satisfaction in labour.*

**KEY WORDS:** *staff recruitment, competence, evaluation*

### **1. INTRODUCTION**

The staff recruitment has an immediate impact both on the lives of the people and on the organisations. Therefore, one can say that the act of recruitment is one of the key acts of management. The success or the failure of the recruitment process has a significant impact on the enterprises and the organisations. Its quality relies mostly on the adopted strategy but also on the preparation of the manager.

One of the most important activities of the human resource function is the recruitment process. Recruitment represents the decisions which exert a major and sustainable influence on an organisation. When Churchill wanted to recruit the commandant of the British army in Northern Africa in the Second World War, he would have chosen the least agreeable one of his superior officers, and he declared to the state that if „the commandant was so disagreeable to us, then he should be odious to his enemies” [5]. So, the question is how can we recruit the most competitive person?

The goal of the recruitment activity is to identify a large number of applicants, so that the ones who fulfil the requirements are selected. Recruitment ensures the selections according to the principle of performance.

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John Kador [7] thinks that there are just a few organisations who are satisfied with hiring employees who are able to reach only a reasonable performance level. The organisations only want to hire superstars for each level of the organisation. These organisations are looking for applicants who can offer remarkable results and who are able to overcome the traditional thresholds of performance.

## **2. THE STAFF RECRUITMENT PROCESS**

According to some specialists from the human resources field [8], the process of ensuring staff from within or outside an organisation can be regarded as a sequence of activities typical for the field of human resources, activities which are necessary to fulfil the individual and organisational objectives. The process of ensuring staff from outside of an organisation consists of: recruitment, selection and orientation or integration of the staff, while ensuring staff from the interior of an organisation involves promotions, requalification, developments, etc., as well as prospective retirements, reassignments, dismissals or deaths.

In consequence, according to George T. Milkovich and John W. Boudreau [10], recruitment is the first step in the process of ensuring staff, as well as the first step in the process of selecting human resources. At the same time, in spite of the fact that more attention was given to the selection of the staff, according to the same authors and to some other specialists in this field, staff recruitment has to have another priority, because an efficient selection of the personnel can be accomplished only if the recruitment process provides a large number of competitive candidates. In other words, the objective of the recruitments activity is to identify a high number of employees so the ones who fulfil the requirements can be selected. This means that the most efficient methods or selection procedures of the personnel are limited by the efficiency of the recruitment process; many qualified candidates or competitive candidate cannot be selected unless they are localized, indentified and attracted through the recruitment process.

The recruitment of the human resources also takes into account the analysis of the vacancies and the projection of labour, because the basic results of these activities, the descriptions and the specifications for the jobs are essential in the recruitment process of the personnel. This means that the person who recruits or hires has to have the necessary information regarding the features of the job, but also the qualities of the future employee.

The recruitment effort of an organisation and the methods which have to be used depend on the planning process of the human resources and of the specific requirements of the jobs which are going to be taken. Knowing the need for staff or anticipating this, as a consequence of the human resources planning process, allows for a good and successful completion of the staff recruitment process. Lloyd L. Byars and Leslie W. Rue [3] point out the existing relations between the analysis of the jobs and staff planning, recruitment and selection of the human resources.

Recruitment is the activity of identifying the persons who have the characteristics required by the vacancies and of attracting these in the organisation.

Recruitment can be carried out directly, contacting the recruitment source or indirectly through mass media, the process carries out in different stages. The process should take place according to a correct methodology, facilitating in this way the identification and attracting the most adequate persons.

The process of recruitment begins when new jobs appear in the organisation or when the existing ones become vacant due to transfers or to retirement. It starts with the detailed inventory of the needs that is the job description, qualifications and necessary experience. The recruitment process takes place according to the nature of the activities and it may be a permanent process or a process which takes place when a certain need appears.

Staff recruitment is the process of attracting the suitable qualified candidates for a certain job who will stay in the enterprise for a reasonable period of time after accepting the employment. The recruitment relies on internal and external sources. The recruitment from within an enterprise has a series of advantages but also some disadvantages as compared to the external recruitment.

In what the internal recruitment is concerned each enterprise may have its own training program in order to train the staff for certain jobs. For example, IBM, a worldwide well known company relies on an important practice internal recruitment and promotion. In the context of Europeanization and globalisation, staff recruitment related to the evolution of the mentalities is more and more favourable for the mobility. Victor Ernoul wrote that „on a European level labour legislation allows more fluidity. This aspect involves more possibilities and opportunities both for the one who recruits and for the applicant, but also more competitiveness” [6]. Therefore it is necessary a sustained professionalization of recruitment.

In the case of the external recruitment, the sources are different according to the type of the jobs and the size of the organisation.

The external recruitment process can be: recruitment offices, newspapers, placement agencies, references, training programs.

Although there are various sources, one of the traditional practices is the recruitment of a number of individuals, larger than necessary, so that after selection the best should be chosen. Another way is to identify the place where the best candidates come and to recruit from those sources.

There are also negative recruitment techniques which use insults and sarcasm, interview under stress and which test the ability of the employees to face certain difficulties. These practices should be avoided; if they are used, the prospective employees should be warned so they do not have an unfavourable image about the organisation.

The development potential of the candidate is identified by the psychologist in the selection process and is transmitted to the decisive persons in the organisation. The development potential of the candidate can be identified by testing four large plans: skills, intellect, motivation and character-values. According to these plans one can make a prognosis for each candidate.

The recruitment of human resources also takes into account the analysis of the jobs and designing the labour because the basic results of these activities, the descriptions and the specifications of the jobs are essential in the staff recruitment

process. This means that the person who recruits or hires has to have the necessary information regarding the characteristics of the job and the qualities of the future employee.

In the recruitment process, the job has to be presented as real as possible, so that the employees would not quit even if their expectations have not been fulfilled. Staff recruitment requires not only identifying and attracting candidates but also their first screening. The most frequently used criteria in the process of recruitment are: competencies, professional experience, development potential of the candidate.

*The competencies-based recruitment systems are “focused on filtering methods which allow the fast and efficient selection of a small number of valuable candidates from an important group” [1].*

These recruitment systems are focusing on the identification of some major competencies (a number of 3-5 competencies) which can satisfy the following criteria:

- competencies already possessed by the candidates and which have been proved in their professional life (for example initiative);
- competencies which may estimate on a long term the success of the candidates. These competencies are difficult to develop through professional training or experience (competencies regarding the necessary motivation for the activity);
- competencies which can be evaluated through reliability, by using the maintenance of the behavioural events. For example when "the participative management of the team" is a required competence, the interviewed are required to integrate in a group and to carry out a certain activity. The given answers are codified before getting an assessment of the discussed competencies which have been proven or not.

Competencies represent a set of observable behaviours, knowledge, skills, interests and personality. All organisations are interested in candidates which are able to give quick results [4]. Competence is “... a fundamental feature of a person, which may include a trait, an ability, an intention, a set of knowledge, an aspect of the self-image or of the social role...” [2].

Competencies are defined in terms of traits, reasons, motives, knowledge and behavioural skills [9]. Competencies are distinct dimension of behaviours which are relevant for the performances in the job. The level of performance is affected by the way in which an individual behaves.

### **3. RECRUITMENT BASED ON PROFESSIONAL SENIORITY**

There are two tendencies in the practices of the organisations:

- organisations which recruit only young people because they start from the premises that they can be easier trained and modelled, and their requirements are more modest;
- organisations which recruit only personnel with a certain experience, starting either from the principle of quality and avoiding the training costs, or from principles which are imposed by normative acts which govern certain sectors of activity.

In practice these two exacerbated tendencies do not give good results, because the recruitment has to focus on the competence and quality of the employee and not on the economic costs. The best recruitment has to take into account the

accomplishment of an age pyramid from the young to the elderly. Therefore, if we maintain the pyramid, we can send the future generation the professional information and secrets.

The seniority based recruitment system can be found in the public organisations, the system appreciates the degree and the seniority, and this aspect is characteristic both for the person and for the job. One starts from the idea that all these aspects are correlated with the proven ability.

For example in the university system the recruitment is based on the competences and seniority as it follows:

❖ For the *university preparatory assistant* the following requirements have to be fulfilled:

- *the grade point average* (except for the grade from the graduation exam) should be at least 8,50 for the university field and 8,00 for the technical field;
- the candidate should have a letter of recommendation from a reader or a professor;
- *the average grade for the graduation exam* should be at least.

The councils of the faculties can also set some other specific criteria.

❖ For the *university assistant* the following requirements have to be fulfilled:

- minimum seniority in the higher education or specific scientific research of 2 years, respectively 4 years in the pre-university education. For the candidates outside the field of education or scientific research a minimum 5 years experience is required.
- the candidates have to be graduates of the MA courses or equivalent forms, with at least 9,00.
- the grade point average for the diploma studies should be of at least 8,50 for the university field and 8,00 for the technical field;
- at least 3 published articles in reference magazines, CNCSIS, categories A,B or C or in scientific volumes of national or international conferences;
- other criteria specific for each faculty and approved by the Council of the Faculty.

❖ For the *lecturer* position the following requirements have to be fulfilled:

- the candidate should be a *PhD Candidate*, with finished studies, paper, or should have the scientific title of a *doctor* in the field of the job or in related fields;
- the candidate should have at least 10 published papers in reference magazines, CNCSIS, categories A, B or C, and a course book for seminar, lab or project;
- *seniority*: for the candidates from the higher education or scientific research, a *minimum seniority of 6 years or 4 years* for the candidates who are *doctors*; for the candidates who come from the pre-university education a minimum seniority of *8 or 6 years* in the case of the candidates who have the scientific title of a doctor; for the candidates outside education or scientific research, a

- minimum seniority of *10 or 8 years* in the case of the candidates who have the scientific title of a doctor;
- *other* criteria specific for each faculty and approved by the Council of the Faculty.
- ❖ For the *reader Ph.D.* position the following requirements have to be fulfilled:
- the title of PhD in the field of the job or in related fields;
  - *a minimum seniority* of 9 years in higher education or scientific research or at least *15 years* in the field of the job for the candidates outside the field of education or scientific research;
  - teaching and scientific activity should meet the specific criteria for each specialization, issued by the National. Council for the Attestation of University Titles, Diplomas, and. Certificates (C.N.A.T.D.C.U.) and the legislation in force (O.M.Ed.C. 5098/03.10.2005, 5099/03.10.2005, 3548/10.04.2006);
  - the papers of the files are the ones set in the Orders of the Minister of Education and Research;
  - *other* criteria specific for each faculty and approved by the Council of the Faculty.
- ❖ For the *professor Ph.D.* position the following requirements have to be fulfilled:
- the title of PhD in the field of the job or in related fields;
  - teaching and scientific activity should meet the specific criteria for each specialization, issued by the National. Council for the Attestation of University Titles, Diplomas, and. Certificates (C.N.A.T.D.C.U.) and the legislation in force (O.M.Ed.C. 5098/03.10.2005, 5099/03.10.2005, 3548/10.04.2006);
  - *other* criteria specific for each faculty and approved by the Council of the Faculty (according to the specific requirements of each specialization set by C.N.A.T.D.C.U.) The criteria specific for each faculty for the professor position have to rely on the points accumulated in the last promotion.

**Table 1. Evolution of the vacancy contest in the period 2005-2008**

University year	Professor	Reader	Lecturer	Assistant	Preparatory assistant	Total
2005-2006	20	26	44	21	17	128
2006-2007	23	45	49	44	30	191
2007-2008	18	50	40	22	16	146

In the university years 2005/2006 there have been 128 vacancy contests, the distribution of the position is shown above. 72 positions have been approved by the Senate of the university and 46 have been approved by the Senate and sent for validation to C.N.A.T.D.C.U. From the 46 position 5 positions have not been validated C.N.A.T.D.C.U. and three professor titles and two reader titles have not been granted.

123 jobs have been validated of the total number of vacancies which means a percentage of 96.09%.



In 2006/2007 there were 181 vacancy contests, the distribution on positions is shown above. 129 candidates have applied for the 123 jobs which were validated by the Senate, six files have been rejected, one for assistant and six for preparatory assistant. 68 positions were validated by the Senate: 23 for professors and 45 for readers and they were sent to C.N.A.T.D.C.U for validation. Of the 68 positions C.N.A.T.D.C.U. did not validate five titles of professors and eight titles of readers.

178 jobs have been validates of the total number of vacancy contest, which means a percentage of 93.19%.

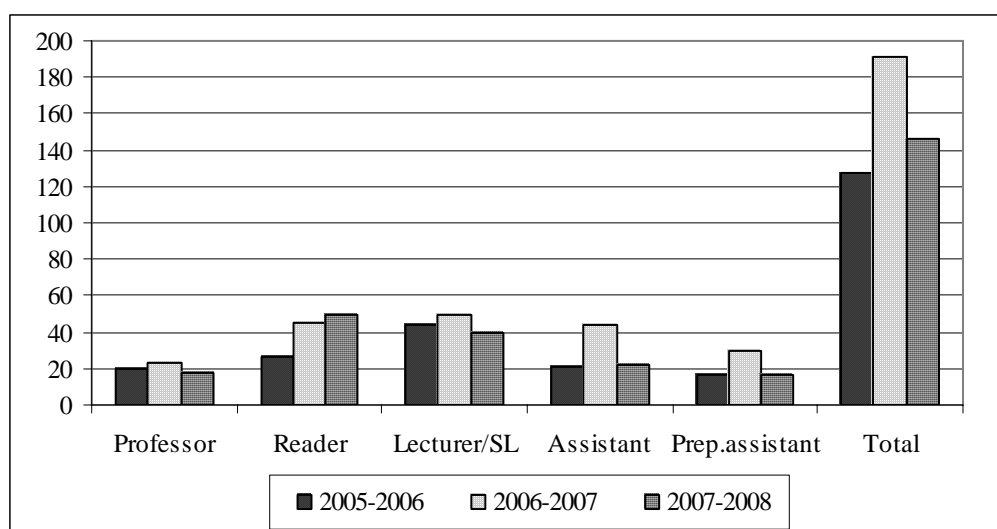


Figure 1. The evolution of the vacancy contests in the period 2005-2008

In 2007/2008 there were 146 vacancy contests, the distribution on positions is shown above. 82 candidates have applied for the 78 jobs which were validated by the Senate, five files have been rejected, two for lecturer, one for assistant and two for preparatory assistant. 68 positions were validated by the Senate: 18 for professors and 50 for readers and they were sent to C.N.A.T.D.C.U for validation. Of the 68 positions C.N.A.T.D.C.U. did not validate two titles of professors and two titles of readers.

142 jobs have been validates of the total number of vacancy contest, which means a percentage of 97.26%.

This analysis shows that the recruitment process is a complex one and has to adapt to the particularities of the organisation.

#### 4. CONCLUSION

The human resources recruitment process is related to other staff activities as for example: the evaluation of the performances, the rewards given to employees, training and developing the personnel and the relations with the employees. Therefore, the candidates with corresponding preparation have better performances, and the constant preoccupations for performance also involve the identification and attraction of competitive candidates. The recruitment effort of an organisation and the methods

which should be use rely on the human resource planning process and of the specific requirement for the jobs which are to be taken. Knowing the necessary staff need or anticipating it, as a consequence of the human resource planning process, facilitates a better and successful staff recruitment process.

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## THE TOTAL REAL CAPITAL STRUCTURE ANALYSIS IN THE PROFITS MASS RELEVANT FOR TURNOVER

**CONSTANTIN CĂRUNTU,  
LOREDANA MIHAELA LĂPĂDUȘI \***

**ABSTRACT:** *The mechanism operator of total actual capital on profit afferent turnover in the synthesizer manner is an important tool in assessing the economic and financial performance of the company both internally and in the diagnostic tests performed outside. Addressed the overall level of business, real capital - fixed and circulating - appears as part of operating capital; with all other forms of total capital operated in the frame of business activity, actual capital is involved in a specific circuit, arising from the operation of producer agents in a market economic environment. The transformation of the company liquid capital in productive real capital takes place in conditions in which the firm is presented on the capital goods market as a buyer and actually proceed to the purchase of goods-capital needed for production. Simultaneously, the company is presented as a buyer and the labour market, drawing work resources required.*

**KEY WORDS:** *total capital, fixed capital, circulating capital, profit, turnover, rentability*

In order to illustrate the total real capital structure through the technical structure of profit related to turnover, named thus  $\frac{Kf}{Kt}$  could use the following analysis methods:

$$P = Kt \cdot \frac{Kf}{Kt} \cdot \frac{Kfa}{Kf} \cdot \frac{CA}{Kfa} \cdot \frac{P}{CA} \quad \text{or} \quad P = Kt \cdot \frac{Kf}{Kt} \cdot \frac{Kfa}{Kf} \cdot \frac{\sum qv \cdot \bar{p}}{Kfa} \cdot \frac{P}{\sum qv \cdot \bar{p}} \quad (1)$$

$$P = \frac{1}{100} \cdot \left( Kt \cdot \frac{Kf}{Kt} \cdot \frac{Kfa}{Kf} \cdot \frac{CA}{Kfa} \right) \cdot \bar{Rc} \quad \text{or} \quad P = \frac{1}{100} \cdot \left( Kt \cdot \frac{Kf}{Kt} \cdot \frac{Kfa}{Kf} \cdot \frac{\sum qv \cdot \bar{p}}{Kfa} \right) \cdot \bar{Rc} \quad (2)$$

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where:

P- the profit afferent to turnover;

Kt - the total real capital;

Kf - the fixed capital;

$\frac{Kf}{Kt}$  - the share of fixed capital in total real capital;

Kfa - the fixed operating capital;

$\frac{Kfa}{Kf}$  - the share of fixed operating capital in fixed total capital;

CA - the turnover;

$\frac{CA}{Kfa}$  - the turnover to 1 RON afferent to fixed operating capital;

$\frac{P}{CA}$  - the profit afferent to turnover;

$\overline{qv}$  - the production sold;

$\overline{p}$  - the medium price of sale;

$\overline{qv \cdot p}$  - the turnover expressed in sale prices;

$\overline{Rc}$  - the medium ratio of commercial rentability.

In order to illustrate this, we consider the data from next table:

**Tabel 1. Indicators**

No.	Indicators	P <sub>0</sub>	P <sub>1</sub>
1.	Total Capital	8.490.586	8.798.337
2.	Fixed capital	5.878.100	6.000.000
3.	Fixed operating capital	2.939.050	3.120.000
4.	Turnover	23.512.376	29.382.540
5.	Profit afferent to turnover	2.685.126	4.750.000
6.	Rate of commercial profitability (%)	11,42	16,17

Accordingly to the mentioned pattern, it is operating with multiple variables on total real capital and it is understood that through average profit on 1 RON turnover is surprises synthesized aspects of using both fixed, circulating capital and labour (reflected in costs and prices sale).

In these conditions means that in the mass of profit, appropriate to modification, are found these influences:

1. The influence of total capital (fixed and circulating):

$$\begin{aligned}
& (K_{t_1} - K_{t_0}) \cdot \frac{Kf_0}{K_{t_0}} \cdot \frac{Kfa_0}{Kf_0} \cdot \frac{CA_0}{Kfa_0} \cdot \frac{P_0}{CA_0} = \\
& = (8.798.337 - 8.490.586) \cdot \frac{5.878.100}{8.490.586} \cdot \frac{2.939.050}{5.878.100} \cdot \frac{23.512.376}{2.939.050} \cdot \frac{2.685.126}{23.512.376} = \\
& = 307.751 \cdot 0,6923 \cdot 0,5 \cdot 8 \cdot 0,1142 = +97.323,989 \text{ RON}
\end{aligned} \tag{3}$$

2. The influence of fixed capital share in total real fixed capital (technical structure of capital):

$$\begin{aligned}
& K_{t_1} \cdot \left( \frac{Kf_1}{K_{t_1}} - \frac{Kf_0}{K_{t_0}} \right) \cdot \frac{Kfa_0}{Kf_0} \cdot \frac{CA_0}{Kfa_0} \cdot \frac{P_0}{CA_0} = \\
& = 8.798.337 \cdot \left( \frac{6.000.000}{8.798.337} - \frac{5.878.100}{8.490.586} \right) \cdot \frac{2.939.050}{5.878.100} \cdot \frac{23.512.376}{2.939.050} \cdot \frac{2.685.126}{23.512.376} = \\
& = 8.798.337 \cdot (0,6819 - 0,6923) \cdot 0,5 \cdot 8 \cdot 0,1142 = \\
& = 8.798.337 \cdot (-0,0104) \cdot 0,5 \cdot 8 \cdot 0,1142 = -41.798,436 \text{ RON}
\end{aligned} \tag{4}$$

3. The influence of share operating fixed capital in total fixed capital (technological structure of fixed capital):

$$\begin{aligned}
& K_{t_1} \cdot \frac{Kf_1}{K_{t_1}} \cdot \left( \frac{Kfa_1}{Kf_1} - \frac{Kfa_0}{Kf_0} \right) \cdot \frac{CA_0}{Kfa_0} \cdot \frac{P_0}{CA_0} = \\
& = 8.798.337 \cdot 0,6819 \cdot \left( \frac{3.120.000}{6.000.000} - \frac{2.939.050}{5.878.100} \right) \cdot \frac{23.512.376}{2.939.050} \cdot \frac{2.685.126}{23.512.376} = \\
& = 8.798.337 \cdot 0,6819 \cdot (0,52 - 0,5) \cdot 8 \cdot 0,1142 = \\
& = 8.798.337 \cdot 0,6819 \cdot 0,02 \cdot 8 \cdot 0,1142 = +109.624,435 \text{ RON}
\end{aligned} \tag{5}$$

4. The influence of turnover to 1 RON operating fixed capital (efficiency of fixed capital):

$$\begin{aligned}
& K_{t_1} \cdot \frac{Kf_1}{K_{t_1}} \cdot \frac{Kfa_1}{Kf_1} \cdot \left( \frac{CA_1}{Kfa_1} - \frac{CA_0}{Kfa_0} \right) \cdot \frac{P_0}{CA_0} = \\
& = 8.798.337 \cdot 0,6819 \cdot \frac{3.120.000}{6.000.000} \cdot \left( \frac{29.382.540}{3.120.000} - \frac{23.512.376}{2.939.050} \right) \cdot \frac{2.685.126}{23.512.376} = \\
& = 8.798.337 \cdot 0,6819 \cdot 0,52 \cdot (9,4175 - 8) \cdot 0,1142 = \\
& = 8.798.337 \cdot 0,6819 \cdot 0,52 \cdot 1,4175 \cdot 0,1142 = +505.026,071 \text{ RON}
\end{aligned} \tag{6}$$

5. The influence of medium profit to 1 RON turnover:

$$\begin{aligned}
& K_{t_1} \cdot \frac{Kf_1}{K_{t_1}} \cdot \frac{Kfa_1}{Kf_1} \cdot \frac{CA_1}{Kfa_1} \cdot \left( \frac{P_1}{CA_1} - \frac{P_0}{CA_0} \right) = \\
& = 8.798.337 \cdot 0,6819 \cdot \frac{3.120.000}{6.000.000} \cdot \frac{29.382.540}{3.120.000} \cdot \left( \frac{4.750.000}{29.382.540} - \frac{2.685.126}{23.512.376} \right) = \\
& = 8.798.337 \cdot 0,6819 \cdot 0,52 \cdot 9,4175 \cdot (0,1617 - 0,1142) = \\
& = 8.798.337 \cdot 0,6819 \cdot 0,52 \cdot 9,4175 \cdot 0,0475 = +1.395.577,199 \text{ RON}
\end{aligned} \tag{7}$$

Diagnosis based on the pattern used illustrates the following issues of phenomena: increase total capital in the previous period showed a positive influence on

profits afferent to the turnover; technical composition of capital adversely affect profits for the turnover; increasing technological composition of fixed capital (the share of fixed capital in total fixed capital asset) is a positive contribution on profits for the turnover; turnover to 1 RON fixed capital asset reflects its efficiency as one and can be an important determinant of income growth for the turnover; increase profits at 1 RON turnover contribute to increased company profits.

The second model highlights the commercial rate of return. Factorial explanation is similar to the above one and is based on the following influences:

1. Influence of total capital (fixed and circulating):

$$\begin{aligned} & \frac{1}{100} \cdot \left[ (Kt_1 - Kt_0) \cdot \frac{Kf_0}{Kt_0} \cdot \frac{Kfa_0}{Kf_0} \cdot \frac{CA_0}{Kfa_0} \right] \cdot \bar{Rc}_0 = \\ & = \frac{1}{100} \cdot \left[ (8.798.337 - 8.490.586) \cdot \frac{5.878.100}{8.490.586} \cdot \frac{2.939.050}{5.878.100} \cdot \frac{23.512.376}{2.939.050} \right] \cdot 11,42 = \\ & = \frac{1}{100} \cdot (307.751 \cdot 0,6923 \cdot 0,5 \cdot 8) \cdot 11,42 = +97.323,989 \text{ RON} \end{aligned} \quad (8)$$

2. Influence of fixed capital share in total real capital (technical structure of capital):

$$\begin{aligned} & \frac{1}{100} \cdot \left[ Kt_1 \cdot \left( \frac{Kf_1}{Kt_1} - \frac{Kf_0}{Kt_0} \right) \cdot \frac{Kfa_0}{Kf_0} \cdot \frac{CA_0}{Kfa_0} \right] \cdot \bar{Rc}_0 = \\ & = \frac{1}{100} \cdot \left[ 8.798.337 \cdot \left( \frac{6.000.000}{8.798.337} - \frac{5.878.100}{8.490.586} \right) \cdot \frac{2.939.050}{5.878.100} \cdot \frac{23.512.376}{2.939.050} \right] \cdot 11,42 = \\ & = \frac{1}{100} \cdot (8.798.337 \cdot (0,6819 - 0,6923) \cdot 0,5 \cdot 8) \cdot 11,42 = \\ & = \frac{1}{100} \cdot (8.798.337 \cdot (-0,0104) \cdot 0,5 \cdot 8) \cdot 11,42 = -41.798,436 \text{ RON} \end{aligned} \quad (9)$$

3. Influence of operating fixed capital in total fixed capital (technological structure of fixed capital):

$$\begin{aligned} & \frac{1}{100} \cdot \left[ Kt_1 \cdot \frac{Kf_1}{Kt_1} \cdot \left( \frac{Kfa_1}{Kf_1} - \frac{Kfa_0}{Kf_0} \right) \cdot \frac{CA_0}{Kfa_0} \right] \cdot \bar{Rc}_0 = \\ & = \frac{1}{100} \cdot \left[ 8.798.337 \cdot 0,6819 \cdot \left( \frac{3.120.000}{6.000.000} - \frac{2.939.050}{5.878.100} \right) \cdot \frac{23.512.376}{2.939.050} \right] \cdot 11,42 = \\ & = \frac{1}{100} \cdot [8.798.337 \cdot 0,6819 \cdot (0,52 - 0,5) \cdot 8] \cdot 11,42 = \\ & = \frac{1}{100} \cdot (8.798.337 \cdot 0,6819 \cdot 0,02 \cdot 8) \cdot 11,42 = +109.624,435 \text{ RON} \end{aligned} \quad (10)$$

4. Influence of turnover to 1 RON operating fixed (efficiency of fixed capital):

$$\begin{aligned}
 & \frac{1}{100} \cdot \left[ Kt_1 \cdot \frac{Kf_1}{Kt_1} \cdot \frac{Kfa_1}{Kf_1} \cdot \left( \frac{CA_1}{Kfa_1} - \frac{CA_0}{Kfa_0} \right) \right] \cdot \bar{Rc}_0 = \\
 & = \frac{1}{100} \cdot \left[ 8.798.337 \cdot 0,6819 \cdot \frac{3.120.000}{6.000.000} \cdot \left( \frac{29.382.540}{3.120.000} - \frac{23.512.376}{2.939.050} \right) \right] \cdot 11,42 = \\
 & = \frac{1}{100} \cdot [8.798.337 \cdot 0,6819 \cdot 0,52 \cdot (9,4175 - 8)] \cdot 11,42 = \\
 & = \frac{1}{100} \cdot (8.798.337 \cdot 0,6819 \cdot 0,52 \cdot 1,4175) \cdot 11,42 = +505.026,071 \text{ RON}
 \end{aligned}
 \tag{11}$$

5. Influence of economic rate of return:

$$\begin{aligned}
 & \frac{1}{100} \cdot \left[ Kt_1 \cdot \frac{Kf_1}{Kt_1} \cdot \frac{Kfa_1}{Kf_1} \cdot \frac{CA_1}{Kfa_1} \cdot (\bar{Rc}_1 - \bar{Rc}_0) \right] = \\
 & = \frac{1}{100} \cdot \left[ 8.798.337 \cdot 0,6819 \cdot \frac{3.120.000}{6.000.000} \cdot \frac{29.382.540}{3.120.000} \cdot (16,17 - 11,42) \right] = \\
 & = \frac{1}{100} \cdot [8.798.337 \cdot 0,6819 \cdot 0,52 \cdot 9,4175 \cdot 4,75] = +1.395.577,199 \text{ RON}
 \end{aligned}
 \tag{12}$$

In order to facilitate the image through the synthesis of factors above mentioned on the profit mass afferent to turnover, we present the following schedule:

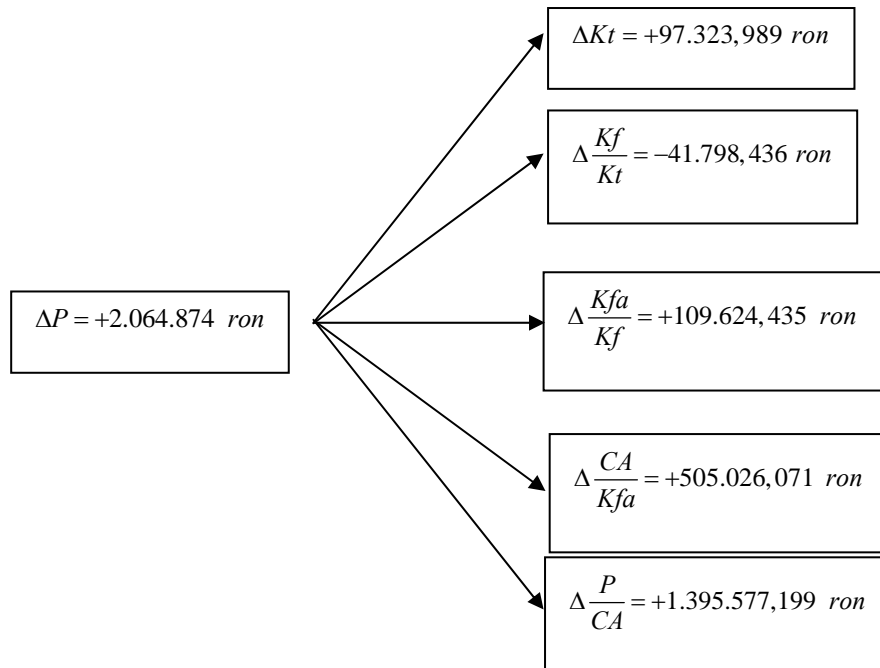


Figure 1. Synthesizing the influence of factors on profits afferent to turnover

Influence of total capital with plus sign does not mean unconditional a positive status in the sense that its volume has increased the amount of profit by about one hundred thousand RON. Here we have to take into account some internal issues: The first is the total capital structure of two components: fixed and circulating capital.

Logical, the second factor  $\Delta \frac{Kf}{Kt}$  illustrates actually the inequalities  $\frac{Kf_1}{Kt_1} < \frac{Kf_0}{Kt_0}$ , respectively  $\frac{Kc_1}{Kt_1} < \frac{Kc_0}{Kt_0}$ .

Or to increase working capital (real circulating assets) can not be assigned the same conditioning relationship as the fixed profit. Conversely, increasing the share of working capital can mean a slow rotation speed of the circulating assets and thus a negative influence on the mass of profit (in comparable conditions of the two types of capital in value terms).

Obviously, that does not automatically mean a negative state as long as turnover dynamics ahead on the components of working capital assets, respectively  $I_{CA} > I_{Kc}$  (index of turnover is higher then the circulating asset capital).

Related to the structure itself of fixed capital illustrated by the share of processing capital  $\frac{Kfa}{Kf}$  respectively the technological structure of the first, it reflects a positive share, thus  $\frac{Kfa_1}{Kf_1} > \frac{Kfa_0}{Kf_0}$  fact illustrated also in increasing the profit mass.

In the management company can be observed the favourable trend of investment policy (putting into service of new fixed operating assets). The same effect can be observed the influence of turnover growth to 1 RON fixed capital asset, increase its efficiency characterized on the basis of turnover. In fact between the technological composition of capital and total fixed capital efficiency is a parabolic correlation type such as:  $y = a + b \cdot x + c \cdot x^2$ , consisting of: y - efficiency of fixed capital characterized on the basis of turnover; x - the share of fixed operating capital in total fixed capital.

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## **POLYCENTRICITY AND REGIONAL DEVELOPMENT**

**AURELIAN IONUȚ CEAUȘESCU**\*

**ABSTRACT:** *The new European political target to reduce development disparities and a more appropriate distribution of development funds within regions. In the ESPON (European Spatial Planning Observation Network) since 2006 there have been studies on policentricity. They support the idea that a polycentric urban structure with a more marked character will contribute to more balanced regional development and to increase European competitiveness. However, studies fail ESPON overlap and a common approach to the two concepts, polycentricity and regional competitiveness.*

**KEY WORDS:** *region, regional development, regionally polycentricity, territorial competitiveness*

In generally, polycentricity is largely regarded as a means of achieving a more balanced pattern of development space and a high level of international territorial competitiveness through the so-called anchor. Regionally polycentricity is rather the result of general trends in contemporary urban geography, advanced post-industrial societies, which led to regions with more centres. In Europe, in the early 60s, was seen a transition from urban models dominated by the functional entities of a central city counted its surroundings by urban network systems of several centres of residence, employment and services.

Due to the prevailing trends of de-concentration space, many urban functions, such as: residence, industry sectors based on offices, retail, wholesale, warehouses, leisure services were extended to all those territories extended (enlarged) by the new centres to the suburbs or places that are located in strategically in terms of transport. Generally speaking, the traditional functional hierarchy and duality of the city centre and many places of the suburbs are eroding in many regions-cities. In these regions, the principles are developed to a higher level and offer a possible model containing the wider Europe: a polycentric urban system, as balanced as possible, avoiding excessive concentration and marginalization phenomena, such a space would result in a network protecting resources.

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These regions are more urban centres deserve attention because they are the result of this process of spatial reorganization. It is actually kind of region composed of a system of urban centres. The specific case of regions where we meet separately, in historical terms, independent cities, both administratively and politically, which are at a distance greater or less - we can say within a distance of switch - and are connected via infrastructure. These cities have merged both functionally and morphologically, in larger urban systems, regional spread and spread (Dieleman and Faludi, 1998, Ghent Urban Studies Team, 1999; Bontje, 2001, Champion, 2001). Dominant patterns of respect when hierarchical relations operation and mobility between central cities and the hinterland have been supplemented with several models from the former independent regions cities. Often cited examples of urban regions with more centres are in the Netherlands Randstad, Rhein Rhur in Germany and Flemish Diamond in Belgium. Other examples can be found in other parts of Europe, for example regions of Italy: Padua-Treviso-Venice and Emilia Romagna and the Basque Country.

Such regional systems with multiple centres above are the different concepts that are in a wider urban area synonymous with the concept of multiple centres, used here, for example, network city (Batten, 1995), networks City (Camagni and Salone, 1993), metropolitan regions with multiple nuclei (Dieleman and Faludi, 1998b) or clusters of cities (CEC, 1999). Literature on urban areas with more centres is still limited and not yet well consolidated (Bailey and Turok, 2001). Consequently, a variety of definitions sometimes more or less involved, operationalisation and approaches to this type of urban configurations are still in the vehicle (Kloosterman and Musterd, 2001).

Randstad is one of the 6 regions with multiple centres and consists of a ring of towns located around a relatively 'Green Hearts', which contains the 4 major cities in the country: Amsterdam, Rotterdam, The Hague and Utrecht. For the Netherlands, the policy is comprehensive. Cities preparing for an urban network are required to prepare space programs and plans in mutual cooperation, while they are seen to be integrated both in the public transport system and the private sector (Ministry of VROM, 2001).

**Urban area with several centres.** European Spatial Development Perspective (ESDP) has contributed decisively to the debate on a polycentric development within Member States and thus to encourage the application polycentricity spatial planning policies at national or regional level, although in some countries was called into question before this strategy to be published. In such cases polycentricity is often applied at regional, often for reasons of international competitiveness. Integrated development of urban areas with more centres (with multiple centres) is initiated by governments rather than national or regional areas. Examples of top-down implementation of this concept are regions Flemish Diamond (Brussels-Antwerp-Ghent-Leuven) (Albrechts, 1998) and RheinRuhr (including cities like: Cologne, Bonn, Dortmund, Essen and Düsseldorf) (Blotevogel, 1998, Knapp, 1998). The Dutch government gave more attention to regions consisting of several urban systems, new space policy referring to regions with more urban areas - as an urban network. 6 were established as urban networks of national importance. The 3 types of opportunities for regional coordination and work in the polycentric urban regions may be distinct.

Regional cooperation and coordination in these regions can open: (1) go accumulation of resources in order to share facilities and services to achieve a balance, (2) develop and operate a balanced complementarities and (3) optimization of spatial diversity, which is mainly related to improving the quality of open spaces.

First regional approach in polycentric urban regions is the ability to actually have a pool of resources for the whole region. Thus, regional businesses have access to a wider variety of resources such as labour, suppliers and customers than the individual nodes or urban locations. In some cases the labour market can resolve a situation of unemployment in an area of the region and lead to labour shortages in other. In addition to this pool of resources, encouraging interaction between neighbouring cities in the polycentric urban region can result in specific specialties. Where such specialization is complementary rather than competitive (the second option), polycentric urban region as a whole can offer a broader service quality for metropolitan services business, households, consumers, workers and tourists.

These services can be promoted as: service delivery, education institutions and research and development, specialized retail, cultural facilities and leisure, and not least, a residential (Ipenburg and Lambregts, 2001). A wide range of complementary services available to qualified and fast, universities, business, warehouse in a polycentric urban region creates an environment for innovation that is clearly a competitive advantage in investment. But cooperation, not competition, is what creates such a set of complementary local media.

The third possibility of regional planning, improving the quality of open spaces, added spatial diversity, ie as a competitive economic resources fund mentioned above and additional facilities in urban polycentric.

All these possibilities require regional coordination and a policy approach to achieve the best results (Evert Meijers and Arie Romein, 2003). It can be assumed that the challenge for actors in polycentric urban regions is to create a regional organizational capacity to be able to master and use these opportunities. Ability regional organization involving regional coordination through a network of regional policy, such as various forms of regional cooperation forum, where all relevant shareholders (different public actors but also private market parties and NGOs), meet, discuss, and decide on planning policies and their implementation. Also, capacity building of regional organizing spatial functionality is conditional, political and institutional context and the regions culture. In general, the main constraints in these regions can be defined as an institutional fragmentation combined with internal targeting key people (like politicians who make policy or markets). Also a higher limit could be the lack of identification with the region in the smallest details.

**Conclusion.** Stakeholders both in polycentric urban regions and at other levels (eg national), who wish to implement the principle polycentricity must prepare their application in practice of spatial development policies. This may lead to new forms of regional coordination and capacity building of regional organization. This may not guarantee success, because success depends on the operation of such networks for coordination and partnerships. However, without a regional organizational capacity, the danger is that the term polycentric urban region to remain only in the planning.

Reviewing current policies on polycentric urban regions shows how the construction of the regional organizational capacity necessary to implement this concept is often forgotten. Lack of coherence functional, cultural, political and institutional will not result in failure to achieve the organizational capacity of regional. Rather, this lack limits what is possible to obtain in this first phase. If the constraints in terms of cultural policentricity or there, and where functional coherence can also be relatively limited, the best start is made with small steps (Evert Meijers and Arie Romein, 2003). In this case, the voluntary cooperation of a limited number of players on simple problems (and not too sensitive ones) or well-defined projects in which the actors to reap the benefits is the best thing. Mutual trust and understanding and working relationships will likely develop, giving the possibility of implementing such policies or more complex projects in the next phase. In such cases, such as Randstad (Netherlands-Area Evert Meijers and Romein, 2003), where the constraints are relatively limited, a more structured cooperation offers several advantages.

Here, the ability of regional organization truly must be developed to enable deliberation, debate, negotiation and decision-making by all stakeholders continuously on a wide variety of projects, more or less complex. However, regional interest, individual actors are sometimes required concessions.

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## **MODELLING INTERNATIONAL TOURISM DEMAND IN THAILAND**

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**ABSTRACT:** *This paper sought to find the short-run and long-run relationships between international tourist arrivals in Thailand with economic variables such as GDP, the price of goods and services, transportation costs, and the exchange rate for the period from 1997(Q1)-2005(Q2). Both the Cointegration techniques based on Johansen and Juselius (1990) and Error Correction Mechanisms based on Engle and Granger concept (1987) were used to find the long-run and short-run relationships of the international tourism demand model for Thailand. This paper used the full six standard method test for unit root tests such as ADF-Test (1979), PP-Test (1987,1988), KPSS-Test (1992), DF-GLS Test (1996), the ERS Point Optimal Test and Ng and Perron (2001). The full six standard method test for unit root test have not previously been used to test unit roots for estimating tourism demand models. The long-run results indicate that growth in income (GDP) of Thailand's major tourist source markets has a positive impact on international visitor arrivals to Thailand while both transportation cost and exchange rate has a negative impact on international visitor arrivals to Thailand. The findings were consistent with economic theory and the implications of the model can be used for policy making.*

**KEY WORDS:** *Thailand; tourism demand; unit root test; cointegration; error correction model*

### **1. INTRODUCTION**

The international tourism business entered an interesting period for many countries in Asia between 1997-1998 (many Asian countries including Thailand experienced an economic crisis during this time: Lim (2003)). Since 1997, the Asian

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region faced an economic crisis which was due to Thailand's policy of the liberalization of its international currency called BIBF in 1993 (Kriangsak, 1998). This policy resulted in a huge inflow of loans to Thailand amounting to the following sums: (1) 193.2 B baht in 1992, (2) 253.4 B baht in 1993, and (3) 202.4 B baht in 1994. Most of these loans flowed into the minor business sector such as the stock market and real estate leading to low productivity and unemployment. Thus, the balance of trade in Thailand led to continuous deficits annually because the products of Thailand could not compete in the world market (Bank of Thailand, 1994).

In addition to this, Thailand applied an international policy of fixed value on its exchange rate which was incongruent with the real value of the US dollar (Chukiat, 2003) that made imports much greater than exports for Thailand. This again contributed to continuous deficits and an imbalance of trade. The imbalance of trade, unfeasible international currency policy, inflow of capital to the unproductive business sector all contributed to the economic crisis from 1997 onwards. As a consequence, Thailand took out a huge loan of 17.2 billion US dollars from the international Monetary Fund (IMF) in the form of a Stand-by Arrangement to help its economy. The crisis that started in Thailand also affected its neighbors such as the Philippines, Indonesia, Singapore and South Korea (Lim and McAleer, 2001).

Another effect of the economic crisis in 1997 was the decreasing GDP of Thailand from 1997 to 2001. In 1997 the GDP of Thailand was 3,073,615 million baht and in 1998 the GDP of Thailand was 2,749,684 million baht. In 1999 the GDP of Thailand was 2,871,980 million baht and in 2000 to 2001 the GDP of Thailand was 3,008,662 million baht and 3,072,925 million baht respectively (source: National Economic and Social Development Board of Thailand). Despite the economic crisis, however, the effect on the tourism industry of Thailand was positive because of the increasing number of foreign tourists coming to Thailand that thereby brought high income to country. In 1997 the number of foreign tourists that came to Thailand was 7.22 million contributing an income of 220 billion baht to the Thai economy. In 1998, the number of foreign tourists increased to 7.76 million and the income increased to 242 billion baht. The following year there were 8.58 million tourists and the income was 253 billion baht. In 2000 to 2001 tourist arrivals continued to increase to 9.51 million people and 10.06 million people with incomes of 285 billion baht and 299 billion baht respectively (source: Thailand's tourism organization).

It is therefore concluded from this study that the international tourism industry in Thailand was not affected by the economic crisis. For a long time now, economists have tried to understand the international tourist consumer behaviour through demand models. For example, Barry and O'Hagan (1972): studied the demand of British tourists going to Ireland; Jud, G.D. and Joseph, H., (1974): studied the demand of international tourist going to Latin American; Uysal and Crompton (1984): studied the demand of international tourists going to Turkey. Summary (1987): studied the demand of international tourists going to Kenya, Kulendran, N. (1996): studied the demand of international tourists going to Australia; Lim C. and M.McAleer (2000): studied the demand of international tourist going to Australia; Durbarry (2002): studied the demand of international tourists (French tourists) going to the UK, Spain and Italy. As well as Paresh Kumar and Narayan (2004) and Resina Katafono and Aruna

Gounder (2004): who studied the demand of international tourists going to Fiji. Based on many articles, the aim of this paper is to find out the international tourist consumer behavior in coming to Thailand during the period 1997-2005 through demand modeling. The consumer behavior information gathered from this research will help in developing the international tourism industry in Thailand.

## **2. RESEARCH AIM AND OBJECTIVE**

This research has the aim and objective of seeking to know how many factors affect international tourist demand arrivals to Thailand in the long-run and short-run and to use the international tourism demand model to explain international tourist's behaviour in Thailand.

## **3. SCOPE OF THIS RESEARCH**

The scope of this research is the period 1997(Q1)-2005(Q2) and mostly the data was secondary data. The countries used for analysis in International Tourism Demand in Thailand were the major countries for the international tourism industry of Thailand, namely Malaysia, China, England, German, France, America and Canada. Almost all of them had an influence on the income of the international tourism industry of Thailand in the same period (source: Thailand's tourism organization).

The variables used in this research were economic variables, for example the numbers of international tourist arriving in Thailand, the GDP of major countries of international tourists coming to Thailand, the world price of Kerosene-Type Jet Fuel, the relative prices between Thailand and the countries of origin of international tourists coming to Thailand and the exchange rate of Thailand in relation to the exchange rates of major countries of international tourists.

## **4. THE METHODOLOGY AND RESEARCH FRAMEWORK**

### **4.1. The concept back ground of International Tourism Demand Model**

The concept of theory has been used in international tourist demand since 1950 but the estimation in international tourist demand by econometric method beginning from the first time by Artus (1972). After that a lot of research about international tourist demand function used the econometric method. The researcher studied research such as Archer (1976), Crouch (1994), Walsh (1996), Lim (1997), Inclair (1998), Lise&Tol (2002), McAleer (2001,2003) Resina and Aruna (2004). Growth in international tourism is closely aligned to economic variables, which at a microeconomic level influence the consumer's decision to undertake overseas travel. Empirical research on international tourism demand has overwhelmingly been based on aggregate time series data which permits estimation of income and price elasticity on inbound tourism (see Lim, 1997 and McAleer, 2001, 2003). A simple origin-destination demand model for international tourism can be written as: (equation number (1)).

$$D_t = f(Y_t, TC_t, P_t) \quad (1)$$

where:

$D_t$  = is a measure of travel demand at time  $t$ ;

$Y_t$  = is a measure of income of the tourist-generating or origin country at time  $t$ ;

$TC_t$  = is a measure of transportation costs from the origin to destination country at  $t$ ;

$P_t$  = is a measure of tourism price of goods and services at time  $t$ ;

And assume that  $(+Y_t)$ ,  $(-TC_t)$ ,  $(-P_t)$  and explain that when income at time  $t$  is increasing then the demand for international tourism is increasing simultaneously. When the measure of transportation costs from the origin to destination country at time  $t$  is increasing then the demand for international tourism decreases. And when the measure of tourism price of goods and services is increasing then the demand for international tourism is decreasing. And the equation (1) can be expressed in log-linear (or logarithmic) form equation number (2).

$$\ln D_t = \alpha + \beta \ln Y_t + \gamma \ln \{F1_t \text{ or } F2_t\} + \delta \ln \{RP_t, ER_t \text{ or } RER_t\} + \Phi \ln D_{t-1} + \theta \ln CP_t + u_t \quad (2)$$

where:

$\ln D_t$  = logarithm of short-term quarterly tourist arrivals (or demand) from the origin to destination country at time  $t$

$\ln Y_t$  = logarithm of real GDP in original country at time  $t$

$\ln F1_t$  = logarithm of real round-trip coach economy airfares in Neutral Units of construction (NUC) between original country and destination country at time  $t$

$\ln F2_t$  = logarithm of real round-trip coach economy airfares in original country currency between original country and destination country at time  $t$

$\ln RP_t$  = logarithm of relative prices (or CPI of destination country /CPI of original country ) at time  $t$

$\ln ER_t$  = logarithm of exchange rate (original country per destination country) at  $t$

$\ln RER_t$  = logarithm of real exchange rate [or CPI (destination country)/CPI(original country)\*1/ER] at time  $t$

$\ln CP_t$  = logarithm of competitive prices [using CPI(destination country)/(other destination country)]

$u_t$  = independently distributed random error term, with zero mean and constant variance at time  $t$

And defined that  $\alpha, \beta, \gamma, \Phi, \theta$  = parameters to be estimated;  $\beta > 0, \gamma < 0, \delta < 0, 0 < \Phi < 1, \theta > 0$  (substitutes) and  $\theta < 0$  (complements).

And this research or the "Modeling International Tourism Demand in Thailand" modified from equation (2) as well as can be written as equation (3).

$$\ln D1_t = \alpha + \beta \ln (GDP_t) + \gamma \ln (PO_t) + \delta \ln (RP_t) + \theta \ln (ER_t) + \rho \ln (RER_t) + u_t \quad (3)$$

where:

$\ln D1_t$  = logarithm of tourist arrivals (or demand) from the origin (each 7 country) to



destination country (Thailand) at time t

$\ln GDP_t$  = logarithm of real GDP in original countries (each 7 country) at time t

$\ln PO_t$  = logarithm of price of Jet Fuel at time t

$\ln RP_t$  = logarithm of relative prices (or CPI of destination country: (Thailand)/CPI of original country: (each 7 country) ) at time t

$\ln ER_t$  = logarithm of exchange rate (original country (each 7 country) per destination country(Thailand)) at time t

$\ln RER_t$  = logarithm of real exchange rate [or CPI (Thailand) / CPI (each 7 country)\*1 / ER] at time t

$u_t$  = independently distributed random error term, with zero mean and constant variance at time t

And defined that  $\alpha, \beta, \gamma, \delta, \theta, \rho$  = parameters to be estimated;  $\beta > 0, \gamma < 0, \delta < 0, \theta < 0, \rho < 0$ .

## 4.2. Unit-Root Tests

This research to test the stationary in all variables were used in International Tourism Demand Model by standard test for unit root. Such as ADF-Test (1979), PP-Test(1987,1988) , KPSS-Test (1992) , DF-GLS Test (1996) , The ERS Point Optimal Test and Ng and Perron (2001).

### 4.2.1. DF-Test, ADF Test (1979)

The DF-Test uses three equation for unit root test in  $Y_t$  and  $Y_t$  is a time series data.

$$D Y_t = \alpha Y_{t-1} + U_t \quad (4) \text{ [No Intercept Term]}$$

$$D Y_t = \beta_1 + \alpha Y_{t-1} + U_t \quad (5) \text{ [Intercept Term]}$$

$$D Y_t = \beta_1 + \beta_t + \alpha Y_{t-1} + U_t \quad (6) \text{ [Intercept + Trend]}$$

where: null hypothesis is that  $\alpha = (\rho-1) = 0$  ( Non-stationary data ( $\rho=1$ ))

- if  $\alpha > \text{Mackinnon statistics}$  conclusion that time series data was stationary or  $I(d) = I(0)$  otherwise rejected  $H_0$  is that  $\alpha = (\rho-1) = 0$  or  $[\rho-1]$  because if  $\alpha$  has a statistics significance at any level then  $\alpha \neq 0$  ( $\rho \neq 1$ );
- if  $\alpha < \text{Mackinnon statistics}$  conclusion that time series data was non-stationary or  $I(d) = I(d)$  as well as accepted  $H_0$  is that  $\alpha = (\rho - 1) = 0$  or  $[\rho = 1]$  because if  $\alpha$  has not a statistics significance at any level then  $\alpha = 0$  ( $\rho = 1$ ).

The ADF-Test was used for unit root test when found that higher order autocorrelation in time series data. Before uses ADF-Test should be check dw statistics from DF-Test equation (5) and (6).

$$D Y_t = \beta_1 + \beta_t + \alpha Y_{t-1} + \beta_i \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t \quad (7)$$

When added term ( $\beta_i \sum_{i=1}^m \Delta Y_{t-i}$ ) in equation (7) then t-statistics value of  $\alpha$  before  $Y_{t-1}$  to be change as well as all t-statistics value of them to be change too. So

ADF-Test corrects for higher order serial correlation by adding lagged difference terms on the right-hand side. The hypothesis test for unit root in time series data by ADF-Test method the same as the DF-test method with the same conclusion about time series data were stationary or non-stationary.

#### 4.2.2. Phillips-Perron Test (PP-Test: 1987, 1988)

This method test for unit root was developed by Phillips and Perron (1988) and they propose a nonparametric method of controlling for higher-order serial correlation in a time series data.

$$D Y_t = \alpha + \beta_t Y_{t-1} + \varepsilon_t \quad (8)$$

The PP-test makes a correction to the t-statistic of the  $\gamma$  coefficient from the AR(1) regression to account for the serial correlation in equation (8). The correction is nonparametric since it uses an estimate of the spectrum of equation (8) at frequency zero that is robust to heteroskedasticity and autocorrelation of unknown form.

$$\gamma_j = (1/T) \sum_{t=j+1}^T \varepsilon_t^* \varepsilon_{t-j}^* \quad (9)$$

$$W^2 = \gamma_0 + 2 \sum_{j=1}^q [1 - j/(q+1)] \gamma_j \quad (10)$$

where:

$W^2$  = Newey-west heteroskedasticity autocorrelation consistent estimation

$\gamma_j$  = coefficient from AR(1) in equation (8)

$\varepsilon_t^* \varepsilon_{t-j}^*$  = error term received from equation (8)

$q = \text{floor} (4 (T/100)^{2/9})$ , [  $q$  is the truncation lag ]

And the PP-Test ( $t_{pp}$ ) has a t-statistic is computed as equation (11) as well as where  $t_b$ ,  $s_b$  are the t-statistics and standard error of ( $\beta_i$ ) received from regress in equation (8) and  $s^*$  is the standard error received from regress in same equation.

$$\text{where: PP-Test} (t_{pp}) = [(\gamma_0^{1/2} t_b) / (W)] - [(W^2 - \gamma_0) T s_b / (2 W s^*)] \quad (11)$$

The asymptotic distribution of the PP-Test ( $t_{pp}$ ) is the same as the ADF-Test. And the hypotheses to be tested are follow up:  $H_0$ : null hypothesis as time series data was non-stationary;  $H_1$ : time series data was stationary

- if PP-Test ( $t_{pp}$ ) > Mackinnon statistics conclusion that time series data was stationary otherwise rejected  $H_0$  is that Non-stationary data;
- if PP-Test ( $t_{pp}$ ) < Mackinnon statistics conclusion that time series data was non-stationary as well as accepted  $H_0$ .

#### 4.2.3. The KPSS-Test (1992)

The KPSS-Test for unit root test was produced by the Kwiatkowski, Phillips, Schmidt and Shin (1992). And the KPSS statistic is based on the residuals from the OLS regression of  $Y_t$  on the exogenous variables  $X_t$  (see equation (12)) and  $X_t$  is a

random walk :  $X_t = X_{t-1} + \varepsilon_t$ .

$$Y_t = X_t + \varepsilon_t \tag{12}$$

where:

$X_t$ :  $X_t = a_0 + b_0 t + \varepsilon_t$  [intercept and trend]

$X_t$ :  $X_t = a_0 + \varepsilon_t$  [intercept]

$\varepsilon_t$ : is a stationary random error

$Y_t$ : is data test stationary or non-stationary

Regress  $Y_t$  on  $X_t$  or regress  $Y_t$  on a constant and a trend then obtain the residual  $\varepsilon_t$  from equation (12) as well as take this residual to calculate in the KPSS statistic (see equation (13)).

$$KPSS = T^{-2} S S_t^2 / (s^2(L)) \tag{13}$$

where:

$T$  = is the sample size

$S_t = \sum_{i=1}^t \varepsilon_i$ ,  $t = 1, 2, \dots, T$

$s^2(L) = T^{-1} \sum_{t=1}^T \varepsilon_t^2 + 2 T^{-1} \sum_{s=L}^L w(s,L) \sum_{t=s+1}^T \varepsilon_t \varepsilon_{t-s}$

$w(s,L)$  = is an optional weighting function corresponding to the choice of a spectral window

$w(s,L) = 1 - s / (L + 1)$  in estimation (see Newey and west, 1987: and Kwiatkowski al., 1992, for more details)

$L$  = the number of truncation (lags) is chosen

The KPSS-test method test for unit root has the hypothesis to be tested are  $H_0$  (null hypothesis) and  $H_1$  ( $H_0$ : time series was stationary;  $H_1$ : time series was non-stationary)

- if  $KPSS$ -statistics > Quantities of distribution of  $KPSS$  statistics table as rejected  $H_0$  and accepted  $H_1$  then conclusion that  $Y_t$  was non-stationary.
- if  $KPSS$ -statistics < Quantities of distribution of  $KPSS$  statistics table and accepted  $H_0$  or rejected  $H_1$  then conclusion that  $Y_t$  was stationary.

#### 4.2.4. The DF-GLS Test (1996)

This test suggested by Elliott, Rothenberg, Stock(1996) and the DF-GLS Test is performed by testing the hypothesis  $a_0 = 0$  ( $\rho = 1$ ,  $a_0 = (\rho - 1)$ ) in equation (14) to be start for this test (because PP-Test and ADF-Test have low power for unit root test and conclude that tests for unit root need to be developed (DeJong et al (1992)) as well as Madala and Kim (1998) suggested that DF-GLS Test is a one method that higher power for unit root test).

$$D Y_t^d = a_0 Y_t^d + a_1 D Y_{t-1}^d + \dots + a_p D Y_{t-p}^d + \varepsilon_t \tag{14}$$

Where  $Y_t^d$  is the locally de-trend series  $Y_t$  and  $Y_t^d = Y_t - B_0^* - B_1^* t$  as well as where  $(B_0^*, B_1^* t)$  are obtained by regressing  $y^*$  on  $z^*$ . And where  $y^* = [y_1, (1 - \alpha^* L)$

$y_2, \dots, (1 - \alpha^*L) y_T]$  as well as  $z^* = [z_1, (1 - \alpha^*L) z_2, \dots, (1 - \alpha^*L) z_T]$ .

where:

$L$  = the lag operator

$\alpha^* = 1 + c^*/T$ ,  $c^* = -7$ : in the model with drift,  $c^* = 13.5$ : in the linear trend case  
 $z^* = (1, t)$

Both DF-GLS and ADF-Test have non-stationary as null hypothesis and to show below that:  $H_0 : a_0 = 0$  : [time series data was non-stationary];  $H_1 : a_0 \neq 0$  : [time series data was stationary]

- if  $a_0 >$  Critical values for the DF-GLS Test for a model with linear trend (Elliott et al. 1996) and rejected  $H_0$  as well as conclusion that time series data was stationary or  $I(d) = I(0)$ ;
- if  $a_0 <$  Critical values for the DF-GLS Test for a model with linear trend (Elliott et al. 1996) and accepted  $H_0$  as well as conclusion that time series data was non-stationary or  $I(d) = I(d)$ .

#### 4.2.5 The ERS Point Optimal Test

The ERS Point Optimal Test is based on quasi-differencing regression in equation (15). When a time series has an unknown mean or linear trend and this method to start from equation (15).

$$d(y_t | a) = d(x_t | a)' \delta(a) + \varepsilon_t \quad (15)$$

where:

$d(y_t | a)$  and  $d(x_t | a)$  are quasi-differenced data for  $y_t$  and  $x_t$

$\varepsilon_t$ : error term that is independently and identically distributed

$y_t$ : time series data were tested

$x_t$ : contain a constant only or both a constant and time trend

$\delta(a)$ : the coefficient to be estimated in equation (15)

$a$ :  $a^* = 1 - 7/T$  when  $x_t$  contains a constant

$a$ :  $a^* = 1 - 13.5/T$  when  $x_t$  contains a constant and time trend

The  $P_T$  statistics was used in ERS Point Optimal Test for unit root test in time series data and show it below that: (see equation (16))

$$P_T \text{ statistics} = ((SSR(a^*)) - (a^*)SSR(1)) / \hat{f}_0 \quad (16)$$

where:

$SSR$  = the sum of squared residuals from equation (12B)

$\hat{f}_0$  = is a frequency zero spectrum estimation or  $\hat{f}_0 = \sum_{j=-(T-1)}^{T-1} \gamma^*(j) \cdot k(j/\tau)$

$j$  = the  $j$ -th sample autocovariance of the  $\varepsilon_t$

$\tau$  = a truncation lag in the covariance weighting

$\gamma^*(j) = \sum_{t=j+1}^T (\varepsilon_t \varepsilon_{t-j}) / T$ ,  $T$  = the number of observation

$k$  = a kernel function (for detail see Eview 5.1 (2004))

and where:

Bartlett:  $k(x) = [1-|x| \text{ if } |x| < \text{ or } = 1, 0 = \text{ otherwise}]$

Parzen:  $k(x) = [1-6x^2+6|x|^3 \text{ if } 0 < \text{ or } = |x| < \text{ or } = (1/2)$   
 $2(1-|x|^3) \text{ if } (1/2) < |x| < \text{ or } = 1$   
 $0 \text{ otherwise}]$

Quadratic spectral:  $k(x)$

$k(x) = 25/(12p^2x^2) * ([ \sin (6px / 5) / (6 px / 5)] - \cos (6 px / 5) )$

The null hypothesis of ERS Point Optimal Test for unit root test in time series data can show below that:  $H_0: \alpha = 1$ : [time series data was non-stationary];  $H_1: \alpha = \alpha^*$ : [time series data was stationary]

- if  $P(\tau)$  statistics > Critical values for ERS test statistic are computed by interpolating the simulation result provided by ERS (1996, table 1, p.825) for  $T = \{50,100,200, \infty\}$  then accepted  $H_0: \alpha = 1$ : [time series data was non-stationary] and said that time series data was non-stationary;
- if  $P(\tau)$  statistics < Critical values for ERS test statistic are computed by interpolating the simulation result provided by ERS (1996, table 1, p.825) for  $T = \{50,100,200, \infty\}$  then accepted  $H_1: \alpha = \alpha^*$ : [time series data was stationary] and said that time series data was stationary (perception : the ERS –Test was used to test unit root for time series data have big sample size at least more than 50 observations).

**4.2.6. The Ng and Perron (NP-test:2001)**

Ng and Perron (2001) developed from four test statistics based on the GLS detrended data  $Y^d_t$  and these test statistics are modified forms of Philips and Perron  $Z_a$  and  $Z_t$  statistics, Bhargava (1986)  $R_1$  statistic and the ERS Point Optimal statistic. This method to start by first define term follow that: (see equation (17)).

$$K = \sum_{t=2}^T ( Y^d_{t-1} )^2 / T^2 \tag{17}$$

And modified statistics of Ng and Perron (2001) be written as, (four statistics were used to test for unit root in time series data :  $MZ^d_a, MZ^d_t, MSB^d$  and  $MP^d_t$ ).

where:

$$MZ^d_a = (T^{-1} ( Y^d_t )^2 - \epsilon_0) / (2k)$$

$$MZ^d_t = MZ^d_a \cdot MSB^d$$

$$MSB^d = ( k / \epsilon_0 )^{1/2}$$

and

$$MP^d_t = \{ (c^{*2} k - c^*T^{-1}( Y^d_t )^2) / \epsilon_0 \text{ if } x_t = 1 \text{ or } z^* = 1, \\ (c^{*2} k + (1-c^*)T^{-1}( Y^d_t )^2) / \epsilon_0 \text{ if } x_t = (1,t) \text{ or } z^* = (1,t) \}$$

where:

$$c^* = \{ -7 \text{ if } x_t = 1 \text{ or } z^* = 1, -13.5 \text{ if } x_t = (1,t) \text{ or } z^* = (1,t) \}$$

$$\epsilon_0 = \sum_{j=(T-1)}^{T-1} \gamma^*(j) \cdot k(j/t),$$

$j$  = the  $j$ -th sample autocorvariance of the  $\epsilon_t$

$t$  = a truncation lag in the covariance weighting

$\gamma^*(j) = \sum_{t=j+1}^T (\varepsilon_t \varepsilon_{t-j}) / T$ ,  $T$  = the number of observation

or

$\hat{f}_0$  = kernel- based sum-of-covariance estimator, and autoregressive spectral density estimators

The null hypothesis of Ng and Perron (2001) Test for unit root test in time series data can show below that:  $H_0$ : time series data was non-stationary;  $H_1$ : time series data was stationary

- if  $MZ_a^d$ ,  $MZ_t^d$ ,  $MSB^d$ ,  $MP_t^d$  statistics > Critical values of Ng and Perron ((2001), table 1) then accepted  $H_0$ : [time series data was non-stationary] and said that time series data was non-stationary;
- if  $MZ_a^d$ ,  $MZ_t^d$ ,  $MSB^d$ ,  $MP_t^d$  statistics < Critical values of Ng and Perron ((2001), table 1) then rejected  $H_0$ : [time series data was non-stationary] one other hand accepted  $H_1$ : [time series data was stationary] and said that time series data was stationary.

### 4.3. Cointegration and Error-Correction Mechanism

The problems with Engle-Granger two step procedure in co-integration approach. For example if it is assumed that the Economic theory can guide in determining the dependent and the independent variable, like in the consumption function (equation number (18)).

$$C_t = \alpha_0 + \alpha_1 Y_t + u_t \quad (18)$$

But if equation (18) has three variables ( $Y$ ,  $W$ ,  $Z$ ) then these are three possible long run relationships then can show equation numbers (19), (20) and (21).

$$Y_t = \alpha_0 + \alpha_1 W_t + \alpha_2 Z_t + u_t \quad (19)$$

$$Z_t = \beta_0 + \beta_1 Y_t + \beta_2 W_t + u_t \quad (20)$$

$$W_t = \gamma_0 + \gamma_1 W_t + \gamma_2 Z_t + u_t \quad (21)$$

So that the co-integration approach of EG can not do it in more than two variables and these weaknesses limit applicability of the this approach. To introduce a technique that consider co-integration not only between pairs of variables, but also in a system this technique is the ML approach of Johansen and Juselius (1990). The Johansen and Juselius approach start at model  $Z_t$  unrestricted vector auto-regression (VAR) involving up to  $K$ -lags of  $Z_t$ : (equation number (22))

$$Z_t = A_1 Z_{t-1} + \dots + A_k Z_{t-k} + u_t, \quad u_t \sim IN(0, \Sigma) \quad (22)$$

Where  $Z_t$  is  $(n \times 1)$  and each of the  $A_i$  is an  $(n \times n)$  matrix of parameters. Equation (22) has been expressed in first differenced form and it is convenient to rewrite the equation (22) to be (23) as well as described below.

$$\Delta Z_t = \Gamma_1 \Delta Z_{t-1} + \dots + \Gamma_{k-1} \Delta Z_{t-k+1} + \Pi Z_{t-k} + u_t \tag{23}$$

where:

$$\Gamma_i = -(I - A_1 - \dots - A_i), (i = 1, \dots, k-1)$$

$$\Pi = -(I - A_1 - \dots - A_i)$$

$\Pi = \alpha\beta'$  and  $\alpha$  is adjustment coefficients of disequilibrium and  $\beta$  is Co-integrating vectors (and the value of  $\alpha\beta'$  to be found).

This way of specifying the system contains information on both the short- and long-run adjustment to changes in  $Z_t$  ( $\Delta Z_t$ ) and rewriting (23) as: (equation number (24)).

$$\Delta Z_t + \Pi Z_{t-k} = \Gamma_1 \Delta Z_{t-1} + \dots + \Gamma_{k-1} \Delta Z_{t-k+1} + u_t \tag{24}$$

It is possible to correct for short-run dynamics by regressing  $\Delta Z_t$  and  $Z_{t-k}$  separately on the right-hand side of (24). That is, the vectors  $R_{0t}$  and  $R_{kt}$  are obtained from: equation number (25) and number (26).

$$\Delta Z_t = P_1 \Delta Z_{t-1} + \dots + P_{k-1} \Delta Z_{t-k+1} + R_{0t} \tag{25}$$

$$Z_{t-k} = T_1 \Delta Z_{t-1} + \dots + T_{k-1} \Delta Z_{t-k+1} + R_{kt} \tag{26}$$

Which can then be used to form residual (product moment) matrices: equation number (27).

$$S_{ij} = T^1 \Sigma_{i=1}^T R_{it} R'_{jt}, (i,j = 0,k) \tag{27}$$

The maximum likelihood estimate of  $\beta$  is obtained as the eigenvectors corresponding to the  $r$  largest eigenvalues from solving the number (28).

$$|\lambda S_{ij} - S_{ji} S_{ii}^{-1} S_{ij}| = 0 \tag{28}$$

Which gives the  $n$  eigenvalues  $\lambda^1 > \lambda^2 > \dots > \lambda^n$  and the corresponding eigenvectors  $\hat{v} = (\hat{v}^1, \dots, \hat{v}^n)$ . Those  $r$  elements in  $\hat{v}$  which determine the linear combinations of stationary relationships can be denoted  $\hat{\beta} = (\hat{v}^1, \dots, \hat{v}^r)$ , that is, these are the cointegration vectors. The ECM model first used by Sargan (1964) after that reproduced by K.F. Wallis and D.F. Hendry (1984) as well as popularized by Engle and Granger corrects for disequilibrium. The back ground concept of ECM model can be show below that: (see equation (29))

$$\Delta Y_t = B \Delta X_t + u_t \tag{29}$$

where:

$\Delta Y_t$  = the changing of dependent variable

$\Delta X_t$  = the changing of independent variable

$B$  = coefficient of  $\Delta X_t$

$u_t$  = error term of equation (29)

If interpretation equilibrium as meaning the variables become constant as well as to impose that  $Y_t = Y_{t-1} = Y_{t-2} = \dots = Y_{t-n}$  and  $X_t = X_{t-1} = X_{t-2} = \dots = X_{t-n}$ . So suppose that the value of  $Y_t$  in equilibrium was dictated by equation (30) and equation (31).

$$\Delta Y_t = B \Delta X_t + \phi(Y_{t-1} - \lambda X_{t-1}) + u_t \quad (30)$$

$$\Delta Y_t = B \Delta X_t + \phi Y_{t-1} - \phi \lambda X_{t-1} + u_t \quad (31)$$

defined:

$$EC_t = Y_t - \lambda X_t, \text{ [EC = error correction]}$$

$$EC_{t-1} = Y_{t-1} - \lambda X_{t-1}$$

$$\phi EC_{t-1} = \phi(Y_{t-1} - \lambda X_{t-1})$$

$$\phi EC_{t-1} = \phi Y_{t-1} - \phi \lambda X_{t-1}, \text{ [see equation (31)]}$$

The simply of ECM model form can be used the equation (32) or (33) as well as this equation can be show below that:

$$\Delta Y_t = B \Delta X_t + \phi EC_{t-1} + u_t \quad (32)$$

$$\Delta Y_t = \text{lagged}(\Delta X_t, \Delta Y_t) + \phi EC_{t-1} + u_t \quad (33)$$

And if  $Y_t$  and  $X_t$  are cointegrated, there is a long-run relationship between of them then the short-run dynamics can be described by ECM model. This is known as the Granger representation theorem. Furthermore the ECM model must has a negative value of  $\phi$  and it is statistically significant (Granger (1986)).

## 5. THE RESULTS OF THE RESEARCH

### 5.1. The results of the Unit-Root Test

This paper determines the order of integration of the variables by 6 standard method tests for unit root. Namely ADF-Test (1979), PP-Test (1987, 1988), KPSS-Test (1992), DF-GLS Test (1996), The ERS Point Optimal Test and Ng and Perron Test (2001). And if variable are integrated of the same order than apply the Johansen-Juselius (1990,1992,1994) maximum likelihood method to obtain the number of cointegrating vector(s) for the long-run and use the ECM model for the short-run. The results of unit root test based on the 6 standard method tests are shown in table 1.

**Table 1. Results of Unit Root Test based on 6 method tests for all variables**

variables	Malaysia	China	England	German	France	America	Canada
D1	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
GDP	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
Po	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RP	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
ER	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RER	I(d)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)

Form: computed



All variables were used in the international tourism demand model of Thailand and were integrated of order (d) excepted both GDP of Malaysia and RER of China which were integrated of order (0).

And when first differencing or second differencing in all variables (excepted both GDP of Malaysia and RER of China) were used in this model as well as the order of integrated in all variables changed. The results of unit root test based on 6 methods after first differencing or second differencing showed in table 2.

**Table 2. Results of Unit Root Test based on 6 methods test for all variables after first or second differencing**

variables	Malaysia	China	England	German	France	America	Canada
D1	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
GDP	I(0)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
Po	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
RP	I(1)	I(2)	I(1)	I(2)	I(2)	I(2)	I(2)
ER	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
RER	I(1)	I(0)	I(1)	I(1)	I(1)	I(1)	I(1)

*From: computed*

After first differencing or second differencing in all variables were used in international tourism demand model of Thailand were integrated of order (1) excepted the RP of China, the RP German, the RP of France, the RP of America and the RP of Canada were integrated of order (2).

## **5.2. The results of the analysis of Modelling International Tourism Demand in Thailand**

### **5.2.1. The results of the analysis of Modelling International Tourism Demand in Thailand as in long-run**

Estimates of long-run cointegrating vectors of modelling international tourism demand in Thailand are given in table 3 and this method is based on Johansen and Juselius (1990). In Malaysia as in long-run cointegrating vectors suggested that  $\ln(\text{PO}_t)$ ,  $\ln(\text{RP}_t)$  and  $\ln(\text{ER}_t)$  have positive impact on international tourism demand model excepted  $\ln(\text{RER}_t)$  has negative impact on this model. The results imply that in the long-run when  $\ln(\text{PO}_t)$  increases 1% then the number of Malaysian tourists arriving in Thailand increases 0.16%,  $\ln(\text{RP}_t)$  increases 1% then the number of Malaysian tourists arriving in Thailand increases 1.79% and when  $\ln(\text{ER}_t)$  increases 1% then the number of Malaysian tourists arriving in Thailand increases 3.93%. Otherwise when  $\ln(\text{RER}_t)$  increases 1% then the number of Malaysian tourists arriving in Thailand decreases 4.98%. In China as the long-run cointegrating vectors suggested that both  $\ln(\text{GDP}_t)$  and  $\ln(\text{ER}_t)$  have positive impact on international tourism demand model otherwise  $\ln(\text{PO}_t)$  has negative impact on this model. The results imply that in the long-run when  $\ln(\text{GDP}_t)$  increases 1% then the number of Chinese tourists arriving in Thailand increases 1.01% and  $\ln(\text{ER}_t)$  increases 1% then the number of Chinese tourists arriving in Thailand increases 1.11%. Otherwise when  $\ln(\text{PO}_t)$  increases 1%

then the number of Chinese tourists arriving in Thailand decreasing 0.75%. In England as in long-run cointegrating vectors suggested that  $\ln(\text{GDP}_t)$ ,  $\ln(\text{PO}_t)$ ,  $\ln(\text{RP}_t)$  and  $\ln(\text{ER}_t)$  have positive impact on international tourism demand model excepted  $\ln(\text{RER}_t)$  has negative impact on this model. The results imply that in the long-run when  $\ln(\text{GDP}_t)$  increases 1% then the number of English tourists arriving in Thailand increases 1.12%,  $\ln(\text{PO}_t)$  increases 1% then the number of English tourists arriving in Thailand increases 0.03%,  $\ln(\text{RP}_t)$  increases 1% then the number of English tourists arriving in Thailand increases 0.005% and  $\ln(\text{ER}_t)$  increases 1% then the number of English tourists arriving in Thailand increases 0.86%. Otherwise when  $\ln(\text{RER}_t)$  increases 1% then the number of English tourists arriving in Thailand decreases 1.22%.

**Table 3. Results of the Long-Run relationship in international tourism demand of Thailand based on the Johansen and Juselius (1990) methodology (international tourist arrivals is the dependent variable (1997(Q1)) to 2005(Q2))**

Country	$\ln(\text{GDP}_t)$	$\ln(\text{PO}_t)$	$\ln(\text{RP}_t)$	$\ln(\text{ER}_t)$	$\ln(\text{RER}_t)$
Malaysia	-	0.16	1.79	3.93	-4.98
China	1.01	-0.75	-	1.11	-
England	1.12	0.03	0.005	0.86	-1.22
German	2.10	-0.10	-	-3.99	4.05
France	3.37	-2.52	-	-23.63	22.78
America	1.71	-0.06	-	-5.79	3.63
Canada	7.37	0.01	-	1.52	7.91

*From: computed*

In Germany as in the long-run cointegrating vectors suggested that both  $\ln(\text{GDP}_t)$  and  $\ln(\text{RER}_t)$  have a positive impact on the international tourism demand model otherwise both  $\ln(\text{PO}_t)$  and  $\ln(\text{ER}_t)$  have a negative impact on this model. The results imply that in the long-run when  $\ln(\text{GDP}_t)$  increases 1% then the number of German tourists arriving in Thailand increases 2.10% and when  $\ln(\text{RER}_t)$  increases 1% then the number of German tourists arriving in Thailand increases 4.05%. Otherwise when  $\ln(\text{PO}_t)$  increases 1% then the number of German tourists arriving in Thailand decreases 0.10% and when  $\ln(\text{ER}_t)$  increases 1% then the number of German tourists arriving in Thailand decreasing 3.99%. In France as in long-run cointegrating vectors suggested that both  $\ln(\text{GDP}_t)$  and  $\ln(\text{RER}_t)$  have positive impact on international tourism demand model otherwise both  $\ln(\text{PO}_t)$  and  $\ln(\text{ER}_t)$  have negative impact on this model. The results imply that in long-run when  $\ln(\text{GDP}_t)$  increases 1% then the number of French tourists arriving in Thailand increases 3.37% and when  $\ln(\text{RER}_t)$  increases 1% then the number of French tourists arriving in Thailand increases 22.78%. Otherwise when  $\ln(\text{PO}_t)$  increases 1% then the number of French tourists arriving in Thailand decreases 2.52% and when  $\ln(\text{ER}_t)$  increases 1% then the number of French tourists arriving in Thailand decreases 23.63%. In America as in long-run cointegrating vectors suggested that both  $\ln(\text{GDP}_t)$  and  $\ln(\text{RER}_t)$  have a positive impact on international tourism demand model otherwise both  $\ln(\text{PO}_t)$  and  $\ln(\text{ER}_t)$  have a negative impact on this model. The results imply that in the long-run when  $\ln(\text{GDP}_t)$  increases 1% then the number of American tourists arriving in Thailand increases

1.71% and  $\ln(\text{RER}_t)$  increases 1% then the number of American tourists arriving in Thailand increases 3.63%. Otherwise when  $\ln(\text{PO}_t)$  increases 1% then the number of American tourists arriving in Thailand decreases 0.06% and when  $\ln(\text{ER}_t)$  increases 1% then the number of American tourists arriving in Thailand decreases 5.79%. And finally Canada as in long-run cointegrating vectors suggested that  $\ln(\text{GDP}_t)$ ,  $\ln(\text{PO}_t)$ ,  $\ln(\text{ER}_t)$  and  $\ln(\text{RER}_t)$  have positive impact on international tourism demand model. The results imply that in long-run when  $\ln(\text{GDP}_t)$  increases 1% then the number of Canadian tourists arriving in Thailand increases 7.37%,  $\ln(\text{PO}_t)$  increases 1% then the number of Canadian tourists arriving in Thailand increases 0.01%,  $\ln(\text{ER}_t)$  increases 1% then the number of Canadian tourists arriving in Thailand increases 1.52% and when  $\ln(\text{RER}_t)$  increases 1% then the number of Canadian tourists arriving in Thailand increases 7.91%.

### **5.2.2. The results of the analysis of Modelling International Tourism Demand in Thailand as in the short-run**

The results of the error correction model for each of the 7 countries (Malaysia, China, England, German, France, America and Canada) is presented in table 4 (Results of the Short-Run relationship in international tourism demand of Thailand based on the ECM model). The results in the short-run indicate that growth in income of the origin countries (except Malaysia) has a positive impact on visitors coming to Thailand. The results imply that in the short-run when  $\ln(\text{GDP}_t)$  in China, England, German, France, America and Canada increases 1% then the number of Chinese tourists arriving in Thailand increases 0.22%, the number of English tourists arriving in Thailand increases 1.24%, the number of German tourists arriving in Thailand increases 5.91%, the number of French tourists arriving in Thailand increases 1.16%, the number of American tourists arriving in Thailand increases 16.05% and the number of Canadian tourists arriving in Thailand increases 3.74%. The results in the short-run indicate that an increase in the world price of jet fuel (except for England and France) has a positive impact on the number of visitors coming to Thailand. The results imply that in the short-run when the world price of jet fuel increases 1% then the number of Malaysian tourists arriving in Thailand increases 0.49%, the number of Chinese tourists arriving in Thailand increases 0.93%, the number of German tourists arriving in Thailand increases 0.32%, the number of American tourists arriving in Thailand increases 0.49%, the number of Canadian tourists arriving in Thailand increases 0.18%.

The results in the short-run indicate that an increase in the exchange rate between the country of origin (England, Germany, France) and Thailand has a negative impact on visitors coming to Thailand. The results imply that in the short-run when the exchange rates between the country of origin and Thailand increases 1% then the number of English tourists arriving in Thailand decreasing 0.58%, the number of German tourists arriving in Thailand decreasing 1.82% and the number of France tourists arriving in Thailand decreasing 1.40%. The results in the short-run indicate that an increase in the real exchange rate between the country of origin (England, German and America) and Thailand has a negative impact on the number of visitors' coming to Thailand. Except France in the short-run indicated that an increase in the

real exchange rate between France and Thailand has a positive effect on the number of French visitors coming to Thailand. The results imply that in the short-run when real exchange rates increase 1% then the number of English tourists arriving in Thailand decreasing 0.44%, the number of German tourists arriving in Thailand decreasing 1.90% and the number of American tourists arriving in Thailand decreasing 1.84%.

**Table 4. Results of the Short-Run relationship in international tourism demand of Thailand based on ECM model**

Variables	Malaysia	China	England	German	France	America	Canada
C	0.06 (0.92)	-0.16*** (-3.02)	0.06** (2.08)	-0.08** (-2.37)	0.01 (0.79)	-0.02 (0.37)	0.01 (0.48)
$\Delta \ln(\text{GDP}_t)$	-	0.22a*** (3.07)	1.24** (2.23)	5.97* (1.90)	1.16b*** (12.66)	16.05b*** (2.79)	3.74** (2.17)
$\Delta \ln(\text{PO}_t)$	0.49* (1.68)	0.93*** (3.25)	-0.05 (-0.69)	0.32a** (2.41)	-0.03 (-0.65)	0.49b** (2.13)	0.18* (1.73)
$\Delta \ln(\text{RP}_t)$	93.34b (1.34)	-	-2.90a (-1.59)	-	-	-	-
$\Delta \ln(\text{ER}_t)$	85.99 (1.22)	0.11 (0.28)	-0.58b** (-2.40)	-1.82a* (-1.88)	-1.40** (-2.13)	1.34 (1.44)	-0.40a (-0.48)
$\Delta \ln(\text{RER}_t)$	-83.63 (-1.19)	-	-0.44* (-1.92)	-1.90a* (-1.95)	1.40** (2.14)	-1.84a*** (-3.27)	0.59a (0.74)
$\text{EC}_{t-1}$	-1.66* (-5.89)	-15.51*** (-4.12)	-0.95*** (-12.29)	-0.78*** (-37.64)	-1.80* (-1.71)	-0.92*** (-5.51)	-0.09* (-2.55)
$\text{R}^2$	0.58	0.63	0.88	0.97	0.93	0.72	0.95
$\text{R}^2$	0.44	0.54	0.84	0.96	0.92	0.62	0.93
DW.	2.03	2.12	2.01	1.96	1.83	1.72	1.52
F-statistics	4.18***	6.73***	20.83***	112.66***	38.99***	7.34***	64.84***
J-B(Normal) (Prob.)	0.44 (0.79)	26.14 (0.00)	0.79 (0.67)	0.24 (0.88)	0.17 (0.91)	0.01 (0.99)	9.92 (0.00)
LM.-test (Prob.)	0.62 (0.71)	0.87 (0.64)	0.29 (0.86)	3.02 (0.22)	1.69 (0.42)	1.97 (0.37)	1.92 (0.38)
RESET (Prob.)	1.98 (0.16)	10.92 (0.00)	0.88 (0.43)	5.70 (0.01)	2.46 (0.11)	0.09 (0.90)	5.02 (0.01)
White-test (Prob.)	17.12 (0.14)	12.68 (0.24)	8.15 (0.88)	11.12 (0.51)	16.38 (0.17)	14.74 (0.25)	14.64 (0.26)

$a = \text{lag } 1 \text{ period}$ ,  $b = \text{lag } 2 \text{ period}$ , \* = Sig. at 90%, \*\* = Sig. at 95%, \*\*\* = Sig. at 99%.  
From: computed

On the other hand the results imply that in the short-run when real exchange rate increases 1% then French tourists arriving in Thailand increase 1.40%. Perception the  $\text{R}^2$  value of international tourism demand model of Thailand was very different between each other. Such as the European countries (England, German and France) and the North American countries (America and Canada) have very high  $\text{R}^2$  values, higher than the Asia countries (Malaysia and China). The error correction term ( $\text{EC}_{t-1}$ ) in every model used in this research showed disequilibrium (see table 4) or showed the speed of adjusted short-run to long of them too. The disequilibrium of Canada was very short, more than other countries. And the disequilibrium of China was a very long time, more than other countries. Also the speed of adjusted short-run to long-run of other countries was similar with each other (the total average values were not more than -2.00).

Furthermore this paper applied a number of diagnostic tests to the error correction model (table 4). The model passed the Jarque-Bera normality test,

suggesting that the errors are normally distributed except that the models for China and Canada not pass this test because the data used in this paper were from a sample size which was too small for the Jarque-Bera normality test. Hence, it should not be used with the Jarque-Bera statistics for normality test in error term (Gujarati 2003). There is no evidence of autocorrelation in the disturbance of the error term (see value of L.M.-test in same table). The RESET test indicates that every model was correctly specified (excepted China, German and Canada). The White-test suggested that the error is homoskedastic and independent of the regressors.

## **6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS**

This paper was motivated by the need for empirical analysis of international tourist behavior arriving in Thailand and an analysis of the determinants of Thailand's international tourism demand from its seven main source markets, Malaysia, China, England, Germany, France, America and Canada. In this article, six standard unit root test were used test for all variables. Namely, ADF-Test (1979), PP-Test (1987, 1988), KPSS-Test (1992), DF-GLS Test (1996), The ERS Point Optimal Test and Ng and Perron (2001). And in this paper the bounds testing approach to cointegration (Johansen-Juselius approach (1990, 1992, 1994) was used to investigate long-run equilibrium relationships between the number of international tourists arriving in Thailand with economics variables. The economic variables such as the GDP of major countries of international tourists coming to Thailand, the world price of kerosene-type jet fuel, the relative price of Thailand with the countries of international tourism and the exchange rate of Thailand compared with that of the countries of origin of international tourists. The existence of cointegration allowed for the application of error correction models to depict the short-run elasticities.

The conclusion of the research and policy recommendations has There are three important conclusions and recommendations that emerge from the empirical analysis of the research. First, a 1% increase in income (GDP) in the long-run in main source markets, China, England, German, France, America and Canada leads to an increase in international visitor traveling to Thailand by 1.01%, 1.12%, 2.10%, 3.37%, 1.71% and 7.37%, respectively. This result is consistent with economic theory and the this result was similar with the results of previous empirical studies of tourist demand (Lim & McAleer(2003), Kafono & Gounder(2004) and Narayan(2004). The long-run result for Thailand's international tourism demand implies that Thailand received increased international visitors with a growth in income (GDP) in major markets during that period. If this can be generalized for future years, then it argues well for the continued development of the Thai tourism industry. Secondly, a 1% increase in transportation costs (price of jet fuel) in the long-run in mostly major source markets such as China, Germany, France and America leads to decreased international tourist arrivals from those countries in Thailand of 0.75%, 0.10%, 2.52% and 0.06%, respectively. This result is consistent with economic theory and this result was similar with the results of previous empirical studies of tourism demand (Lim & McAleer(2001) Narayan(2004)). If a generalization can be made for future years, then

it suggests that the Thai government should increase support for international low cost airlines or reduce the cost for international airlines arriving in Thailand because the Thai government cannot control the price of jet fuel in future. Thirdly, in the long-run the exchange rate is an important determiner of international tourist's behavior and a 1% increase in the value of the exchange rate of Thailand against the currency of the major tourist markets of Malaysia, England, German, France and America leads to a decrease in international visitor arrivals from these countries to Thailand of 4.98%, 1.22%, 3.99%, 23.63% and 5.79%, respectively. This results is consistent with economic theory and it suggests that the Reserve bank of Thailand should be careful when using any policy that impacts on Thai currency because when the Thai currency is very strong, it not only negatively impacts on export goods and services (Anderson and Garcia 1989, Pick 1990, Chukiat 2003) but it also decreases international visitor arrivals to Thailand (Lim & McAleer 2003).

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D1	I(d)	I(0)a	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
GDP	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(0)a	I(d)	I(0)a	I(d)	I(0)a	I(d)	I(0)a	I(d)
RP	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
ER	I(0)a	I(d)	I(0)a	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RER	I(0)a	I(d)	I(0)a	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
<b>Canada</b>																			
D1	I(0)a	I(0)a	I(d)	I(d)	I(d)	I(d)	I(d)a	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
GDP	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RP	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
ER	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RER	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(0)	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)

*In = intercept , INT = intercept+ trend , a = Sig. 99 %.*

*Con = Conclusion of status of order integrated by 6 standard unit root test.*

*From: computed*

**Table 2. Results of Unit Root test based on standard test (6 methods) after 1<sup>th</sup> or 2<sup>th</sup> differencing**

Countries	PP		ADF		GLS-DF		KPSS		ERS		MZ <sub>a</sub> <sup>d</sup>		MZ <sub>t</sub> <sup>d</sup>		MSB <sup>d</sup>		MP <sub>t</sub> <sup>d</sup>		Con.	
	IN	INT	IN	INT	IN	INT	IN	INT	IN	INT	IN	INT	IN	INT	IN	INT	IN	INT	I(d)	
<b>Malaysia</b>																				
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)b	I(1)	I(1)b	I(1)a	I(1)b	I(1)a	I(1)b	I(1)a	I(1)b	I(1)a	I(1)a	I(1)a
GDP																				I(0)
PO	I(1)a	I(1)b	I(1)c	I(1)b	I(1)a	I(1)	I(1)c	I(1)c	I(1)	I(1)	I(1)a	I(1)c	I(1)c	I(1)	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a
RP	I(1)b	I(1)b	I(1)c	I(1)b	I(1)a	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)a	I(1)c	I(1)c	I(1)	I(1)a	I(1)a	I(1)	I(1)	I(1)	I(1)a,c
ER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)b	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)a
RER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)a
<b>China</b>																				
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)b	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)a
GDP	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)c	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)a
RP	I(2)a	I(2)a	I(2)a	I(2)a	I(2)b	I(2)b	I(2)	I(2)	I(2)a	I(2)c	I(2)	I(2)c	I(2)	I(2)c	I(2)	I(2)c	I(2)	I(2)c	I(2)	I(2)a
ER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)a	I(1)a	I(1)b	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
RER																				I(0)
<b>England</b>																				
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)b	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a
GDP	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)b	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)a
RP	I(1)a	I(1)a	I(1)a	I(1)b	I(1)a	I(1)b	I(1)	I(1)b	I(1)a	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)a

ER	I(1)a	I(1)b	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)b	I(1)	I(1)b	I(1)c	I(1)b	I(1)c	I(1)b	I(1)c	I(1)a
RER	I(1)a	I(1)b	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)b	I(1)	I(1)b	I(1)b	I(1)b	I(1)b	I(1)b	I(1)b	I(1)b	I(1)b	I(1)b
<b>German</b>																			
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a
GDP	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)c	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a
RP	I(2)a	I(2)a	I(2)b	I(2)b	I(2)b	I(2)a	I(2)	I(2)	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a
ER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)b	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
RER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
<b>France</b>																			
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a
GDP	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)b	I(1)a	I(1)c	I(1)a	I(1)b	I(1)a	I(1)c	I(1)a	I(1)b	I(1)a
RP	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)	I(2)	I(2)a	I(2)b	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a	I(2)a
ER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
RER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
<b>America</b>																			
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a
GDP	I(1)a	I(1)a	I(1)a	I(1)b	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)b	I(1)c	I(1)b	I(1)c	I(1)a
RP	I(2)a	I(2)a	I(2)a	I(2)b	I(2)b	I(2)c	I(2)	I(2)	I(2)	I(2)a	I(2)b	I(2)a	I(2)b	I(2)a	I(2)b	I(2)a	I(2)b	I(2)a	I(2)a
ER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
RER	I(1)a	I(1)a	I(1)a	I(1)b	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)c	I(1)a	I(1)c	I(1)b	I(1)c	I(1)a	I(1)c	I(1)a
<b>Canada</b>																			
D1	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)	I(1)a	I(1)a	I(1)a	I(1)c	I(1)a	I(1)c	I(1)b	I(1)c	I(1)b	I(1)c	I(1)a
GDP	I(1)b	I(1)c	I(1)b	I(1)c	I(1)a	I(1)b	I(1)	I(1)	I(1)b	I(1)c	I(1)a	I(1)b	I(1)a	I(1)b	I(1)a	I(1)b	I(1)a	I(1)b	I(1)a
RP	I(2)a	I(2)a	I(2)b	I(2)b	I(2)b	I(2)a	I(2)	I(2)	I(2)a	I(2)a	I(2)c	I(2)a	I(2)c	I(2)a	I(2)	I(2)a	I(2)c	I(2)a	I(2)a
ER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a
RER	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)a	I(1)	I(1)	I(1)a	I(1)b	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a	I(1)c	I(1)a

*In = intercept , INT = intercept+ trend , a = Sig. at 99 % , b = Sing at 95% , c = Sing at 90%.*

*Con = Conclusion of status of order integrated by 6 standard unit root test.*

*From : computed*

## **FORECASTING WITH X-12-ARIMA AND ARFIMA: INTERNATIONAL TOURIST ARRIVALS TO INDIA**

**PRASERT CHAITIP, CHUKIAT CHAIBOONSRI \***

**ABSTRACT:** *Econometric forecasting involves the application of statistical and mathematical models to forecast future economic developments. This study focuses on forecasting methods based on both X-12-ARIMA seasonal adjustment and an autoregressive fractionally integrated moving average (ARFIMA). Secondary data based on facts and figures that have already been recorded were utilized to forecast international tourist arrivals to India, 2007-2010. From this period the results confirm that the best forecasting method for India based on the X-12-ARIMA seasonal adjustment consisting of X-12-ARIMA(0,1,2)(0,1,1), X-12-ARIMA(0,1,1)(0,1,1) and X-12-ARIMA(2,1,0)(0,1,1) and the best forecasting method based on ARFIMA(p,d,q) method consisting of ARFIMA(1,0.1906,1), ARFIMA(1,0.2562,1), ARFIMA(1,0.2635,1) and ARFIMA(1,0.2951,1). Furthermore these methods predict that international tourism arrivals to India, 2007-2010 will increase at a positive growth rate. If these results can be generalized to a series of future year, then a recommendation from the study under taken should enable both public sector and private sector policy makers to develop a strategic tourism plan to focus on the increasing numbers of international tourist arrivals to India.*

**KEY WORDS:** *India; international tourism; X-12-ARIMA method; ARFIMA method; best forecasting methods*

### **1. INTRODUCTION**

International tourist arrivals and international tourist receipts have traditionally been used as benchmark aggregate series to assess the overall importance of tourism worldwide and in specific countries. High international tourist arrival levels may be used in advertising campaigns and also in political discussions to legitimize and emphasize the success of a country in the international community. Similarly, sizeable international tourist receipts can be a good indicator of the role of tourism in an economy in term of both Gross Domestic Product and foreign exchange generation. Policy makers may subsequently be convinced to assist tourism development and further increase profitability from tourism activities. It is not surprising, therefore, that

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the majority of World Tourism Organization (WTO) statistics focus on these two time series reported as levels, annual changes and market shares (Papatheodorou and Song 2005). Furthermore The United Nations Conference on Trade and Development singled out tourism as the only sector in international trade in services for which developing countries had experienced positive surpluses in their trade account (UNCTAD, 1998). Tourism receipts in developing countries, valued at US\$ 6 billion in 1980, reached an unprecedented US. \$ 62.2 billion in 1996.

The prospects are that this flow will continue a manifestation of the growing importance of tourism (Narayan, 2005). The above information emphasizes that international tourism can generate money for the economy of developing countries, such as India. In 2002, India received 2.38 million international tourists and in the same year India received income from international tourism of 2,923 million US\$. And in 2004, the number of international tourists was 3.46 million and the income was 4,769 million US. \$. These data show that when the number of international tourists to India increases, then the income from international tourists to India also increases. Therefore, if the econometrics approach is able to forecast the number of international tourist arrivals to India, it will also be able to forecast the level of income from international tourists. Thus it is an essential analytical tool in tourism policy and planning.

There were many empirical studies tested time series methods to forecast international tourism (in terms of tourist arrivals) for a particular country (Richa, 2005). An incomplete list of recent studies includes those by Martin and Witt(1987), Chan(1993), Witt *et al*(1994), turner et al (1995, 1997), Kulendran and King (1997), Chu (1998), Kim (1999) and Lim and McAleer (2000a, 200b), Chaitip, Chukiat and Rangaswamy (2006). Authors differ on the best method for tourism forecasting. For example, whereas Martin and Witt(1989) used simple autoregressive(AR) models, Lim and McAleer found that the Autoregressive Integrated Moving Average (ARIMA) forecast tourism arrivals more accurately, and Prasert, Chukiat, and Rangaswamy found that the best methods to forecast international tourists arrivals to Thailand was both VAR model and SAIMA(p,d,q)(P,D,Q) model. Fong-Lin Chu (2008) used ARFIMA(p,d,q) model to forecasting international tourists arrival in Singapore. It is impossible to achieve a unanimous decision for any particular model, since forecasts are affected by a variety of factors, particularly the countries under consideration, the type of data and time span covered by the study. From above of reason this paper focuses on the famous econometric approach based on both X-12-ARIMA and ARFIMA for forecasting the number of international tourist arrival to India,2007-2010 based on the data covering 2002-2006.

## **2. RESEARCH OBJECTIVE**

This research aims to predict the number of international tourist arrivals to India, 2007-2010 and to seek the best forecasting method for forecasting international tourist arrivals to India of the same period.

### **3. SCOPE OF THIS RESEARCH**

The scopes of this research cover up secondary data based on facts and figures that have already been recorded were utilized to forecast international tourist arrivals to India, 2007-2010. The countries used for forecasting international tourist arrivals to India consist of UK, USA, Canada, France, Sri Lanka, Germany, Japan, Malaysia, Australia, Italy, Singapore, Nepal, Netherlands, Korea, Spain and other country (source: India's Tourism Organization). An economic variable adopted in this study is the number of international tourist arrivals to India from 2002-2006 to forecast for 2007-2010.

### **4. RESEARCH FRAMEWORK AND METHODOLOGY FOR TOURISM FORECASTING**

Tourism forecasting methods can be divided into qualitative and quantitative methods and causal quantitative techniques. Regardless of the type of forecasting method used, the usefulness of any tourism demand forecasting model is really determined by the accuracy of the tourism forecasts that it can generate, as measured by comparison with actual tourism flows (Mahmoud, 1984). Frechtling (1996, 2001) highlighted five patterns in a tourism time series: (a) seasonality, (b) stationarity, (c) linear trend, (d) non-linear trend and (e) stepped series. The time series non-causal approach or forecasting a single variable approach is limited by the lack of explanatory variables and it also was best used for short-term to medium-term forecasting. Additionally, in this approach, it is assumed that the factors related to seasonality, trend and cycle are slow to change and can be extrapolated in the short term (Kon and Turner, 2005 and Prasert, Chukiat and Rangaswamy, 2006).

In this paper, focus on forecasting a single variable approach as well as this variable as international tourists arrival to India during period 2002-2006. Both The X-12-ARIMA(p,d,q)(P,D,Q) method and ARFIMA(p,d,q) were used to forecast international tourist arrival to India during period 2007-2010.

#### **4.1. X-12-ARIMA forecasting method**

The X-12-ARIMA program is the primary method used for seasonal adjustment of government and economic time series in the United States, Canada, and the European Union (Miller and Williamms (2003). The package seasonal adjustment is X-12-ARIMA developed by the Census Bureau in the United States. It has been continually improved since the 1960s, and it is used by many statistics agencies and central banks (Shu and Andrew (2005)). As well as it is based on ratio-to-moving-average classical) decomposition (Macauley, F.R., 1930; also described in Makridakis, et. al., 1998) and includes a great number of improvements that have been developed through empirical testing over the years, with the X-12-ARIMA variant having being released in 1996. The X-12-ARIMA procedure makes adjustment for monthly or quarterly series. It consists of three steps built upon one another.

1. A regress-ARIMA model is built for the time series as the technical tools of regression analysis with the ARIMA approach to pre-adjust various effects such as outliers, trading day and holiday effects.
2. Carries out the actual seasonal adjustment which decomposes the pre-adjusted series, *i.e.* the output from the reg-ARIMA step, into three elements – trend, seasonal, and irregular components.
3. And the final step of the program tests the quality of seasonal adjustment.

#### 4.2. General model of X-12-ARIMA

(Source: U.S. Census Bureau X-12-ARIMA Reference Manual)

ARIMA models as discussed by Box and Jenkins (1976) are frequently used for seasonal time series. A general multiplicative seasonal ARIMA model for a time series  $Z_t$  can be written

$$\emptyset(B)\Phi(B^s)(1-B)^d(1-B^s)^D Z_t = \theta(B)\rho(B^s)a_t \quad (1)$$

where:

$B$  - the backshift operator ( $B z_t = Z_{t-1}$ ).

$S$  - the seasonal period.

$\emptyset(B) = (1 - \emptyset_1 B - \dots - \emptyset_p B^p)$  is the non-seasonal AR operator

$\Phi(B^s) = (1 - \Phi_1 B^s - \dots - \Phi_p B^s)$  is the seasonal AR operator

$\theta(B) = (1 - \theta_1 B - \dots - \theta_q B^q)$  is the non-seasonal moving average (MA) operator

$\rho(B) = (1 - \rho_1 B^s - \dots - \rho_Q B^{Qs})$  is the seasonal moving average (MA) operator

$(1-B)^d(1-B^s)^D$  - non-seasonal differencing of order  $d$  and seasonal differencing of order  $D$

A useful extension of ARIMA models results from the use of a time-varying mean function modeled via linear regression effects. More explicitly, suppose write a linear regression equation for a time series  $Y_t$  as

$$Y_t = \sum \beta_i x_{i,t} + Z_t \quad (2)$$

where:

$Y_t$  = the (dependent) time series,

$x_{i,t}$  = regression variables observed concurrently with  $Y_t$

$\beta_i$  = regression parameters

$Z_t = Y_t - \sum \beta_i x_{i,t}$

The time series of regression error is assumed to follow the ARIMA model (1). Modelling  $Z_t$  as ARIMA address the fundamental problem with applying standard regression methodology to time series data, which is that standard regression assumes that the regression error ( $Z_t$  in (2)) are uncorrelated over time. In fact, for time series data, the errors in (2) will usually be auto correlated, and, moreover with often require differencing. Assuming  $Z_t$  is uncorrelated in such cases will typically lead to grossly invalid results the expression (1) and (2) taken together define the general regARIMA

model allowed by the X-12-ARIMA program. Combining (1) and (2), the model can be written in a single equation as

$$\Phi(B)\Phi(B^s)(1-B)^d(1-B^s)^D(Y_t - \sum_i \beta_i x_{i,t}) = \theta(B)\rho(B^s)a_t \quad (3)$$

The regARIMA model (3) can be thought of either as generalizing the pure ARIMA model (1) to allow a regression mean function  $\sum_i \beta_i x_{i,t}$ , or as generalizing the regression model (2) to allow the errors  $Z_t$  to follow the ARIMA model (1). In any case, notice that the regARIMA model implies that first the regression effect are subtracted from  $Y_t$  to get the zero mean series  $Z_t$ , then the error series  $Z_t$  is differenced to get a stationary series, say  $w_t$ , and  $w_t$  is then assumed to follow the stationary ARIMA model,  $\Phi(B)\Phi(B^s)w_t = \theta(B)\rho(B^s)a_t$ . Another way to write the regARIMA model (3) is (see model (4)).

$$(1-B)^d(1-B^s)^D Y_t = \sum_i \beta_i (1-B)^d(1-B^s)^D x_{i,t} + w_t \quad (4)$$

where  $w_t$  follows the stationary ARIMA model just given. Equation (4) emphasize that that the regression variables  $x_{i,t}$  in the regARIMA model, as well as the series  $Y_t$ , are differenced by the ARIMA model differencing operator  $(1-B)^d(1-B^s)^D$ . Notice that the regARIMA model as written in (3) assumes that the regression variable  $x_{i,t}$  affect the dependent series  $Y_t$  only at concurrent time points, i.e., model (3) does not explicitly provide for lagged regression effects such as  $\beta_i x_{i,t-1}$  lagged effects can be included by the X-12-ARIMA program.

### 4.3. General model of ARFIMA

ARFIMA models were proposed by Granger and Joyeux (1980) after Hosking (1981) also proposed this method to fit long-memory data. An autoregressive fractionally integrated moving-average (ARFIMA) process is ARFIMA(p,d,q) model as well as it can be written give by: (see equation (5)).

$$\Phi(\beta)\Delta^d y_t = \delta + \theta(\beta)\varepsilon_t \quad (5)$$

with

$$\Phi(\beta) = 1 - \phi_1 \beta - \phi_2 \beta^2 - \dots - \phi_p \beta^p$$

and

$$\theta(\beta) = 1 - \theta_1(\beta) - \theta_2(\beta)^2 - \dots - \theta_q(\beta)^q$$

where:

$\delta$  - constant term

$\theta(\beta)$  - moving-average operator at order q

$\varepsilon_t$  - error term of equation (5)

$\Phi(\beta)$  - the autoregressive operator at order p

$\Delta^d y_t$  - differencing operator at order d of time series data  $y_t$

- For  $d$  within (0,0.5), the ARFIMA process indicates to exhibit long memory or long range positive dependence.

- For  $d$  within  $(-0.5, 0)$ , the process exhibits intermediate memory or long range negative dependence.
- For  $d$  within  $[0.5, 1)$  the process is mean reverting and there is no long run impact to future values of the process.
- The process is short memory for  $d=0$  corresponding to a standard ARMA process.

## 5. THE RESULTS OF THE RESEARCH

### 5.1. Forecasting accuracy is based on the Average Absolute Percentage Error covering-sample forecasts: (three year) of each X-12-ARIMA model for forecasting international tourist arrivals to India for 2007-2010

Table 1 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2007. The value of Average Absolute Percentage Error (AAPE(%)) in within-sample forecasts: (three year) of each X-12-ARIMA model was selected the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period.

**Table 1. Empirical comparison of X-12-ARIMA seasonal adjustment method for 2007**

Number	Models of forecasting	AAPE(%) (Three Years)
1	X-12-ARIMA(0,1,1)(0,1,1)	10.95
2	X-12-ARIMA(0,1,2)(0,1,1)	7.21
3	X-12-ARIMA(2,1,0)(0,1,1)	9.99
4	X-12-ARIMA(0,2,2)(0,1,1)	26.21
5	X-12-ARIMA(2,1,2)(0,1,1)	11.41

*From: computed*

As shown in table 1, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA (0,1,2)(0,1,1). Because the AAPE(%) of this model is lower than the other models such as X-12-ARIMA (0,1,1)(0,1,1), X-12-ARIMA (2,1,0)(0,1,1), X-12-ARIMA (0,2,2)(0,1,1) and X-12-ARIMA (2,1,2)(0,1,1).

Table 2 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2008. The value of Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model was selected the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period.

As shown in table 2, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA(0,1,2)(0,1,1). Because the AAPE(%) of this model is lower than the other models such as X-12-ARIMA(0,1,1)(0,1,1), X-12-ARIMA(2,1,0)(0,1,1), X-12-ARIMA(0,2,2)(0,1,1) and X-12-ARIMA(2,1,2)(0,1,1). Table 3 shows forecasting performance accuracy



comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2009. The value of Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model was used for selection the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period.

**Table 2. Empirical comparison of the accuracy of X-12-ARIMA seasonal adjustment method for 2008**

Number	Models of forecasting	AAPE(%) (Three Years)
1	X-12-ARIMA(0,1,1)(0,1,1)	6.07
2	X-12-ARIMA(0,1,2)(0,1,1)	4.05
3	X-12-ARIMA(2,1,0)(0,1,1)	6.46
4	X-12-ARIMA(0,2,2)(0,1,1)	11.24
5	X-12-ARIMA(2,1,2)(0,1,1)	7.00

*From: computed*

As shown in table 3, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA (0,1,1)(0,1,1). Because the AAPE(%) of this model is lower than the other models such as X-12-ARIMA (2,2,0)(0,1,1), X-12-ARIMA (0,2,2)(0,1,1) and X-12-ARIMA (2,1,2)(0,1,1). But X-12-ARIMA (0,1,2)(0,1,1) was not selected to the best model for forecasting because this model has been found that evidence of non-seasonal over differencing (see more information at U.S. Census Bureau. *X-12-ARIMA Reference Manual, Version 0.2.10*).

**Table 3. Empirical comparison of the accuracy of X-12-ARIMA seasonal adjustment method for 2009**

Number	Models of forecasting	AAPE(%) (Three Years)
1	X-12-ARIMA(0,1,1)(0,1,1)	2.13
2	X-12-ARIMA(0,1,2)(0,1,1)	1.46
3	X-12-ARIMA(2,1,0)(0,1,1)	2.20
4	X-12-ARIMA(0,2,2)(0,1,1)	9.03
5	X-12-ARIMA(2,1,2)(0,1,1)	3.84

*From: computed*

Table 4 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2010. The value of Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model was used for selection the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period.

As shown in table 4, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA (2,1,0)(0,1,1). Because the AAPE(%) of this model is lower than the other models both X-12-ARIMA

(0,2,2)(0,1,1) and X-12-ARIMA (2,1,2)(0,1,1). But X-12-ARIMA (0,1,1)(0,1,1) and X-12-ARIMA (0,1,2)(0,1,1) were not selected to the best model for forecasting because these models have been found that evidence of non-seasonal over differencing (see more information at U.S. Census Bureau. *X-12-ARIMA Reference Manual, Version 0.2.10.*)

**Table 4. Empirical comparison of the accuracy of X-12-ARIMA seasonal adjustment method for 2010**

Number	Models of forecasting	AAPE(%) (Three Years)
1	X-12-ARIMA(0,1,1)(0,1,1)	0.33
2	X-12-ARIMA(0,1,2)(0,1,1)	0.70
3	X-12-ARIMA(2,1,0)(0,1,1)	0.81
4	X-12-ARIMA(0,2,2)(0,1,1)	24.48
5	X-12-ARIMA(2,1,2)(0,1,1)	1.11

*From: computed*

## 5.2. The empirical results of forecasting international tourist arrivals to India 2007-2010 by quaternary growth rate.

As shown in table 5 presents the results of forecasting by the best of X-12-ARIMA (p,d,q)(P,D,Q) models for 2007-2010. Mostly first quaternary average percentage change, second quaternary average percentage change and third quaternary average percentage change in international tourist arrivals to India are negative. And mostly fourth quaternary average percentage change in international tourist arrivals to India is positive. Furthermore the quaternary average percentage change per year is positive as well as the quaternary average percentage change per year equally between 1.30% and 2.00 % during this period.

**Table 5. Forecasts of quaternary average percentage change in international tourist arrivals to India based on the best of X-12-ARIMA(p,d,q)(P,D,Q) models covering 2007-2010**

Year	Q1 (%)	Q2 (%)	Q3 (%)	Q4 (%)	Average per Year
2007	-5.07	-9.03	-0.07	22.01	1.96
2008	-4.59	-8.16	-0.01	19.58	1.68
2009	-4.21	-7.45	-0.12	17.66	1.47
2010	-3.89	-6.85	-0.13	16.09	1.30

*From: computed*

As shown in table 5, the X-12-ARIMA method forecasting that the high season of international tourism industry in India should be fourth quaternary of each year during the period 2007-2010. These empirical results are similarity with previously empirical results from India's tourism organization. Based on this study the

international tourism industry in India 2007-2010 will increase at a positive growth rate.

**5.3. Forecasting accuracy is based on the AIC (Akaike, 1974) covering-sample forecasts: (four year) of ARFIMA model, India, 2007-2010.**

Table 6 shows forecasting performance accuracy of the 1 models based on ARFIMA method for forecasting international tourist arrivals to India 2007. The value of Akaike Information Criteria (AIC) of each ARFIMA model was selected the best of ARFIMA models for forecasting international tourist arrivals to India for this period.

**Table 6. Empirical comparison of the accuracy of ARFIMA method for 2007**

Number	Models of forecasting	AIC
1	ARFIMA(2,d,2) model, d = 0.2924	24.31
2	ARFIMA(1,d,1) model, d = 0.1906	24.25
3	ARFIMA(1,d,0) model, d = 0.4119	24.40
4	ARFIMA(0,d,1) model, d = 0.4659	24.35
5	ARFIMA(0,d,0) model, d = 0.4862	24.93

*From: computed*

From table 6, the best model to forecasting international tourist arrivals to India during the specified period is ARFIMA(1,0.1906,1). The value of Akaike Information Criteria (AIC) = 24.25 as well as this model is best model among of these model because the value of AIC is less than other models (Torre, Didier and Lemoine, 2007). Consequently ARFIMA(1,d,1) model was selected the best model for forecasting international tourist arrivals to India for this period.

From table 7, the best model to forecasting international tourist arrivals to India during the specified period is ARFIMA(1,0.0256,1). The value of Akaike Information Criteria (AIC) = 24.24 as well as this model is best model among of these model because the value of AIC is less than other models (Torre, Didier and Lemoine, 2007). Consequently ARFIMA(1,d,1) model was selected the best model for forecasting international tourist arrivals to India for this period.

**Table 7. Empirical comparison of the accuracy of ARFIMA method for 2008**

Number	Models of forecasting	AIC
1	ARFIMA(0,d,0) model, d = 0.4904	24.89
2	ARFIMA(1,d,1) model, d = 0.2562	24.24
3	ARFIMA(2,d,2) model, d = 0.2560	24.28
4	ARFIMA(1,d,0) model, d = 0.4247	24.36
5	ARFIMA(0,d,1) model, d = 0.4737	24.35
6	ARFIMA(2,d,1) model, d = 0.2620	24.25
7	ARFIMA(1,d,2) model, d = 0.2533	24.25

*From: computed*

From table 8, the best model to forecasting international tourist arrivals to India during the specified period is ARFIMA (1,0.2635,1). The value of Akaike Information Criteria (AIC) = 24.09 as well as this model is best model among of these model because the value of AIC is less than other models (Torre, Didier and Lemoine, 2007). Consequently ARFIMA (1,d,1) model was selected the best model for forecasting international tourist arrivals to India for this period.

**Table 8. Empirical comparison of the accuracy of ARFIMA method for 2009**

Number	Models of forecasting	AIC
1	ARFIMA(1,d,1) model, d = 0.2635	24.09
2	ARFIMA(0,d,0) model, d = 0.4924	24.79
3	ARFIMA(1,d,0) model, d = 0.4286	24.21
4	ARFIMA(0,d,1) model, d = 0.4785	24.21
5	ARFIMA(2,d,2) model, d = 0.3729	24.11
6	ARFIMA(1,d,2) model, d = 0.2630	24.10
7	ARFIMA(2,d,1) model, d = 0.2735	24.10

*From: computed*

From table 9, the best model to forecasting international tourist arrivals to India during the specified period is ARFIMA(1,0.2951,1). The value of Akaike Information Criteria (AIC) = 24.43 as well as this model is best model among of these model because the value of AIC is less than other models (Torre, Didier and Lemoine, 2007). Consequently ARFIMA(1,d,1) model was selected the best model for forecasting international tourist arrivals to India for this period.

**Table 9. Empirical comparison of the accuracy of ARFIMA method for 2010**

Number	Models of forecasting	AIC
1	ARFIMA(0,d,0) model, d = 0.4917	24.85
2	ARFIMA(1,d,1) model, d = 0.2951	24.43
3	ARFIMA(2,d,2) model, d = 0.4141	24.45
4	ARFIMA(1,d,2) model, d = 0.3087	24.44
5	ARFIMA(2,d,1) model, d = 0.4292	24.44

*From: computed*

## 6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS

This paper provides forecasting analysis of international tourist arrivals to India for 2007-2010 based on the X-12-ARIMA seasonal adjustment method. The best X-12-ARIMA models are the X-12-ARIMA(0,1,2)(0,1,1), the X-12-ARIMA (0,1,1)(0,1,1) and the X-12-ARIMA (2,1,0)(0,1,1). Because of these models have a value of average absolute percentage error (AAPE (%)) are very low than other X-12-ARIMA models (see more detail at U.S. Census Bureau. X-12-ARIMA Reference Manual, Version 0.2.10. and appendix B). And the X-12-ARIMA (0,1,2)(0,1,1) model predicts that both in 2007 the number of international tourists arrival to India will be 5,079,651

million and in 2008 the number of international tourists to India will be 6,224,480 million. Furthermore the X-12-ARIMA(0,1,1)(0,1,1) model predicts that in 2009 the number of international tourists arrival to India will be 6,224,480 million and X-12-ARIMA(2,1,0)(0,1,1) predicts that in 2010 the number of international tourist to India will be 6,796,890 million (see more information at appendix A, table 10 and figure 1).

And also this paper provides forecasting analysis of international tourist arrivals to India for 2007-2010 based on the ARFIMA (p,d,q) method.

The best ARFIMA (p,d,q) models are ARFIMA (1,0.1906,1), ARFIMA (1,0.2562,1), ARFIMA (1,0.2635,1) and ARFIMA (1,0.2951,1). Because of these models have a value of Akaike Information Criteria (AIC) are very low than other ARFIMA models were used to forecast the international tourists arrival to India (Torre, Didier and Lemoine, 2007). And the ARFIMA (1,0.1906,1) model predicts that in 2007 the number of international tourists arrival to India will be 4,870,974 million. The ARFIMA (1,0.2562,1) model predicts that in 2008 the number of international tourists to India will be 5,134,618 million. Furthermore the ARFIMA (1,0.2635,1) model predicts that in 2009 the number of international tourists arrival to India will be 5,142,249 million and the ARFIMA (1,0.2951,1) predicts that in 2010 the number of international tourist to India will be 5,189,688 million (see more information at appendix B, table 11 and figure 2).

In summary, the number of international tourists to India for the next four years will continue tremendous growth (see more detail in table 12). These results are similar with the previous empirical studies that there was a significant increase in the annual international tourism receipts (Papatheodorou and Song, 2005), (Jo Chau Vu and Lindsay W. Turner, 2006) and (Chaitip, Chaiboonsri, and Rangaswamy 2006). If these results can be generalized to a series of future year, then a recommendation from the study under taken should enable both public sector and private sector policy makers to develop a strategic tourism plan to focus on the increasing numbers of international tourist arrivals to India. Tourism Industry in India has witnessed tremendous growth. Tourism Industry should act to ensure that there are adequate numbers of hotels, transportation, tourist destinations, tourist police units and airports. Tourism Industry demanded adequate budget allocation for developing facilities and human resources and for addressing the environmental impact of increased tourism. Increased tourism will impact economies, environment, and cultures.

### Appendix A

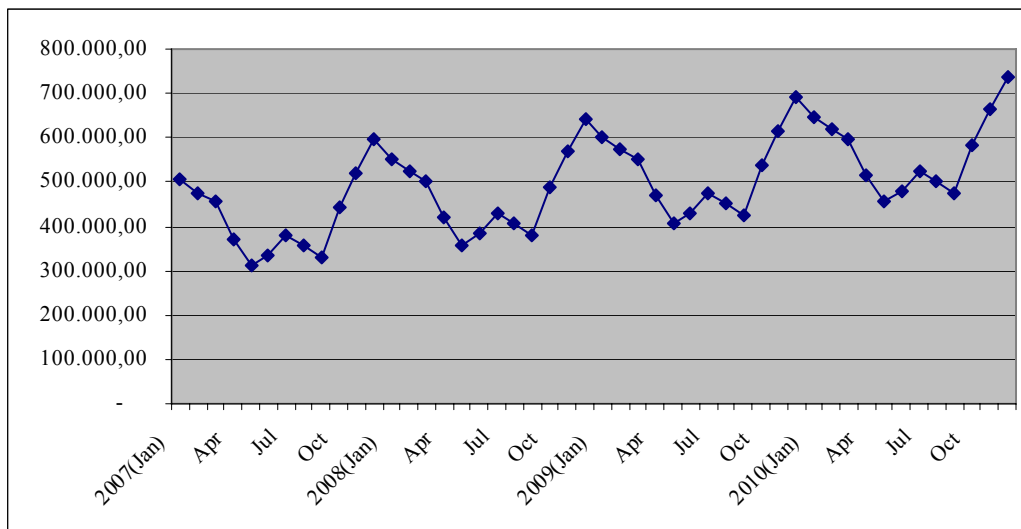
#### Extension experimental results of forecasting international tourist arrivals to India for 2007-2010 based on X-12-ARIMA forecasting method.

**Table 10. Forecast the number of international tourist arrivals to India for 2007- 2010 based on the X-12-ARIMA (0,1,2)(0,1,1), X-12-ARIMA (0,1,1)(0,1,1) and X-12-ARIMA (2,1,0)(0,1,1)**

Unit: Persons

Year/Month	2007	2008	2009	2010
Jan	505,575.00	552,962.00	600,570.00	648,269.00
Feb	476,527.00	524,294.00	571,992.00	619,692.00
Mar	455,593.00	503,356.00	551,054.00	598,756.00
Apr	372,654.00	420,243.00	467,944.00	515,644.00
May	311,258.00	359,061.00	406,759.00	454,460.00
Jun	334,873.00	382,714.00	430,412.00	478,113.00
Jul	379,481.00	427,242.00	474,946.00	522,648.00
Aug	357,028.00	404,795.00	452,494.00	500,195.00
Sep	329,832.00	377,699.00	425,396.00	473,097.00
Oct	442,002.00	489,717.00	537,416.00	585,117.00
Nov	520,081.00	567,781.00	615,480.00	663,181.00
Dec	594,747.00	642,316.00	690,017.00	737,718.00
Total	5,079,651.00	5,652,180.00	6,224,480.00	6,796,890.00

From computed



From computed

**Figure 1. Graphical presentation of forecasting international tourist arrivals to India 2007-2010 based on X-12-ARIMA(0,1,2)(0,1,1), X-12-ARIMA(0,1,1)(0,1,1) and X-12-ARIMA(2,1,0)(0,1,1) (Unit: Persons)**

**Appendix B**

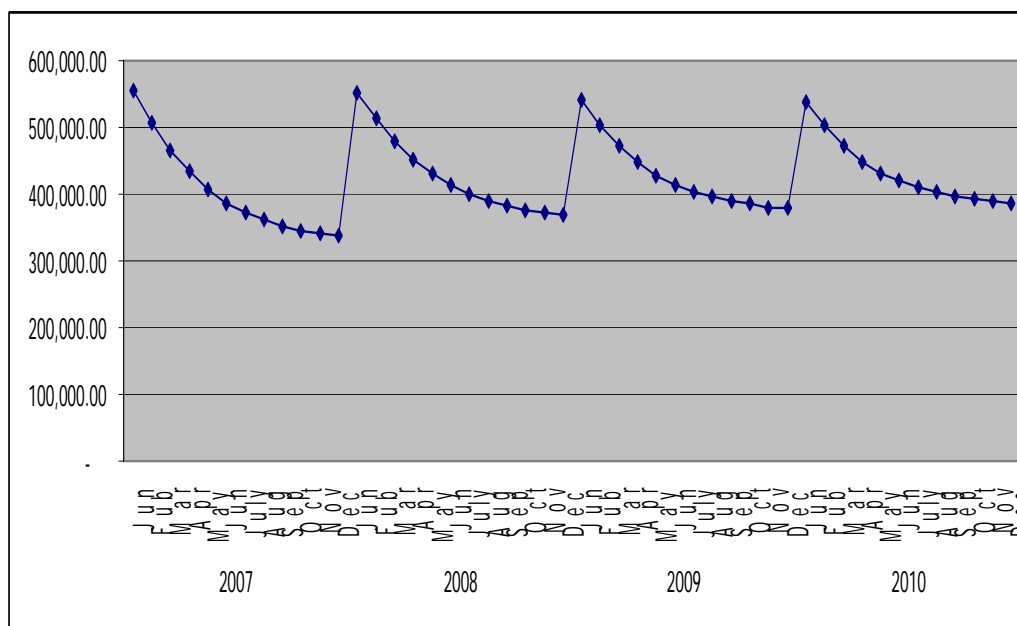
**Extension experimental results of forecasting international tourist arrivals to India for 2007-2010 based on ARFIMA forecasting method.**

**Table 11. Forecast the number of international tourist arrivals to India 2007- 2010 based on the ARFIMA(p,d,q)**

Unit: Persons

Year/Month	2007	2008	2009	2010
Jan	556,519.00	553,064.00	541,963.00	538,192.00
Feb	508,352.00	514,460.00	504,628.00	502,133.00
Mar	466,257.00	479,417.00	472,317.00	471,682.00
Apr	432,931.00	451,350.00	447,281.00	448,577.00
May	407,316.00	429,687.00	428,477.00	431,532.00
Jun	387,824.00	413,155.00	414,442.00	418,993.00
July	373,010.00	400,538.00	403,911.00	409,678.00
Aug	361,708.00	390,844.00	395,910.00	402,642.00
Sep	353,021.00	383,313.00	389,731.00	397,216.00
Oct	346,280.00	377,381.00	384,868.00	392,936.00
Nov	340,985.00	372,635.00	380,961.00	389,480.00
Dec	336,771.00	368,774.00	377,760.00	386,627.00
<b>Total</b>	<b>4,870,974.00</b>	<b>5,134,618.00</b>	<b>5,142,249.00</b>	<b>5,189,688.00</b>

From computed



**Figure 2. Graphical presentation of forecasting international tourist arrivals to India 2007-2010 based on ARFIMA(p,d,q) (Unit: Persons)**

**Table 12. Forecast the number of international tourist arrivals to India 2007- 2010 based on both X-12-ARIMA (p,d,q)(P,D,Q) and ARFIMA(p,d,q)**

Actual 2007	X12-ARIMA 2007	ARFIMA 2007	Actual 2008	X12-ARIMA 2008	ARFIMA 2008
532088	505,575	556,519	584765	552,962.00	553,064
498806	476,527	508,352	560658	524,294.00	514,460
444186	455,593	466,257	509926	503,356.00	479,417
333945	372,654	432,931	369677	420,243.00	451,350
267758	311,258	407,316	290785	359,061.00	429,687
310104	334,873	387,824	344526	382,714.00	413,155
377474	379,481	373,010	-		
360089	357,028	361,708	-		
325893	329,832	353,021	-		
440715	442,002	346,280	-		
510987	520,081	340,985	-		
575148	594,747	336,771	-		
<b>4977193</b>	<b>5,079,651</b>	<b>4,870,974</b>	<b>2660337</b>	<b>2,742,630.00</b>	<b>2,841,133</b>

From computed

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## **THAILAND'S INTERNATIONAL TOURISM DEMAND: THE ARDL APPROACH TO COINTEGRATION**

**PRASERT CHAITIP, CHUKIAT CHAIBOONSRI \***

**ABSTRACT:** *This paper sought to find the short-run and long-run relationships between international tourist arrivals in Thailand and economic variables such as GDP, the price of goods and services, transportation costs, temperature of Thailand and both the exchange rate and exchange rate risk for the period from 1997(Q1)-2005(Q2). The cointegration techniques used were based on the ARDL approach to cointegration (developed by Pesaran and Pesaran (1997), Pesaran and Smith (1998) and Pesaran et al. (2001)) of Thailand's international tourism demand and error correction mechanisms were used to find the short-run relationships of Thailand's international tourism demand. This paper used the full six standard method test for unit root tests such as ADF-Test (1979), PP-Test (1987,1988), KPSS-Test (1992), DF-GLS Test (1996), the ERS Point Optimal Test and Ng and Perron (2001). The full six standard method test for unit root test have not previously been used to test unit roots for estimating tourism demand models based on ARDL approach to cointegration as well as this method for analyzing the long-run relations when the variables are of mixed-order of integration, i.e.,  $I(0)$  and  $I(1)$ . The long-run results indicate that growth in income (GDP) of Thailand's major tourist source markets has a positive impact on international visitor arrivals to Thailand while transportation cost and both exchange rate and exchange rate risk have a negative impact on international visitor arrivals to Thailand. The findings were consistent with economic theory and the implications of the model can be used for policy making. Finally, the temperature of Thailand mostly has a negative impact on international visitor arrivals to Thailand.*

**KEY WORDS:** *Thailand; Mixed order of Integration; ARDL approach; cointegration; International tourism demand*

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## 1. INTRODUCTION

Tourism has emerged as a major source of foreign exchange earnings for the developing countries. It has become the key export sector and has constituted an important alternative for earning income (Narayan, 2004). In Thailand international tourism is the fastest growing industry and the earnings from international tourism in Thailand has increases substantially, rising from 220 billion baht in 1997 to 299 billion baht in 2001. Moreover, the earnings from international tourism in Thailand have risen from 323 billion baht in 2002 to 450 billion baht in 2005. While, the number of international tourist arrivals to Thailand was 7.22 million in 1997, by 2005 the number of international tourist arrivals to Thailand had increases to 13 million (source: Thailand's tourism organization). Additionally, the domestic tourism industry in Thailand is also the fastest growing industry and the earnings of the domestic tourism industry has increases substantially, rising form 180 billion baht in 1997 to 223 billion baht in 2001. Furthermore, the earnings of the domestic tourism industry in Thailand has risen from 235 billion baht to 347 billion baht in 2005. While, the number of trips by Thai visitors was 52 million in 1997, in 2005 the number of trips by Thai visitors had increases to 76 million trips (source: Thailand's tourism organization). The above data shows that both the international and domestic tourism industries are very important to Thailand's economy and had a positive impact on the Thai economy during the period 1997-2005. In the future both the international tourism industry and the domestic tourism industry will most probably continue to be important industries for Thailand, especially the international tourism industry. The tourism industry not only contributes to gross domestic product (GDP) but it also impacts positively on employment, investment and foreign exchange (The International Tourism Industry of Thailand).

This paper focuses on only the international tourism industry of Thailand for four reasons: the international tourism industry of Thailand is the fastest growing industry and the earnings from this industry are increases continuously (Parsert, Rangaswamy and Chukiat (2006)). While in 1993 Thailand was in thirteen place for the world's highest international tourism receipts (WTO (1996)), by 1996 Thailand ranked fifth in Asia after China, Hong Kong, Malaysia and Singapore (Pran (1997)); the World Tourism Organization expects annual growth during the period 1995-2020 in East Asia and the Pacific and South Asia of 6.5% and 6.2% respectively (WTO (2004)); Thailand was in the top five countries in East Asia and the Pacific where a lot of international tourists arrived during the period 1992-1993 (Pran (1997)); in 2004 Asia and the Pacific were the second top regional destination (WTO (2005)). Based on these facts, the international tourism industry will have a very important impact on the international economy of Thailand in the future.

The main source of international tourists for Thailand are Malaysia, Japan, China, Singapore, Taiwan, Korea, England, America, Germany, Australia, France, Sweden and Canada. All of these countries have been included in this research by framework of tourism economics. For a long time now, economists have tried to understand the international tourist consumer behavior through demand models. For example, Barry and O'Hagan (1972): studied the demand of British tourists going to

Ireland; Jud, G.D. and Joseph, H. (1974); studied the demand of international tourist going to Latin American; Uysal and Crompton (1984) studied the demand of international tourists going to Turkey. Summary (1987) studied the demand of international tourists going to Kenya, Kulendran, N. (1996) studied the demand of international tourists going to Australia; Lim C. and M.McAleer (2000) studied the demand of international tourist going to Australia; Durbarry (2002) studied the demand of international tourists (French) going to the UK, Spain and Italy. As well as Paresh Kumar and Narayan (2004) and Resina Katafono and Aruna Gounder (2004) who studied the demand of international tourists going to Fiji. The aim of this paper is to find out the international tourist consumer behavior in coming to Thailand during the period 1997-2005 through the demand model. The consumer behavior information gathered from this research will help in developing the international tourism industry in Thailand.

## **2. RESEARCH AIM AND OBJECTIVE**

This research has the aim and objective of seeking to know how many factors affect international tourist demand arrivals to Thailand in the long-run and short-run and to use the international tourism demand model to explain international tourist behavior in Thailand.

## **3. SCOPE OF THIS RESEARCH**

The scope of this research is the period 1997(Q1)-2005(Q2) and mostly the data was secondary data. The countries used for analysis in International Tourism Demand in Thailand were the major countries for the international tourism industry of Thailand, namely Malaysia, Japan, China, Singapore, Taiwan, Korea, England, America, Germany, Australia, France, Sweden and Canada. Almost all of them had an influence on the income of the international tourism industry of Thailand in the same period (source: Thailand's tourism organization). The variables used in this research were economic variables, for example the numbers of international tourist arriving in Thailand, the GDP of major countries of international tourists coming to Thailand, the world price of Kerosene-Type Jet Fuel, the relative prices between Thailand and the countries of origin of international tourists coming to Thailand and the exchange rate of Thailand in relation to the exchange rates of major countries of international tourists and the temperature of Thailand.

## **4. THE METHODOLOGY AND RESEARCH FRAMEWORK**

### **4.1. The concept back ground of International Tourism Demand Model**

The concept of theory has been used in international tourist demand since 1950 but the estimation in international tourist demand by econometric method beginning from the first time by Artus (1972). After that a lot of research about international tourist demand function used the econometric method. The researcher studied research

such as Archer (1976), Crouch (1994), Walsh (1996), Lim (1997), Inclair (1998), Lise&Tol (2002), McAleer (2001, 2003) Resina and Aruna (2004). Growth in international tourism is closely aligned to economic variables, which at a microeconomic level influence the consumer's decision to undertake overseas travel. Empirical research on international tourism demand has overwhelmingly been based on aggregate time series data which permits estimation of income and price elasticity on inbound tourism (see Lim, 1997 and McAleer (2001, 2003)). A simple origin-destination demand model for international tourism can be written as: (equation number (1A))

$$D_t = f(Y_t, TC_t, P_t) \quad (1)$$

where:

$D_t$  - is a measure of travel demand at time  $t$

$Y_t$  - is a measure of income of the tourist-generating or origin country at time  $t$

$TC_t$  - is a measure of transportation costs from the origin to destination country at  $t$

$P_t$  - is a measure of tourism price of goods and services at time  $t$

And assume that (+  $Y_t$ ), (- $TC_t$ ), (-  $P_t$ ) and explain that when income at time  $t$  is increasing then the demand for international tourism is increasing simultaneously. When the measure of transportation costs from the origin to destination country at time  $t$  is increasing then the demand for international tourism decreases. And when the measure of tourism price of goods and services is increasing then the demand for international tourism is decreasing. And the equation (1) can be expressed in log-linear (or logarithmic) form [equation number (2)].

$$\ln D_t = \alpha + \beta \ln Y_t + \gamma \ln \{F1_t \text{ or } F2_t\} + \delta \ln \{RP_t, ER_t \text{ or } RER_t\} + \phi \ln D_{t-1} + \theta \ln CP_t + u_t \quad (2)$$

where:

$\ln D_t$  - logarithm of short-term quarterly tourist arrivals (or demand) from the origin to destination country at time  $t$

$\ln Y_t$  - logarithm of real GDP in original country at time  $t$

$\ln F1_t$  - logarithm of real round-trip coach economy airfares in Neutral Units of construction (NUC) between original country and destination country at time  $t$

$\ln F2_t$  - logarithm of real round-trip coach economy airfares in original country currency between original country and destination country at time  $t$

$\ln RP_t$  - logarithm of relative prices (or CPI of destination country/CPI of original country) at time  $t$

$\ln ER_t$  - logarithm of exchange rate (original country per destination country) at time  $t$ ;

$\ln RER_t$  - logarithm of real exchange rate [or CPI (destination country) / CPI (original country)\*1/ER] at time  $t$

$\ln CP_t$  - logarithm of competitive prices [using CPI (destination country) / (other destination country)]

$u_t$  - independently distributed random error term, with zero mean and constant variance at time  $t$

And defined that  $\alpha, \beta, \gamma, \delta, \phi, \theta$  = parameters to be estimated;  $\beta > 0, \gamma < 0, \delta < 0, 0 < \phi < 1, \theta > 0$  (substitutes) and  $\theta < 0$  (complements).

And this research or the “Thailand ’s International Tourism Demand : The ARDL approach to co-integration ” modified from equation (2) as well as can be written as equation (3).

$$\ln(D1_t) = \alpha + \beta \ln(GDP_t) + \gamma \ln(PO_t) + \delta \ln(RP_t) + \rho \ln(RER_t) + \theta \ln(SDR_t) + \sigma \ln(TEM) + u_t \quad (3)$$

where:

$\ln D1_t$  - logarithm of tourist arrivals (or demand) from the origin (each 13 country) to destination country (Thailand) at time t

$\ln GDP_t$  - logarithm of real GDP in original countries (each 13 country) at time t

$\ln PO_t$  - logarithm of price of Jet Fuel at time t

$\ln RP_t$  - logarithm of relative prices (or CPI of destination country: (Thailand ) /CPI of original country: (each 13 country ) at time t

$\ln RER_t$  - logarithm of real exchange rate [or  $CPI(Thailand)/CPI(each\ 7\ country)*1/ER$ ] at time t

$\ln SDR_t$  - logarithm of exchange rate risk (original country (each 13 country) per destination country(Thailand)) at time t; (First time, this variable was used in international tourism demand by Chaitip, Rangaswamy and Chaiboonsri (2006))

$\ln TEM$  - logarithm of average temperature of Thailand (Wietzelise, Richard (2002))

Dum - dummy variable was used only in ECM model (Dum = 1: high season otherwise Dum = 0: low season)

$u_t$  - independently distributed random error term, with zero mean and constant variance at time t

And defined that  $\alpha, \beta, \gamma, \delta, \theta, \rho$  = parameters to be estimated;  $\beta > 0, \gamma < 0, \delta < 0, \theta < 0, \rho < 0, 0 < \sigma < 0$ .

## 4.2. Unit-Root Tests

This research to test the stationary in all variables were used in International Tourism Demand Model by standard test for unit root. Such as ADF-Test (1979) , PP-Test(1987,1988) , KPSS-Test (1992) , DF-GLS Test (1996), The ERS Point Optimal Test and Ng and Perron (2001) (see detail 6 standard unit root test in P. Chaitip, N. Rangaswamy and C. Chaiboonsri (2006) “Modeling International Tourism Demand in Thailand”. As well as this paper presented in “Statistic and Applied statistic Academic Year Conference ” during 24-26 May 2006 at Thailand).

## 4.3. ARDL approach to cointegration based concept on Pesaran and Pesaran (1997), Pesaran and Smith (1998) and Pesaran et al. (2001)

### 4.3.1. Methods for cointegration analysis

There are several methods available for conducting the cointegration test. The most widely used methods include the residual based Engle-Granger (1987), maximum likelihood based Johansen (1988,1991) and Johansen-Juselius (1990) test. The other, less commonly used techniques include: the variable addition approach to Park (1990), the residual-based procedure for testing the null of cointegration by Shin(1994) and the stochastic common trends (system) approach introduced by Stock and Watson (1988). The above methods require that the variables in the system be of equal order integration these method do not include the information on structural break in time series data and also suffer from low power. Due to these problems associated with the standard test method, the OLS based autoregressive distributed lag (ARDL) approach to cointegration has become popular in recent year (Shrestha (2006)).

#### 4.3.2. ARDL approach to cointegration

The ARDL modelling approach developed by Pesaran and Pesaran (1997), Pesaran and Smith (1998), Persaran and Shin (1999) and Pesaran et al. (2001). The estimates obtained from the ARDL method of cointegration analysis are unbiased and efficient given that (Narayan (2004)): the method can be applied to studies that have a small sample; it estimates the long-run and short-run components of the model simultaneously, removing problem associated with omitted variables and autocorrelation; it can distinguish dependent and explanatory variables; the method for analyzing the long-run relationship when the variables are of mixed-order of integration i.e., I(0) and I(1) (Shrestha (2006)).

The main advantage of this approach lies in the fact that it can be applied irrespective of whether the variables are I(0) or I(1) (Pesaran and Pesaran (1997, pp. 302-303). Another advantage of this approach is that the model takes sufficient number of lags to capture the data generating process on a general-to-specific modeling framework (Laurenceson and Chai 2003, p.28). Moreover, a dynamic error correction model (ECM) can be derived from ARDL through a simple linear transformation (Banerjee el al. 1993, p.51). The ECM integrates the short-run dynamics with the long-run equilibrium without losing long-run information. It is also argued that using the ARDL approach avoid problems resulting from non-stationary time series data (Laurenceson and Chai 2003, p.28). The ARDL approach to cointegration, the following simple model is considered (see equation (4)):

$$Y_t = \alpha + \beta (X_t) + \delta(Z_t) + u_t \quad (4)$$

where:

$Y_t$  - dependent variables time series data at t-time

$X_t$  - first independent variables time series data at t-time

$Z_t$  - second independent variables time series data at t-time

$u_t$  - a vector of stochastic error terms

$\alpha$ ,  $\beta$  and  $\delta$  - parameters

For the above equation, the error correction version of ARDL approach to cointegration model is given by(see equation (5)):



$$\begin{aligned} \Delta Y_t = & \alpha + \sum_{i=1}^p \beta_i \Delta Y_{t-i} + \sum_{i=1}^p \delta_i \Delta X_{t-i} + \sum_{i=1}^p \gamma_i \Delta Z_{t-i} + \lambda_1 Y_{t-1} + \\ & + \lambda_2 X_{t-1} + \lambda_3 Z_{t-1} + u_{1t} \end{aligned} \tag{5}$$

The first part of equation 2D with  $\beta_i$ ,  $\delta_i$  and  $\gamma_i$  represents the short run dynamics of model as well as where as the second part with  $\lambda_1$ ,  $\lambda_2$  and  $\lambda_3$  represents the long-run relationship among in all variables. And when take natural log in to equation 2D then can be written as equation (6) and showed as fellows that.

$$\begin{aligned} \text{Dln}(Y_t) = & \alpha + \sum_{i=1}^p \beta_i \Delta \ln(Y_{t-i}) + \sum_{i=1}^p \delta_i \Delta \ln(X_{t-i}) + \sum_{i=1}^p \gamma_i \Delta \ln(Z_{t-i}) + \\ & + \lambda_1 \ln(Y_{t-1}) + \lambda_2 \ln(X_{t-1}) + \lambda_3 \ln(Z_{t-1}) + u_{1t} \end{aligned} \tag{6}$$

The null hypothesis in the equation is  $\lambda_1 = \lambda_2 = \lambda_3 = 0$ , which means the non-existence of the long-run relationship among in all variables.

#### 4.3.3. ARDL model testing procedure of Thailand's international tourism demand model

In this paper is looking for a lon-run relationship among  $\ln(D1_t)$ ,  $\ln(GDP_t)$ ,  $\ln(PO_t)$ ,  $\ln(RP_t)$ ,  $\ln(RER_t)$ ,  $(SDR_t)$  and  $\ln(TEM_t)$ . From above variables can be written as equation 4D based on ARDL approach to cointegration of Thailand's international tourism demand (see equation (7)).

$$\begin{aligned} \text{Dln}(D1)_{ij,t} = & \alpha_{0D1} + \sum_{p=1}^p b_{pD1} \Delta \ln(D1)_{ij,t-p} + \sum_{p=1}^p c_{pD1} \Delta \ln(GDP)_{ij,t-p} + \sum_{p=1}^p d_{pD1} \\ & \Delta \ln(PO)_{ij,t-p} + \sum_{p=1}^p e_{pD1} \Delta \ln(RP)_{ij,t-p} + \sum_{p=1}^p f_{pD1} \Delta \ln(RER)_{ij,t-p} + \sum_{p=1}^p g_{pD1} \\ & \Delta (SDR)_{ij,t-p} + \sum_{p=1}^p h_{pD1} \Delta \ln(TEM)_{ij,t-p} + \lambda_{1D1} \ln(D1)_{ij,t-1} + \lambda_{2D1} \ln(GDP)_{ij,t-1} + \\ & \lambda_{3D1} \ln(PO)_{ij,t-1} + \lambda_{4D1} \ln(RP)_{ij,t-1} + \lambda_{5D1} \ln(RER)_{ij,t-1} + \lambda_{6D1} (SDR)_{ij,t-1} \\ & + \lambda_{7D1} \ln(TEM)_{ij,t-1} + u_{1t} \end{aligned} \tag{7}$$

The ARDL approach to cointegration must uses F-test for testing the existence of long-run relationship among above the variables. As well as the null hypothesis for no cointegration among the variables in equation (7) is :

- $H_0 : \lambda_{1D1} = \lambda_{2D1} = \lambda_{3D1} = \lambda_{4D1} = \lambda_{5D1} = \lambda_{6D1} = \lambda_{7D1} = 0$   
against the alternative hypothesis

- $H_1 : \lambda_{1D1} \neq \lambda_{2D1} \neq \lambda_{3D1} \neq \lambda_{4D1} \neq \lambda_{5D1} \neq \lambda_{6D1} \neq \lambda_{7D1} \neq 0$

This can also be denoted as follows:  $F(D1_t | GDP_t, PO_t, RP_t, RER_t, SDR_t, TEM_t)$ .

The asymptotic distributions of the F-statistics are non-standard under null hypothesis of no cointegration relationship between the among variables, irrespective of whether the variables are purely I(0) or I(1), mutually cointegrated. The sets of asymptotic critical value are provided by Pesaran and Pesaran(1997). The first set assumes that all variables are I(0) while the second set assumes that all variables are I(1). And can define null hypothesis as well as define a against the alternative hypothesis is:  $H_0$  : cointegration or long-run relationship to be not found among the variables;  $H_1$ : cointegration or long-run relationship to be found among the variables.

- If the computed F-statistics is greater than the upper bound critical value, then reject the null hypothesis and conclude that cointegration or long-run relationship to be found among the variables.
- If the computed F-statistics is less than the lower bound critical value, then accept the null hypothesis and conclude that cointegration or long-run relationship to be not found among the variables.
- If the computed F-statistics falls with the lower and upper bound critical value, then result is inconclusive; the error correction term will be a useful way of establishing cointegration (Kremers, et al. (1992) and Bannerjee, et al. (1998)).

The conclusion of step for ARDL approach to cointegration as well as this approach consists of two steps (Pesaran et al, 2001): in first step is to examine the existence of long-run relationship among all variables in equation under estimation; the second step is to estimate the long-run and short-run coefficients of the same equation. Perception: all variable previously defined and the order of lags in ARDL model are selected by either the Akaike Information Criterion (AIC) or the Schwartz Bayesian Criterion (SBC) before the selected model is estimated by the OLS technique (Narayan, et al. (2004)); SBC is known as the parsimonious model: selecting the smallest possible lag length (Pesaran and Smith (1998), Shrestha (2006)); AIC is known for selecting the maximum relevant lag length (Pesaran and Smith (1998), Marashdeh (2005) and Shrestha (2006)).

## **5. THE RESULTS OF THE RESEARCH**

### **5.1. The results of the Unit-Root Test**

This paper determines the order of integration of the variables by 6 standard method tests for unit root. Namely ADF-Test (1979), PP-Test (1987, 1988), KPSS-Test (1992), DF-GLS Test (1996), The ERS Point Optimal Test and Ng and Perron (2001). And if both variables are integrated of the same order and the variables are integrated of  $I(0)$  and  $I(1)$  than apply the ARDL approach to cointegration for the long-run relationship between the dependent variable with the independent variables (Pesaran and Pesaran (1997), Pesaran and Smith (1998) and Pesaran et al. (2001)). And after that can use the ECM model for estimating the short-run relationship between the dependent variables with the independent variables. The results of unit root test based on the 6 standard method tests are shown in table 1 and table 2. All variables were used in the international tourism demand model of Thailand were both integrated of order (d) and integrated of order (0).

And when first differencing or second differencing in all variables (excepted the variables have integrated of order (0) or  $I(0)$ ) were used in this model as well as the order of integrated in all variables changed. The results of unit root test based on 6 methods after first differencing or second differencing showed in table 3 and table 4. After first differencing or second differencing in all variables were used in international tourism demand model of Thailand were both integrated of order (1) and integrated of order (2).

**5.2. The results of the analysis of Thailand 's International Tourism Demand**

**5.2.1. The results of cointegration test of Thailand 's International Tourism Demand as in long-run based on ARDL approach to cointegration**

The calculated F-statistics are reported in table 1 as well as this table presented the value of F-statistics for testing the existence of a long-run relationship among variables of Thailand's international tourism demand model. And the critical value bounds of the F-statistics with intercept and no trend (k = 4, k = 5, and k = 6) from Pesaran and Shin (2001).

**Table 1. F-statistics for testing the existence of a long-run relationship among variables and Critical value bounds of the F-statistics with intercept and no trend (k= 4, k=5 and k=6 ) from Pesaran and Shin (2001)**

Source countries for Thailand's tourists	F-statistics	5% Critical value		The number of k
		I(0) lower bound	I(1) upper bound	
Malaysia	7.97**	2.87	4.00	6
Japan	37.26**	2.85	4.04	4
China	3.01	2.65	3.80	5
Singapore	6.72**	2.65	3.80	5
Taiwan	3.34	2.87	4.00	6
Korea	22.95**	2.87	4.00	6
England	74.87**	2.87	4.00	6
America	21.52**	2.65	3.80	5
German	23.27**	2.65	3.80	5
Australia	12.45**	2.65	3.80	5
France	14.70**	2.65	3.80	5
Sweden	18.35**	2.65	3.80	5
Canada	31.31**	2.65	3.80	5

Source: From computed , \* = Sig. at 90% , \*\* = Sig. at 95%.

For all of Thailand 's source countries –Malaysia, Japan, Singapore, Korea, England, America, German, Australia, France, Sweden and Canada- F-statistics is higher than the upper bound critical value at the 5 % level. This implies that the null hypothesis of no cointegration can not be accepted and that there is indeed a cointegration relationship among the variables in all models. Excepted both China and Taiwan are lower than the upper bound critical value at the 5 % level. This case has not a problem both China and Taiwan as well as these country have long-run relationship among their variables during 1997(Q1)-2005(Q2). Because both China and Taiwan have the coefficient of the error correction model(ECM) of the selected ARDL approach to cointegration is negative and highly significant at 1 % level. This confirms the existence of a stable long-run relationship and points to a long-run cointegration relationship between variables (Bannerjee *et al.* (1998), Hazem Marshdeh(2005), Bazoumana Ouattara (2004)). And the all variables of both China and Taiwan have been tested by 6 standard unit root test before estimated by ARDL approach to

cointegration. The results of this method has not a problem for cointegration test base on ARDL approach to cointegration (Narayan (2004).

### 5.2.2. The results of the analysis of Thailand 's International Tourism Demand as in long-run based on ARDL approach to cointegration

The empirical results of the long-run tourism demand model for Thailand 's thirteen international main tourist source countries, obtained by normalizing on visitor arrivals, are presented on table 2.

**Table 2. Results of the Long-Run relationship in Thailand 's international tourism demand base on ARDL approach (Pesaran and Pesaran (1997), Pesaran and Smith (1998) and Pesaran et al.(2001)).[the numbers of international tourist arrivals is the dependent variable(1997(Q1) to 2005(Q2)]**

Country	Con.	ln(GDP <sub>t</sub> )	ln(PO <sub>t</sub> )	ln(RP <sub>t</sub> )	ln(RER <sub>t</sub> )	ln(SDR <sub>t</sub> )	ln(TEM <sub>t</sub> )	ARDL Model
Malaysia	-0.28 (-0.07)	1.50*** (4.52)	-0.18*** (-3.11)	3.22 (1.20)	-1.05*** (-2.52)	-0.43* (-1.80)	-1.74*** (-2.71)	ARDL (0,0,1,0,0,0,0)
Japan	47.99* (2.37)	-10.65** (-2.85)	1.08** (3.26)	-	-	-4.89** (-2.98)	29.93** (2.53)	ARDL (4,4,4,4,4,4)
China	24.58*** (5.13)	-0.13 (-1.56)	-0.10 (-0.69)	-	0.19 (0.46)	-0.44 (-1.22)	-3.46* (-2.63)	ARDL (0,0,1,0,0,0)
Singapore	-2.73 (-0.51)	1.68*** (3.23)	-0.26** (-1.95)	-	-0.96** (-2.44)	-0.07 (-1.26)	-1.66*** (-3.44)	ARDL (1,0,1,1,0,0)
Taiwan	-4.80 (-0.24)	0.17 (0.11)	-0.03 (-0.12)	-2.69 (-1.23)	-4.02*** (-4.44)	-5.76*** (-2.98)	3.94*** (2.51)	ARDL (0,1,1,0,0,0,0)
Korea	2.52*** (2.37)	0.04 (0.84)	0.01 (0.43)	-0.58* (-1.72)	0.05 (0.51)	17.00*** (-3.64)	-0.03*** (-2.81)	ARDL (0,0,0,1,0,1,0)
England	15.21*** (9.22)	1.22*** (6.19)	-0.16*** (-3.32)	-1.79** (-2.00)	-0.84*** (-4.75)	-0.01 (-1.35)	-4.42*** (-11.00)	ARDL (0,1,0,0,0,1,1)
America	15.50*** (4.18)	0.95*** (2.33)	-0.01 (-0.20)	-	-0.51** (-2.23)	-0.01 (-0.59)	-4.69*** (-7.00)	ARDL (0,0,0,0,1,1)
German	47.67*** (4.48)	-0.08 (-0.05)	-0.06 (-0.55)	-	-0.25* (-1.73)	0.14*** (2.65)	-11.32*** (-12.00)	ARDL (0,0,1,0,1,1)
Australia	-20.43 (-0.82)	0.28 (0.19)	0.10 (0.31)	-	-0.08 (-0.06)	0.008 (0.04)	7.99 (1.04)	ARDL (1,0,0,0,0,1)
France	0.67 (0.16)	0.59 (0.99)	0.05 (0.56)	-	0.01 (0.46)	-0.07 (-1.58)	1.33*** (3.23)	ARDL (2,0,0,0,0,2)
Sweden	31.79** (2.16)	2.80*** (2.51)	-0.29 (-1.24)	-	-0.37 (-0.51)	1.20* (1.71)	-17.79*** (-10.53)	ARDL (0,1,1,1,0,1,1)
Canada	27.04*** (6.82)	1.24** (2.00)	-0.18 (-1.69)	-	-0.75 (-1.49)	0.01 (0.26)	-8.63*** (-10.72)	ARDL (0,0,0,0,1,0,1)

\* = Sig. at 90% , \*\* = Sig. at 95% , \*\*\*= Sig. at 99% , Source : from computed

All variables appear with both the correct sign and incorrect sign. Clearly, incomes of origin countries, travel costs, own price, exchange and temperature of Thailand are influential in determining international visitor arrivals to Thailand. The results of all variables were used in this research impact on the international visitor arrivals to Thailand during 1997(Q1) - 2005(Q2) showed that.

In Malaysia as in long-run base on ARDL approach to cointegration suggested that ln(PO<sub>t</sub>), ln(RER<sub>t</sub>), ln(SDR<sub>t</sub>) and ln(TEM<sub>t</sub>) have negative impact on international

tourist arrival to Thailand excepted  $\ln(\text{GDP}_t)$  has positive impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when  $\ln(\text{PO}_t)$ , increasing 1 % then the number of Malaysian tourists arriving in Thailand decreasing 0.18 %,  $\ln(\text{RER}_t)$  increasing 1% then the number of Malaysian tourists arriving in Thailand decreasing 1.05%,  $\ln(\text{SDR}_t)$  increasing 1% then the number of Malaysian tourists arriving in Thailand decreasing 0.43% and when  $\ln(\text{TEM}_t)$  increasing 1% then the number of Malaysian tourists arriving in Thailand decreasing 1.74%. Otherwise when  $\ln(\text{GDP}_t)$  increasing 1% then the number of Malaysian tourists arriving in Thailand increasing 1.50%.

In Japan as in long-run base on ARDL approach to cointegration suggested that Constant term,  $\ln(\text{PO}_t)$  and  $\ln(\text{TEM}_t)$  have positive impact on international tourist arrival to Thailand excepted  $\ln(\text{GDP}_t)$  and  $\ln(\text{SDR}_t)$  have negative impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1% then the number of Japanese tourists arriving in Thailand increasing 47.99%,  $\ln(\text{PO}_t)$  increasing 1% then the number of Japanese tourists arriving in Thailand increasing 1.08%,  $\ln(\text{TEM}_t)$  increasing 1% then the number of Japanese tourists arriving in Thailand increasing 29.93%. Otherwise when  $\ln(\text{GDP}_t)$  increasing 1% then the number of Japanese tourists arriving in Thailand decreasing 1.50% and when  $\ln(\text{SDR}_t)$  increasing 1% then the number of Japanese tourists arriving in Thailand decreasing 4.89%.

In Chinese as in long-run base on ARDL approach to cointegration suggested that Constant term has positive impact on international tourist arrival to Thailand. And  $\ln(\text{TEM}_t)$  has negative impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1% then the number of Chinese tourists arriving in Thailand increasing 24.58%. Otherwise when  $\ln(\text{TEM}_t)$  increasing 1% then the number of Chinese tourists arriving in Thailand decreasing 3.46%.

In Singapore as in long-run base on ARDL approach to cointegration suggested that  $\ln(\text{PO}_t)$ ,  $\ln(\text{RER}_t)$  and  $\ln(\text{TEM}_t)$  have negative impact on international tourist arrival to Thailand excepted  $\ln(\text{GDP}_t)$  has positive impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when  $\ln(\text{PO}_t)$  increasing 1 % then the number of Singaporean tourists arriving in Thailand decreasing 0.26 %,  $\ln(\text{RER}_t)$  increasing 1% then the number of Singaporean tourists arriving in Thailand decreasing 0.96 % and when  $\ln(\text{TEM}_t)$  increasing 1% then the number of Singaporean tourists arriving in Thailand decreasing 1.66%. Otherwise when  $\ln(\text{GDP}_t)$  increasing 1 % then the number of Singaporean tourists arriving in Thailand increasing 1.68%.

In Taiwan as in long-run base on ARDL approach to cointegration suggested that both  $\ln(\text{RER}_t)$  and  $\ln(\text{SDR}_t)$  have negative impact on international tourist arrival to Thailand excepted  $\ln(\text{TEM}_t)$  has positive impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when  $\ln(\text{RER}_t)$  increasing 1 % then the number of Taiwan's tourists arriving in Thailand decreasing 4.02%,  $\ln(\text{SDR}_t)$  increasing 1% then the number of Taiwan's tourists arriving in Thailand decreasing

5.76%. Otherwise when  $\ln(\text{TEM}_t)$  increasing 1% then the number of Taiwan's tourists arriving in Thailand increasing 3.94%.

In Korea as in long-run base on ARDL approach to cointegration suggested that  $\ln(\text{RP}_t)$ ,  $\ln(\text{SDR}_t)$  and  $\ln(\text{TEM}_t)$  have negative impact on international tourist arrival to Thailand excepted Constant term has positive impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when  $\ln(\text{RP}_t)$  increasing 1 % then the number of Korea's tourists arriving in Thailand decreasing 0.58 %,  $\ln(\text{SDR}_t)$  increasing 1% then the number of Korea's tourists arriving in Thailand decreasing 17.00% and when  $\ln(\text{TEM}_t)$  increasing 1 % then the number of Korea's tourists arriving in Thailand decreasing 0.03%. Otherwise when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1% then the number of Korea's tourists arriving in Thailand increasing 2.52%.

In England as in long-run base on ARDL approach to cointegration suggested that  $\ln(\text{PO}_t)$ ,  $\ln(\text{RP}_t)$ ,  $\ln(\text{RER}_t)$  and  $\ln(\text{TEM}_t)$  have negative impact on international tourist arrival to Thailand excepted both Constant term and  $\ln(\text{GDP}_t)$  have positive impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when  $\ln(\text{PO}_t)$ , increasing 1 % then the number of England's tourists arriving in Thailand decreasing 0.16%,  $\ln(\text{RP}_t)$  increasing 1% then the number of England's tourists arriving in Thailand decreasing 1.79%,  $\ln(\text{RER}_t)$  increasing 1% then the number of England's tourists arriving in Thailand decreasing 0.84% and when  $\ln(\text{TEM}_t)$  increasing 1% then the number of England's tourists arriving in Thailand decreasing 4.42%. Otherwise when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1% then the number of England's tourists arriving in Thailand increasing 15.21%. As well as when  $\ln(\text{GDP}_t)$  increasing 1% then the number of England's tourists arriving in Thailand increasing 1.22%.

In America as in long-run base on ARDL approach to cointegration suggested that Constant term and  $\ln(\text{GDP}_t)$  have positive impact on international tourist arrival to Thailand excepted  $\ln(\text{RER}_t)$  and  $\ln(\text{TEM}_t)$  have negative impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1 % then the number of American tourists arriving in Thailand increasing 15.50 %,  $\ln(\text{GDP}_t)$  increasing 1% then the number of American tourists arriving in Thailand increasing 0.95 %. Otherwise when  $\ln(\text{RER}_t)$  increasing 1 % then the number of American tourists arriving in Thailand decreasing 0.51 % as well as when  $\ln(\text{TEM}_t)$  increasing 1% then the number of American tourists arriving in Thailand decreasing 4.69 %.

In Germany as in long-run base on ARDL approach to cointegration suggested that both Constant term and  $\ln(\text{SDR}_t)$  have positive impact on international tourist arrival to Thailand excepted both  $\ln(\text{RER}_t)$  and  $\ln(\text{TEM}_t)$  have negative impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1% then the number of German's tourists arriving in Thailand increasing 47.67%,  $\ln(\text{SDR}_t)$  increasing 1% then the

number of German's tourists arriving in Thailand increasing 0.14%. Otherwise when  $\ln(\text{RER}_t)$  increasing 1% then the number of German's tourists arriving in Thailand decreasing 0.25% and when  $\ln(\text{TEM}_t)$  increasing 1% then the number of German's tourists arriving in Thailand decreasing 11.32%.

In France as in long-run base on ARDL approach to cointegration suggested that only one variables is  $\ln(\text{TEM}_t)$  has negative impact on international tourist arrival to Thailand. The empirical results imply that in long-run when  $\ln(\text{TEM}_t)$  increasing 1% then the number of France's tourists arriving in Thailand decreasing 1.33%.

In Sweden as in long-run base on ARDL approach to cointegration suggested that Constant term,  $\ln(\text{GDP}_t)$  and  $\ln(\text{SDR}_t)$  have positive impact on international tourist arrival to Thailand excepted  $\ln(\text{TEM}_t)$  has negative impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1 % then the number of Sweden's tourists arriving in Thailand increasing 31.79 %,  $\ln(\text{GDP}_t)$  increasing 1% then the number of Sweden's tourists arriving in Thailand increasing 2.80 % and  $\ln(\text{SDR}_t)$  increasing 1 % then the number of Sweden's tourists arriving in Thailand increasing 1.20 %. Otherwise when  $\ln(\text{TEM}_t)$  increasing 1 % then the number of Sweden's tourists arriving in Thailand decreasing 17.79 %.

In Canada as in long-run base on ARDL approach to cointegration suggested that Constant term and  $\ln(\text{GDP}_t)$  have positive impact on international tourist arrival to Thailand excepted  $\ln(\text{TEM}_t)$  has negative impact on international tourist arrivals to Thailand. The empirical results imply that in long-run when defined all variables were used in demand model equal to 0 and other all variables were not used in this model increasing 1 % then the number of Canada's tourists arriving in Thailand increasing 27.04%,  $\ln(\text{GDP}_t)$  increasing 1% then the number of Canada's tourists arriving in Thailand increasing 1.24%. Otherwise when  $\ln(\text{TEM}_t)$  increasing 1% then the number of Canada's tourists arriving in Thailand decreasing 8.63%.

### **5.2.3. The results of the analysis of Thailand's International Tourism Demand as in short-run (ECM) selected based on ARDL approach to cointegration**

The results of the error correction model for each of the 13 countries (Malaysia, Japan, China, Singapore, Taiwan, Korea, England, America, German, Australia, France, Sweden and Canada) is presented in both table 3 and table 4 (results of the short-run relationship in Thailand's international tourism demand based on the ECM model was selected by ARDL approach to cointegration and this approach was developed by Pesaran and Pesaran (1997), Pesaran and Smith (1998) and Pesaran et al.(2001)). The empirical results in the short-run indicate that growth in income of the origin countries has positive impact on international visitors arriving in Thailand. The results imply that in short-run when  $\ln(\text{GDP}_t)$  in Malaysia, Japan, China, Singapore, Taiwan, Korea, England, America, German, Australia, France, Sweden and Canada increasing 1 % then the number of Malaysia's tourists arriving in Thailand increasing 2.78 %, the number of Japan's tourists arriving in Thailand increasing 9.23 %, the number of Singapore's tourists arriving in Thailand increasing 2.33 %, the number of

Taiwan's tourists arriving in Thailand increasing 3.23 %, the number of Korea's tourists arriving in Thailand increasing 0.17 %, the number of America's tourists arriving in Thailand increasing 8.32 %, the number of Australia's tourists arriving in Thailand increasing 6.63 %, the number of Sweden's tourists arriving in Thailand increasing 0.99 % and the number of Canada's tourists arriving in Thailand increasing 3.24 %.

**Table 3. Results of the Short-Run relationship in Thailand's International Tourism Demand of Thailand based on error correction variable selected by ARDL approach to cointegration**

Variables	Malaysia	Japan	China	Singapore	Taiwan	Korea	England
C	-0.21*** (-3.64)	0.02 (0.26)	-0.39** (-2.47)	-0.01 (-0.42)	0.05 (0.56)	0.04 (1.28)	-0.04** (-1.98)
$\Delta \ln(\text{GDP}_t)$	2.87*** (4.21)	9.23*** (2.52)	0.09 (1.46)a	2.33*** (3.53)	3.23*** (2.76)	0.17** (2.39)	0.28 (0.57)
$\Delta \ln(\text{PO}_t)$	-0.24 (-1.44)a	-0.16 (-0.91)b	0.80** (2.41)	0.03 (0.19)a	0.90*** (2.97)	-0.01 (-0.37)	-0.12** (-2.07)
$\Delta \ln(\text{RP}_t)$	-0.74 (-0.22)	-	-	-	-5.36 (-1.01)	-0.55 (-1.02)	-0.28 (-0.23)
$\Delta \ln(\text{RER}_t)$	-0.60 (-1.06)	-	-0.15 (-0.32)a	-0.05 (-0.11)a	-3.93* (-1.94)	-0.15* (-1.76)	-0.43* (-1.90)
$\Delta \ln(\text{SDR}_t)$	-0.43*** (-3.00)	0.96*** (3.31)b	0.15 (0.42)b	-0.09** (-2.07)	-4.53 (-1.64)	- 13.17** (-2.09)	-0.01* (-1.69)
$\Delta \ln(\text{TEM}_t)$	3.57*** (3.75)	-0.75 (-0.34)a	5.51** (2.20)	-1.69*** (-3.11)	4.02*** (2.75)	0.59*** (2.97)	-2.58*** (-6.94)
DUM	0.46*** (4.52)	-0.01 (-0.05)	0.07** (2.40)	0.03 (0.62)	0.06 (0.59)	0.09*** (4.56)	0.08 (1.61)
$\text{EC}_{t-1}$	-0.90*** (-4.85)	- 0.07*** (-2.38)	-1.08*** (-3.85)	-1.45*** (-8.57)	-1.17*** (-5.31)	- 0.48*** (-2.89)	-0.68*** (-3.81)
$R^2$	0.80	0.78	0.72	0.86	0.72	0.81	0.94
$R^{-2}$	0.73	0.71	0.62	0.82	0.61	0.73	0.92
DW.	2.10	1.63	1.77	1.85	1.80	1.89	2.03
F-statistics	11.58***	11.31** *	6.90***	21.24***	6.39***	10.45** *	39.39***
J-B(Normal) (Prob.)	0.21 (0.90)	1.61 (0.44)	19.77 (0.00)	6.73 (0.03)	0.25 (0.88)	0.31 (0.85)	0.12 (0.94)
$C^2_{\text{auto}}(2)$	0.65	0.18	0.12	0.38	0.25	0.61	0.14
$C^2_{\text{white}}(15),(13)$	0.90	0.15	0.27	0.18	0.11	0.42	0.36
$C^2_{\text{RESET}}(2)$	0.59	0.14	0.00	0.01	0.32	0.00	0.01
Chow forecast test	0.47 <sup>N</sup>	0.32 <sup>N</sup>	0.14 <sup>N</sup>	0.06 <sup>S</sup>	0.01 <sup>S</sup>	0.00 <sup>S</sup>	0.47 <sup>N</sup>

$a$ =lag 1 period,  $b$  = lag 2 period, \* = Sig. at 90%, \*\* = Sig. at 95%, \*\*\* = Sig. at 99%, Source : from computed; N = No structure changed, S = Structure changed.

The empirical results in the short-run indicate that an increasing in the world price of jet fuel has negative impact on the number of international visitors arriving to Thailand (excepted for China and Taiwan). The results imply that in the short-run when the world price of jet fuel increasing 1% then the number of England's tourists



arriving to Thailand decreasing 0.12%, the number of America 's tourists arriving to Thailand decreasing 0.23%, the number of German's tourists arriving to Thailand decreasing 0.04 % and the number of Canada's tourists arriving to Thailand decreasing 0.29 %. Otherwise in the short-run indicate that an increasing in the world price of jet fuel has positive impact on the number of international visitors arriving to Thailand. The results imply that in the short-run when the world price of jet fuel increasing 1% then the number of China 's tourists arriving in Thailand increasing 0.80% as well as the number of Taiwan's tourist arriving to Thailand increasing 0.90%.

**Table 4. Results of the Short-Run relationship in Thailand 's International Tourism Demand of Thailand based on error correction variable selected by ARDL approach to cointegration**

Variables	America	German	Australia	France	Sweden	Canada
C	-0.33*** (-4.15)	-0.14*** (-2.94)	-0.03 (-0.53)	-0.16*** (-4.22)	-058*** (-2.65)	-0.22*** (-4.23)
$\Delta \ln(\text{GDP}_t)$	8.32*** (3.22)	0.86 (0.24)	6.63* (1.69)	0.09 (1.07)a	0.99*** (3.58)a	3.24* (1.70)
$\Delta \ln(\text{PO}_t)$	-0.23** (-2.19)a	-0.04*** (-3.35)	0.05 (0.33)a	0.17 (1.25)	-0.25 (-1.24)	-0.29** (-2.27)
$\Delta \ln(\text{RP}_t)$	-	-	-	-	-	-
$\Delta \ln(\text{RER}_t)$	-0.24 (-1.08)a	0.41*** (-2.43)b	0.31 (0.49)	0.004 (0.09)	0.29 (0.56)	-0.10 (-0.26)
$\Delta \ln(\text{SDR}_t)$	-0.03** (-2.36)b	-0.05** (-1.91)	-0.002 (-0.09)b	-0.03 (-0.78)	-0.48 (-1.52)	0.007 (0.22)
$\Delta \ln(\text{TEM}_t)$	2.08** (2.46)a	-6.51*** (-20.34)	-0.52* (-1.75)a	-1.50*** (-8.63)a	-2.06 (-1.48)	-3.92*** (-9.00)
DUM	0.42*** (2.77)	0.27*** (4.16)	-0.06 (-1.09)	0.35*** (8.08)	1.22*** (2.88)	0.39*** (4.87)
$\text{EC}_{t-1}$	-0.53*** (-3.17)	-0.56*** (-4.53)	-0.11*** (-3.59)	-1.07*** (-16.39)	-0.23** (-1.97)	-0.29* (-1.78)
$R^2$	0.87	0.97	0.50	0.94	0.97	0.95
$R^{-2}$	0.82	0.95	0.30	0.93	0.96	0.94
DW.	2.29	2.05	1.72	1.73	2.33	1.82
F-statistics	17.98***	82.84***	2.35**	50.43***	93.92***	59.03***
J-B(Normal) (Prob.)	1.59 (0.45)	3.92 (0.14)	2.90 (0.23)	0.49 (0.78)	2.79 (0.24)	0.98 (0.61)
$c^2_{\text{auto}(2)}$	0.38	0.24	0.34	0.29	0.29	0.99
$c^2_{\text{white}(15),(13)}$	0.77	0.79	0.41	0.01	0.77	0.82
$c^2_{\text{RESET}(2)}$	0.03	0.00	0.01	0.07	0.00	0.04
Chow forecast test	0.00 <sup>S</sup>	0.76 <sup>N</sup>	0.00 <sup>S</sup>	0.00 <sup>S</sup>	0.88 <sup>N</sup>	0.04 <sup>S</sup>

a=l原因 1 period, b = lag 2 period, \* = Sig. at 90%, \*\* = Sig. at 95%, \*\*\*= Sig. at 99%

Source : from computed, N = No structure changed, S = Structure changed.

The empirical results in the short-run indicate that an increasing the real value of exchange between the country of origin (Taiwan, Korea, England) has negative impact on the number of international visitors arriving to Thailand. The results imply

that in the short-run when the real value of exchange between the country of origin increasing 1% then the number of Taiwan's tourists arriving to Thailand decreasing 3.93 %, the number of Korea's tourists arriving to Thailand decreasing 0.15%, the number of England's tourists arriving to Thailand decreasing 0.43%. Otherwise the empirical results in short-run indicate that an increase the real value of exchange between the Thailand with the German has positive impact on the number of German's tourists arriving to Thailand. The results imply that in the short-run when lags two period of the real value of exchange between Thailand with German increasing 1% then the number of German's increasing 0.41%.

The empirical results in the short-run indicate that an increase the value of exchange risk between the country of origin (Malaysia, Singapore, Korea, England, German and America) has negative impact on the number of international visitors arriving to Thailand. The results imply that in the short-run when the value of exchange risk between the country of origin increasing 1% then the number of Malaysia's tourists arriving to Thailand decreasing 0.43%, the number of Singapore's tourists arriving to Thailand decreasing 0.09%, the number of Korea's tourists arriving to Thailand decreasing 13.17%, the number of England's tourists arriving to Thailand decreasing 0.01%, the number of German's tourists arriving to Thailand decreasing 0.05%. As well as when lags two period of the value of exchange risk between Thailand with America increasing 1% then the number of America's arriving to Thailand decreasing 0.03%.

Otherwise the empirical results in short-run indicate that an increase the value of exchange risk between the Thailand with the Japan has positive impact on the number of Japan's tourists arriving to Thailand. The results imply that in the short-run when lags two period of the value of exchange risk between Thailand with Japan increasing 1% then the number of Japan's tourists increasing 0.96%. The empirical results in the short-run indicate that an increase the temperature of Thailand (excepted Malaysia, China, Taiwan, Korea and America) has negative impact on the number of international visitors arriving to Thailand. The results imply that in the short-run when the temperature of Thailand increasing 1% then the number of Singapore's tourists arriving to Thailand decreasing 1.69%, the number of England's tourists arriving to Thailand decreasing 2.58 %, the number of German's tourists arriving to Thailand decreasing 6.51% and the number of Canada's tourists arriving to Thailand decreasing 3.92%. As well as when lags one period of temperature of Thailand increasing 1% then the number of Australia's tourists arriving to Thailand decreasing 0.52% and the number of France's tourists arriving to Thailand decreasing 1.50%. Otherwise the empirical results in short-run indicate that an increase the temperature of Thailand has positive impact on the number of international visitors arriving to Thailand. The results imply that in the short-run when the temperature of Thailand increasing 1% then the number of Malaysia's tourists arriving to Thailand increasing 3.57 %, the number of China's tourists arriving to Thailand increasing 5.51%, the number of Taiwan's tourists arriving to Thailand increasing 4.02%, the number of Korea's tourists arriving to Thailand increasing 0.59%. As well as when lags one period of temperature of Thailand increasing 1% then the number of America's tourists arriving to Thailand increasing 2.08 %.

The empirical results in the short-run indicate that increase other variables were not used in ECM model (defined that this the variables as constant term of ECM model) has negative impact on the number of international visitors arriving to Thailand. The results imply that in the short-run when other variables were not used in ECM model increasing 1 % (while the variables were used in this model to be constant value) then the number of Malaysia's tourists arriving to Thailand decreasing 0.21%, the number of China's tourists arriving to Thailand decreasing 0.39%, the number of England's tourists arriving to Thailand decreasing 0.04%, the number of America's tourists arriving to Thailand decreasing 0.33%, the number of German's tourists arriving to Thailand decreasing 0.14 %, the number of France's tourists arriving to Thailand decreasing 0.16%, the number of Sweden's tourists arriving to Thailand decreasing 0.58 % and the number of Canada's tourists arriving to Thailand decreasing 0.22%.

Finally, as expected, Dum tend to have a significant positive effect on international visitor arrivals to Thailand. The empirical results in short-run indicate that in high season of Thailand has positive impact on international visitor arrival to Thailand. The results imply that when Thailand has a during of high season then median of number of Malaysia's tourists arrivals to Thailand increase around 58.40% when comparison with low season of Thailand, median of the number of China's tourists arrivals to Thailand increase around 7.25% when comparison with low season of Thailand, median of the number of Korea's tourists arrivals to Thailand increase around 9.41% when comparison with low season of Thailand, median of the number of America's tourists arrivals to Thailand increase around 52.19% when comparison with low season of Thailand, median of the number of German's tourists arrivals to Thailand increase around 30.99% when comparison with low season of Thailand, median of the number of France's tourists arrivals to Thailand increase around 41.90 % when comparison with low season of Thailand, median of the number of Sweden's tourists arrivals to Thailand increase around 238.71 % when comparison with low season of Thailand and median of the number of Canada's tourists arrivals to Thailand increase around 47.69 % when comparison with low season of Thailand (Gujarati (2003), p.321).

Granger (1986) notes that the existence of a significant error correction term is evidence of causality in at least one direction. The lagged error correction term  $EC_{t-1}$  is negative and significant at the 1 % level for all countries (excepted both Sweden and Canada are significant at the 5 % and 10 % respectively). The coefficients of -0.90, -0.07, -1.80, -1.45, -1.17, -0.48, -0.68, -0.53, -0.56, -0.11, -1.07, -0.23, -0.29 for Malaysia, Japan, China, Singapore, Taiwan, Korea, England, America, German, Australia, France, Sweden and Canada, respectively, indicate a moderate rate of convergence to equilibrium. The value of adjust  $R^2$  of ECM model is very high value as well as the value most of them are more than 70 % (excepted the ECM model of China, Taiwan and Australia). The value of F-statistic showed that every ECM model are fit for be a short-run model of Thailand's international tourism demand model by statistics significant at 1 % (excepted the ECM model of Australia).

Furthermore this paper applied a number of diagnostic test to the error correction model. The models passed the Jarque-Bera normality test, suggesting that

the errors of them are normally distributed expect the model for China not pass this test because the data were used in this model are very small size. Hence, it should not be used with the Jarque-Bera statistics test for the normality of error term of this model (Gujarati(2003), Parsert, Rangaswamy and Chukiat (2006)). There is no evidence of autocorrelation in the disturbance of the error term (see value of L.M-test in same tables). The White-test suggested that the error is homoskedastic and independent of the regressors (excepted ECM model of France). The RESET test indicates that the models are correctly specified (excepted ECM model of Malaysia, Japan and Taiwan). While the Chow-forecast-test indicates that both ECM models have structure changed and ECM model have not structure changed.

## **6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS**

This paper was motivated by the need for empirical analysis of international tourist behavior arriving in Thailand and an analysis of the determinants of Thailand's international tourism demand from its thirteen main source markets, Malaysia, Japan, China, Singapore, Taiwan, Korea, England, America, German, Australia, France, Sweden and Canada. In this article, six standard unit root test were used test for all variables. Namely, ADF-Test (1979), PP-Test (1987,1988), KPSS-Test (1992), DF-GLS Test (1996), The ERS Point Optimal Test and Ng and Perron Test (2001). And in this paper the bounds testing approach to cointegration base on ARDL approach to cointegration which this method was developed by Pesaran and Shin, 1995, 1999; Pesaran *et al.*, 1996, Pesaran (1997), Pesaran and Smith (1998) and Pesaran *et al.*(2001). Although this method suggested that no need to pre-testing of unit root test of variables (Pesaran *et al.* (2001), Narayan (2004)). However, Ouattara (2004a), Chaudhry and Choudhary (2005) argues that in the presence of I(2) variables the computed F-statistics provided by Pesaran *et al.* (2001) are no more valid because they are based on the assumption that the variables are I(0) or I(1).

Therefore, the implementation of unit root test in ARDL procedure might still be necessary in order to ensure that none of the variables is integrated of order 2 or beyond. Consequently this paper must be used six standard unit root test for all variables before uses ARDL approach to cointegration. This method was used to investigate long-run equilibrium relationships between the number of international tourists arriving in Thailand with economics variables and temperature of Thailand. The economic variables such as the GDP of major countries of international tourists arriving to Thailand, the world price of kerosene-type jet fuel, the relative price of Thailand with the countries of international tourism and exchange rate of Thailand compared with the countries of international tourists. The existence of cointegration allowed for the application of error correction models to depict the short-run elasticities

The conclusion of the research and policy recommendations has There are sixth important conclusions and recommendations that emerge from the empirical analysis of the research. First, a 1% increase in income (GDP) in the long-run in main source markets, Malaysia, Singapore, England, America, Sweden and Canada

(excepted Japan) leads to an increase in international visitor travelling to Thailand by 1.50%, 1.68%, 1.22%, 0.95%, 2.80% and 1.24%, respectively. This result is consistent with economic theory and the this result was similar with the results of previous empirical studies of tourist demand (Lim & McAleer (2003), Kafono & Gounder (2004), Narayan (2004), Parsert, Rangaswamy and Chukiat (2006). The long-run result for Thailand's international tourism demand implies that Thailand received increased international visitors with a growth in income (GDP) in major markets during that period. If this can be generalized for future years, then it argues well for the continued development of the Thai tourism industry.

Secondly, a 1% increase in transportation costs (price of jet fuel) in the long-run in mostly major source markets such as Malaysia, Singapore and England (excepted Japan) leads to decreased international tourist arrivals from those countries in Thailand of 0.18%, 0.26% and 0.16% respectively. This result is consistent with economic theory and this result was similar with the results of previous empirical studies of tourism demand (Lim & McAleer (2001), Narayan (2004), Parsert, Rangaswamy and Chukiat (2006). If a generalization can be made for future years, then it suggests that the Thai government should increase support for international low cost airlines or reduce the cost for international airlines arriving in Thailand because the Thai government cannot control the price of jet fuel in future.

Thirdly, in the long-run the exchange rate is an important determiner of international tourist's behavior and a 1% increase in the value of the exchange rate of Thailand against the currency of the major tourist markets of Malaysia, Singapore, Taiwan, England, America and German leads to a decrease in international visitor arrivals from these countries to Thailand of 1.05%, 0.96%, 4.02%, 0.84%, 0.51% and 0.25% respectively. This results is consistent with economic theory and it suggests that the Reserve bank of Thailand should be careful when using any policy that impacts on Thai currency because when the Thai currency is very strong, it not only negatively impacts on export goods and services (Anderson and Garcia (1989), Pick (1990), Chukiat (2003)) but it also decreases international visitor arrivals to Thailand (Lim & McAleer (2003), Parsert, Rangaswamy and Chukiat (2006)).

Fourthly, in the long-run the exchange rate risk is an important determiner of international tourist's behavior and a 1% increase in the exchange rate risk of Thailand compared with the currency of the major tourist markets of Malaysia, Japan, Taiwan and Korea (excepted both German and Sweden) leads to a decrease in international visitor arrivals from these countries to Thailand of 0.43%, 4.89%, 5.76% and 17.00% respectively. This results is consistent with economic theory and it suggests that the Reserve bank of Thailand should be careful when using any policy that impacts on Thai exchange risk because when the Thai exchange rate risk so much, it not only negatively impacts on export goods and services (Anderson and Garcia (1989), Pick (1990), Chukiat (2003)) but it also decreases international visitor arrivals to Thailand (Lim & McAleer (2003), Parsert, Rangaswamy and Chukiat (2006)).

Fifthly, a 1% increase in relative price in the long-run in between Thailand with both Korea and England lead to decreased international tourist arrivals from those countries in Thailand of 0.58% and 1.796% respectively. This result is consistent with economic theory and this result was similar with the results of previous empirical

studies of tourism demand (Lim & McAleer (2001), Narayan (2004), Parsert, Rangaswamy and Chukiat (2006). If a generalization can be made for future years, then it suggests that the Thai government should be careful when using any policy that impacts on the price-index of Thailand because when the price-index of Thailand increase then, it not only negative impacts on the consumer behavior of Thai's people but it also decreases international visitor arrivals in Thailand (but not much because impact on only two countries are both Korea and England).

Finally, in the long-run the temperature of Thailand is an important determiner of international tourist's behavior and a 1% increase (meaning that weather is very hot increase 1%) in the temperature of Thailand leads to a decrease in international visitor arrivals from Malaysia, China, Singapore, Korea, England, America, German, Sweden and Canada to Thailand(excepted Japan, Taiwan and France) of 1.74%, 3.46%, 1.66%, 0.03%, 4.42%, 4.69%, 11.32%, 17.79% and 8.63% respectively. it suggests that the department of environment in Thailand's government should be careful when using any policy that impacts on the weather of Thailand because when the weather of Thailand has a high temperature then , it not only negatively impacts on the people of Thailand but it also decreases international visitor arrivals to Thailand (Wietzelise and Richard(2002)).

#### Appendix A. The table results of research

**Table 5. Results of Unit Root Test based on 6 method tests for all variables**

Variables	Malaysia	Japan	China	Singapore	Taiwan	Korea	England
D1	I(d)	I(0)	I(d)	I(d)	I(0)	I(d)	I(d)
GDP	I(0)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
PO	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RP	I(d)	-	I(d)	I(d)	I(d)	I(d)	I(d)
RER	I(d)	-	I(0)	I(0)	I(0)	I(d)	I(d)
SDR	I(d)	I(d)	I(d)	I(0)	I(0)	I(0)	I(d)
TEM	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)

Form: computed

**Table 6. Results of Unit Root Test base on 6 method tests for all variables**

Variables	America	German	Australia	France	Sweden	Canada
D1	I(d)	I(d)	I(d)	I(d)	I(0)	I(d)
GDP	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
PO	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
RP	I(d)	I(d)	I(d)	I(d)	-	I(d)
RER	I(d)	I(d)	I(d)	I(d)	I(d)	I(d)
SDR	I(d)	I(d)	I(0)	I(d)	I(0)	I(d)
TEM	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)

Form: computed

**Table 7. Results of Unit Root Test base on 6 method tests for all variables after first or second differencing**

Variables	Malaysia	Japan	China	Singapore	Taiwan	Korea	England
D1	I(1)	I(0)	I(1)	I(1)	I(0)	I(1)	I(1)
GDP	I(0)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
PO	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
RP	I(1)	-	I(2)	I(2)	I(1)	I(1)	I(1)
RER	I(1)	-	I(0)	I(0)	I(0)	I(1)	I(1)
SDR	I(1)	I(1)	I(1)	I(0)	I(0)	I(0)	I(1)
TEM	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)

Form: computed

**Table 8. Results of Unit Root Test base on 6 method tests for all variables after first or second differencing**

Variables	America	German	Australia	France	Sweden	Canada
D1	I(1)	I(1)	I(1)	I(1)	I(0)	I(1)
GDP	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
PO	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
RP	I(2)	I(2)	I(2)	I(2)	-	I(2)
RER	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
SDR	I(1)	I(1)	I(0)	I(1)	I(0)	I(1)
TEM	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)

Form: computed

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## **THE EMPLOYEES BOARD - UNION RELATIONSHIP (PSHYCO-SOCIOLOGICAL STUDY IN THE JIU VALLEY)**

**VASILE CIOCODEICĂ \***

**ABSTRACT:** *The study points out the evolution of the most relevant post revolutionary aspects of the Romanian mining problems, by using examples in the Jiu Valley, the most important coal basin in our country, and it is characterized by novelty elements in the field of the relations between the Employees Board and the Union in the mining activity both from the point of view of revealing reality and of presenting the results of the social investigations carried out.*

**KEY WORDS:** *mining, union, reorganization, disintegration, documentary analysis, observation, sociological investigation*

The study “The Employees Board-Union Relationship” proposed itself through its six chapters to point out in evolution the most relevant post revolutionary aspects of the Romanian mining problems, illustrating, by examples, the Jiu Valley, the most important coal basin of our country.

Reporting to the inner and international history and legislation in the field, the thesis of master’s degree developed the following aspects:

- The social size of the union organization;
- The diversity of mining problems in the Jiu Valley;
- The union activity and its reflection in legislation;
- Realities and desires in the relations between the Employees Board and the Unions;
- The social implications on the background of the reorganization of the mining activity in the Jiu Valley, and at the end of the thesis to present the Suggestions and the Solutions.

The study is characterized by the novelty elements in the field of the relations Employees Board - Union in the mining activity from the point of view of pointing out the reality as well as the results of the social researches of the carried our investigations.

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The first chapter of the study introduce us in the pre- and post revolutionary, inner and international union theme under legislative and evolutionary historical aspect making so the introduction to deeply present the union organization in the Jiu Valley after 1989 and to point out the relation Employees Border - Union on the background of the necessity of the mining enterprises reorganization.

The professional organization of the workers in Romania didn't pass through long stages, which are specific to the guilds or trade unions of some European countries. Since the inter-war period the rhythm of making up the organizations fluctuated depending on the economic conditions of the unions and the offensive of the employers. During the inter-war period the unions will be marked by divisions, like the appearance of "the yellow" unions, yet succeeding in obtaining, by strikes, some economic rights. Under the legislative aspect the inter-war period was marked by a rich legislation, which settled the labour relations and the rights of the unions. After 1945, during many decades, the unions existed only formally in enterprises.

The disintegration of the old state structures after December 1989 created a large field for the action of the unions. If the reappearance of the unions coincided with their breaking up (in June 1990 over 1000 unions acted at the national level), at present, due to the union of the trade unions movement, there are some strong union federations: The National Confederation of the Unions from Romania, The Union Confederation "Cartel Alfa", The Independent Union Confederation "Brotherhood", The National Union Block, The "CERES" Confederation, The Unlined Union Confederation from Romania, The Mining Union Confederation from Romania, to which the Mining Union League from the Jiu Valley is affiliated.

The two leading and deciding centres of the Jiu Valley mining, Administration Border - Union, were marked by the latent rhythm of the achievement of the coal mining reorganization, Romania being among the latest states in Europe in this sense. On the background of the mistaken understanding of the property and democracy as the expression only of the rights but not as well as of the obligations, it has started a deep crisis of the authority of the leaders in enterprises. In this sense, a chapter of the study deliberates upon the problems concerning the labour conflicts and upon the way of their settlement in the inner and international field as well as upon the labour contracts theme due to which provisions the unions won rights for limited periods, especially as far as the rights regarding salaries and other personnel rights are concerned.

Under these imperatives there were taken place the researches "The social implications in the case of decreasing the mining activity in the Jiu Valley" and "The social protection at the Autonomous Pit Coal Administration", both of them carried out on the basis of a contract concluded with the Autonomous Pit Coal Administration from Romania.

In the research "The social implications in the case of decreasing the mining activity in the Jiu Valley" the used methodology had a complex character in the sense that it had joined more techniques of getting the information: the documentary analysis, the observation, the sociological investigation, the sociological interview.

The area of the investigation referred to 11 mining enterprises belonging to the Autonomous Pit Coal Administration, those which were pre-eminently on

“production”, meaning the enterprises from Lonea, Petrla, Dalja, Livezeni, Aninoasa, Vulcan, Paroseni, Lupeni, Barbateni, Uricani and Brazi Valley.

The content, depending on the kind of the personnel, was:

- leadership - the lot included 49 leaders;
- union leaders - the lot totalized 125 union leaders ;
- employees - the most numerous lot in the research and it supposed the division in samples. It was fixed a volume of 2% out of the whole potential population (over 25000 employees), which led to a figure of the division in samples of 521 subjects.

As a scheme of samples it was made the choice for that “on shares” which, although it was not an optional one, was the only one that could be used under the conditions of the concrete restrictions.

The instruments of the investigation were represented, mainly, by the questionnaires of investigation and protocols of interview for the three inquiries. For the lot of the employees it was used the interview, for the lot of the union leaders it was made, in majority, an investigation and some interviews either, and for leadership it was appealed exclusively to investigation. It had in view the establishment of the opinions of three different lots of subjects concerning the same problems.

The three questionnaires contained 14 or 15 questions of opinion and 4 questions concerning socio-professional characteristics of the individual. Out of those 14 or 15 questions of opinion, 10 were completely identically in the questionnaires, which represented a percentage of over 70%. From the point of view of the criterion of the way of formulating the questions there were used both those closed (with limited answers in number and specified alternatives) and the opened codificated questions.

The contingency of decreasing the activity at the mining enterprises focused the interest in this research representing the key problem of the undertaken investigation.

At the end of the analyses there were ascertained the followings:

- at the level of the mass of employees, the fear of inflation (41.48%) is over three times higher than the fear of the decrease of the activity;
- for the union leaders the understanding of the danger of decreasing the activity is with almost 20% higher to the opinion of the mass of employees but still secondary to the inflation, which stands in the top of the hierarchy of dangers;
- only in the case of the leadership the decrease of the activity is considered the highest danger at the highest percentage (43%).

The so far commentary refers to the awareness of the danger of decreasing the activity in the situations when it was not made a direct reference to it but it was “penetrated” in a larger list of diverse, potential dangers.

The question: “Supposing that it will appear the necessity of decreasing the activity in your enterprise or in the other mines of the Jiu Valley, in what degree this thing will affect you?” was put only to the category called by us “employees” which is the most numerous (521 persons) and out of which 90% are workers or foremen. It has been ascertained that the decrease of the activity in the personal enterprise would affect deeply over 76% out of the subjects, but only 50% out of them would be affected in the same way if the decrease refers to other mines.

Changing the place of the opinions to indifference or lack of opinion is normal in the case of “the others” in comparison with that “personal”, so we shouldn’t be surprised by a percentage of 20% referring to the alternative of the lack of opinion. Anyhow, the worry is higher in the places where the mining activity has an overwhelming percentage: Lonea, Uricani, Petrila, Aninoasa a.s.o.

The matter of the causes of the economic situation - and implicit of the eventual necessities for decreasing the mining activity - is extremely important. By the knowledge, as much as precisely of these causes, depends the identification of the solutions for counteracting the damaged situation. That’s why a question referring to these causes was opened, precodificated put. There was allowed the selection of three more causes out of 9 possible alternatives. By maximum concord the main cause is considered to be the insufficiency of the investments, this one being the only situation when all the three categories of subjects placed the cause on the same top. After this first cause the consens does not take place referring to the other eight alternatives, there are even seven situations when the employees and the leadership have so different opinions that the same factors take place at distance of 3-8 levels in the hierarchy.

On the second place in the hierarchy it is placed the insufficiency of the subsidies.

The weak organization and leadership are the third in the whole hierarchical of the specific causes, but this hierarchical place comes from very different positioning referring to the categories of personnel: the third place for the employees, the sixth place for the union leaders and only the eighth for the managers. It is one of the typical causes when endorsed categories of personnel accuse (the employees) and those endorsed (the leadership) contest or minimalized.

The general conclusion about the specific causes of the present state of the Jiu Valley mining is that in their entire majority they are claimed in different ways by the three categories of the subjects who enunciate them depending on their specific interest.

As the pleaded causes determine to a great extent even the way on which their counteracting is seen, we should expect at pronounced differences concerning even the solutions for struggling against the danger of decreasing the activity.

So the re-qualification for changing the job is taken into account by over a half out of the employees (51%), by the union leaders in a percentage of 41% and by the managers in a percentage of 20%.

The retirees in favourable conditions as solutions, gets a percentage of 56% referring to the union leaders, 38% to the employees and only 14% to the managers.

The acceptance of retirees after 20 labour years wouldn’t be a problem for 30-50% out of these in cause because referring to age, 47% out of them overtook 20 years of labour.

The solutions foreseen by the managers were quantificated as follows:

- the modification of the labour schedule 57.14%
- the production technology up-dating 42.85%
- the reorganization of the organized structures 34.69%

The feature of this hierarchy is the idea that the diminishing of the danger of the mining activity decrease should rely on its inner changes, on the improvement of the gained performance.

Among other possible solutions we keep in mind that one concerning the incomplete labour schedule. This is a solution at which other enterprises from other branches of activity appeal but all the subjects refuse it in mining.

The research "Social protection at the Autonomous Pit Coal Administration-Jiu Valley" should be a theoretical and applicable inquire for concrete research. Due to the structure of the sample of subjects (employees, union leaders, managers) and the followed objects, the inquiry from 1997 partially took again aspects from the inquiry made in 1994, which had as a subject the implications of the possible decrease of the activity. As a matter of fact four questions from the questionnaire that refer to the situation of life and mining in the Jiu Valley as a whole were almost identically in the two researches. The conclusions of the two studies show the followings: if in 1994 the majority of the subjects ascertained the worsening of the mining situation, in 1997 these findings got worse with 18-22%. If in 1994 life was considered worse by 52% out of the subjects, in three years the percentage increased at 68% and the opinion of those who considered living better decreased from 24% to 9%.

In order to achieve a comparison between the opinion at the national level and that one from the Jiu Valley on this matter, we referred to the I.M.A.S.' and I.C.C.U.'s soundings from the public opinions barometer. If in 1994 at the national level approximately 66% out of the subjects are not satisfied by the way of living, in 1997 the percentage decreases at 56%. Although both at the national level and in the Jiu Valley over 50% out of the subjects are not satisfied by the way of living still there is a discrepancy concerning the evolution of dissatisfaction.

So, while at the national level the dissatisfaction, even insignificant (9%) decreases for the period 1994-1997, in the Jiu Valley, in the same period, the dissatisfaction increases (6%). Among the causes of this discrepancy we consider to be more pointed out the arrest of the miners' leader from the Jiu Valley, the danger of decreasing the mining activity and especially, a lack of a programme for social sustain in the reorganization of the mining sector. Among the factors that influence mining and life the Government is classified on the first place. The responsibility, starting with the Government, concerning the mining situation, which got worse year after year, is in a way an implicit accusation referring to the way this one acted. In fact, even the information from The Public Opinion Barometer shows a disadvantageous opinion about the Government.

The reorganization of the Romanian mining can be done only by a large social acceptance. The research "The social protection at the Autonomous Pit Coal Administration-Jiu Valley" tried to include the aspect of the social acceptance too.

For the subjects the fear of unemployment is classified on top (31.96%) followed by the mining reorganization (26.02%). The estimation that the loss of the job is the most dangerous phenomenon becomes more evidently if we logically suppose that the mining reorganization and the decrease of the mining activity (10.41%) include the diminishing of the staff too.

Referring to the matter of the possibility and necessity of the reorganization, after the analysis there appear three situations:

- the situation when the reorganization is considered required and possible in mining in the same way as in the whole industry (10.77%);
- the second situation when the reorganization is considered required and possible but with specific contents (44.78%);
- the third situation when the reorganization is not required and possible.

The worry and the resistance against reorganization (the positions 2 and 3 - 86.66%) consist of the lack or inconsistency of some governmental programmes or of other institutions too referring to reorganization.

Among the solutions for achieving the reorganization it comes out as a first option (30.08%) the privatization with the help of the foreign sustain.

The option for closing the less advantageous mines (17.90%) situated on the second place, we believe that the subjects' opinion starts from the supposition that there are two, maximum three disadvantageous mines and from the belief in the redistribution of the available staff at the other mines, belief that has as a support the percentage of only 3.30% belonging to those who accept as a solution the decrease of the staff at all the Jiu Valley mines.

The reorganization of the mining supposes the closing of the disadvantageous mines and the decrease of the number of employees at the active mines. To do that it is required the utilization of a complex of financial and social instruments in order to allow the achievement of a process in a way accepted by the society, without social tensions.

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## **THE SYSTEM OF INDICATORS IN THE NATIONAL ECONOMY**

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**ABSTRACT:** *The indicators are the main part of the business information system forecast; due to them, one can set forth, on the one hand, the quantitative and qualitative objectives of the forecast management tools and the means to achieve them, while on the other hand, they characterize the phenomenon and economic and social processes in all their organizational types - level, structure, influence factors.*

**KEY WORDS:** *Gross Domestic Product, National Accounting System, Money Stock*

### **1. THE SYSTEM OF INDICATORS, THE MAIN COMPONENT OF THE INFORMATION SYSTEM OF MACROECONOMIC FORECASTS**

The indicators are absolute or relative numerical expressions which quantify the economic and social objectives of each period, which determine the means of carrying out these objectives and control the efficient use of resources. A series of issues that can not be quantified, such as, for example, the ones referring to the improvement of working conditions or the improvement of the environment, are carried out to the letter. Other components of information systems, such as information carriers, information flows, technical means of recording, processing, transmission and storage of information, etc., are very helpful, and their role is to support the system of indicators to meet the requirements of the business forecast information system.

### **2. CHARACTERISTICS OF THE SYSTEM OF INDICATORS**

The system of indicators which help the forecast activity has a number of features, among which we mention the following:

- It is a unitary, coherent system, where each component is inextricably linked with one another; this lies with the unitary and coherent characteristic that must be ensured to social reproduction and with the application of a unique

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calculation methodology within all subsystems of the economic and social life. Without this unity, correlating these subsystems or activities or determining the aggregate quantities of development could not be possible;

- it has a pyramidal point, meaning that their numbers in the national economy is smaller than at the level of socio-economic base units, of companies, respectively;
- it is comprehensive, meaning that it reflects aspects of all subsystems of society, of all sides and spheres of social reproduction proportions and correlations in the economy
- its forming and improvement should be addressed systemically, due to the number of structures that reflect the whole economic and social activity
- its development is a continuous process, meaning that it improves continuously and it adapts itself to the requirements of economic and social development, to the new organizational and management structures of economy, to the strategic and tactical collectives of economic and social policies at every stage.

Within the forecast activity, the system of indicators has the following main functions: a) accurate forecast of economic and social activities' b) rigorous measurement of economic and social phenomena and processes, c) linking all sides of social reproduction in order to ensure material, human, financial, monetary and exchange balance of economic development, d) encouraging all economic units to improve the quality and efficiency of their operations; e) facilitating the control of economic – social activities.

### 3. THE MACROECONOMIC INDICATORS WITHIN THE NATIONAL ACCOUNTING SYSTEM

The GNP (Gross Domestic Product) is the total value of final goods and services produced in a given period by production factors owned by a country. The GNP is the basic measure of national economic activity. It is necessary to distinguish between: a) the real and the nominal GNP, b) the real and the nominal value of the GNP and their growth, c) the total GNP and the GNP per capita. The nominal GNP measures the value of production in a certain period – the prices during that period, ie the current prices. The real GNP measures the same output value in constant prices, ie the prices of a base period. The economic literature considers that the GNP "measures the change in physical output of the economy, assessing all the goods and services produced in two different periods of time with the same prices, ie in constant prices. GNP can be calculated more easily than the GNP because current prices are more available.

Relating the GNP to the number of inhabitants of a country (P) one can determine the GNP per capita, that is to say:

$$PNB / loc = \frac{PNB}{P} \quad (1)$$

where:



$$PNB_n / loc = \frac{PNB_n}{p} \text{ \textit{si} } PNB_r / loc = \frac{PNB_r}{P}$$

The growth of GDP, as expressed by its growth rate, is calculated as a ratio, in absolute or relative sizes, between its level from the current year and the level from the base year:

$$r_{PNB} = \frac{PNB_1}{PNB_0} \text{ \textit{si} } \frac{PNB_1}{PNB_0} \cdot 100 \quad (2)$$

where:

$$r_{PNB} = \frac{PNB_{n/1}}{PNB_{n/0}} \text{ \textit{si} } \frac{PNB_{n/1}}{PNB_{n/0}} \cdot 100 \quad \text{and}$$

$$r_{PNB_r} = \frac{PNB_{r/1}}{PNB_{r/0}} \text{ \textit{and} } \frac{PNB_{r/1}}{PNB_{r/0}} \cdot 100$$

Gross domestic product (GDP) is the value of final output of goods and services produced over a period of time by traders operating within national boundaries. GDP includes, therefore, the value of all goods and services produced within the national economy for investments, consumption, exports and making or increasing stocks. GDP can also be classified as a nominal GDP and a real GDP. All relations used for the GNP are also valid for the GDP.

However, the GNP is considered the basic indicator for measuring the economic activity that highlights the results of all economic units from a country no matter where they operate, ie both within national borders, and outside. GDP shows the results of all economic agents operating within a country whether or not belonging to that country.

#### 4. INDICATORS OF CURRENCY SUPPLY OR MONEY STOCK

The limited currency supply, MH is defined as including on equal terms bills, coins and demand deposits held by the private non-banking sector (bank accounts associated with bearer checks, where cash is available on request). The most significant changes are: Germany includes deposits that can be withdrawn with a notice of one month; in Britain, the measures taken as regards the limited currency supply are M0 and M2 (including the availability of non-financial residents – there is no M); in the United States there are traveler's checks and other bank deposits that use bearer checks.

- The currency supply in a broad sense, M2. This equals Mi plus the deposit accounts and the savings accounts and the foreign currency deposit accounts held by residents other than the central government. The notable differences are: Australia and Italy include deposit certificates (DC), Belgium includes deposit certificates and investments in shares of investment funds; In the UK, the currency supply in a broad sense is called M4 and it includes any available

non-financial residents (Britain's definition of M2 is more limited, while M3 is not published anymore); France includes various money market instruments; the Netherlands uses treasury bills, Japan focuses on a measure known as M2 + CD, in the USA, M2 consists of M1 plus overnight redemption agreements and Eurodollar deposits held by U.S. residents in branches of U.S. banks worldwide and in all the banks from Britain and Canada, shares of the mutual fund with general purpose and broker / dealer funds on the money market and short term deposits and savings deposits.

- M3 equals M2 plus other obligations of financial institutions. For example, in the U.S. M3 equals M2 plus redemption agreements and Eurodollar deposits, shares of the mutual funds destined only to legal entities from the money market and long-term deposits.
- M4, as it is used in the United Kingdom, includes the obligations of all banks and construction companies from the UK, in sterling pounds, towards other UK residents from the private sector.

Other variations are related to currency supply and liquidity. Some countries give special attention to currency supply. Thus the British M0 indicator is almost entirely represented by circulating cash and it also includes operational bank deposits in the Bank of England. The currency stock of the central bank in Germany is represented by the circulating cash and the necessary minimum savings of the banks placed in the central bank. This was the main variable target until 1987.

Some countries are interested in total liquid assets, which include a wider range of instruments and they are less affected when funds change their destination in response to the changes of the relative interest rates. It is worth mentioning the following:

- In the United Kingdom, LPS (liquidity of the private sector) includes: foreign currency, deposits, savings instruments and wholesale money market funds;
- In France, the total liquidity is M3 plus short-term securities issued by non-banking institutions and contractual savings schemes managed by credit institutions;
- In Spain, ALP (total liquidity) represents M3 plus certificates covered by mortgages, treasury bills, endorsed treaties, trade effects and deposit certificates of the Bank of Spain (ALP = liquid assets held by the public). The speed of circulation, that is to say whenever the money changes its holder within a year, can be measured by dividing the nominal GDP to any of the monetary aggregates (such as M2), expressed as an annual average.

Commercial banks can make money, from the fact that they borrow/lend most of the deposits placed within them as it is unlikely that all depositors should claim refunds at the same time. In order to be able to control the currency supply, central banks can limit the rate of new deposits that banks can lend, asking them to keep a fixed proportion of assets, as follows: a) basic reserves - cash and balances placed in central banks (operational deposits) used to meet the daily demands of customers and intra-banking settlements, and b) Secondary reserve - safe liquid assets (eg Treasury bills) which can be used to cover temporary increases in withdrawals.

Monetary authorities are trying to control the size and the growth of currency supplies in the following ways: a) changing the rates of reserve assets – this affects the extent to which banks can lend money and it is usually done only every few years, b) operations on open market - buying and selling government bonds on the open market results in increasing or decreasing the amount of money from bank reserves and private deposits, c) influencing interest rates - for example, through open market operations (which affects the supply and demand for money), changing the discount rate or imposing fixed rates for certain deposits or loans, d) control of credit - for example, limitations on the total amount that can be lent by banks, the total personal credit or the conditions regarding down payment imposed for any credit, and e) moral belief - for example, central banks have opened discussions with commercial banks, perhaps to persuade them to restrict lending. Direct control over rates of reserve assets and over the currency supply affects the supply of money, while other measures affect the demand for money.

The increase of currency supply can be observed by tracking deposits which are found in various monetary aggregates. For this purpose we may use alternative indicators of the growth of money supply:

- The balance sheet of the banking sector. Changes in column of liabilities (deposits) must be equal to changes in the column of assets (mainly, loans) and to the obligations that are not included in the monetary aggregates,
- Sector equivalents. They are measured by the money which the public service puts out of circulation (the budget surplus and the sales of government bonds to non-banking entities) plus the net increases of the banking sector (mainly bank loans) and net increases from abroad (net inflows from the external payments balance sheet, destined to the private sector).

Monetary authorities adopted several approaches of the monetary control.

The U.S. Federal Reserve (Central Bank), for example, pays particular attention to aggregate M2 as an indicator of inflationary pressure. On the whole, the reasoning is that in order to achieve price stability, long-term growth of M2 should be approximately equal to the increasing trend of production. The Federal Reserve also controls M3, but it is considered less important than M2. In the UK, M0 money supply is being controlled, while the Bank of Japan aims at M2 + CD and Germany and France mainly aimed at M3 in a broad sense.

## **5. THE INFLUENCE OF PRICE CHANGES ON THE MACROECONOMIC INDICATORS**

An important objective of price variation analysis is to estimate accurately the value of the main macroeconomic aggregates used in SNA. This means that from the statistical study of price changes, one needs to identify the main issues that are to be taken into consideration - the interpretation of changes in the nominal and the real values of the main macroeconomic indicators. The most significant problems in this context are: a) detect changes in the nominal value of traded goods and services and identify the extent of changes that can be attributed to prices, b) indicating the link between, the general price level and inflation, c) implications of nominal income

changes on the purchase of goods and services, and d) comparing the prices and volumes between countries, establishing and calculating the purchasing power parity GDP per capita in a currency recognized for international comparisons. SNA provides the framework for addressing these issues in an integrated and coherent manner.

Macroeconomic aggregates are composed of heterogeneous goods and services represented by a variety of prices and tariffs. Aggregates are calculated by summing up volumes and prices and charges. Any macroeconomic aggregate is, thus, a quantitative component, a volume and a value component. The evolution of macroeconomic aggregates from one period to another or from one moment to the next is due to both volume and price change and to the change of structures. Identifying the contribution of each factor to the overall change is difficult and involves a synthetic indicator of price trends. For this purpose there should be taken into account the following:

- prices and volumes change not only absolutely but also relatively, leading to changes in the proportion of prices and volumes as well;
- in the case of most goods, price and volume changes are not independent - usually, small quantities are correlated with high prices and vice versa;
- the description of goods and services taken into consideration changes over time because, on the one hand, new products will be turned out, while on the other hand, some existing goods are no longer produced;
- rapid changes in the quality of many goods, which affects prices.

Deciding upon the formula of calculation which summarizes the evolution of prices has been the subject of extensive debates in specialized literature. The tests used in assessing the various formulas fail to make one single choice, meaning that there isn't one formula that works simultaneously for all tests. Because one can not choose a formula based strictly on these tests, in practice, the breaking of nominal aggregates into prices and volumes is based on judgments that depend on the estimation of the outcome and on the costs of obtaining the necessary information. As a consequence, there isn't a real price index, in the sense that a certain economic development should correspond to the exact value regarding the price evolution. The real term associated with macroeconomic aggregates should not be confused with that of physical volume - miscellaneous goods meet in an aggregate size through the sum of their monetary expressions.

When one is interested in the actual size, the following should be taken into account: a) the real change must be understood only in relation to prices and the physical structure of a period considered as a basis for comparison, and b) relative price changes are based on a convention, namely on adopting a certain formula for the price index as the basis for calculating the dynamics. In statistical practice we use a limited number of price indices, among which we mention: the Laspeyres index, the Paasche index and the Fisher index.

The Laspeyres and Paasche indices summarize the relative changes in prices of a set of goods. Each has advantages and restrictions. When deciding on one of the two indices we should take into consideration the possibility of obtaining data, the easiness with which results are interpreted and the calculated indices are compared over time. The latest version of the SNA (1993) recommends the annual Fisher chain indices. Alternatively, annual Laspeyres chain indices are also recommended for volume while

Paasche indices are good for prices. Theoretically you can use both, but most statisticians choose the former. Regardless of the variant used, the smallest deviation from the corresponding Fisher index can be used as a test of significance. Using the Fisher index has the advantage that there are, at the same time, both Laspeyres indices and Paasche indices, allowing their determination by comparing the degree of influence of weighting schemes. This may be a criterion for assessing the value of Fisher indices.

## 6. MEASURING PRICES AND PHYSICAL VOLUMES FOR ASSESING MACROECONOMIC AGGREGATES

These measurements are obtained through successive evaluation of the components of macroeconomic aggregates to a level as detailed as possible. The current value of an asset  $i$  at time  $t$  (VIT) is obtained through multiplying the unit market price ( $p_{it}$ ) by the number of product units ( $q_{it}$ ) ie:  $v_{it} = p_{it} \cdot q_{it}$ . One can also use prices from the previous period which in the long run, can become constant. Estimating the flows of goods in constant prices means building a time series in which all transactions involving that certain product are expressed by the price of a base period:  $v_{it} = p_{i0} \cdot q_{it}$ . The indicators of constant prices may be expressed by current prices based on price indices for which the reference period is the period of constant prices. The same holds true for the calculation of aggregate indicators as well:

$$V_{it} = \sum p_{it} \cdot q_{it} \quad (3)$$

$$V_{i0} = \sum p_{i0} \cdot q_{i0} \quad (4)$$

In the case of product  $i$ , the index is  $\frac{p_{it} \cdot q_{it}}{p_{i0} \cdot q_{i0}}$  and in the case of the macroeconomic aggregate index is  $\frac{\sum p_{it} \cdot q_{it}}{\sum p_{i0} \cdot q_{i0}}$ .

The Paasche index represents the price index and its rate is determined using prices from the current period, while the Laspeyres index is the index of physical volume and its rate is calculated with the help of prices from the basic period. The relations for their calculation are:

- for the Paasche index  $IP_{t/0} = \frac{\sum p_{it} \cdot q_{it}}{\sum p_{i0} \cdot q_{it}}$
- for the Laspeyres index:  $IQ_{t/0} = \frac{\sum p_{i0} \cdot q_{it}}{\sum p_{i0} \cdot q_{i0}}$

The values in constant prices have the characteristic of additivity and, as such, they may be a convenient method to build aggregate sizes, removing price variation. The value index can be determined as a product between Paasche and Laspeyres indices.

## 7. CONCLUSIONS

The estimation in constant prices of aggregates from the national accounting system requires the use of individual price indices from the base year for weighting the components of the volume. Each base year provides a different perspective because of these weights; therefore, it is necessary to update the base year, especially when this is relatively distant from the current year. In order to build consistent time series, old series should be related to the series formed within the new base year, thus resulting in a set of chained time series. It should be noted however that chained series are not additive -business implies the fact that the relationship between a macroeconomic aggregate and its components in current prices (i.e. the aggregate equals the sum of components) should be maintained also when the current values (of the aggregate and of its components) are independently extrapolated using a set of physical volume indices.

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## **THE SCIENTIFIC DEFINITION OF SOCIAL STRATIFICATION, AS A HISTORICAL PROCESS OBJECTIVE**

**GHEORGHE COSTANDACHI \***

**ABSTRACT:** *In this paper the author defines the nature of social stratification and social classes, and the main concepts associated with this process, as well. The work describes the concept of "social stratification" from the point of view of some classic economists and sociologists. In the work is described a contemporary interpretation of the social stratification. Also is given a qualitative assessment in the Republic of Moldova and the attached well-known classification of social stratification in its conditions.*

**KEY WORDS:** *social stratification, social strata, inequality, group classes*

### **1. INTRODUCTION**

Most of the societies are organized in such way that their institutions do not distribute equally the benefits and responsibilities among the various categories of people and social groups. Sociologists call "social stratification" position of individuals and groups from top to bottom in horizontal layers, or strata, on the basis of inequality in income, education level, the amount of power, professional prestige. From this perspective, the social order is not neutral, but helps to reach the goals and interests just of some individuals and social groups more than others.

The question like «who gets anything and why?" was actual in all times for Humanity. The first Jewish prophets, who lived 800 years BC, in particular, Amos, Micah and Isaiah, have consistently blamed the rich and powerful members of society. Micah, for example, blamed for the fact that they took over the fields and houses of their neighbours were "filled with violence, demanded bribes and engaged in dishonest and treacherous acts. Greek philosophers, including Platon and Aristotel, discussed in detail the institution of private property and slavery. In his work called "The State" in 370 BC. e. Platon wrote: "Any city, however small it may be, is effectively divided

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into two halves: one for the poor, another for the wealthy, and they fight amongst themselves." In the Indian Laws of Manu, written in about 200 BC, describes the creation of the world in which social inequality is sent down by the gods for the common good. In the Anglican hymn have these words: Rich man - in his castle, Poor people - at his gate, God has one high and one low, and determine to whom, than to have. Thus, the famous polar opposite views on social stratification: some, like Micah and Plato, criticized the existing system of distribution, others, like the Brahmins, supported it. In real life, inequality of humans plays a huge role. Inequality - a specific form of social differentiation in which some individuals, sectors, classes are at different stages of vertical social hierarchy, have unequal life chances and opportunities to meet needs. Inequalities - criteria by which we can place one group above or below others. Social structure occurs at the social division of labour and social stratification - about the public distribution of the fruits of labour, i.e. social benefits.

## **2. THE DEFINITION OF SOCIAL STRATIFICATION AND SOCIAL CLASSES NATURE**

Thus, from the introduction of our research topic, we note that the issue of social stratification was stood in ancient times. At present, this question remained, but changed attitude towards it, or simply takes other forms and evolves according to historical cycles and processes. Most researchers believe that social stratification is a hierarchically organized structure of social inequality that exists in a particular society at a certain historical period of time. Hierarchically organized structure of social inequality can be described as a division of society into strata. Layered, tiered society in this case can be compared with the geological layers. However, compared with a simple bundle of social stratification has at least two significant differences. First, the stratification is a rank-stratification, where the higher layers are in a privileged position (in relation to the possession of resources or capacity to receive remuneration) than the lower layers. Secondly, the upper much smaller than the number of incoming members of their society.

*V. Marx and Weber on the classes:* Despite the fact that social class is one of the central concepts in sociology, on the content of this concept still there is not a single, strong point of view. For the first time a comprehensive picture of the class society were described in the works of Karl Marx. We can say that the social classes related to Marx - is economically deterministic and genetically conflicting groups. The basis of division into groups is a property presence or absence. Antagonistic classes, which inevitably appear in any society with a complex hierarchical structure based on inequality. Marx also admits the existence in society of small social groups which generate some class conflicts. Studying the nature of social classes, Marx made the following assumptions: 1. Any society produces a surplus of food, shelter, clothing and other resources. Class differences increase when one of the groups assigns resources that are not immediately consumed and are not currently necessary. Such resources are considered as private property. 2. Classes are defined based on the fact of possession or produced not possession property. In different historical periods, there were various



types of property which have been crucial in human relationships, but all social systems are based on two antagonistic social classes. 3. Class relations involve exploitation of one class by another, which is the cause of class conflict, which is the basis for social change, place in society.

Despite the revision, in terms of contemporary society, many of the class theory of Marx, remain relevant in respect of existing in our time of social structures. This especially can be applied to situations of interclass conflicts, strife and struggles to change the conditions of resource allocation. In this regard, Marx's theory of class struggle now has many followers among sociologists and political scientists of many countries. The most influential, alternative to Marxist theory of social classes are related in works of Max Weber. Unlike Marx Weber identifies other factors that influence the formation of relations of inequality. In particular, he examines the prestige as one of the most important features of social class. However, he considers the relationship between the possibility of attaching to a higher status and attractive social class, while assuming that the class is a group of people with similar capabilities, "push" or opportunities for career. Just as Marx, Weber, as the base of the status distribution in the society and the basis for the formation of social classes see attitude towards property. However, the division within the main classes (intermediate class) made by Weber, is much more important than Marx one. For example, Weber shares the class of owners and "commercial", class is divided into several sub-classes, the working class (depending on the type of ownership of enterprises in which they work), based on one of those opportunities to enhance their status, they possess. Unlike Marx, Weber delimited bureaucracy as a class, as an essential link power in the modern society. Weber first time lays the basis for class division system of stratification that exists in this society.

### **3. MODERN CONCEPTS OF CLASSES**

Attempts to explain the mechanism of social stratification was not done once at different periods of human history. However, only in the last decade of this century we have been able to comprehend the scientific complex social problems, without understanding that it is impossible to explain the processes taking place in society, imagine the future of this society.

A. *Functionalist's theory of stratification.* T. Parsons believes that the bases of stratification are the value orientations of members of society. This estimation and assignment of people to certain social strata is carried by the following basic criteria: Qualitative characteristics of members of society, which are determined by genetic traits and prescribed status (origin, family ties, personal qualities and abilities); Role-playing features, which are determined by a set of roles which the individual performs in society (position, level of professionalism, knowledge, etc.); The characteristics of ownership of material and spiritual values (money, means of production, artistic works, the possibility of spiritual and ideological influences on other sectors of society, etc.).

Currently, the most influential point of view on the formation of social strata can be considered the theory of stratification of K. Davis and W. Moore. According to this theory, every society must solve the problem of placement and motivation of the

individual in the social structure. Social order in a society based on the distribution of individuals on social status (in accordance with their functionality, their maximum contribution to achieving the goals of society). To implement the distribution of individuals on social status and their motivation is realized by compensation practices, which can be used to encourage the successful implementation of the individuals of their roles, and for maintaining of unequal distribution system of rewards in accordance with the occupied status. Thus, in any social system of rewards should be distributed differentially in accordance with social status. For this purpose, are created and legitimized the rights of every social status in respect of remuneration from the society. Why in a society appears a social and remuneration inequality? According to K. Davis and W. Moore, the social positions have an higher rank, because they have a functional significance or importance to society, but it requires more skills and better training. Thus, in terms of Functionalist's theory, inequality and the distribution of a status in society based on the functional significance of this status, requirements for execution and difficulty of filling the role of social status, are functionally necessary to society. It should be noted that this theory of stratification is currently the most developed and theoretically justified. However, many modern scholars find in this theory a number of significant shortcomings. One of the major weaknesses of the theory is rightly considered to ignore power factor, which plays a significant role in the distribution of rewards in societies. Modern theories of social class are also based on stratification. Most sociologists see in relation to the ownership of the key differences, however, recognize their class, factors such as seniority status, power, prestige, etc. If a social stratum can mean the division of the parameters, the social class is not only enlarged strata.

B. *The class structure of society Models.* Currently, there are many models of class structure. The sociologists at present come to the view that in modern society the basis of these structures remain unchanged, but change only a few structural units. These changes are based on cultural, economic, structural and other characteristics of each society. This definition of the class positions of individuals by using composite indices assessing the positions of individuals on many dimensions. The models include the stratification adopted in western sociology should be considered the most famous model of W. Warner. It should be said that all modern Western model of the class structure of society in varying degrees, contain elements of Warner. These elements include the following: 1. High-upper class includes the representatives of dynasties, with very significant resources of wealth, power, prestige throughout the society. Their situation is so firmly, that does not depend on competition, the rate of securities and other socio-economic changes in society. Very often, the representatives of this class do not even know exactly the size of their empires. 2. Lower - upper class includes the bankers, prominent politicians, owners of large firms that have achieved higher status in the competition or because of different qualities. They can not be taken in the upper-upper class, as either considered upstarts (in terms of representatives of top-top), or do not have enough influence in all areas of society. Typically members of this class are tough competition and depend on the political and economic situations of the society. 3. Principal - the middle class includes wealthy businessmen, hired managers firms, major lawyers, doctors, scientific elite. Representatives of this class do not claim to

influence across the state, but in a fairly narrow areas of their position quite firmly and steadily. In their activity areas, they have high prestige. 4. Lower - middle class wage earners are - engineers, medium and low ranking officials, teachers, scientists, heads of departments in enterprises, skilled workers, etc. At present these classes in the developed western countries are the most numerous. His main aspirations are to improve status within the class, and career success. In this regard, for representatives of this class a very important emphasis is on the economic, social and political stability of society. Speaking of stability, the representatives of this class are the main support of the existing power. 5. High - lower class wage earners are not included in the previous one. The dependence on the more senior levels of society for livelihood leads to the fact that this class throughout history fought for better living conditions. 6. Lower - lower class includes poor people, unemployed and other marginalized groups.

#### **4. SOCIAL AND CLASS STRUCTURE OF THE MOLDOVIAN SOCIETY**

Along with the collapse of such giant as the former Soviet Union, in the space of the former Soviet bloc and the Soviet republics began a path of development, in another capacity and dimension. Experience with Warner's model showed that, as presented, it is in most cases it is unacceptable for the countries of Eastern Europe and the Republic of Moldova, where in the course of historical processes, present a different social structure, there were radically different status groups. However, at present, due to the changes that have occurred in our society, many elements of the structure Warner can be used in the study of the social classes in Moldova. Modern research of factors, criteria and patterns of stratification of the Republic of Moldova can identify strata and groups, differing social status, and place in the process of reforming the Moldovan society. Under the current situation, especially during the last 5-7 years, the Moldovan society is structurally divided into four social classes: *upper, middle, and lower base, as well as of out of the socialized "social bottom"*.

*The upper layer includes*, above all, real ruling class, acting as the principal agent of reform. This includes elite and under elite group occupying the most important positions in government, in economic and power structures. They are united by the fact finding power and possibility to have a direct impact on the reform process.

*The middle layer* is the middle layer of the embryo in the Western sense of the term. Most representatives of this layer have neither providing personal independence capital, nor the level of professionalism that meets the requirements of post-industrial society, nor the high social prestige. Furthermore, while this layer is too small in number and can not serve as a guarantor of social stability. In the future, full middle layer of Moldova is formed on the basis of social groups that make up today, corresponding to the "Proto". This small-scale entrepreneurs, managers of medium and small businesses, middle tier of the bureaucracy, senior officials, most qualified and capable professionals, workers and others.

*Basic social layer* covers most of the Moldovan society. His representatives have secondary vocational qualifications and the potential for limited employment potential. To the base layer is the main part of the intellectuals (professionals), semi intellectuals (associate professionals), technical personnel, workers of mass

occupations of trade and service, most of the peasantry. Although, social status, attitudes, interests and behaviour of these groups are different, their role in the transition process quite similar - it is primarily an adaptation to changing conditions in order to survive and to sustain the progress status.

*The bottom layer* encloses the main, socialized part of society, its structure and function is the least clear. The distinctive features of its members are low-activity-potential and the inability to adapt to the harsh socio-economic conditions of the transition period. Basically, this layer consists of poorly educated, older, not too healthy and strong people, from those who do not have jobs, and often a permanent occupation, place of residence of the unemployed. Signs of the representatives of this layer are very low personal and family income, low education, unskilled labour, or the lack of permanent employment.

*Social bottom* is mainly characterized by isolation from social institutions of society at large, to be offset involvement in specific criminal and quasi-criminal institutions. Representatives of the social bottom are criminals and half-criminal elements - the thieves, gangsters, drug dealers, the owners of brothels, both large and small crooks, hired killers, as well as the weak people - alcoholics, drug addicts, prostitutes, vagrants, homeless, etc.

## 5. CONCLUSION

The social stratification is actually a social heterogeneity, where exists inequality, inequality of social status of people and their groups. The social stratification represents the process and result of the social differentiation into various groups that differ by their social status. A criterion for division of society into strata can be extremely varied, moreover, both objective and subjective. But most common are such as: profession, income, property, participation in government, education, prestige, self-esteem a person's social position, etc. According to researchers, the middle class in modern industrial society determines the stability of the social system and at the same time gives it momentum, as the middle class - is primarily a highly productive and highly qualified, proactive and enterprising worker. Moldova belongs to a mixed type of stratification. Our middle class is emerging, and this process is of key importance and wide for the formation of a new social structure. If we analyze the current process, or situation of withdrawal dangerous line that if society is crossed by, it can be risky for the statehood of the Republic of Moldova. By this attitude, it is also determined such negative processes like a mass exodus of overseas primary labour reserve, the failure of legislation, the slow democratic processes, etc.

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## **DIAGNOSING AND EVALUATING THE PERFORMANCES OF NATIONAL HARD COAL COMPANY BASED ON AN ECONOMETRIC MODEL FOR ANALYZING THE COSTS BASED ON THE CORRELATION METHOD**

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**ABSTRACT:** *The purpose of the initial step from this paper is not to reflect to the opportunity of the implementation of some new methods of analyze and to offer the possibility to fundament some strategic decisions regarding the improvement of the abilities from the pit coal market, following that by applying creatively a model of analyze to be assured a board picture, with a role of offering basic information for taking the major decisions regarding the decrease of the coasts and increase of the activity efficiency in order to perfect the actions for reconfiguring the speed for extracting the pit coal. To apply a model of stimulation having as base the correlation analyze, which surprises the influence of some factors as: goods production, valour productivity of the work, the ponder of material expenses into the total cost over a factor of performance represented by the expense at 1000 Lei of goods production allowed the visualization of the changing the factor resulted into the conditions of the increasing or decreasing of the studied factors. The value of the determination coefficient and the result of using the Fisher test show us that the model expresses very well the link between the expenses at 1000 Lei of goods production and the mentioned factors, the reason for which it can be used at setting the decisions, for improving the organization and managing, having as purpose to increase the work quality (based on the productivity increase) and reducing the expenses for exploiting the hard coal.*

**KEY WORDS:** *simulation model, correlation analyze, costs at 1000 Lei of goods production, labour productivity.*

One of the basic objective of a technique management it must to base on the analyze and determination of the way to consume and use the resources, the

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production factors, present dependences between them and production results, so that based on the conclusions we should contour some directions of action to improve the developed activity.

The way of correlating represents a mathematical method that allows being established the mutual link of a factor to another or with a group of factors. In order to make an objective research of the production activity, many times it is necessary to bring into evidence the influence of some factors over the final result, being important to research and appreciate the way to act different factors over some indicators of the company activity.

In order to determine the dependence of correlation we can use the regression model of the multifactor. The multiple regression method allows to be analyzed the linear relationship between a dependent variable and many independent variables for explicating and forecasting the variation of the dependent variable in function of its co variation with the independent variables. The multiple links show a mathematic relation where there are many factorial or independent variables.

The multiple correlation equation is expressed as follows:

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \dots + \alpha_n X_n + \varepsilon \quad (1)$$

that expresses that the Y variable may be obtained as a linear combination of the  $X_1, X_2, \dots, X_n$  variables whose it is added the error „ $\varepsilon$ ”.

where:

Y represents the theoretical value of the result;

$\alpha_0$  – represents the coefficient that expresses the influence of the factors that are not included into the model, considered having a constant action (free parameter);

$X_i$  ( $X_1, \dots, X_n$ ) – functional parameters;

$\alpha_i$  ( $\alpha_1, \dots, \alpha_n$ ) – regression coefficients;

In the following I propose to build an econometric model that should analyze the costs based on the correlation method because it allows to be analyzed the links between the phenomenon and evaluation of the changes of the future indicators, the qualitative appreciation of the independent factors of result and detecting the factors that contributed or will contribute to the change of the cost and in what measure.

The correlation analyze is made in few stages that in the end allow to be study in detail the influence of the variable factors over the result factor (the result), which will be used at taking the decisions, regarding choosing the specific directions for reducing the cost, which, will also contribute to developing efficiently the activity.

Taking the example of the National Coal Company, the analyze of correlation will be made for the period 2002 – 2008 taking as indicator the expenses at 1000 Lei of goods production, which characterizes the quantity of expenses

necessary for supervising the time movement of the costs, the efficiency of making the expenses.

So, it will be described the equation of multiple regression that expresses the dependences of the expenses at 1000 Lei of goods production over the following factors included into the relation:

- production ( $X_1$ );
- ponder of material expenses into goods production price ( $X_2$ );
- work productivity ( $X_3$ );
- time factor used for excluding the influence of autocorrelation ( $X_4$ ).

The initial data for determining the dependence of correlation are presented into the table 1.

**Table 1. Input data for determining the correlation link**

<b>Years</b>	<b>Expenses at 1000 Lei of Goods production (<math>X_0</math>), Ron</b>	<b>Goods production (<math>X_1</math>), thousands Ron</b>	<b>Ponder of material expenses into goods production price (<math>X_2</math>), %</b>	<b>Value labor productivity (<math>X_3</math>), Thousands Ron /man year</b>	<b>Time (<math>X_4</math>)</b>
2002	2361,8	226043	20,64	13,12	1
2003	2049,4	295799	20,37	17,95	2
2004	2314,1	302915	20,57	19,63	3
2005	2050,6	352863	24,34	23,27	4
2006	1680,2	391502	20,95	29,29	5
2007	1742,4	365634	26,35	30,36	6
2008	1709,0	395198	28,09	33,66	7

*Source: date of NHC Petrosani*

The correlation analyze presumes the following stages:

1. *To establish the correlation dependence* – first stage of the analyze consists in establishing the dependence of correlation where there are set the functional and resulted factors.

After analyzing the data presented into the table no. 1 after analyzing the diagrams (for establishing the presence of correlation dependence there are made some diagrams of the dependence of the indicator resulted from the factorial indicators) we may say that the type of dependence chose between the expenses at 1000 Lei of goods production and selected factors is correlative and linear.

2. *Choosing the type of dependence* – second stage for analyzing the correlation, it consists in establishing the dependence of correlation that means the character of the average variations of a parameter from the group of values of other parameter. As I mentioned above, for choosing the type of dependence into the multiple mathematical models there are analyzed the diagrams of the resulted indicative of each factorial indicators and it is made the analyze of the obtained diagrams that consists in setting the presence or absence of the dependence of correlation.

Due to the fact that the dependence of correlation is linear, the mathematical shape of the function model is as follows:

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 \quad (2)$$

For excluding the self-correlation (eliminating the influence of self-correlation), we introduce the factor of time ( $X_4$ ) and the function model is as follows:

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 \quad (3)$$

3. *Calculating the regression coefficients* – by elaborating the mathematic model there were determined the regression coefficients  $\alpha_i$  for the factors  $X_i$  of the multiple dependence of correlation. The coefficients estimation for this model by using the smallest quarters method and calculation of the statistics necessary for the statistic tests associated by the Regression procedure from the package of statistic processions from Excel (table 2).

So the equation of multiple regressions is as follows:

$$Y = 5100.0836 + 0.00040 X_1 - 46.4453 X_2 - 187.4868 X_3 + 575.9744 X_4 \quad (4)$$

The regression coefficients  $\alpha_i$  indicate the value of with how much it will change the result value  $Y$  at the variation of the factor with a unit.

The economical sense of the regression coefficients may be interpreted as follows:

- $\alpha_1$  = the increase of the production volume with 1 Leu leads to increasing the expenses at 1000 Lei of goods production with 0.00040 Lei;
- $\alpha_2$  = once it is increased the ponder of the material expenses with 1%, the expenses at 1000 Lei of goods production are decreased in average with 46.4453 Lei;
- $\alpha_3$  = once the work productivity is increased with 1000 Lei, the expenses at 1000 Lei of goods production are decreased in average with 187.4868 Lei;

4. *Intensity of dependence of correlation* – in order to follow in what measure the variable factors influence the result, it is analyzed the intensity of the dependence of correlation and the multiple coefficient of determination.

According to the data resulted after applying the Regression procedure we may say the followings:

- The multiple coefficient of correlation  $R = 0.9964$ , from which it results the link between the result and the variable factors is very tide, almost of the functional one (1,0)
- The determination coefficient  $R^2 = 0.9928$ , shows that 99.28 % from the variation of the expenses at 1000 Ron of goods production is explained of the studied factors.

5. *Estimating the correlation coefficients by using the Fisher criteria* - for estimating the trueness of the correlation coefficient. Into ANOVA table from the table 2 is given the value of F statistics for the test characterized by:



**Table 2. Regression Procedure (Excel)**

<b>SUMMARY OUTPUT</b>					
<i>Regression Statistics</i>					
Multiple R		0.9964403			
R Square		0.9928933			
Adjusted R Square		0.9786800			
Standard Error		41.583822			
Observations		7			

<b>ANOVA</b>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	483188.82	120797.205	69.856700	0.01416278
Residual	2	3458.428577	1729.214288		
Total	6	486647.2486			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	5100.083606	521.6520997	9.776791101	0.010300459
x1	0.000401095	0.00106288	0.377365936	0.742182791
x2	-46.4453368	15.07913486	-3.080106201	0.09121457
x3	-187.4868856	27.01943428	-6.938964142	0.020143366
x4	575.974474	99.1544662	5.80886062	0.028380336

<b>RESIDUAL OUTPUT</b>			
<i>Observation</i>	<i>Predicted X0</i>	<i>Residuals</i>	<i>Standard Residuals</i>
1	2348.263269	13.53673105	0.563832389
2	2059.195138	-9.795137665	-0.407987412
3	2313.756567	0.343433267	0.014304694
4	2052.213702	-1.613701969	-0.06721397
5	1672.46472	7.73528044	0.322190168
6	1786.647886	-44.24788603	-1.843014476
7	1674.958719	34.0412809	1.417888607

<b>PROBABILITY OUTPUT</b>	
<i>Percentile</i>	<i>X0</i>
7.142857143	1680.2
21.42857143	1709.0
35.71428571	1742.4
50	2049.4
64.28571429	2050.6
78.57142857	2314.1
92.85714286	2361.8

$$\begin{cases} H_0 : \alpha_1 = \alpha_2 = \alpha_3 = 0 \\ H_1 : \text{it is at least a coefficient } \alpha_i \text{ different from zero} \end{cases} \quad (5)$$

This test refers to whole independent variables (it is noticed that  $H_0$  is not extended over the free term).

The displayed value Significance  $F = 0.01416$  is smaller than the fixed range of significance (of 0.05), which rejects the null hypothesis in favour of an alternative hypothesis.

In order to follow if the value of the coefficient of multiple correlation is considerable or not, we follow the Fisher table value. Based on the freedom degrees  $v_1 = 4$ ,  $v_2 = 2$  and the trust degree  $\alpha = 0.05$ , the table value of function  $F = 19.25$ . The calculated value is compared with the table value and if this is greater than the table value so the value of the coefficient of multiple correlation is considerable.

If  $F_{\text{calculated}} = 69.856 > F_{\text{table}} = 19.25$  we can notice that the coefficient of multiple correlation is considerable.

By this test it is verified the significance of whole regression. Because  $C_{\text{calculated}} > F_{\text{table}}$  it results that the form of dependence was chosen correctly and that the dependence is linear.

6. *Statistic verification of the coefficients.* In order to see which variables have a significant influence over the resulted variable we must calculate the estimative parameters, by testing each variable with the Student test. The third picture of results from the table no. 2 contains the values estimated for the model coefficients and also the statistics necessary for verifying the usual hypothesis over the coefficients. It can be noticed that these tests over the coefficients are individual.

T Stat - t statistics for verifying the hypothesis  $H_0: \alpha_i = 0$  vs. the alternative hypothesis  $H_1: \alpha_i \neq 0$ . In conditions of a null hypothesis we can prove that the report between the coefficient and the standard error follows a repartition Student with n-p freedom degrees. This report is the value resulted as t Stat. That means for  $X_1$   $9.776 = 5100.0836 / 521.6520$ . We compare this value with the table value of the variable Student correspondent to the significance degree  $\alpha = 0.05$  and the number of freedom degrees  $v = n - p = 7 - 5 = 2$  (where  $p = 5$  is the number of model parameters - 4 variables X plus free term and  $n = 7$  is the number of observations). The table value  $t_{\text{table}} = 4,303$ .

If the calculated value is bigger than the one taken from the table then the explicative variable has a significant influence over the resulted variable.

As it can be noticed for the variables  $X_1$   $t = 0.377 < 4.303$  and  $X_2$   $t = 3.080 < 4.303$  which shows the fact that these variables has no significant influence over the resulted factor. For  $X_3$ :  $t \text{ Stat} = 6.938 > t_{\text{table}} = 4.303$ , so the hypothesis  $H_0$  is denied and we can say with a probability of  $P = 0.95$  that the factor  $X_1$  has significant influence over the resulted factor.

The critical bilateral probability of t test with the hypothesis specified at t Stat is presented into the column P-value from the table 2.

For the significance stage  $\alpha = 0.05$  it can be rejected the nullity hypothesis of the free term ( $0.0103 < 0.05$ ) and of the coefficients  $\alpha_3$  and  $\alpha_4$  ( $0.0201$  and  $0.0283$  are smaller than  $0.05$ ). It can not be rejected the null hypothesis regarding the coefficients  $\alpha_1$  and  $\alpha_2$  ( $0.742$  and  $0.0912$  are bigger than  $0.05$ ).

The Regression Procedure calculates automat the inferior and superior limits of the trusting interval for each parameter at the range of  $0.05$ . So, we can notice that, in population, the parameters of linear model are contented into the following intervals:

$$\begin{aligned}
 2855.5957 < \alpha_0 < 7344.5714 \\
 -0.0041 < \alpha_1 < 0.0049 \\
 -111.3256 < \alpha_2 < 18.4349 \\
 -303.7421 < \alpha_3 < -71.2316 \\
 149.3472 < \alpha_4 < 1002.6017
 \end{aligned}
 \tag{6}$$

We can notice that the intervals of  $\alpha_1$  and  $\alpha_2$  have also the zero value, so we can conclusion that we can not reject the null hypothesis  $H_0: \alpha_1 = \alpha_2 = 0$ .

7. *Determining the elasticity coefficients.* In order to compare the influence of each factor selected for determining which factor has a bigger influence over the resulted indicator, we also can use the calculation of the elasticity coefficients that show with how many percents in average it will be changes the value of the resulted indicator to the change of the factor value with one percent (table 3).

**Table 3. Partial coefficient of elasticity**

No.	Indicators	Indicators' value		
		X1	X2	X3
1	Regression coefficient ( $\alpha_i$ )	0.000401	- 46.4453	- 187.486
2	Average value of the studied factor ( $X_i$ )	332850.57	23.044	23.897
3	Average value of the result (Y)	1986.785		
4	Partial coefficient of elasticity ( $E_i$ )	0.0671	-0.5387	- 2.2550

The elasticity coefficients are calculated by using the following formula:

$$E_i = \frac{\alpha_i \cdot X_i}{Y}
 \tag{7}$$

where:

$\alpha_i$  expresses the regression coefficient of the factor „i”

$X_i$  – average value of the factor „i”

Y – average value of the resulted indicator

- $E_1 = 0.0671$ , at the increase of the goods production with 1%, the expenses at 1000 Lei of goods production are increased in average with 0.0671%

- $E_2 = - 0.5387$ , at the increase of the ponder of material expenses with 1%, the expenses at 1000 Ron of goods production are decreased in average with 0.5387 %
- $E_3 = - 2.2550$ , at the increase of work productivity with 1%, the expenses at 1000 Lei of goods production are decreased in average with 2.255 %

The partial coefficients of the elasticity confirm that over the expenses at 1000 Lei of goods production the biggest influence has it the valour productivity factor of work.

*Conclusion.* The basic conclusion resulted from this analyze of correlation reveals especially the influence of the factor of work productivity over the costs at 1000 Lei of goods production, that imposes to be taken some decisions for correcting the inefficient situation of the company in order to increase the work productivity, which attracts the reducing the production costs.

In this sense we consider that the measures for increasing the work productivity must be linked to permanent and continuous actions regarding the technical and technological reorganization of the mining processes, element that is determined in increasing permanently the economical efficiency for extracting the pit coal, constituting the safest way for consolidating the mining.

So, we consider that the analyze of the expenses must be admitted as a basic instrument for putting a diagnostic and for evaluating the company performance, because their research, investigation permanently allow us to understand the mechanism for forming the results depending on the volume, structure and tendencies of different categories of expenses.

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## **SUBSIDIES - CONCEPT, RECOGNITION AND TAX IMPLICATIONS**

**ROMAN DANCIU \***

**ABSTRACT:** *Even if, theoretically speaking the specialty literature accepted and validated the concept of perfect competition, this remains, only a hypothetical issue that cannot be met in its pure form - in the real economy. The impossibility of the market to regulate itself as well as the anti-competition practices or unfair competition make absolute necessary the intervention of the state at the economic level in order to re-establish the market equilibrium and to relaunch the economic growth. But this intervention - both at world level as well as at EU level - or more specific at the Romanian level - takes place in a controlled way based upon some specific regulations. Such regulations aim at the domains of state intervention, type and quantum of aid, concession conditions, as well as at the reflection in the beneficiaries' financial situations of the aid received and their influence upon the economic - financial results. We try hereafter a brief presentation of the concept, recognition and fiscal implications of the most used form of state aid in the economy: subsidies.*

**KEY WORDS:** *state aid, government assistance, subsidy, tax advantage, public expenditure, state guarantee*

### **1. THE STRUCTURE OF PUBLIC EXPENDITURE FOR TARGETS AND ECONOMIC ACTIONS**

Public expenditure express economic relations - social in the form of money, which manifests itself between State, on one hand and individuals and companies, on the other hand, during distribution and use of State financial resources in order to accomplish its functions [2].

This expenditure is materialized in payments made by the State for purchase of goods or provision of services to achieve Government objectives:

- education;
- health;
- maintenance of the army;

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- general public services;
- social-cultural actions, etc.

Expenditure regarding economic activity represents a special role within public expenditure. It is intended for financial support of independent public companies or companies with State capital, private or mixed, or points to achievement of certain actions or important goals for the country.

Mainly, the costs for economic actions are directed towards public sector enterprises, corporate sector comprising State-owned capital or majority State capital companies having as object of activity - the production of goods or services of national interest (local) and where State has the power to decide.

Financing mechanism of public sector enterprises is similar to that of private enterprises. But the fact that they are still owned by the State give them a certain specificity in the sense that besides the development of activity in profitable conditions, they follow and meet certain public utilities for which prices or rates are not a result of interaction between the demand and supply, but are controlled or determined by the State.

This leads to a conflict between the need of liberty for decision, autonomy and enterprise marketing dynamism, on one hand and responsibility of the public authority in the general evolution of prices, relative to purchasing power of the members of society, which leads to ensure satisfaction of the public interest, on the other hand. So, raises the need for compensation by the State, through financial aids of the insufficient income of these enterprises, generated by not covering through prices or tariffs, of the specific costs of production.

Another characteristic of public sector enterprises is related to the financing of investments and the creation of own funds. In principle, the resources for their financing should be provided through self-financing.

But, in case the prices set at another level of decision than the enterprise do not provide at least the covering of the costs, in most cases the State is to support the enterprises of public interest in this regard.

The financial flow between public enterprises and State is achieved actually in both directions. The State allocates to the enterprises the funds to finance current expenditure or capital. In turn, the enterprises discharge at State budget a number of taxes, levies, duties, fees related to concession contracts, payments from profit, etc.

State supports from financial point of view, outside the public sector also the privately owned enterprises, to which it gives aids for development, for environmental protection or for supporting the economical sectors in which they are part and in which State is interested.

The forms of State aids for economic activities can be classified into:

- *direct forms* of intervention by making payments;
- *indirect forms* which, without involving an effective transfer of funds from the State have the effect of financially supporting of the beneficiaries.

The main forms of *direct financial aids* are:

- subsidies;
- investments;
- subsidized loans;
- aids for the broadcasting of information, marketing studies, organizing of exhibitions;
- repayable advances.

*Indirect financial aids* are mainly in the following presentations:

- tax benefits;
- loans guaranteed by the State.

In the following chapters, we will discuss the concepts, recognition and fiscal implications of the main forms of financial support from the State given for economic objectives: subsidies on products and investment allowances.

## **2. CONCEPT, RECOGNITION AND FISCAL IMPLICATIONS OF THE SUBSIDIES**

The most used and most important direct State aid is represented by subsidies.

The subsidy is, in essence, a non-reimbursable grant that the State provides to economic agents, to support their operation in conditions where their work is ineffective, but is of public interest. This type of aid is granted without contra-work, but conditioned (for example the obligation to produce and deliver energy coal at a price set by State).

Subsidies can be granted for activities both internally and for export.

*Intern subsidies* (of functioning or operating) are named so because they do not intend to cover losses of the companies caused by differences between selling prices (imposed by the State) and production costs.

Regarding the operating subsidies, even they are given in many countries and are amounted to a significant amount, there are points of view according to which these are ineffective, that do not provide real protection to the economic beneficiary.

It is estimated that for the products made, companies should be left to set real prices, according to the costs of production and market demand, and subsidy to be given to the beneficiaries of these products that can not handle the actual level of prices.

*Subsidies for export* are a form of State aid, used mainly in countries wishing to enter certain markets or remain on readily accessible markets.

The concrete and most often the export subsidies represent amounts paid by the State to the producers, determined as the difference between the highest price in the internal market of the product to be exported and the lowest price of the product on foreign markets.

However, may appear other forms to grant subsidies for export, such as: refunding a portion of taxes paid by exporters, granting of transport facilities for the exported goods, etc.

*Subsidies for investments* represent those financial aids that State grants for the development of public and private sectors, having as main objective the satisfaction of general interest and not achieving of profit.

The purpose of these aids is to promote (stimulate) enterprises for procurement or production of equipment or other goods of restraint nature, including the financing of long-term assets or to cover other expenses of investment nature [1].

Receiving subsidies represents for the enterprise a real advantage in goods and values that, as a rule, should not be reimbursed.

According to I.A.S. 20, Government assistance represents "the actions performed by the Government, in order to provide economic benefits, particular to an entity or categories of entities that meet certain criteria" [3].

Also under this standard, the Government subsidies are recognized as income in the periods corresponding to expenditure, which they are going to compensate. Two approaches of the accounting treatment are considered as applicable to subsidies:

- *in terms of capital* – according to it, a subsidy is an incentive given by Government that does not involve repayment or costs, being credited directly in the interest of shareholders and shown as such in the balance sheet and not in the profit and loss account;
- *in terms of financial outcome* - according to it a subsidy is to be included in the income, as represents an input from a source other than shareholders and properly reflected in the profit and loss account.

Most often, a Government subsidy is recognized as income in the same period with the relevant expenditure, as it is relatively easily identifiable. In case of subsidies related to depreciable assets, these are usually recognized as income over the periods in which depreciation of those assets is to be expensed.

Subsidies for activities, including non-monetary subsidies at fair value are recognized in the balance sheet as deferred income over the useful life of the asset. Another variant, considered acceptable, of preparation of the financial statements deducts the subsidiary to obtain the net accounting value of the asset, being recognized as income over the life cycle of the asset, by reducing depreciation expenses.

Regardless of the variant adopted, subsidies represent for their beneficiaries controlled sources, generating future economic benefits.

From the fiscal point of view, the incomes from subsidies are a source of income tax, the revenue account from subsidies being closed by taking the balances into the profit and loss account.

Similarly, the incomes from subsidies for investments are taxable, and depreciation costs of assets made from these sources are deductible.

But taking into account that the amortization effect is felt throughout the life of the assets and that such costs do not correspond to a real effort of enterprise – this should not influence the result of exercise where they are found.

To compensate this effect, in the account of income from investment subsidies is registered share of the received subsidy - in proportion to the depreciation noted into expensed (or full - in case of cassation or transfer of the assets before the expiration of the period of use).



There are exempted, according to the latest regulations (O.U.G. no. 34/2009 - M. Of. Nr. 249/2009 - Art. 18) the taxpayers whose income tax is less than minimum tax amount of total revenue for the corresponding tranche provided in the Law. In this situation, to situate the total revenues into corresponding tranche, are taken into account the revenues obtained from any source recorded on December 31 of last year, minus - among others - and the income from operations that represents the share of Government subsidies.

There are also exempted the micro-enterprises that choose to pay income tax on micro-enterprises income instead of taxes on profit. In this case the taxable sum from the taxes on micro-enterprises income is represented by the income from any source, less the share of Governmental subsidies (Law no. 571/2003 - M. Of. Nr. 927/2003 - updated, Art. 108 paragraph (1)).

In terms of value added tax, the tax base is constituted for goods and services supply - from all that represents the obtained counterpart - or to be obtained - by the supplier from the buyer - including subsidies directly linked to price of these operations (Law 6. 571/2003, updated M. Of. Nr. 927/2003, art. 137 paragraph (1)).

For subsidies to be considered directly related to price it is necessary to be fulfilled these conditions (H.G. no. 44/2002, updated - M. Of. Nr. 112/2009, Title VI, section 18):

- the value of the subsidies to depend on the quantity of the delivered goods/rendered services;
- the amount of the subsidies to be determined before this activity.

The subsidies that do not meet these two conditions - such as subsidies for covering local public transport expenses or grants for making own investments - do not enter into the tax base.

Regarding the deduction of the value added tax, this is not conditioned by the source of financing for acquisition of goods.

Repayment of subsidies connected to assets is register through reducing the balance of the delayed income with the reimbursable amount.

Repayment of a subsidy associated to incomes is made by reducing the associated delayed incomes, if any, or - in their absence - on the account of expenses.

To the extent that the reimbursed amount exceeds the delayed incomes, or if no such incomes surplus exist, respectively, the full returned value is immediately recognize as an expense [8].

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## **THE NECESSITY OF LOWERING PRODUCTION COST IN THE MANAGEMENT OF COAL MINING UNITS**

**IONELA-CLAUDIA DINA, GABRIELA BUȘAN \***

**ABSTRACT:** *In the current economic conditions, cost is a key instrument in decisions on resource allocation, which are often limited, on the volume and structure of production, increase or withdraw supply of goods or services market, etc. In these circumstances the best choice is to choose a minimum cost. In its universal acceptance, the cost of production is an economic category that provides information about the work done by an operator and is a key factor of economic and financial analysis of the efficiency of the unit. Calculating the cost of production is achieved only at a general level, but are taken into account and: distribution cost, labour cost, cost of education, health, information, administration, time, debt (credit), inflation, unemployment, economic reform, ecological cost.*

**KEYWORDS:** *managerial decision, resources, production cost, cost calculation, cost reduction, coal mining industry*

### **1. INTRODUCTION**

In the current conditions of market economy, enterprises must act and develop in an environment which is increasingly unstable and more risky. To this end *management activities* use many information which are to be created, provided, analysed and controlled increasingly stringent, so that enterprises can improve their ability to react to external factors. Thus, *managers* are forced to assume responsibility for the best browsing pathways to obtain maximum results with the use of resources becoming increasingly scarce and more expensive.

Management decisions based on cost of production are focusing primarily on monitoring dynamic developments compared with changes caused by actual production activities. From these violations, general managers, and those of mines in particular, can detect various ways of reducing the cost of production that would have

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as effect the accumulation of certain factors of production, according also to their specific consumption from the extraction activity. Generally, *cost of production* is an indicator that comprises all living and materialized labour consumption expressed in monetary form, made or to be made for purchase, manufacture or sale of a unit of economic goods, works performed or services provided by one unit. In one of his works Paul Hayne defines production cost this way: "total cost is the cost of the opportunity and thus it includes not only pays made by the enterprise towards others for the merchandise and services it benefits from, but also the implicit value of any good (work force, field, capital) that the firm delivers to itself" [4].

## 2. MANNERS OF REDUCING THE COST OF PRODUCTION

Production cost is also a reference indicator of the level of economic efficiency. Tracking the actual level of production costs provide the company the possibility to know the volume of the factors of production and efficiency of the inputs consumed, compared with standards set or with the consumption expenditures made by competitors. In doing so, costs stimulate enterprises to introduce technical progress, increase the skills of workers to scientifically organize production and work and to maximize the efficiency of production factors. Professor Michael E. Porter has in view the fact that the relative cost position of a firm depends on "significant driving cost forces." The driving cost factor forces determine the structure of the cost of a service and are differentiated by the degree of control a company exerts over them. Driving cost forces determine the activity of cost behaviour, reflecting any links or interdependencies that influence it. Cost performance of firms in each of its separate major activities cumulates to determine the relative cost position of the firm" [8].

We can thus say that ***the main factors that determine actions of cost reduction*** are: *Limited character of resources*, which brings a rational as possible usage of these; *A good as possible valuing of production factors* which involves a raise of revenues in the conditions of not modifying sales costs; *Raising the efficiency of firm activity* which attracts with it a raising of profit. In tests carried out we can observe that the main ways of reducing cost are based on analysis on labour productivity, direct and indirect reduction of costs that relate specifically to the consumption of materials and general administrative expenses of production.

In what concerns ***reduction of costs with material expenses*** in the mining industry, one can infer the following *directions*: Consume of raw materials that are found in great quantities and at costs as reduced as possible; Modernization of extraction technologies by purchasing tools at a good price and which correspond technically; Re-evaluation of consumption norms; Increasing the rotation movement of the circulating capital; Using as extensive as possible the tools of production with the purpose of reducing the degree of amortization which befits the unity from the final product - the coal. Of the total consumption incurred in the production of the coal mines, the biggest share was found to be that of the material costs, and thus they should be the main direction to reduce costs. To ***reduce costs of live labour*** mainly aims at increasing labour productivity through the following *methods*: introducing technical progress; raising the preparation level and perfection of the hired personnel;

stimulating employees through a system of bonuses; raising work condition quality and of the social climate inside the unit. Desirable is the fact that labour productivity growth rate prevails wage growth rate, thus demonstrating leadership and ability to efficiently use human resources and the pay level of the company.

Another target of reducing cost of production is *the general administrative costs* can be reduced in particular by increasing the volume of production, a reduction of administrative machinery, mechanization of calculation, the obvious statistical and planning but also through a reduction in office supplies with strict rules and norms to domestic administrative costs. Taking into account cost and other areas over which it can act to reduce production cost and the instruments used we can summarize schematically the effects that occur by applying these measures thus [1]:

**Table 1. Effects that occur by applying certain measures**

Area of action	Instruments used	Effects
<i>Material resources used</i>	<ul style="list-style-type: none"> <li>• Lowering consumption of raw materials, materials, fuel, energy and water, etc;</li> <li>• Using new or unconventional resources that are cheaper;</li> </ul>	<ul style="list-style-type: none"> <li>• Modifying proportions between material resources and wages ;</li> <li>• Reduction of total costs and of prices,</li> <li>• Raising the market share;</li> </ul>
<i>Work productivity</i>	<ul style="list-style-type: none"> <li>• qualifying, re-qualifying and perfecting the workforce;</li> <li>• intensive use of machines, tools, equipments, installations;</li> <li>• ensuring rhythmicity in supplying work places with the factors of production;</li> <li>• raising the degree of organization and work discipline;</li> </ul>	<ul style="list-style-type: none"> <li>• growth of physical production per worker and per time unit ;</li> <li>• reduction of costs and growth of profit;</li> <li>• growth of net profit,</li> </ul>
<i>Capacity of production</i>	<ul style="list-style-type: none"> <li>• enlargement of capacity of production;</li> <li>• growth of degree of utilization of the capacity of production;</li> </ul>	<ul style="list-style-type: none"> <li>• growth of physical production;</li> <li>• growth of total costs;</li> <li>• reduction of unitary costs and of costs for 1000 lei business rate;</li> <li>• lowering of costs on sub-activity;</li> </ul>
<i>Quality of production</i>	<ul style="list-style-type: none"> <li>• restructuring and improved management quality of human material resources, organizational processes and management of scientific research;</li> </ul>	<ul style="list-style-type: none"> <li>• increasing costs of prevention and identification of defects;</li> <li>• reduction of costs generated by non-quality;</li> </ul>
<i>Introducing technical progress</i>	<ul style="list-style-type: none"> <li>• improving methods for recovery of company resources;</li> </ul>	<ul style="list-style-type: none"> <li>• growth of physical production;</li> <li>• lowering of specific consumption;</li> <li>• growth of profit;</li> </ul>
<i>Management activity</i>	<ul style="list-style-type: none"> <li>• monitoring operational expenses for places of work and ways of spending by determining deviations of actual expenditure compared to forecast and detect the causes that have generated these deviations;</li> <li>• use cost information in making decisions based on the detection of relevant, inevitable costs and through cost analysis and investment opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>• identify the causes that increase costs;</li> <li>• relative and absolute economies in the structure of costs ;</li> <li>• eliminating on maintaining in production of certain artifacts.</li> </ul>

Reducing cost of production should take place without negative influences on the overall activity of the enterprise, however, some deficiencies may occur such as:

- influence in an overwhelming financial resources of society when they are decided improvement of existing technologies or introduction of new technologies;
- loss of benefits generated by old technology at their replacement with new ones;
- exclusive application of cost-cutting strategy that achieves its purpose only when the manufacturer has become the market leader for cost and able to detect other companies to give up this kind of strategy with cost.

### 3. CONCLUSIONS

We can therefore say that in essence, to the cost of rational producer behaviour stems directly from its work to the objective - maximizing profits - which has to rely mainly on rationality in mobilizing and allocating resources, the spirit of competition and knowledge-based computing economically. To increase their profits, one would have to increase production volumes sold. How any entrepreneur faces some restrictions, including the limited nature of economic resources and the prices of production factors market data in terms of perfect competition will be able to achieve its purposes by reducing specific consumption of inputs, in other words, increasing the yield factors. Reducing costs of production materials expressed in the same time, rational management of natural resources, and where companies reviewed in November - coal - concern for the natural environment, responsibility for sustainable economic and social development. We can thus say that reduction of production cost is of a major importance for any producer and should be done permanently and with great responsibility, because it represents the way towards a profitable enterprise, a competitive and stable one.

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## **THE NEED TO IDENTIFY RISKS IN THE ECONOMIC AGENT'S ACTIVITY**

**GABRIELA DOBROTĂ \***

**ABSTRACT:** *A world in constant motion, an economy in which the corresponding fluctuations of different indicators of economic phenomena and processes are recorded in short intervals of time, the transition to a market economy in most countries of the world and thus, eliminating the administrative mechanisms of management are just some issues generating event risk both at the macroeconomic level and microeconomic level. Operational risk, market risk, bankruptcy risk, currency risk, investment risk, technological risk are acting categories in the business environment and put their imprint on the work carried out by economic entities and the results obtained. Exercise of active management of risk involves identifying potential risks, their quantification, a set of appropriate measures to prevent or limit the effects generated.*

**KEY WORDS:** *economic risk, exploitation risk, financial risk, risk's strategies*

### **1. CONCEPTUAL DEMARCATIONS OF RISK AND UNCERTAINTY NOTIONS**

Risk or uncertainty? Unanimous opinion is that both manifest the essential categories that affect the general policy of a firm. However, often confusion between them was putting the sign of equality. In reality, the two concepts are different and proper understanding. Theoretical and practical approach of the two concepts has suffered many changes due to the complexity of the worldwide economy, relations in social area, technological, economic crisis event, diversification of financial instruments, etc. The inability of companies to adapt to changes made in the external environment with minimal cost can develop into a risk for those. If we refer to this sense, it is clear that any company (even the most profitable) is subject to constant risk, burdening the development of risk management mechanisms to enable a fast referral made changes but also developing a mechanism of intervention.

A definition of the notion of risk is based on changes made to profit level compared to the average profit levels achieved in previous years (this can be

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implemented also to the change in future profitability, revenues to be obtained, the results recorded). Another manner to approach, illustrates risk the possibility that can occur which has an unintended consequences. It is noted that the risk is regarded as the probability of manifestation of an event (possible to predict or not) with negative implications on economic activity of a company. Whatever the approach manner of risk concept, it is observed that translates potential losses corresponding probabilities of their show, known or determined. Instead, uncertainty implies inability to estimate those probabilities.

We can consider that the uncertainty is similar to a variable that can not be defined fully as you can not identify or predict possible events or the probability of their occurrence. In presenting these concepts can be observed that the risk is resulting from uncertainty. Thus, the inability to estimate an event occurs, the time of registration and the size of the uncertainty effects recorded materialized. Following the adoption of decisions today determine registration results in the future which are subject to a state of uncertainty.

## **2. DIFFERENT CONCEPT OF RISK IN THE ECONOMIC FIRM ACTIVITY**

An important issue is reflected in the need for risk management at any company level, which involves: tracking identifying factors with negative impact on work performed, quantified estimates of the consequences of event risk, substantiation of a complex of measures to prevent event risk, mitigate damage caused when realized it, in the use of specialized units in risk management if it is not possible by the entity. Each manager must determine a minimum and maximum risk on the scale that is willing to accept that the results of the company are dependent on them (assuming a higher risk but may lead to better results and corresponding losses and vice versa). Risk is part of any activity, it can be found in the daily agenda of managers of any types of companies. One should be aware any moment of the nature of the risk and how big it is and especially whether this risk is higher or not than the gain.

Unforeseen changes that occur in the evolution of interest rates, currency exchange rates or prices of a product not only affect the financial earnings of the business carried out by the economic agent, but may even lead to bankruptcy. The risk appears as a phenomenon that stems from circumstances for which the decider can identify possible events and even the probability of their occurrence, but without being able to specify exactly which of these events will actually occur. In these circumstances one can say that decisions that are taken involve uncertainty and, therefore, the risk is an uncertain part of decisions.

Currently most decisions are taken in conditions of risk and uncertainty generated by incomplete knowledge of one or more variables that are a constant of the economic activity and a reason which explains to a certain extent, the differences between the profitability of business projects. Identifying the risk which may occur in the business carried out by the company constitutes a requirement due to the sensitivity degree of the economic outcome to the operating risks turning the company into a more or less risky investment. Thus, risk assessment appears as a requirement of



management to monitor risk factors and initiate preventive measures, limitations or controversy of their effects.

### 3. RISK DIAGNOSING IN THE ECONOMIC FIRM ACTIVITY

Although in the speciality literature risk has several acceptations for businesses carried out by economic agents (economic risk, exploitation risk, financial risk, commercial risk, investment risk etc.) the economic significance of risk is considered to be an important one, because it points out the inability of a company to adapt on time and at the lowest costs to environmental changes; in other words the economic risk expresses the volatility of the economic outcome under exploitation.

**1. The risk of exploitation and the threshold of profitability/point of profitability.** The risk of exploitation acts due to the sensitivity of result to changes of operating conditions. The probability that the size of the enterprise's activity can not cover the total expenses generated by its support because of their structure, involves the emergence of risk of exploitation. For any economic agent the risk level of the operation is more important as the share of the fixed nature of costs is higher.

In order to estimate the risk of operating, the business practice are using a tool of analysis known as the threshold of profitability, for establishing the conditions needed for the microeconomic balance , with or without profits (neutral point).

Threshold yield represents the quantity of products to be made and subject to sale by the enterprise so that the receipts from the sale to cover their variable costs involve both by the process of production and fixed costs as well.

On the threshold of profitability level, the business profit is ineffective. As the company's fixed costs are higher, the threshold level of profitability is higher, implying that the company increases the volume of products or goods to be sold in order to become profitable. The formula used to determine the threshold of profitability is the following [4]:

$$CA_{PR} = \frac{ChF}{1 - v} \quad (1)$$

where:

$CA_{PR}$  represents the turnover which must to be made for the enterprise to obtain zero profit;

$Ch F$  - size of fixed costs involved in the production of the enterprise;

$v$  - share in variables expenses (CV) in turnover (CV / CA).

Where the desired output calculation is needed to be done in order to allow the enterprise to obtain a zero profit ( $Q_{PR}$ ), the formula becomes:

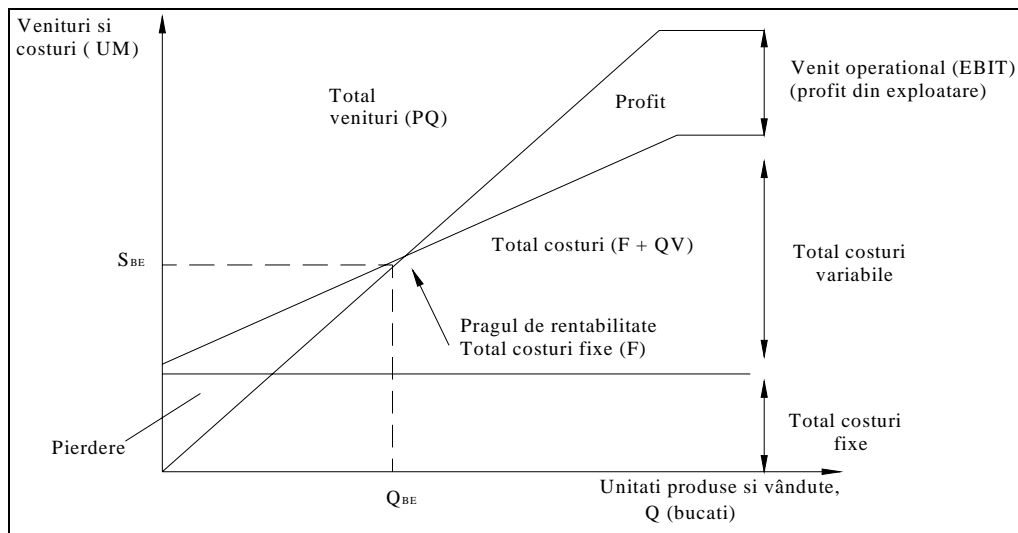
$$Q_{PR} = \frac{ChF}{p_u - cv_u} \quad (2)$$

where:

$p_u$  is the average price in unit sales of company products;

$cv_u$  variable unit cost related to production and selling of products.

The essential elements of the threshold of profitability analysis are presented graphically in Figure no. 1. Number of units produced and sold are represented on the abscissa and the costs and income are measured on the ordinate



**Figure 1. Threshold rentability diagram**

where:

$S_{BE}$  represents the figure of sellings according to threshold rentability;

$Q_{BE}$  - represents the figure of production according to threshold rentability;

F - fixed costs;

V - unit variable costs;

P - unit price;

$F + Q \times V$  - total costs.

In assessment of operational risk may compute together the threshold of profitability of the enterprise, also the coefficient of elasticity ( $Ke$ ), coefficient known as *coefficient of leverage operation*. It measures the relative increase in operating results arising from a change in relative production or turnover. Relationship of calculation is as follows:

$$Ke = \frac{\frac{\Delta Re}{Re}}{\frac{\Delta CA}{CA}} \quad (3)$$

where:

$Ke$  represents the exploiting leverage coefficient (operation leverage);

$\Delta Re$  - surplus of exploiting result;

Re - exploiting result in current period;

$\Delta CA$  - surplus of turnover; CA - turnover of current period.

A value higher than one unit of this factor reflects the fact that an increase in turnover with a single currency entails an increase greater of the exploitation result, considering itself as a favourable effect on the company. If an increase of the monetary unit of turnover leads to an increase under one unit of the exploitation result is evaluated as a negative effect on enterprise, management having the burden of adoption some appropriate measures. For exemplification of it is considered that over two financial periods the data related on turnover and operating result extracted from the profit and loss account are as follows (tab. 1):

**Table 1. The value of turnover and exploiting result**

No.	Indicator name	N-3	N-2	N-1	N
1	Turnover (CA)	90614521	114881336	151291866	150303668
2	Exploiting result	4184822	8216111	7449889	4634040
3	Turnover surplus		24266815		- 988198
4	Increase of exploiting result		4031289		- 2815849
5	Exploiting leverage coefficient		2.32		92.3

*Financial exercise from year N:*

$$Ke = \frac{\frac{\Delta Re}{Re}}{\frac{\Delta CA}{CA}} \quad (4)$$

$$Ke = \frac{\frac{\Delta Re}{Re}}{\frac{\Delta CA}{CA}} = \frac{\frac{Re_{2003} - Re_{2002}}{Re_{2003}}}{\frac{CA_{2003} - CA_{2002}}{CA_{2003}}} = \frac{\frac{8.216.111 - 4.184.822}{8.216.111}}{\frac{114.881.336 - 90.614.521}{114.881.336}}$$

$$Ke = \frac{\frac{4.031.289}{8.216.111}}{\frac{24.266.815}{114.881.336}} = \frac{0,4906}{0,2112} = 2,3$$

Coefficient value of the operation lever (2, 3) recorded at end of year N indicates the fact that at this time/moment the company position was comfortable in terms of economic risk.

*Financial period from year N-2:*

$$Ke = \frac{\frac{\Delta Re}{Re}}{\frac{\Delta CA}{CA}} = \frac{\frac{Re_{2005} - Re_{2004}}{Re_{2005}}}{\frac{CA_{2005} - CA_{2004}}{CA_{2005}}} = \frac{\frac{4.634.040 - 7.449.889}{4.634.040}}{\frac{150.303.668 - 151.291.866}{150.303.688}}$$

$$Ke = \frac{\frac{-2.815.849}{4.634.040}}{\frac{-988.198}{150.303.668}} = \frac{0,60}{0,0065} = 92,3$$

This result indicates a high economic risk to society. Situation is due to the changes to the operation result evolution in a rapidly pace compared to changes in turnover.

**2. The financial risk.** The financial risk of economic agents is associated with the method of financing of the company business, given the sensitivity of the outcome to changes in funding conditions. Thus, the more fixed payment amounts are used in a higher proportion in the total financial sources, the more important is the financial risk dimension.

**3. The risk of bankruptcy.** The risk of bankruptcy appears due to the economic agent's failure to honour its payment obligations on time. Therefore, the risk of bankruptcy is manifested in the situation in which the company is unable to cope with payments to its creditors, suppliers, state, financial and credit institutions etc. The purpose of strategies to prevent the risk of bankruptcy (to restructure companies in difficulty) is to eliminate the causes and dysfunctions that have generated a decline of the economic performance recorded by the company. The causes that can lead to bankruptcy are many, focusing on: reduction of activity; reducing of margins and rates of return; the emergence and amplification of Treasury issues, management issues; the bankruptcy of customers, reduced market outlets, etc.

Analyzing the causes of bankruptcy can be said that it is not a savage phenomenon, but a result of progressive degradation of the financial situation of the company. In these circumstances the risk of insolvency may be predictable a few years before termination of payments. Between the methods of risk analysis of bankruptcy is calling scoring method and the indicators of profitability, along with indicators of asset structure, indicators of liquidity or an indicator of efficiency. Provided condition for the selection of indicators showing the performance of an enterprise is the relationship of interdependence between them.

In the methods based on scoring technique (the Altman pattern, Conan J. and M. Holder pattern, the Bank of France pattern) a highly importance model presents a Conan J. and M. Holder pattern. The pattern is built on the basis of five variables, with the following form:

$$Z = 0.24 r_1 + 0.22 r_2 + 0.16 r_3 - 0.87 r_4 - 0.10 r_5 \quad (5)$$

where:

$$r_1 = \frac{\text{exploiting gross surplus}}{\text{total debts}}$$

$$r_2 = \frac{\text{permanently capital}}{\text{total assets}}$$

$$r_3 = \frac{\text{non - fixed assets (without stocks)}}{\text{total assets}}$$

$$r_4 = \frac{\text{financial expenses}}{\text{turnover}}$$

$$r_5 = \frac{\text{employees expenses}}{\text{added value}}$$

The bankruptcy risk depends on the score function whose values are interpreted as follows:

**Table 2. The values of the score function**

Score value	Enterprise position	Bankruptcy risk
Z > 0.16	Very good	Less of 10%
0.1 < Z < 0.16	good	Between 10% and 30%
0.04 < Z < 0.1	Attention	Between 30% and 65%
-0.05 < Z < 0.04	Danger	Between 65% and 90%
Z < -0.05	Failure	Over 90%

In order to examples the pattern Conan J and M. Holder considered the following indicators taken from the balance sheet and profit and loss documents concluded at year-end of financial year N (tab.3):

**Table 3. The economic and financial indicators**

No.	Indicators name	Symbol/ relationship	Year N
1	Exercise production	Qe	152391453
2	Consumptions derived from the 3 rd parties	Ct	112456024
3	Added value	VA	40862849
4	Imposits and taxes	It	459548
5	Personnel expenses	Cp	30149401
6	Gross surplus of exploiting	EBE	10253900
7	Total debts	Dt	42327561
8	Permanent capital	Cp	59267759
9	Total assets	At	101002102
10	Non fixed assets	Ac	20409686
11	Stocks	St	27089209
12	Financial expenses	Cf	3623792
13	Turnover	CA	150303668

Determining the function score for the N year:

$$r_1 = \frac{\text{exploiting gross surplus}}{\text{total debts}} = \frac{10253900}{42327561} = 0.2422$$

$$r_2 = \frac{\text{permanently capital}}{\text{total assets}} = \frac{59267759}{101002102} = 0.5867$$

$$r_3 = \frac{\text{non - fixed assets (without stocks)}}{\text{total assets}} = \frac{20409686}{101002102} = 0.2020$$

$$r_4 = \frac{\text{financial expenses}}{\text{turnover}} = \frac{3623792}{150303668} = 0.0241$$

$$r_5 = \frac{\text{employees expenses}}{\text{added value}} = \frac{59267759}{40862849} = 1.4504$$

$$\begin{aligned} Z &= 0.24 r_1 + 0.22 r_2 + 0.16 r_3 - 0.87 r_4 - 0.10 r_5 = \\ &= 0.24 \times 0.2422 + 0.22 \times 0.5867 + 0.16 \times 0.2020 - 0.87 \times 0.0241 - 0.10 \times 1.4504 = \\ &= 0.0535 \end{aligned}$$

Appreciates the value of the function score is considered that the enterprise is open of bankruptcy into a percentage of 65% (which means a state of alert). Among the measures that can be adopted in order to overcome the existing list are: improve the ratio between expenses on employees and the value added, for the purposes of obtaining a surplus value after covering the entire expenditure on account of its staff.

An ideal situation for the enterprise may encounter when surplus value remaining after covering expenses for the whole staff is large enough, because it will be for use for other purposes in the enterprise; a special attention should be given to the ratio between the non fixed assets (excluding stocks) and the total assets, whereas a low value indicates that the total assets in stocks have a significant share; ratio of value between gross operating surplus and debt in the year shows that the analysis under the company's total debts are covered only in the percentage of 24% on the gross operating surplus (which is the fundamental financial resource at a firm).

**4. Foreign currency risk.** Currency risk is manifested as a consequence of the occurrence of a loss of business and financial foreign operations, as a result of variation of exchange rates between the occurrence date of the claim or debt in foreign currency and the time of cash collection or the actual payment thereof. The strategies adopted for managing currency risk are carried out through sale/purchase operations of foreign currency from banks, through operations of reception/granting of loans in foreign currency, contracts sale/purchase operations in foreign currency firm term, through sale/purchase operations of operational contracts of currency.

All these being operations for covering the open position (the open position appears in case of lack of balance of claims with debts; in case of equality the closed position is recorded), but also through operations of provision set-up for currency risk. The importance of currency risk coverage arises from the fact that it is also present in investment businesses.

**5. The investment risk.** The risk in the economic agent's investment business appears as a result of the fact that the achievement of all investments involves immediate expenses, while revenues and profits will come during a future period of time.

### **3. STRATEGIES ADOPTED IN ORDER TO PREVENT THE RISK**

Any strategy involves a process of substantiation, elaboration and implementation. The strategy is based on both risk assessment process resulted in the identification and risk analysis also the risk management which imply on the probability of event involving risk factors and developing a package of appropriate safeguard measures.

Since the strategy allows the identification of ways and means by which the company can progress towards the key objectives, the adopted management must take into account the possibilities offered by environment and market, such as the level of risk, restrictions and competition of the various possible options. In all these cases, management operates through decisions that can be grouped into operational, administrative and strategic decisions.

The objectives pursued through each category of decisions are: the operational decisions seek to obtain current operation with a maximum profit; the administrative decisions regard the management structure of the company and the purchase of necessary resources; development and orientation represent the objectives pursued.

The formulated strategies differ, inherently, in a situation to another, but also in dynamics. Nevertheless a strategy may be deemed successful if the tasks and activities are directly and clearly related to the strategic plan achievement. In this case one can speak of an adoption process of objectives and strategies and their distribution in key activities. The adoption of strategies is underlying both for dimensioning the necessary fund resources and for protection against risk through techniques of prevention, surveillance, coverage of damage, undertaking feasibility studies.

Currently, due to the complexity of businesses carried out by economic agents and the risks which can influence them, economic agents solve differently the strategic formulation task. Although the strategies that can be adopted are multiple and in constant growth, the choice of a particular strategy is part of the strategic option of a company, that is to preserve its competitive advantage and to ensure its viability in internal and international competitiveness.

Regardless of the financial restructuring strategy adopted, the risk cannot be eliminated entirely, there is always left a certain irreducible level of uncertainty. Thus, the main objective is to ensure the premise of recovery characterized by obtaining sustainable economic performance.

The importance of identification and quantification of risk at the economic agent's level stems from the fact that the company stability is important for managers, employees, customers, suppliers and creditors, as for the community in which it operates.

#### 4. CONCLUSIONS

- The insufficient knowledge of risk, its wrong assessment and the lack of adequate protection against the risk directly affect the final earnings of the business carried out by any economic agent;
- Whatever the strategy adopted, the decision-maker must have an active attitude and work towards determining an optimal ratio between the risk taken and results achieved;
- An active risk management involves identifying risk factors and the probability of manifest an event but their follow-up and an update of the information needed;
- The manager must be able to recognize the activities or areas that generate maximum return on the appropriate level of risk, correlated with the level of resources.

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## **CONSIDERATIONS REGARDING THE TAX BURDEN EFFECTS AND ITS MITIGATION MEASURES**

**GABRIELA DOBROTĂ, MARIA FELICIA CHIRCULESCU \***

**ABSTRACT:** *Taxation need not be questioned. In the context of social development, the existence of public institutions is essential and intangible nature of their work, and thus unable to obtain the necessary revenue to cover its expenses necessarily determined, taking some parts of the results in the material sphere through taxation. However, one important issue is represented by the size of the tax burden borne by taxpayers. Tax burden is a widely debated issue considered at all times. It is important number taxes and mandatory contributions or greater tax burden borne by all taxpayers? For tax burden can be determined with sufficient accuracy is tolerable limits sizing math? What are the effects generated by the tax burden? These are questions to which answers can be drawn not always make full satisfaction truth. The work reflected a number of issues relating to fiscal pressure sizing customization for Romania and its effects and measures to be taken to reduce it.*

**KEY WORDS:** *tax pressure, current tax income, fiscal policy, nominal revenue*

### **1. THE TAX BURDEN AND ITS EFFECTS**

The importance of the tax burden of economically point of view can not be challenged because it not only manifests the extent to which income tax payers may be affected but the degree of budget revenues up by compulsory levy income taxpayers in the form of taxes and contributions. Viewed in this context, the tax burden should harmonize the contradictory relationship between the desire to increase the state tax burden in order to obtain high income needed to carry out its functions and duties of taxpayers and aimed at as low a tax burden.

Acceptable level of tax burden can not be determined precisely because it acts on a number of external factors, resulted in the a variety of samples, the possibility of recovery through price tax burden, the size of utility enjoyed by taxpayers or subjective factors. An important aspect of the analysis of tax burden is reflected in the revenue

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remaining after payment to the taxpayers tax liability related to the level of life needs and desire of saving or investment (it is not enough a mathematical sizing level of tax burden).

The level of tax burden can generate both economic effects and social nature. Thus, an increased tax burden is reflected in the reduction of aggregate demand for private property and vice versa. Therefore, the purpose of a government action to minimize the effects of an economic crisis and to help economic recovery should aim to reduce the tax burden. Socially highly taxation may materialize in reduced ability to purchase suitable real income.

Meanwhile, a high degree of fiscal pressure may cause different behaviours of taxpayers to reduce or even avoid performing an active duty generators or consumption of products subject to multiple taxation. Also, the event risk of tax evasion is more striking in the case of a high tax burden and the increased taxation by inflation and the reducing the competitiveness of their products on international markets are secondary effects.

## 2. DETERMINATION OF TAX BURDEN

Tax burden has a great economic relevance as indicated on the one hand the measure that nominal income taxpayers are adjusted through taxation, and the second indicates the degree to which the state budget gathers revenues through tax levy. Thus, the tax burden must to reconcile two diametrically opposite trends: the state which wants the tax burden is growing to cover public expenditure and the growing population who wants a pressure as small as possible in order to achieve its goal in fiscal policy. Fiscal policy works particularly on tax producers rather than the service tax picker, so relying on a real partnership between the state and taxpayers.

Tax burden carried ( $Pf_r$ ) is reflected by the ratio of tax achieved nominal revenue and value of gross domestic product ( $GDP=PIB$ ) recorded in the same period in the national economy. On the mathematical relationship of calculation can be written as:

$$Tax\ burden\ carried[\%] = \frac{Nominal\ tax\ revenues}{GDP} \times 100 \quad (1)$$

Tax revenues underlying the calculation of tax burden are part of total revenue. By the state budget law is made up the budget revenues taking into account taxes, contributions and all other payments collected from citizens and/or legal entities. So, the revenues are structured in the state budget in current revenues (tax revenues and no tax revenues), income from capital and proceeds from repayment of loans.

The category of tax revenues included direct and indirect taxes such as income tax, payroll and income taxes, property taxes, other direct taxes, contributions for additional pension for the disabled, value added tax, excise customs duties and other indirect taxes. An analysis of the structure of tax revenues show a decline while the share of direct taxes in total tax revenue and an increase in the indirect taxes. This is

preferred because of higher efficiency shown by indirect taxes, including in less prosperous economically periods, but is deeply unfair to individual taxpayers.

As specified relationship (1), we determined the tax burden for the period 1992-2008 in our country (table 1).

**Table 1. Evolution of taxation burden, in Romania, during 1992-2008**

Year	Gross domestic product - millions ron -	Current tax income* - millions ron -	Tax burden -%-
1992	602,9	129,1	21,43
1993	2.003,6	365,4	18,24
1994	4.977,3	831,8	16,71
1995	7.213,5	1.245,4	17,27
1996	10.891,9	1.752,3	16,09
1997	25.292,5	4.005,1	15,84
1998	37.379,8	6.067,7	16,23
1999	54.573,0	8.501,9	15,58
2000	80.377,3	11.439,4	14,23
2001	116.768,7	13.727,1	11,76
2002	151.475,0	16.775,3	11,07
2003	197.564,8	23.602,3	11,95
2004	246.468,8	30.252,7	12,27
2005	288.047,8	34.531,2	11,99
2006	344.535,5	40.486,6	11,75
2007	404.708,8	52.185,9	12,89
2008	503958,7	60175,5	11,94

\* Nominal tax revenues realized (It was considered the tax burden carried by the state budget and not to the general consolidated budget level).

Source: Statistical Yearbook of the INS2, Laws state budgets, Own calculations based on sources listed

Analyzing the data in table 1 there is a significant increase in gross domestic product since, in particular, during 2000 (an increase of 503.51% in 2007 compared to 2000) and an oscillation of the tax burden carried by a peak of 21.43% in 1992 to 12.89% in 2007, reaching but in this period also a minimum of 11.07% in 2002. Evolution of GDP and fiscal pressure achieved within the 2002-2008 time are reflected in figure 1.

As shown in figure 2 tax burden is a continuous downward trend, albeit on certain times it is slow, which are justified by the continuous growth of GDP at a rate more alert than the nominal tax revenue growth achieved.

Reducing tax level in the period 1990-1997, can be estimated to be caused by the decline in the real economy, easing further, the expression real gross domestic product and, therefore, to reduce the tax base. Also, changes in the level of taxation are determined by the evolution of mandatory levies collection level, in conjunction with voluntary compliance of taxpayers to pay them. Evolution of decreasing the tax burden recorded after 1999, given that domestic product began to grow with high values can be assessed as a result of the general trend of fiscal relaxation.

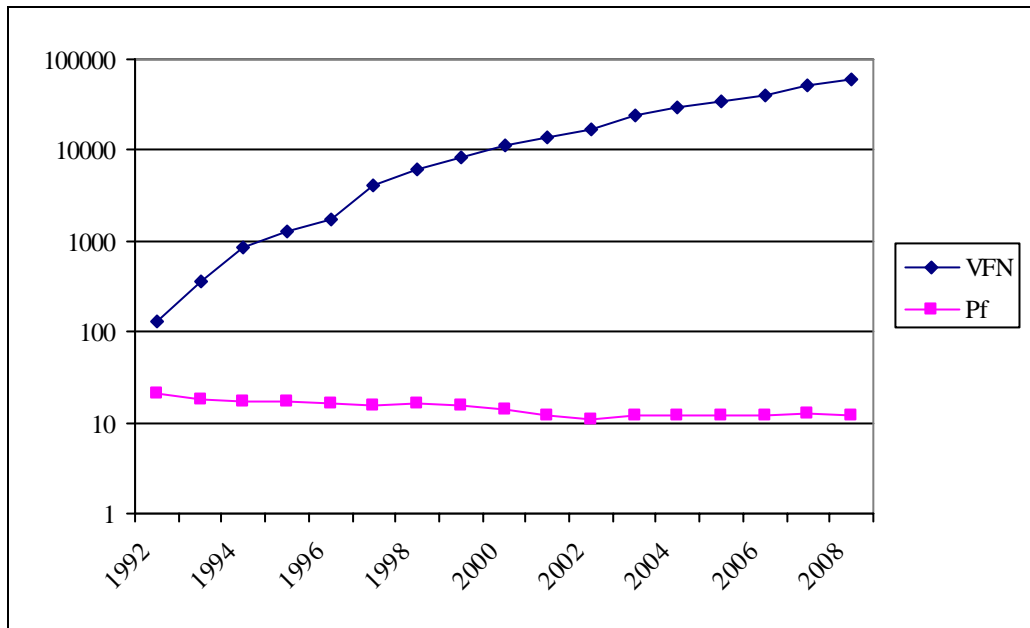


Figure 1. Evolution of nominal tax revenues made accordingly to the tax burden

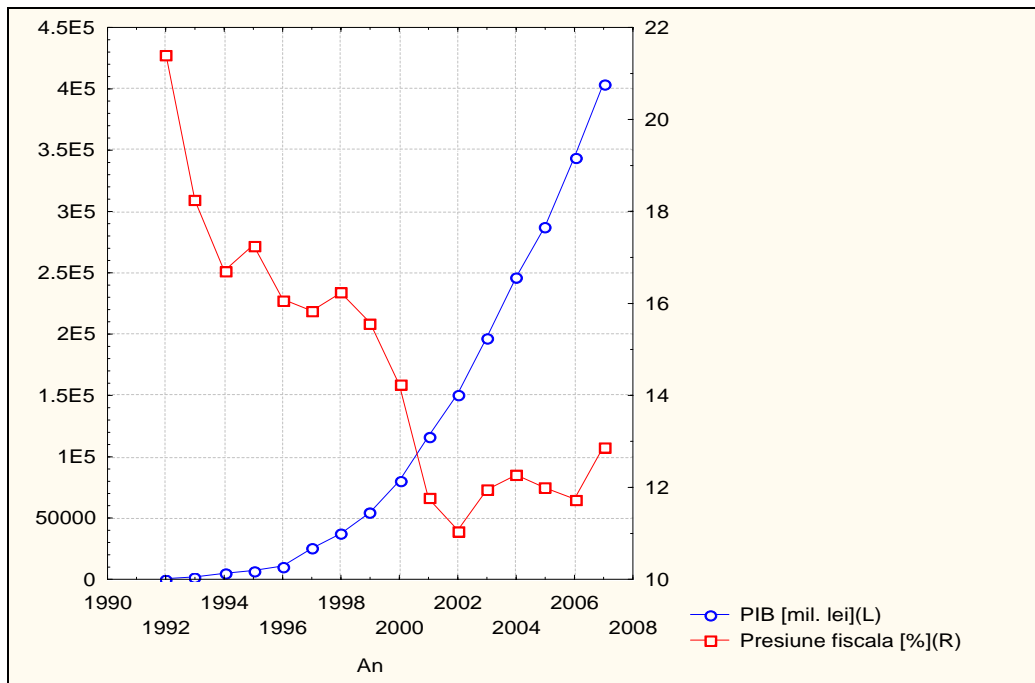


Figure 2. Development of the tax burden and GDP achieved during the time 1992-2008

Thus, for example, this may indicate the reduction from January 1, 2000 the profit tax rate from 38% to 25%, and then from January 1, 2005 to 16%, reducing the general rate of value determination added from 22% to 19% all from January 1, 2000, and reducing the tax burden carried by the contributions.

Measures required to reduce the tax burden, are in the form:

- significantly reducing public expenditure;
- achieve budgetary resources through the budget deficits that are well managed;
- reducing tax evasion, by appropriate legislation, with as few gaps, namely the possibility of reduced tax evasion.

Instead, it is considered that a high tax burden is an increasing tax rate is done with certain risks, namely:

- the risk of reducing productive effort, that high taxes discourage the incentive to work, savings and even investment;
- the risk of fraud and tax evasion;
- the risk of inflation through taxation reflected by direct action of taxation on prices and wages, elements generating inflation.

However long term policy with a high tax increases state income provided that initiate certain actions to stimulate growth or improve some social problems temporarily.

Reduce the tax wedge has a direct influence on employment force as interest moves to work "black" in the legally area, since taxpayers will lose interest in finding new methods and practices for the reduction of taxes. Romanian fiscal system tolerance to fiscal indiscipline led to the aggregation of capital in the hidden economy and is added also the general tendency to see the levies required a confiscation of part of the receipts and not a method of financing public expenditure.

Decrease tax burden gives taxpayers the opportunity to use proceeds from tax cuts for economic development and thus increase future revenues.

If the policy adopted by the Government aims to reduce this tax must be made on a tax reform aimed at increasing the tax base while reducing tax rates, but without result in the state budget to reduce revenue he needs.

When a repeat change in the tax laws occurs in order to fill some gaps of budgetary revenues, due the actions and political commitments taken, they do nothing only to increase the tax burden in Romania and thus deepen the distrust of business area, and the predictable nature of the tax system is just a constant target difficult to achieve.

The volume of tax revenues in our country and the tax burden carried by them were influenced first by fiscal policy pursued by the tax authorities but also by other factors such as quality management of state tax claims and the degree of voluntary tax compliance. Government's vision of tax policy focuses on ensuring a stimulating role of taxes indication as to increase the economic development and fiscal consolidation. But, year 2010 will bring changes in the Tax Code, local taxes will increase by 20% (it is considered that this increase corresponds to inflation in the period 2006-2009).

It can be concluded that increasing the tax burden does not necessarily determine the appropriate increase of tax revenues, but instead, lowering the tax burden

create conditions conducive to increased earnings. Also, the international financial crisis, should maintain a low tax burden. Fiscal loosening can provide to business community in Romania flexibility and predictability. It may cause economic growth by expanding the tax base, following the development of official economic activities. In our country, it must reduce the number of tax obligations by waiving some fees parafiscal.

Also, for economic recovery may be taken the following measures:

- reduction or exemption of tax in case of investment in less developed areas;
- reducing social contributions for health;
- tax incentives for accelerated depreciation of investments during the crisis;
- improving collection degree of taxes;
- the adoption of fiscal measures in order to stimulate labour.

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## **ASPECTS REGARDING INTERNET BANKING SERVICES IN ROMANIA**

**IMOLA DRIGĂ, DORINA NIȚĂ, CODRUȚA DURA \***

**ABSTRACT:** *Banks have traditionally been interested in using technology to improve their products, services and efficiency. Over a long time they have been using electronic and telecommunication networks for delivering a wide range of value added products and services. With its increasing popularity, Internet is more and more used by banks as a channel for providing their products and services to their customers. This form of banking is generally referred to as Internet banking. The paper examines the features of Internet banking focusing on the substantial growth over the last years as banks use Internet services as an aggressive business strategy to gain market share rather than for making profits.*

**KEY WORDS:** *financial institutions, E-banking, Internet banking*

### **1. INTRODUCTION**

Apart from the traditional type of banking services, customers today require more personalised products and services and able to access such services at any time and at any place. Electronic banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet. E-Banking is also called Internet banking, online banking. E-Banking may include ATMs, wire transfers, telephone banking, electronic funds transfers and debit cards. Nowadays, internet banking sites process customer service inquiries, allow transactions from one account to another, take loan applications, open new accounts.

Internet banking (or online banking) is a banking service that allows customers to conduct financial transactions on a secure website operated by their bank. Internet

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banking basically allows customers to be able to do everything that they can do in your regular banking institution, only with the benefit of doing it from the convenience of their own home.

Internet banking offers an array of different advantages to the user, including: account balances and history including year-to-date information, the ability to transfer money from one account to another and to payees for bill payments, check history, reorders, and stop payments, check credit card balances and statements, complete online loan applications, secure interactive messaging with staff, and much more.

Financial institution Internet offerings can be broadly classified into three groups with distinct risk profiles:

- *informational* - offers information about the bank's products and services ("brochureware") and is low risk;
- *communicative* - offers account-related information and possibly offers updates to static data (such as addresses). Since access is permitted to the bank's main systems, the risk is material;
- *transactional* - allows customers to execute financial transactions and carries the highest risk. Some transactional models carry higher risks, for example, if the customer has never visited a branch throughout his entire relationship and prefers to carry out all his transactions remotely (this commonly happens with some online share trading sites).

Some of the distinctive features of Internet banking are:

- it removes the traditional geographical barriers as it could reach out to customers of different countries;
- it has added a new dimension to different kinds of risks traditionally associated with banking;
- security of banking transactions, validity of electronic contract, customers' privacy have assumed different dimensions given that Internet is a public domain, not subject to control by any single authority or group of users;
- it poses a strategic risk of loss of business to those banks who do not respond in time to this new technology.

Over the last few decades information technologies had affected the banking industry highly and have provided a way for the banks to differentiate their products and services. The precursor for the modern home online banking services were the distance banking services over electronic media from the early '80s. The term online became popular in the late '80s and referred to the use of a terminal to access the banking system using a phone line. In today's world, computers play an incredibly large role in the way the world exists in general, and the majority of tasks could actually not be completed if not for the use of computers. The history of Internet banking obviously begins with the history of the Internet. Although the term Internet was first adopted around the year 1974, it wasn't until the 1990s that the Internet became a really universal adoption. The Internet grew incredibly throughout the 90s, and as it continued to grow.

Internet banking has been around for quite a few years now, but has really only become prominent over the past year or so in particular. Online banking services started in New York in 1981 when four of the city's major banks (Citibank, Chase

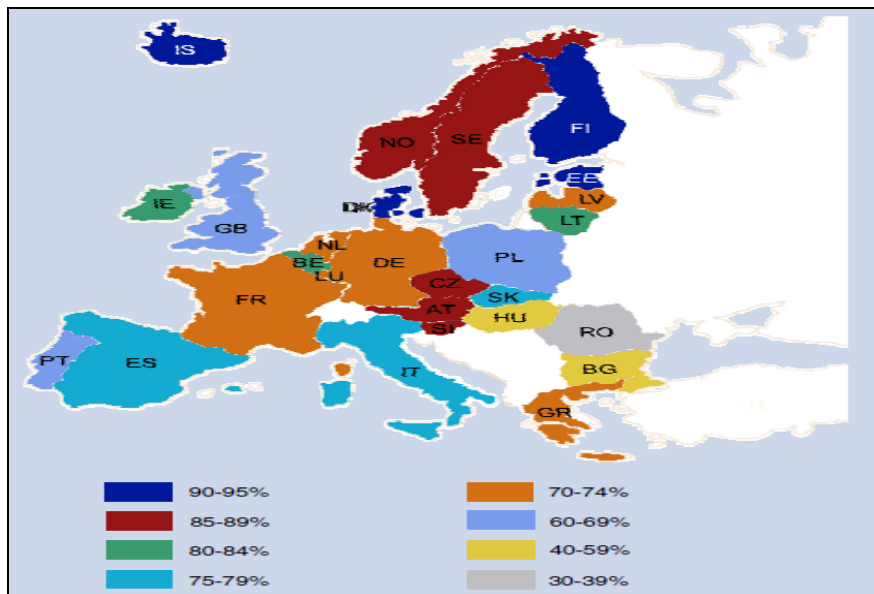


Manhattan, Chemical and Manufacturers Hanover) offered home banking services using the videotex system. The UK's first home online banking services were set up by the Nottingham Building Society in 1983.

The system used was based on the UK's Prestel system and allowed on-line viewing of statements, bank transfers and bill payments. In order to make bank transfers and bill payments, a written instruction giving details of the intended recipient had to be sent to the NBS who set the details up on the Homelink system. The first financial institution to offer online Internet banking services to all of its members was the Stanford Federal Credit Union that provided this type of service from October 1994.

## 2. INTERNET BANKING AROUND THE WORLD

*Europeans* use online banking to quite different degrees. Adoption rates decrease from north to south and rich to poor. Most companies in Europe use the internet for banking and financial services (e-finance). 72% of enterprises across the EU-27 manage part or all of their financial tasks online. However, the differences are remarkable (figure 2). 93% of firms in Iceland are users of online finance, whereas only 30% of Romanian companies use that service.

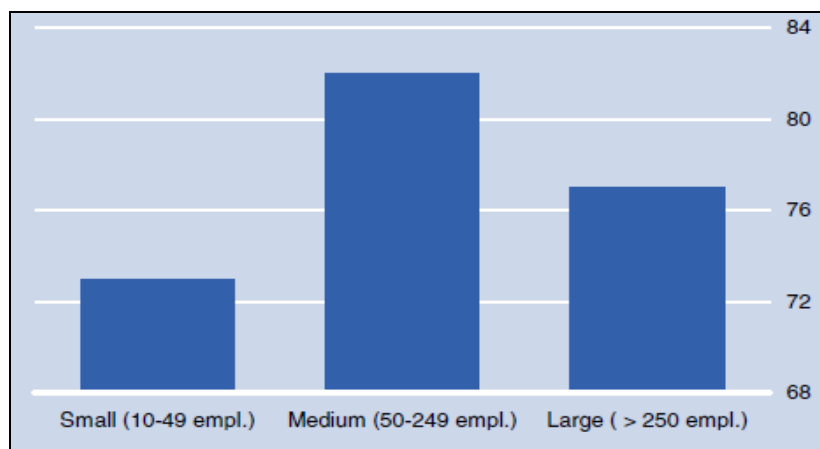


Source: Eurostat, 2007

**Figure 1. % of enterprises who use the internet for banking and financial services, 2006**

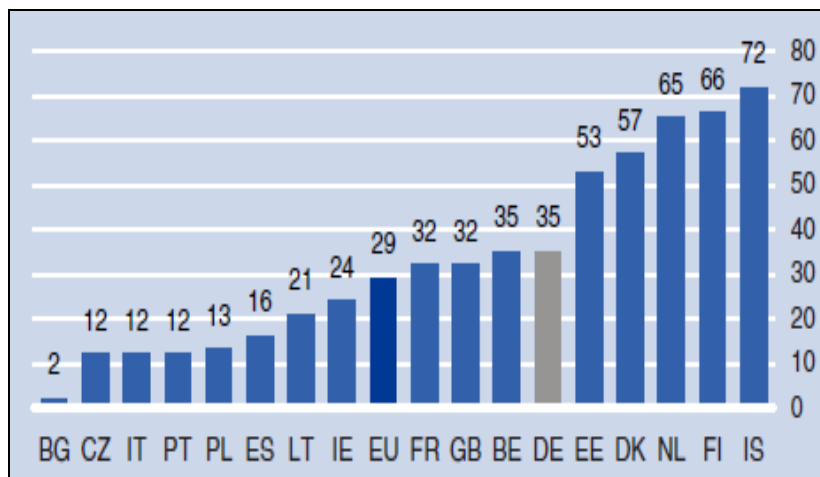
Banking over the internet is most widespread among medium-sized firms. The fact that fewer large firms than medium-sized firms use the internet for financial services may be surprising, but many large companies employ legacy systems which do not need the internet (figure 2).

Northern Europeans are the most enthusiastic online bankers. Adoption rates increase from south to north and poor to rich. More than 70% of all Icelanders use the internet to access banking services but only 2% of the Bulgarians do. In some Northern European countries, more than 60% of the population use online banking. Apparently, online banking has attracted users from outside the early core group. In Iceland, for instance, the adoption rate of highly educated people is 90%, while that of medium educated people has reached 76%. This implies an education gap of 14 pp or merely 20% of the average adoption rate in Iceland. In Bulgaria, this is still 300%. At some point in development, adoption rates among the laggards will catch up with those of the early users (figure 3).



Source: Eurostat, 2007

**Figure 2. % of enterprises in the EU-25 who use the internet for banking and financial services, 2006**



Source: Eurostat, 2008

**Figure 3. % of individuals, who have used online banking, 2008**

In the EU 27, 60% of households had access to the internet during the first quarter of 2008, compared with 54% during the first quarter of 2007, and 48% had a broadband internet connection, compared with 42% in 2007. Household internet access ranges from 25% in Bulgaria to 86% in the Netherlands. In 2008, the proportion of households with internet access was three quarters or more in the Netherlands (86%), Sweden (84%), Denmark (82%), Luxembourg (80%) and Germany (75%). The lowest levels were registered in Bulgaria (25%), Romania (30%) and Greece (31%). In the EU 27, nearly a third of all individuals had used internet for travel and accommodation services and around 30% had used internet banking (table 1).

**Table 1. Internet access and internet banking in the EU 27 in 2008 (%)**

	<b>Internet access</b>	<b>Internet banking</b>
EU 27	60	29
Belgium	*	*
Bulgaria	25	1
Czech Republic	46	14
Denmark	82	61
Germany	75	38
Estonia	58	55
Ireland	63	28
Greece	31	5
Spain	51	20
France	62	40
Italy	42	13
Cyprus	43	11
Latvia	53	39
Lithuania	51	27
Luxembourg	80	48
Hungary	48	13
Malta	59	25
Netherlands	86	69
Austria	69	34
Poland	48	17
Portugal	46	14
Romania	30	2
Slovenia	59	21
Slovakia	58	24
Finland	72	72
Sweden	84	65
United Kingdom	71	38

Note: \* Data not available, Source: Eurostat, 2008

An ever increasing number of Europeans access banking services over the internet. Between 50-60% of Europeans may bank online by 2020.

In the *U.S.A.*, many financial institutions have been slow to upgrade their Internet banking systems, creating a wide gap in online capabilities and use when comparing the largest banks to smaller lenders. However:

- 80% of online households now do their banking online, a 12% increase from 2008;
- 70% of online households pay bills online monthly, up from 64% in 2008;
- 83 million households will use Internet banking by 2014;
- consumers are increasingly sensitive to fees;
- consumer demand is building for online personal finance management tools that consolidate money-monitoring capabilities offered by free Web sites with financial institution sites;
- megabanks, such as Bank of America, Citibank, and Wells Fargo, dominate the Internet banking playing field; nearly 60% of these banks' customers paid a bill online, significantly more than those customers paying bills online at smaller financial institutions.

Overall, 68% of credit unions offer Internet banking services, although that number is dramatically affected by asset size. Nearly all credit unions with more than \$20 million in assets offer online banking. The average credit union offering Internet banking has more than 6,300 members enrolled in the service, ranging from 5,800 among credit unions with \$100 million to \$200 million in assets to about 85,000 for credit unions with more than \$1 billion in assets.

Banks use Internet services as an aggressive business strategy to gain market share rather than for making profits. Thus, banks reduced Internet payment fees to encourage customers to use the Internet instead of branches. A study developed by Capgemini, UniCredit Group and European Financial Management & Marketing Association, *World Retail Banking Report 2009*, analysed the local active user's frequencies of use, developing two new profiles: the branch active user, who uses branches exclusively, and the Internet active user, who uses the Internet as often as possible.

The findings of the report were obtained from an extensive market survey conducted in eight European countries, the United States and Japan, based on interviews with chief executives from 54 banks and a thorough analysis of profitability. The study included 11 banks from Romania, with 85% of market share (Alpha Bank, B.C.R., Banca Românească, Banca Transilvania, Bancpost, B.R.D., CEC Bank, ING Bank Romania, Raiffeisen Bank, UniCredit Țiriac Bank, Volksbank). The report showed that, on average, an Internet active user paid about €31 less than a branch user (34% less).

Most of the countries in this year's study had pricing policies in which Internet services were less expensive than branch services. For example, certain Nordic countries established extremely attractive prices for online services to move clients towards the Internet whenever products were available. Frequencies of use indicate that this pricing strategy directly influences customer behaviour. Contrary to the global trend, a few countries priced their Internet usage higher than their branch services. An example of this is Russia, where banks have kept online banking fees elevated. The fee structures also illustrate the Internet effect.

From 2006 to 2008, account management fees had been driven down as a result of the Internet (free online banking subscriptions). But over the course of 2008, this trend has reversed, and customers have moved their payments online where fees are lower, thereby lessening the part of payments in the fee structure. The report concluded that, along with the development of low-cost remote banks and clear pricing encouraged by regulators and associations, the impact of the Internet and geographic price convergence will continue to make prices decrease for the next five years.

### **3. DEVELOPMENT OF INTERNET BANKING IN ROMANIA**

Until 2000, Internet Banking applications could have been accessed mostly in the United States of America, or in European countries such as: United Kingdom, Spain, Italy and France. Since 2000, online banking applications are commercialized or created in Romania. In Romania, e-banking was introduced since 1996, first by the foreign banks and then (starting from 1998-1999) by the local banks as well. Although in 1999 the Turkish-Romanian Bank provided for the first time Internet banking services or Emporiki Bank launched its Internet Banking service in December 2000, the first Internet banking solutions are considered to be appeared in 2001.

As at that time were few people having Internet connection, Internet banking services market has stalled a few years. Initially, the main customers were large companies. Statistics of the Ministry of Communications indicated that the number of Internet banking users was around 18,000 people in late 2003. In 2006, their number increased to about 200,000. In 2007, 26 of 37 banks from Romania have implemented Internet banking systems (table 2).

In May 2007, Ad Mission conducted a usability study of Internet banking services, taking into account the 5 banks in the Romanian banking system: Bancpost; B.R.D.; Banca Transilvania; HVB Ţiriac; Raiffeisen Bank.

The report was made from the customer perspective, the average individual who has knowledge of computer and Internet use. Were included in the study customers who had at least one card used to shop online, know the risks of using online tools and are reluctant to any item that is not understood. The study took into consideration different standard and custom criteria (table 3).

Based on this study, one may note that of the 5 banks that have made usability tests, Raiffeisen Bank (average score obtained: 7.38) and Banc Post (7.84) were able to do the best compromise between security and usability, the other 3, Banca Transilvania (6.53), HVB Ţiriac (6.30) and BRD (6.23) is at a stage that can be improved.

Despite of late and small adoption of Internet banking, banks from Romania seem today to be aware of Internet opportunities. In fact, they are all planning to move very rapidly to Internet banking and to offer more sophisticated services. Banks have refined their range of Internet banking services, but their penetration rate continues to be low in Romania, compared to other countries in the region. Young people are increasingly more interested in using these banking products, especially with the expansion of internet services.

**Table 2. Banks from Romania that have implemented Internet banking systems**

No.	Bank	Internet banking
1	ABN AMRO Bank	ABN AMRO NetBanking
2	Alpha Bank	Alpha Click
3	Anglo-Romanian Bank Limited	i-ARBL
4	Banca Comercială Carpatica	BCC e-SMART
5	B.C.R.	MultiCash BCR
6	Banca C.R.Firenze Romania	CR Firenze Online
7	Banca Italo-Romena	Bank@You- Internet banking
8	Banc Post	Internet eBank
9	Banca Românească	e-bancamea
10	B.R.D.	BRD-NET, BRD@ffice
11	Banca Transilvania	BT24
12	Bank Leumi Romania	Leumi Online
13	Citibank Romania	CitiDirect Online Banking
14	Emporiki Bank	UBISQL Internet banking
15	Eximbank	Internet eBank
16	FinansBank	FINANSnet
17	GarantiBank International	Garanti Online
18	HVB-Tiriac Bank *	OnLine B@nking
19	ING Bank	ING Online, HomeBank
20	Libra Bank	LIBRA WEB BANKING
21	OTP Bank Romania	OTPdirekt
22	Raiffeisen Bank	Raiffeisen Online
23	Romexterra Bank	TerraBanking
24	SanPaolo Bank	SANPAOLO B@NK
25	UniCredit *	UniCredit Internet banking
26	Volksbank	MultiCash@SmartOffice

Source: Ministry of Communications and Information, 2007, Note: \* now UniCredit Tiriac Bank

Aware of the advantages that these services bring in terms of expenses and queues in front of the tellers, banks have diversified their offers, and even have promotions for those who choose Internet banking. For example, B.C.R., Romania's largest bank, offers a discount of 75% for interbank transfers through the Click 24Banking B.C.R. service compared to over-the-counter operations.

#### 4. CONCLUSION

In Romania, as more and more banking institutions implement Internet banking services, it is of absolutely necessary for these organisations to identify factors that influence users' intention to adopt or use of those services in order to gain market share. The Internet banking offered on the Romanian banking market is in full development process as banks have to win the confidence customers. But the level of accessibility regarding the performing of banking operations straight from the company office or from home determines a growing number of customers to use this kind of services. Thus, more and more Romanians use the Internet to pay bills or shop on line.

Thus, the number of Internet banking users increased almost 10 times in the past three years. If in 2006 about 110,000 Romanians used Internet banking, in 2009 their number exceeded one million users. In 2010, it is expected that the use of Internet banking services could rise especially among small enterprises (with 15%) and medium-sized and large companies (with 12%).

**Table 3. Internet banking services usability**

Criterion	Bancpost	Raiffeisen Bank	Banca Transilvania	HVB Tiriac	B.R.D.
<b>1. Standard Criteria</b>					
<b>a. Surfing</b>					
Ease of authentication	7	5	7	6	7
Menu functionality	8	8	8	7	7
Positioning within the site	9	8	7	6	3
<b>b. Design</b>					
Home page	8	4	8	7	7
Layout	8	6	7	6	6
Methods to capture attention	7	7	3	6	4
<b>c. Content Information</b>					
Information structuring	7	8	6	3	7
Help zone	5	9	7	6	4
Contact page	7	5	5	6	5
<b>2. Custom criteria</b>					
Ease of making banking operation	7	9	5	5	6
Security and surfing conjugation	8	7	6	6	7
Ease of accessing demo account	9	6	8	7	8
Help offered in case of loss / theft of login	7	5	4	6	7
Information costs incurred by the customer	5	9	4	5	3
<b>Average Score</b>	<b>7.84</b>	<b>7.38</b>	<b>6.53</b>	<b>6.30</b>	<b>6.23</b>

Source: Ad Mission Romania, Report on the usability of Internet banking services, May 2007

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## **“ACTIONS SPEAK LOUDER THAN WORDS” - BODY LANGUAGE IN BUSINESS COMMUNICATION**

**GABRIELA DUMBRAVĂ, ADRIANA KORONKA \***

**ABSTRACT:** *The paper starts from two premises, namely that business communication is a specific form of human interaction, and 70% of our communication is non – verbal. Therefore, relying on the latest findings in the field, our research deals with such basic elements of non – verbal communication as the use of interpersonal space and body language in order to prove their value as social cues, interpretable on the level of the collective unconscious and capable of enhancing or undermining the verbal message.*

**KEY WORDS:** *business communication, non-verbal communication, social cues, body language, interpersonal space*

### **1. INTRODUCTION**

The publication of Charles Darwin’s *The Expressions in Man and Animals* in 1872 inaugurated the modern approach to nonverbal communication as a set of symbolic cues comprehensible on the level of the collective subconscious and, therefore, exerting a stronger and a more immediate impact on the interlocutor.

As a mixture of movement, posture, and tone of voice with a strong subconscious layer, body language, including facial expressions, gesture reflects our feelings, thoughts and attitude towards the interlocutor so accurately that it can undermine our verbal discourse. This, corroborated with the statistic detail that over 70% of our communication is done nonverbally (cf. Kinsey Goman), places further emphasis on the importance of acquiring skills pertaining to this type of interaction in order to ensure efficient social and business relations.

Consequently, as a form of human interaction, business communication largely relies on people’s capacity to handle such social cues as the use of interpersonal space and body language in order to support and enhance what we communicate verbally.

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## 2. THE USE OF INTERPERSONAL SPACE

Proxemics, the study of the communicative aspects of personal space, starts its approach from the premise that every individual is surrounded by an invisible zone of psychological comfort that acts as a buffer zone against any invasive attempt from the outsider.

Research in this sense led to the conclusion that the comfort zone varies depending on the interlocutor and the context of communication, playing a crucial role in the type of relation we initiate with other individuals.

In 1959, anthropologist Edward Hall discovered that humans are strongly aware of their space and territory and, after conducting extended studies and experiments, he concluded that Americans had four distinct comfort distances, and also noted the dramatic variation of comfort zones from one culture to another.

The four comfort zones delineated by Hall for U.S. Americans are:

- 0 - 45 cm - intimate distance, reserved for close, deeply emotional personal relationships such as sexual intercourse or violent physical confrontation;
- 45 cm - 120 cm - personal distance, reserved for personal conversations with friends, family, or associates;
- 120 cm - 365 cm - social distance, reserved for formal interactions such as business meetings or interviews;
- 365 cm - line of sight - public distance, reserved for public speaking and lectures. (Loo 32)

As Hall points out further, individuals tend to feel uncomfortable or even threatened when someone who, for some reason, is perceived as an intruder invades their personal space. Therefore, entering someone's personal distance without first establishing some level of trust can trigger a defensive reaction, as they will instinctively withdraw to regain the correct level of personal territory.

Besides, the social use of space provides important information about the status, confidence, and power of people, the amount of personal territory being directly proportional to the three elements. Thus, in office buildings, people of higher authority use much more personal space, having their own corner offices meant to put significant distance between them and the rest of the employees, usually crammed together in cubicles.

On the other hand, social experience has made it clear that confident or higher status people are comfortable being at the centre of the attention, while lower status or insecure people prefer to withdraw to the back of the room.

University studies have shown that the students who sit in front or at the centre of the classroom received the highest grades in the class, while those who sat in the back and at the corners of the room got the poorest grades (Loo 105).

Under the circumstances, it becomes obvious that proxemics is one of the most efficient means of conveying or adding emphasis to a message. Specialists in non – verbal communication have outlined the following aspects that should be taken into account to ensure an effective business interaction:

- *Sitting side-by-side fosters cooperation.* By sitting to our interlocutors’ side seems to enhance their cooperative behaviour by displaying a non – competitive attitude.

Another advantage of this position is that it directs everybody to the problem under discussion, such as a report on the table, or research material that needs revision or organizing.

- *Opposite sides fosters competition/threat.* Sitting directly across from someone, such as an employer sitting directly across from a prospective applicant with a table in between them, tends to foster a competing/threatening attitude.
- *Sitting at 90° ensures good conversation.* Experiments have shown that the best seating position for a cooperative exchange is at the corner of the table.

The benefits of this position are that it allows for both parties to enter into each other’s personal space, creating a stronger bond than if they remained distant from each other; it dramatically reduces stress, as the corner of the table provides psychological security for both parties by placing between them a comparatively smaller barrier than in the case of opposite seating.

- *Gender differences should not be overlooked.* A study done by Byrne and Fisher (1975) showed that American men generally chose to sit across from people who they considered their friends and American women chose to sit adjacent to the people that they considered to be their friends. Additionally, the study showed that men did not like strangers sitting across from them and women did not like having strangers sitting next to them (Bjorseth 58).

Therefore, the way in which we use office space provides such valuable information about our communication style and skills that it would not be farfetched to view office layout as a metaphor for business relationships. For instance an office includes a conversation area, with chairs of equal size set around a small table or at right angles to each other, we can infer that the occupant is most likely informal and collaborative, preferring a more casual communication style than the one possible from behind a desk.

In contrast, the senior manager who conducts meetings in his office by placing a worktable perpendicular to the front of his desk, sitting in a comfortable chair behind it, while the rest of the team sits in armless chairs at the table, attempts to reinforce his role as the authority figure in the room.

Paradoxically, he obtains the opposite effect, as people never fail to perceive imposed distance and react to it (Kinsey Goman 27).

### 3. BODY LANGUAGE AND FIRST IMPRESSION

Body language is generically referred to as attitude, that aura we generate around us and which is perceived long before we utter a word. Since research shows that we decide whether we like someone or not in the first few moments of interaction, and the first impression is the most difficult to change, it becomes clear that, together with the efficient use of interpersonal space, body language is an element of involuntary behaviour with a dramatic impact on the verbal message.

According to non-verbal communication specialists, the basics of body language include:

- body posture,
- head gestures,
- facial expressions,
- handshake,
- eye contact,
- smile.

*Body posture* is one of the first things people notice about their interlocutor and, therefore, an important contributor to first impression. Thus, walking and standing with, head up, shoulders back, conveys a message of self-confidence and balance, automatically commanding respect, whereas slouching and drooping shoulders clearly mean the opposite, no matter what the verbal message contains.

Body language researchers point out two basic categories of body postures: *open/closed* and *forward/back*. The open posture is considered receptive and involves unfolded arms, uncrossed legs, and exposed palms. The closed posture, in which arms are folded, legs are crossed and the entire body is turned away, is defensive or hostile to interaction.

As this posture usually appears in combination with the forward/back leaning, the non – verbal messages they entail are as it follows:

- Leaning back and closed = lack of interest;
- Leaning back and open = contemplation and cautious interest;
- Leaning forward and closed = potential aggressive behaviour;
- Leaning forward and open = interest and agreement (Boe 15).

In terms of metalanguage, non-verbal message, *head gestures* fall into the following major categories:

- Head neutral = neutral and open attitude;
- Tilted back = superior attitude;
- Tilted down = negative and judgmental attitude;
- Tilted to one side = interest.

*Facial gestures*, in their turn, can send out parallel messages, being able to contradict, or even completely undermine the verbal discourse.

Synthetically, this is what attitudes and thoughts they reveal:

- Eye rub = deceitful attitude;
- Eye roll = dismissive gesture that indicates superiority;
- Looking over top of glasses = scrutiny and a critical attitude;
- Nose rub = dislike of the subject;

- Hand or fingers blocking mouth = deceit;
- Chin stroking = making a decision;
- Thumb under chin with index finger pointing vertically along the cheek = negative attitude and critical judgment (Boe 21).

*Handshakes* are another vital component of interpersonal encounters. As a matter of fact, it has become common knowledge that the few seconds of a handshake can be decisive for building a business relationship. A person who shakes hands by placing his/her hand onto the top is the so-called *controller* that is someone who wants to be in charge, which is to be kept in mind during any interaction. On the other hand, the *sandwich* handshake, in which we use both hands to envelop the interlocutor's hand, is not recommended as it is considered to invade their private space.

The general recommendation is to extend the full hand, in a moderately strong grip, not only the fingers, which would be a sign of insecurity, or even disrespect to the interlocutor, and to avoid, by any means, extending a wet hand, no matter what the reasons of the moist are (holding a cold beverage or anxiety). Since this is extremely unpleasant for the receiver, it is strongly advisable to wipe our right hand before handshake.

Consequently, the elements of an effective handshake, as they have been established by body language experts, are the following:

- Hold the person's hand firmly;
- Shake three times maximum;
- Maintain constant eye contact;
- Radiate positive aura (Bjorseth 48-49).

Sustained *eye contact* is an essential element of non-verbal interaction not only because it displays confidence and involvement on our part, but it also helps us understand what the other person is actually saying verbally. Experts are of the opinion that eye contact should begin before the actual interaction, if we are trying to get someone's attention, and it should be maintained throughout the conversation and while saying “good-bye” in order to leave a positive, powerful lasting impression.

The eye contact area considered socially appropriate during business conversation is delineated by a triangle with its base above the eyes and its sides coming to a point between the nose and the lips.

The recommended eye contact duration is about 80-90 percent of the conversation, because less than that can be interpreted as discomfort, evasiveness, lack of confidence or boredom. The other extreme would fall into the category of staring, making the other person feel dominated and uncomfortable. It is permitted to glance down occasionally, but for not more than a moment, but looking over the other person's shoulder should be avoided, as it indicates lack of interest and boredom.

Smiles are *facial expressions* that create a positive business environment by showing interest, excitement, empathy, or concern. Given their effectiveness, we should be aware of their negative impact if overused. Therefore, to gain and increase respect and attention, we should first establish our presence in a business context and, only then, smile. This approach will surely be perceived far more professional than entering a room giggling or “all smiles.”

#### 4. CONCLUSION

Non-verbal communication has a much greater impact and higher reliability than the spoken word, due to people's capacity to interpret symbols and cues recognizable on the level of collective memory. Since our body language reveals our deepest feelings and hidden thoughts to our interlocutors, over 70% of our communication is perceived nonverbally. Consequently, an effective business interaction is conditioned by the proper interpretation and use of non-verbal cues.

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## **CUSTOMER RELATIONSHIP MANAGEMENT - A NEW METHOD OF TARGETING THE 21<sup>ST</sup> CENTURY CONSUMERS**

**LUIGI DUMITRESCU, MIRCEA FUCIU \***

**ABSTRACT:** *The development of the information technology and of the communication systems has created the best environment for the organizations to develop a better and a longer relationship with consumers. The stronger the competition becomes the harder it is for the organizations to target and retain the clients. The development of the customer relationship management has become an important tool for creating better value for the customers. With the help of CRM and of CRM related software, it has become much easier to target the consumer. This paper presents several definitions to CRM as well as some different approaches with regard to this aspect. We also present several aspects with regard to the evolution of the CRM software world wide.*

**KEY WORDS:** *customer relationship management, marketing, information, consumer*

### **1. INTRODUCTION**

Lately, today's organizations start to realize more and more the importance of client orientation, respectively the importance of placing the clients in the centre of the organizations' attentions. In the beginning of the marketing concept, the clients were considered persons that just offer the money, and do not choose what they receive. In the present market conditions – in which the competition is very strong, and the market is more and more controlled by demand rather than the offer – the clients want to be known, understood and served as well as can be expected, on the contrary they give up and go to the competition. In order to survive, the organizations must open more and more to the outside world, to become more sensitive to the needs and desires of the clients. If the organizations do not understand this aspect and do not take the necessary measures in order to rectify that, then the decline and even the end is very close. In the last decades, the organizations have started to understand the importance of creating

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strategies in accordance with the clients' needs and desires. In order to create an effective client orientation a new concept has emerged and which is presented by every major publications: *Customer Relationship Management - CRM* (Sandoe et. all, 2001). The new concept of CRM presumes the particularization and individualization of the relationship with the client, starting from the premises that each client is different from the other.

## **2. CUSTOMER RELATIONSHIP MANAGEMENT - THE NEW WAY**

CRM is a complex process that brings together the multitude of data with regard to the clients, sales, marketing methods efficiency, the market trends, data that can be offered by different departments and software applications. CRM is not just a technology but an organizational philosophy for surviving in consumer centred economy. Some organizations define the CRM an automation of the sales forces. Others consider that the secret of Customer Relationship Management is consistent of the support activities like: data mining, data warehousing and the distribution of this data to the personnel – managers and simple employees - that interact with the clients.

The organizations must see CRM as a bridge, not as a final point. This new concept represents a new way by which the organizations come before the clients' needs, clients that expect to be attended with special attention in the case of each client-organization interaction. The back bone of Customer Relationship Management is the organizational culture, which has to be modified, adapted in order to accommodate new changes and implies even cases of training and educating the employees. CRM represents a shift that brings together the entire organization. This change implicates a development of the intellectual capital as well as a structural change within the organization. The key for a successful CRM strategy is the interlacing of the "client orientation" philosophy with technology. The organizations that want to implement this new concept have to initiate the design or redesign of the information strategy in order to tide these systems permanently with the client (Gorski, 2009).

The development of the information and communication systems have become in the last decades important elements that will help organizations, marketers and consumer alike to come together, to change ideas and information faster. The new CRM system has been developed by web sites communication, call centre communication and wireless communication. These new types of communication give the organizations the possibility to develop long time relationships which will benefit both the clients and the organization. Today the consumer has unlimited access to information. The access to information is sustained by the access facilities which have become faster and faster. The development of the Internet is a new way for the clients and the organizations to communicate and give the consumers the possibility to buy goods and services from across the world.

Starting from this new way of approaching the clients, a new type of CRM emerges specifically – Internet based CRM (E-CRM). This new concept is defined as a management approach which allows the organizations to identify, attract and increase the number of clients. The information technology is more and more used by managers and marketers to organize the information about the clients. In this context the



databases are essential in order to create a viable CRM. In order to deliver their goods and services via the Web, the organizations must develop a plan in order to: (1) Identify the client; (2) Create the possibility to group the data about the clients with the help of different marketing tools; (3) Create the possibility to analyze and improve the marketing campaigns.

Today we see more and more web sites where the organizations have very carefully structured the questions that they want to ask the clients, questions that are only the important ones for the organization. In order to insure an easy data collection and to maximize the data accuracy the organizations must: (1) Explain to the clients the reason for which the data is collected; (2) Explain clearly to the client for what the data is collected for; (3) Offer the possibility of easy data input; (4) Indicate the mandatory fields; (5) Validate the data; (6) Insure a fast confirmation. The information can be easily obtained if they are asked in certain fields and that are divided in different categories that present a greater importance for the organization: (1) Demography; (3) Life style; (4) Business to business (B2B); (5) The product; (6) Acquisition history; (7) The client's value; (8) The client's loyalty.

Customer relationship management consists of the processes a company uses to track and organize its contacts with its current and prospective customers. CRM software is used to support these processes; information about customers and customer interactions can be entered, stored and accessed by employees in different company departments. Typical CRM goals are to improve services provided to customers, and to use customer contact information for targeted marketing. While the term CRM generally refers to a software-based approach to handling customer relationships, most CRM software vendors stress that a successful CRM effort requires a holistic approach (Rigby et. al, 2002). CRM initiatives often fail because implementation was limited to software installation, without providing the context, support and understanding for employees to learn, and take full advantage of the information systems (Arussy, 2005). CRM can be implemented without major investments in software, but software is often necessary to explore the full benefits of a CRM strategy. Other problems occur when failing to think of sales as the output of a process that itself needs to be studied and taken into account when planning automation (Selden, 2000). From the outside, customers interacting with a company perceive the business as a single entity, despite often interacting with a number of employees in different roles and departments. CRM is a combination of policies, processes, and strategies implemented by an organization to unify its customer interactions and provide a means to track customer information. It involves the use of technology in attracting new and profitable customers, while forming tighter bonds with existing ones.

CRM includes many aspects which relate directly to one another: *Front office operations* - Direct interaction with customers, e.g. face to face meetings, phone calls, e-mail, online services etc.; *Back office operations* - Operations that ultimately affect the activities of the front office (e.g., billing, maintenance, planning, marketing, advertising, finance, manufacturing, etc.); *Business relationships* - Interaction with other companies and partners, such as suppliers/vendors and retail outlets/distributors, industry networks (lobbying groups, trade associations). This external network supports front and back office activities; *Analysis* - Key CRM data can be analyzed in order to plan target-marketing campaigns, conceive business strategies, and judge the

success of CRM activities (e.g., market share, number and types of customers, revenue, profitability). Perhaps it is important to note that while most consumers of CRM view it as a software "solution", there is a growing realization in the corporate world that CRM is really a customer-centric strategy for doing business; supported by software. There are several different approaches to CRM, with different software packages focusing on different aspects. In general, Customer Service, Campaign Management and Sales Force Automation form the core of the system (with SFA being the most popular).

*Operational CRM* provides support to "front office" business processes, e.g. to sales, marketing and service staff. Interactions with customers are generally stored in customers' contact histories, and staff can retrieve customer information as necessary. Sales Force Automation automates sales force-related activities such as: (1) Activity Management: Scheduling sales calls or mailings; (2) Tracking responses; (3) Generating reports; (4) Opportunity Management and Assessment; (5) Account Management and Target Account Selling; (6) Automate Sales Order Processing.

*Campaign management* combines elements of Operational and Analytical CRM. Campaign management functions include: (1) Target groups formed from the client base according to selected criteria; (2) Sending campaign-related material (e.g. on special offers) to selected recipients using various channels (e.g. e-mail, telephone, SMS, post); (3) Tracking, storing, and analyzing campaign statistics, including tracking responses and analyzing trends.

*Consumer Relationship System (CRS)* covers aspects of a company's dealing with customers handled by the Consumer Affairs and Customer Relations contact centres within a company (Rigby et. all, 2002). Representatives handle in-bound contact from anonymous consumers and customers. Early warnings can be issued regarding product issues (e.g. item recalls) and current consumer sentiment can be tracked (voice of the customer). Several CRM software packages are available, and they vary in their approach to CRM. However, as mentioned above, CRM is not just a technology but rather a comprehensive, customer-centric approach to an organization's philosophy of dealing with its customers. This includes policies and processes, front-of-house customer service, employee training, marketing, systems and information management. Hence, it is important that any CRM implementation considerations stretch beyond technology toward the broader organizational requirements.

*CRM strategies* can vary in size, complexity, and scope. Some companies consider a CRM strategy only to focus on the management of a team of salespeople. However, other CRM strategies can cover customer interaction across the entire organization. Many commercial CRM software packages provide features that serve the sales, marketing, event management, project management, and finance industries.

Many CRM project "failures" are also related to data quality and availability. Data cleaning is a major issue. If a company's CRM strategy is to track life-cycle revenues, costs, margins, and interactions between individual customers, this must be reflected in all business processes. Data must be extracted from multiple sources (e.g., departmental/divisional databases such as sales, manufacturing, supply chain, logistics, finance, service etc.), which requires an integrated, comprehensive system in place with well-defined structures and high data quality. Data from other systems can be transferred to CRM systems using appropriate interfaces. Because of the company-wide

size and scope of many CRM implementations, significant pre-planning is essential for smooth roll-out. This pre-planning involves a technical evaluation of the data available and the technology employed in existing systems. This evaluation is critical to determine the level of effort needed to integrate this data.

Equally critical is the human aspect of the implementation. A successful implementation requires an understanding of the expectations and needs of the stakeholders involved. An executive sponsor should also be obtained to provide high-level management representation of the CRM project. An effective tool for identifying technical and human factors before beginning a CRM project is a pre-implementation checklist (Selden, 1997). A checklist can help ensure any potential problems are identified early in the process.

The development of the communication systems and the development of new technologies have led to the creation of many CRM software. Table 1 lists the top CRM software vendors in 2006-2007 (figures in millions of US dollars) published in a Gartner study. Table 2 lists the top software vendors for CRM projects completed in 2006 using external consultants and system integrators, according to a 2007 Gartner study.

**Table 1. Top CRM software vendors in 2006-2007**

<b>Vendor</b>	<b>2007 Revenue</b>	<b>2007 Share (%)</b>	<b>2006 Revenue</b>	<b>2006 Share (%)</b>	<b>2006-2007 Growth (%)</b>
SAP	2,050.8	25.3	1,681.7	26.6	22.0
Oracle	1,319.8	15.3	1,016.8	15.5	29.8
Salesforce.com	676.5	8.3	451.7	6.9	49.8
Amdocs	421.0	5.2	365.9	5.6	15.1
Microsoft	332.1	4.1	176.1	2.7	88.6
Others	3,289.1	40.6	2,881.6	43.7	14.1
<b>Total</b>	<b>8,089.3</b>	<b>100</b>	<b>6,573.8</b>	<b>100</b>	<b>23.1</b>

**Table 2. Top software vendors for CRM projects completed in 2006**

<b>Vendor</b>	<b>Percentage of implementations</b>
Siebel (Oracle)	41%
SAP	8%
Epiphany (Infor)	3%
Oracle	3%
PeopleSoft (Oracle)	2%
salesforce.com	2%
Amdocs	1%
Chordiant	1%
Microsoft	1%
SAS	1%
Others	15%
None	22%

As the enterprise CRM market grows, many companies and small groups of developers are focusing on creating CRM software that is distributed freely on the Internet or offered at a fraction of the price of classic enterprise CRM software. However, many vendors charge for support.

### 3. CONCLUSIONS

The development of the information technology, of communication and of the Internet has created the best field in which to create a better relationship with the client. The shift from the product oriented marketing to the client oriented marketing has brought to life a new concept that has forever changed the way the organizations do business. It is very important for the organizations to realize that if they do not take care of the consumer, if they do not constantly communicate with them and they don't give the clients what they need or want then the companies will die. Right now, Customer Relationship Management systems and the Internet have become the most important ways of targeting, tying and retaining the clients. With the help of these two tools the organizations have found the way to offer the clients, wherever they are, what they want and need, in the fastest of time and at the best quality possible.

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## **USING THE EXPERIMENT METHOD IN BUSINESS-TO-BUSINESS MARKETING**

**CODRUȚA DURA, MONICA LEBĂ \***

**ABSTRACT:** *The concept of industrial marketing is circumscribed around an explosive development which has influenced the specialization and the differentiation of the science of marketing, through extending its applicability to various fields of activities. If on conceptual level, marketing can be used in relation with any type of market – industrial or consumer – the methods of implementing the elements of the marketing process can be very different. The marketing experiment is dwelt upon in this paper both from a theoretic point of view and from the point of view of its practical applicability; the second approach is based on creating and solving a study case using the method of projecting the marketing experiment with the help of random blocks.*

**KEY WORDS:** *industrial marketing, marketing experiment, marketing variables, observing units, experimental treatment, experimental factor, random blocks, experimental error*

### **1. THE THEORETIC FRAMEWORK OF THE INDUSTRIAL MARKETING CONCEPT**

The word “marketing” comes from the present participle of the Anglo-Saxon verb “to market”, which means “to sell”, “to trade”, “to deal”, “to commercialize”. Later on, the word spread on an international level because it was impossible to capture in translation the whole meaning of the term and the wide range of equivalents associated with it. Originating from the economic field, marketing was the main subject of great theoretic debates during the second half of the past century. According to some authors, more than 1600 definitions have been attributed to marketing so far.

These can fall into two separate categories: classic or “narrow” definitions which focus mainly on commercial activities and on the physical movement of goods and services, neglecting a series of groups strongly influenced by the development of marketing activities (consumers, trade unions, public authorities, governmental

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agencies etc.); modern or “broad” definitions which are related to modern marketing points of view, extending the fields influenced by marketing towards non-profit organizations, relating the company’s activity with the environment, implying social aspects etc.

The starting point in decoding the term marketing is the definition given by the American Marketing Association (A.M.A.): “*Marketing is the performance of business activities that direct the flow of goods and services from producers to consumers.*” Forwarded in 1948, this definition met serious criticism as it was considered tributary to “the old concept of marketing”, because it referred only to activities which result in the production of goods and they end in selling them. The most recent definition of marketing according to A.M.A. reads: „*marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large*” (2007) [13]. Included in the “broad definitions” category, this new approach corresponds to the new modern tendency of including the marketing theory and practice into various fields of the economic – social life.

The explosive development of marketing during the second half of the 20<sup>th</sup> Century was possible in two ways: extensive – implementing marketing in an increasing number of organizations and fields of activity; intensive – consolidating and improving the marketing point of view within enterprises and branches which had implemented it.

Both directions that marked the evolution of contemporary marketing were meant to broaden the field of applicability of this science and resulted in a great process of marketing specialization and differentiation, a process which is still in progress. It is very important that we note the following: if in countries with a developed market economy, marketing has first developed its general methods and practices, and only later has it developed the ones specific to particular fields of activity, then in Romania (just like in other countries that suffered economic changes), the evolution of general marketing and specialized marketing is almost simultaneous.

One of the major criteria that determine the specialization of contemporary marketing is the profile of the economic activity. Thus we can distinguish between: *Industrial marketing or B2B Marketing; Consumer Marketing (B2C); Services Marketing.*

According to American specialists William Pride and O.C. Ferrell, **industrial marketing** represents “*a set of activities destined to facilitate and encourage the trade implying industrial products and consumers on organizational markets*” [12]. Nowadays, the concept industrial marketing is used in a broader sense, meaning that it does not encompass only the sector of industrial products but it also takes into consideration the characteristics of the clients interested in these products and the characteristics of organizational markets. As a concept, marketing can be used in relation with any type of market - industrial or consumer - *the methods of implementing the elements of the marketing process can be very different* [1].

One of the most frequently used methods in marketing researches to obtain the necessary information required by market researches is the marketing experiment. Further on, we analyze the experiment method and its characteristics when applied to

industrial marketing, starting from the fact that the marketing research has become a necessity due to the unprecedented intensification of the complexity of the decisional process within industrial enterprises.

## 2. THE ELEMENTS OF THE MARKETING EXPERIMENT

The marketing experiment is a deliberate “induced” simulation on a small scale and under more or less artificial circumstances of a marketing activity which aims to characterize the way this is affected by one or more casual factors. Actually, the variation of one or more *explanatory (independent) variables* is used by the researcher to quantify the effects of this variation upon some *observing units* (consumers, users, economic units, etc.) of the result interpretation and of the probable evolution laws enunciation. The main elements of any marketing experiment are [7]:

- **Marketing variables.** An experiment operates with two big categories of variables:
  - a) *Independent variables* consisting of influence factors, the activity of which is observed during the experiment. In their turn, these variables fall into other two categories:
    - *explanatory variables* also called *experimental factors* or marketing *stimuli* (materialized in products, their characteristics, package, auxiliary services, payment facilities, price, advertisements etc.) the size of which is modified on purpose by experiment operators in order to reveal the effects of these changes upon the demand, the volume of sales, upon competition, distributors etc.;
    - *random variables (outsiders)* which are not subject to experimental treatment; if we are aware of their effect, we can reject or influence seriously the hypothesis according to which independent variables change dependent variables. Thus, it is important not to eliminate them, but to try to maintain their level as long as possible.
  - b) *Dependent variables* (also called explained variables) are variables of effect type, materialized in the volume of sales, demands, time for adopting the purchasing decision, opinions and attitudes, reactions from competition, trademarks, the efficiency of mediators etc. During the experiment, these variables must be kept from possible influences which might be produced by disturbance factors.
- **The observation units** can be represented by shops which sell certain products, batches of products that are to be tested, groups of buyers etc.; their reaction to various experimental factors are closely watched and analyzed. Observation units also fall into two categories:
  - *experimental units* - the experimental treatment is being applied and appropriate measurements are being made;
  - *control units (witness)* - are also placed under observation, but they are kept from stimuli which influence the former; their role is to be a comparison basis for the changes occurred in the case of experimental units.

Beside the results of the experiment, marketing researches also show the importance of other factors, apart from experimental ones. Very often, there are cases in which the effect of a factor is conditioned by the existence or by the influence of

other factors because there is a certain interaction among the effects of factors. In order to outline the effect of the experimental factor as accurately as possible, it is necessary that the marketing experiment be designed and carried out so that it enables the quantification and the elimination of the carrier effect caused by the interaction between factors.

• **Treatments** are a set of actions and procedures through which the performer of the experiment interferes with the independent marketing variables in order to detect the reaction of dependent variables. As a consequence, *treatments are working instruments of the marketing experiment*. They can be represented by changes in pricing (in order to register a variation in the demand), in functional characteristics of the product (in order to analyze the evolution of the sales volume), changes in the behaviour of shop attendants (in order to detect the speed of adopting purchasing decisions) etc. Due to the variation of some external factors (which cannot be entirely controlled), of the inaccuracy of measurements, of the negligence of those who conduct the experiment, of behaviour disturbances caused by stress, we can come across *experimental errors*.

*Designing the marketing experiment* represents an anticipated structuring process, using a model or a chart with *different combinations of factors* which form the treatments chosen to be applied on groups of experimental units. The efficiency of conducting a marketing experiment is, thus, conditioned by the process of *choosing the appropriate design scheme*. Thus, the first category of experiment design schemes implies the existence of one experimental factor and it is based upon the hypothesis of a constant influence from other factors (Solomon's test or the sign test). Marketing practice requires, however, the use of some more elaborate experiment design methods, which can reflect precisely the complexity of marketing phenomena: random design, random blocks design,  $\chi^2$  test model, Latin squares, Greek-Latin squares etc.

### **3. THE USE OF MONO-FACTORIAL MODEL WITH RANDOM BLOCKS AND GROUPS OF THE SAME SIZE FOR DESIGNING AND CONDUCTING AN INDUSTRIAL MARKETING EXPERIMENT**

This method of elaborating a marketing experiment is based upon the principle of grouping experimental units into blocks, that is to say more homogenous groups. After forming the blocks ( $i=1,2,\dots,n$ ), the distribution of experimental units on different levels of the experimental factor ( $j=1,2,\dots,r$ ) is done at random. At the same time, in order to reduce errors, the blocks must be of the same size. The experiment design implies a random sample, made of  $n-r$  units.

Consider the case of a company that produces spare parts and subassemblies for Dacia cars, a company which intends to re-analyze its production technologies for some products in order to improve performances and increase sales. A group of technical and economic specialists was formed in this respect, to find solutions that lead to the increase of sales on condition that the technical performances of the products are kept the same and the production costs are reduced. The group of specialists identified the brake cylinder among the products that could be improved through technical – economic measures. The marketing department came up with four



different modernization alternatives of the brake cylinder; they are symbolized by A, B, C, and D.

In order to establish whether the proposed modernization measures can determine a significant increase of sales, a number of eight shops which sell brake cylinders were randomly selected; they are supplied with a stock that covers the market demand for a month for all the four types of the product. Moreover, necessary steps have been taken so that other selling conditions should not be modified and that they would be the same as for the types A, B, C and D of the product. During the marketing experiment, each shop was regarded upon as a block, thus observing the isolation of the studied factor (the improvement of the product) from the influences caused by the characteristics of shops (type, sales behaviour, notoriety etc). The results obtained can be seen in table 1.

**Table 1. The volume of sales registered by the eight shops in the cases A, B, C and D of the product**

Shops (blocks)	Levels of the experimental factor				Total (T <sub>i...</sub> )
	A	B	C	D	
1	640	645	578	667	2530
2	580	600	612	641	2433
3	600	617	725	725	2667
4	577	580	640	735	2532
5	610	586	745	685	2626
6	565	607	715	668	2555
7	573	665	635	732	2605
8	555	680	650	647	2532
Total (T <sub>j.</sub> )	4700	4980	5300	5500	20480
Average ( $\bar{y}_j$ )	587.5	622.5	662.5	687.5	2560

The experimental method proposed below implies following several steps:

**A). Submitting the null  $H_0$  hypothesis.** Taking into consideration the fact that the marketing experiment is a selective research, that is to say that it is conducted on a number of eight shops which sell break cylinders over a limited period of time (a month), the result is obvious to have a relative value. Thus, it is possible that the data does not coincide with the information concerning the entire population (made up of all the shops that sell that certain product); moreover, we cannot know for sure the difference between the two series of data, since the total state of the population is usually unknown.

The mathematical theory of probabilities provides methods to evaluate the results of selective studies, making it possible to estimate, in terms of probability, the maximum error rate which can occur when using the information from the research instead of the real data which characterizes the population. As a consequence, we cannot make statements under certainty; however we can make suppositions called statistic hypotheses. A *null hypothesis* is a statistic hypothesis that is to be verified. In our example, the null hypothesis can be submitted as follows:

- $H_{0\text{ Fr}}$  - the modernization measure does not affect heavily the volume of sales (in the case of the experimental factor);
- $H_{0\text{ B}}$  - the experimental blocks do not affect significantly the volume of sales (in the case of shops which are organized as experimental unit blocks).

Verifying a hypothesis means submitting it to some tests, called statistic tests, a procedure after which the supposition is either rejected or accepted. Such a decision is always based on calculations regarding the confidence interval which corresponds to an established level of importance. In order to facilitate practical operations, statistic tests usually indicate the actual working procedure which mainly consists in determining a specific value – noted with F in our example – using the data from the research; this value is then compared with other “critical” values from a table, followed by the decision whether the hypothesis is rejected or not.

**B). Calculating the sum of square deviations  $SAP_T$ .** Calculating the sum of square deviations as a total  $SAP_T$ :

$$SAP_T = \sum_{j=1}^r \sum_{i=1}^n y_{ij}^2 - C$$

where:  $y_{ij}$  – represents the level of the dependent variable for experimental unit  $i$  ( $i = 1, n$ ), to which the experimental factor  $j$  ( $j = 1, r$ ) is applied;  $C$  – represents the correction term obtained from the following equation:

$$C = \frac{T^2}{r \times n}$$

$T$  is the general total of the contingent table while “ $r$ ” and “ $n$ ” are the levels of the experimental factor and of the number of analyzed blocks, respectively.

The first relation of the total of square deviations is being determined as a whole:

$$\sum_{j=1}^r \sum_{i=1}^n y_{ij}^2 = 640^2 + 580^2 + 600^2 + \dots + 668^2 + 732^2 + 647^2 = 13203522$$

$$\text{The correction relation will be } C = \frac{20480^2}{8 \times 4} = 13107200$$

$$\text{Then } SAP_T = 13203522 - 13107200 = 96322$$

- *Determining the total of square deviations due to the experimental factor  $SAP_{Fr}$ :*

$$SAP_{Fr} = \frac{1}{n} \sum_{j=1}^r T_{.j}^2 - C = \frac{4700^2 + 4980^2 + 5300^2 + 5500^2}{8} - 13107200 = 46600$$

- *Determining the total of square deviations due to experimental blocks  $SAP_B$ :*

$$SAP_B = \frac{1}{r} \sum_{i=1}^n T_i^2 - C = \frac{2530^2 + 2433^2 + 2667^2 + 2532^2 + 2626^2 + 2555^2 + 2605^2 + 2532^2}{4} - 13107200 = 9113$$

- *Determining the total of square deviations due to experimental error  $SAP_E$ :*

$$SAP_E = SAP_T - SAP_{Fr} - SAP_B = 96322 - 46600 - 9113 = 40609$$

**C). Calculating the average of the sums of square deviations MS**

- for the experimental factor :  $MS_{Fr} = \frac{SAP_{Fr}}{r-1} = \frac{46600}{4-1} = 15533.33$

- for experimental blocks:  $MS_B = \frac{SAP_B}{n-1} = \frac{9113}{8-1} = 759.42$

- for experimental error:  $MS_E = \frac{SAP_E}{(r-1)(n-1)} = \frac{40609}{3 \times 7} = 1933.76$

**D). Validating the results of the experiment with the help of Fischer test.**

This implies the calculation of some F values:

$$F_{Fr} = \frac{MS_{Fr}}{MS_E} \text{ - for the experimental factor}$$

$$F_B = \frac{MS_B}{MS_E} \text{ - for blocks of experimental units}$$

$$F_{Fr} = \frac{MS_{Fr}}{MS_E} = \frac{15533.33}{1933.76} = 8.032$$

$$F_B = \frac{MS_B}{MS_E} = \frac{759.42}{1933.76} = 0,392$$

#### 4. CONCLUSIONS

A determination of the results of the experiment can be possible through comparing the values calculated during the Fisher test with the tabled values for  $V_1$  and  $V_2$  degrees of liberty and with the value of the degrees of importance  $\alpha$ . The number of degrees of liberty as numerator is  $V_1 = r-1$ ; at the same time, the number of degrees of liberty as denominator equals  $V_2 = (n-1) \cdot (r-1)$ .

Based on these facts, we can determine  $F_{theoretic}$  and when comparing it with  $F_{Fr}$  and  $F_B$  we find the following:

- $H_{OFr}$  is rejected if  $F_{Fr \text{ calculated}} > F_{theoretic (r-1);(n-1)(r-1);\alpha}$
- $H_{OB}$  is rejected if  $F_{B \text{ calculated}} > F_{theoretic (n-1);(n-1)(r-1);\alpha}$

The results of calculations and adopting the decision of acceptance or rejection of the null hypothesis  $H_0$  (according to which the estimated modernization measures do not affect significantly the volume of sales) are entered in table 2.

The theoretic value of F for  $V_1=3$  and  $V_2=21$  degrees of liberty on a level of significance  $\alpha = 0,05$  is  $F_{theoretic 3;21;0,05}=3,07$ . Considering that  $F_{calculated}$  calculated for the experimental factor is greater than  $F_{theoretic}$ , we can reject the hypothesis and the

conclusion is that the volume of sales of the analyzed product is heavily influenced by increasing performances through modernization.

**Table 2. The results of the marketing experiment**

The source of variation	No. of degrees of liberty	Sum of square deviations (variation) SAP	Square average (dispersion) MS	Fisher F test
Experimental factor	(r-1)=3	SAP <sub>F<sub>r</sub></sub> = 46600	MS <sub>F<sub>r</sub></sub> = 15533.33	F <sub>F<sub>r</sub></sub> = 8.032
Blocks	(n-1)=7	SAP <sub>B</sub> = 9113	MS <sub>B</sub> = 759.42	F <sub>B</sub> = 0.392
Experimental error	(r-1)(n-1)=21	SAP <sub>E</sub> = 40609	MS <sub>E</sub> = 1933.76	-
Total	r·n-1=31	SAP <sub>T</sub> = 96322	-	-
Decision	H <sub>0</sub> is rejected because F <sub>F<sub>r</sub></sub> (8.032) > F <sub>theoretical 3;21;0.05</sub> (3.07)			
	H <sub>0</sub> is accepted because F <sub>B</sub> (0.392) < F <sub>7;21;0.05</sub> (3.41)			

Moreover, this conclusion is supported due to its high confidential level. Thus, for  $\alpha = 0,1\%$ ,  $F_{\text{theoretic } 3;21;0,001} = 7.94$  which means that the previous relation is correct and it applies in 99,9% of the cases.

As far as the variation of blocks (made up of the 8 shops), implementing the Fischer test can lead to  $F_{\text{calculated}} < F_{\text{theoretic } 7;21;0,05}$  ( $0.392 < 3.41$ ); in this case it is necessary to adopt a null hypothesis. Hence it appears that the type of shops does not affect significantly the volume of sales.

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## **MACROECONOMIC MODELING TO ANALYZE THE DEVELOPMENT OF INVESTMENTS IN ROMANIA IN THE TRANSITION**

**MARIA ENESCU, MARIAN ENESCU \***

**ABSTRACT:** *This article presents an analysis of developments in macroeconomic modelling, presents some models of economic growth on investment (Keynes), model underlining the importance of each model in hand, the innovative feature of the macroeconomic model and application modelling investment opportunity in our country.*

**KEY WORDS:** *Macroeconomic modelling, output, endogenous variables, exogenous variables, regressions, capital stock*

Macroeconomic modelling dates beginning after the Second World War in 1992 Charemza and Deadman are described in the paper "New Directions in Econometric Practice" assumptions that have been processed in defining key terms and classifications of macroeconomic modelling methodology.

Macroeconomic modelling (MEMs) is multi-dimensional, representing not only a science but an art. MEMs in a primary variant are defined as: a set of equations behavioural and institutional relations that structure the economy is based mainly on the behaviour of individual economic agents.

There are two types of macroeconomic models [2][4]:

- MEMs (Macro-Economic-Modelling);
- CGE (Computable General Equilibrium).

The MEMs provides information about the dynamic processes of adjustment and can be used short term and medium term is classified as [5]:

- a Model of Keynes-Klein (KK): consists in explaining the evolution variable order "request" in the context of macroeconomic fluctuations, addresses the problem of short-term instability's output and of hiring labour using policies stabilization;

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- a Model of Philips-Bergstrom [7][8](PB): is a demand-oriented model that uses differential equations to estimate the structural parameters of the stochastic model, the state of stability and asymptotic properties of the model are expressed in a continuous time, very difficult to enforce because of large scale models;
- a Model of Walras-Johansen (WJ): is mainly multisectoral excellence using non-linear differential log. The economy is composed of interrelated markets that reach an equilibrium level by maximizing the profit-oriented behaviour of producers and consumer actions in a competitive market.
- a Model of Walras-Leontief (WL): is such general equilibrium system, incorporating an input table output (IO) in which giving sectoral or aggregate value of final components may be obtained sectoral output,
- a Model of Muth-Sargent (MS): is based on rational expectations theory of evolution, are similar in terms of KK model dynamic, non-linearity, stochastic and variable time mesh. One important feature of this model is given of how expectations are formed, they are no longer depending on previous values of dependent variables, and the variables actually vary apparent expectations, which are obtained when the model is solved.

The future developments of the models were the WJ and WL CGE modelling. Neoclassical CGE models are based on optimizing behaviour of economic agents, their main objective is to conduct policy analysis to economic resources, international trade, production efficiency and income distribution sector [4].

The difference between MEMS and CGE models can be made with respect to time. CGE models generate values of endogenous variables only for the initial state of equilibrium, a new equilibrium after the shock is required. Do not submit information about the process of adjustment, but the image time instant of microeconomics. Recently, some models provide information on dynamic adjustment processes, which can be used short term (3 to 5 years) and medium term (5 to 7 years) [6].

The MEMs provides information on the dynamics of adjustment processes, used for short-term forecasts and medium term and to review policies.

There is variable apparent trend (technical progress), represented both macroeconomic models for discrete and continuous by deterministic functions of time, entering the appropriate equations macroeconomic models. The model can be introduced stochastic trends that may be apparent on those phenomena that are believed likely to influence the behaviour of endogenous variables.

About some physical models (models that led to the characterization of the Lorenz weather events) in Great Britain led to the evaluation of macroeconomic systems using model described by 18 differential not linear equations order 1 and 2, with 63 structural parameters, including vector  $\beta$  of the 33 long-term parameters, the vector  $\gamma$  of the 27 speed adjustment and the vector  $\lambda$  of the three trends.

Model equations as deterministic:

➤ adjustment of private consumption equation:

$$D^2 \log C = \gamma_1(\lambda_1 + \lambda_2 - D \log C) + \gamma_2 \log \left[ \frac{\beta_1 e^{-\{\beta_2(r-D \log p) + \beta_3 D \log p\}} (Q + P)}{T_1 C} \right] \quad (1)$$

assumed that the excess growth rate of consumption over long-term growth rate of expected real income ( $\lambda_1 + \lambda_2$ ) depends on the ratio between the partial equilibrium level of consumption and current consumption, the balance of consumption partly depends on real disposable income  $(Q+P)/T_1$ , the real rate of interest  $r-D \log p$  and the inflation rate  $D \log p$ ;

➤ equation of labour adjustment:

$$D^2 \log L = \gamma_3(\lambda_2 - D \log L) + \gamma_4 \log \left[ \frac{\beta_4 e^{-\lambda_4 t} \{Q^{-\beta_6} - \beta_5 K^{-\beta_6}\}^{-1/\beta_6}}{L} \right] \quad (2)$$

implies that accelerate the pace of employment growth rate depends on the surplus labour supply  $\lambda_2$  over the current rate of increase in labour and the relationship between the balance part of the labour and the ratio of the partial equilibrium labour and the current workforce.  $\beta_5$  quantify the importance of capital in production and decay rate of  $\lambda_1$  is through technical progress, the amount of labour needed to produce a equations that refer to the given output in terms of a given capital;

➤ equations that pertain to the industry in the behaviour of the economy with firms and market structure:

$$D^2 \log K = \gamma_3(\lambda_1 + \lambda_2 - D \log K) + \gamma_6 \log \left[ \frac{\beta_5 (Q/P)^{1+\beta_6}}{r - \beta_7 D \log p + \beta_8} \right] \quad (3)$$

$$D^2 \log Q = \gamma_7 \log \left[ \frac{\{1 - \beta_9 (qp/p_i)^{\beta_{10}}\} (C + G_c + DK + E_n + E_0)}{Q} \right] \quad (4)$$

$$D^2 \log p = \gamma_9 (D \log w/p) - \lambda_1 + \gamma_{10} \log \left[ \frac{\beta_{11} \beta_4 T_2 w e^{-\lambda_{11}} \{1 - \beta_5 (Q/K)^{\beta_6}\}^{-(1+\beta_6)/\phi_6}}{p} \right] \quad (5)$$

accelerate the pace of capital stock (equation 3) depends on the excess growth rate expected long-term ( $\lambda_1 + \lambda_2$ )'s output over the current rate of increase of capital stock and the ratio of marginal product of capital and the real interest rate plus a risk premium. The excess growth rate's output over the long term growth rate expected ( $\lambda_1 + \lambda_2$ ) of sales units (equation 4) depends on the ratio between the balance part of the income and current level of income and the ratio of the partial equilibrium stocks and the current level of stocks.

Term  $1 - \beta_9(qp/p_i)^{\beta_{10}}$  is the ratio of total supply produced from domestic output, the term  $1 - \beta_9(qp/p_i)^{\beta_{10}}$  is the portion derived from imports (this term is used in (equation 8) of the adjustment equation for imports). Accelerating the growth of price level (equation 5) depends on the excess current growth rate of real wage above the rate of technical advances  $\lambda_1$  and the relationship between partial equilibrium relationship between price level and current level of prices;

➤ wage adjustment equation:

$$D^2 \log w = \gamma_{11}(\lambda_1 - D \log(w/p)) + \gamma_{12} D \log(p_i - qp) + \gamma_{13} \log \left[ \frac{\beta_4 e^{-\lambda_1 t} \{Q^{-\beta_6} - \beta_5 K^{-\beta_6}\}}{\beta_{12} e^{\lambda_2 t}} \right] \quad (6)$$

implies that the pace of nominal wage rate depends on the excess rate of technical progress than the current rate of real wage growth, the current rate of increase in the ratio of import prices in domestic prices and the rate of partial equilibrium level of labour supply to work; term  $D \log(p_i/qp)$  highlights the pressure on higher wages to compensate for the loss of welfare caused by lower real exchange rate  $q$ ;

➤ adjusting the interest rate equation

$$D^2 r = -\gamma_{14} Dr + \gamma_{15} [\beta_{13} + r_f - \beta_{14} D \log q + \beta_{15} \frac{p(Q+P)}{M} - r] \quad (7)$$

is the dynamic behaviour of long-term bond market, is a portfolio balance equation that takes into account the substitution between money, domestic bonds and foreign bonds. The term  $p(Q+P)/M$  represents the actual liquidity measure takes into account the increased use of plastic money card;

➤ import adjustment equation

$$D^2 \log I = \gamma_{16}(\lambda_1 + \lambda_2 - D \log(p_i I / qp)) + \gamma_{17} \log \left[ \frac{\beta_9 (qp/p_i)^{\beta_{10}} (C + G_c + DK + E_n + E_0)}{(p_i/qp)I} \right] \quad (8)$$

assumed that the excess growth rate of import volumes to the expected growth rate of long-term  $(\lambda_1 + \lambda_2)$  the aggregate sales depends on the ratio between the actual balance of imports and part of the current value of imports and the ratio of the partial equilibrium stocks and their current value adjustment

➤ export adjustment equation

$$D^2 \log E_n = \gamma_{18}(\lambda_1 + \lambda_2 - D \log E_n) + \gamma_{19} \log \left[ \frac{\beta_{16} Y_f^{\beta_{17}} (p_f / qp)^{\beta_{18}}}{E_n} \right] \quad (9)$$



determines that the excess growth rate of export volume to the expected growth rate in the long term ( $\lambda_1 + \lambda_2$ ) of demand for exports depends on the ratio between exports and the balance part of their current level.  $\beta_{17}$  and  $\beta_{18}$  are external income and price elasticity of demand for British goods;

- equations for adjusting current actual external transfers  $F$ , real profits, interest rates, the dividends from outside  $P$  and real net foreign investment combined  $K_a$ , sizes which values can have both positive and negative;

$$D^2 F = -\gamma_{20} DF + \gamma_{21} [\beta_{19} (Q + P) - F] \quad (10)$$

$$D^2 P = -\gamma_{22} DP + \gamma_{23} \{[\beta_{20} + \beta_{21} (r_f - D \log p_f)] K_a - P\} \quad (11)$$

$$D^2 K_a = -\gamma_{24} DK_a + \gamma_{25} \{[\beta_{22} + \beta_{23} (r_f - r) - \beta_{24} D \log q - \beta_{25} d_x] (Q + P) - K_a\} \quad (12)$$

- equation monetary adjustment issue in the ratio reversed  $p_i / qp$  (explained in equation 6)

$$D^2 \log M = \gamma_{26} (\lambda_3 - d \log M) + \gamma_{27} \log \left[ \frac{\beta_{26} e^{\lambda_3}}{M} \right] + \gamma_{28} \log \left[ \frac{E_n + E_0 + P - F - DK_a}{(p_i / qp) I} \right] \quad (13)$$

- equation of exchange rate adjustment is the dynamic behaviour of the foreign exchange market

$$D^2 \log q = \gamma_{30} D \log (p_f / qp) + \gamma_{31} \log \left[ \frac{\beta_{27} p_f}{qp} \right] + \gamma_{32} D \log \left[ \frac{E_n + E_0 + P - F}{(p_i / qp) I} \right] + \gamma_{33} \log \left[ \frac{E_n + E_0 + P - F - DK_a}{(p_i / qp) I} \right] \quad (14)$$

accelerating the exchange rate depends on the rate of decrease in real rates instead  $D \log (p_f / qp)$ , the relationship between real exchange rate expected in stationary state conditions and the current real exchange rate and balance of payments surplus ratio and the real value of imports;

- equation expressing the value of stocks

$$DS = Q + (p_i / qp) I - C - DK - DK_a - E_n - E_0 - G_c \quad (15)$$

- equations outlining the apparent trend variables (variable trend productivity ( $\mu_1$ ), variable labour trend ( $\mu_2$ ), variable trend to use plastic money and credit (card) ( $\mu_3$ ))

$$D\mu_1 = \lambda_1 \quad (16)$$

$$D\mu_2 = \lambda_2 \quad (17)$$

$$D\mu_3 = \lambda_3 \quad (18)$$

Both endogenous variables (C - private consumption real, En - real exports of goods not oils products, F - foreign real current transfers, I - the import volume, K - private fixed capital not residential Ka - cumulative net real foreign investment, L - labour employed, P - real profits, interest rates and dividends from abroad, P - price level, Q - real net output, q - the rate, r - interest rate, w - wage levels, S - stocks) and exogenous variables ( $d_x$  - variable notional currency control, M - currency issued,  $E_o$  - real export oil,  $G_C$  - real government consumption,  $P_F$  - prices in major industrialized foreign countries,  $p_i$  - the price of imports,  $r_f$  - interest rate abroad,  $T_1$  - total tax policy variable defined by Bergstrom,  $T_2$  - variable indirect tax policy,  $Y_f$  - real income of the major industrialized foreign countries, t - time) varies depending on time.

Exogenous variables satisfy the following equilibrium conditions:

$$d_x = 0 \quad (\text{not exchange control})$$

$$E_0 = E_0^* e^{(\lambda_1 + \lambda_2)t} \quad (\text{export of petroleum products has a growth rate equal to } \lambda_1 + \lambda_2)$$

$$G_c = g^* (Q + P) \quad (\text{real government consumption is a constant proportion of real output})$$

$$p_f = p_f^* e^{\lambda_4 t} \quad (\text{principally prices in industrialized countries has a growth rate equal to})$$

$$r_f = r_f^* \quad (\text{foreign interest rate is constant})$$

$$T_1 = T_1^* \quad (\text{total tax policy variable is equal to 0})$$

$$T_2 = T_2^* \quad (\text{indirect taxation policy variable is equal to 0})$$

$$Y_f = Y_f^* e^{((\lambda_1 + \lambda_2) / \beta_{17})t} \quad (\text{foreign real income increase by constant rate equal to } (\lambda_1 + \lambda_2) / \beta_{17})$$

where  $g^*$ ,  $p_f^*$ ,  $p_i^*$ ,  $r_f^*$ ,  $T_1^*$ ,  $T_2^*$ ,  $\lambda_4$  are constant.

In these circumstances, it was shown that C (t)... q (t) is amended to rate steady equilibrium conditions. The system defined by the 18 equations is not autonomous because the time variable was defined as an exogenous variable. To study the system dynamics around the equilibrium point, and fireworks were made amendments by defining a set of mathematical variables new form  $y_i$  (t):

$$1'. \quad y_1(t) = \log \{ C(t) / C^* e^{(\lambda_1 + \lambda_2)t} \}$$

$$2'. \quad y_2(t) = \log \{ L(t) / L^* e^{\lambda_2 t} \}$$

$$3'. \quad y_3(t) = \log \{ K(t) / K^* e^{(\lambda_1 + \lambda_2)t} \}$$

$$\begin{aligned}
4'. \quad & y_4(t) = \log \{Q(t) / Q^* e^{(\lambda_1 + \lambda_2)t}\} \\
5'. \quad & y_5(t) = \log \{p(t) / p^* e^{(\lambda_3 - \lambda_1 - \lambda_2)t}\} \\
6'. \quad & y_6(t) = \log \{w(t) / w^* e^{(\lambda_3 - \lambda_2)t}\} \\
7'. \quad & y_7(t) = r(t) - r^* \\
8'. \quad & y_8(t) = \log \{I(t) / I^* e^{(\lambda_1 + \lambda_2)t}\} \\
9'. \quad & y_9(t) = \log \{E_n(t) / E_n^* e^{(\lambda_1 + \lambda_2)t}\} \\
10'. \quad & y_{10}(t) = \log \{F(t) / F^* e^{(\lambda_1 + \lambda_2)t}\} \\
11'. \quad & y_{11}(t) = \log \{P(t) / P^* e^{(\lambda_1 + \lambda_2)t}\} \\
12'. \quad & y_{12}(t) = \log \{K_a(t) / K_a^* e^{(\lambda_1 + \lambda_2)t}\} \\
13'. \quad & y_{13}(t) = \log \{M(t) / M^* e^{\lambda_3 t}\} \\
14'. \quad & y_{14}(t) = \log \{q(t) / q^* e^{(\lambda_1 + \lambda_2 + \lambda_4 - \lambda_3)t}\} \\
15'. \quad & y_{15}(t) = \log \{S(t) / S^* e^{(\lambda_1 + \lambda_2)t}\}
\end{aligned}$$

where:  $C^*$ ,  $L^*$ ,  $K^*$ ,  $Q^*$ ,  $w^*$ ,  $r^*$ ,  $I^*$ ,  $E^*$ ,  $F^*$ ,  $P^*$ ,  $K^*$ ,  $M^*$ ,  $q^*$  are functions of the vector  $(\beta, \gamma, \lambda)$  of the 63 parameters of equations 1 to 18 and additional parameters:  $g^*$ ,  $p_f^*$ ,  $p_i^*$ ,  $r_f^*$ ,  $T_1^*$ ,  $T_2^*$ ,  $Y_f^*$ ,  $\lambda_4$ .

It is a continuous time macroeconomic model applied to the United Kingdom, was used a sample contains quarterly data; the model generated a plausible long-term behaviour. Innovative design feature is that it incorporates the stochastic trends which are apparent trend variables like technical progress that are not directly observable, but known to have a strong influence on observable variables present in this model.

Parameters were estimated using the algorithm Bergstrom [3], as demonstrated for the first time the feasibility of using this algorithm in estimating the macroeconomic model. A typical feature of these models is that the estimated parameters are unstable region on the border with a stable region [1].

**Conclusion.** Because the model of 18 equations can be applied in Romania, was required: a suitable analytical evaluation of equation and system variables a database corresponding to the parameters of equations can be taken. This can not be designed for a transition period due to constraints in the evolution of the phenomenon of investment in Romania.

In Romania, a first assessment of practice macro modelling investment highlights seven main categories of variables, most commonly used form regressions: the existing capital stock and utilization of production capacity, output, employment and other indicators designed to offer (egg costs), demand, financial resources that could be supported investments; interest.

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## **BACKGROUND ECONOMIC GROWTH IN TRANSITION PERIOD**

**MARIAN ENESCU, MARIA ENESCU \***

**ABSTRACT:** *In this article were the patterns of growth for a country in transition, because Romania has came an intense process of transition. An attempt to identify factors which increase the supply of factors of production which is the connection between them and the GNP / capita or standard of living for a longer period.*

**KEY WORDS:** *economic growth, economic models, capital, investment, GNP/capita*

### **1. INTRODUCTION**

Growth is a complex process to increase the size of the national economy based on the combination and use increasingly efficient factors of production, cast size by size of gross domestic product or national income per capita [2].

The economic growth is influenced by both direct factors (quantity, quality and structure of human potential, natural resources, capital) and indirect factors, factors acting through direct involvement and may enhance or diminish their action (scientific and technical progress, the investment capacity absorption of the internal market, international trade).

Study growth of a country involves the expression, using a system of equations, the functional dependence of all factors of economic growth and improved macroeconomic indicators used. The growth of a country during transition, as also in other historic step, explains the links between all the factors that determine economic growth linkages expressed by a system of economic and mathematical models [3].

The history of economic development has shown that with which the indicator is expressed as the best welfare of the people is real GNP / capita. Elements that increase the supply of factors of production and the link between them and the GNP / capita or standard of living for a longer period: economic growth that does not allow lowering the standard of living, constant growth, the influence of growth on savings, the influence of population growth on economic growth.

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## 2. ECONOMIC GROWTH THAT DOES NOT ALLOW LOWERING THE STANDARD OF LIVING

The output (income, production) in an economy can be expressed [4] using a production function as

$$Y = F(K, N) \cdot A \quad (1)$$

where:

K represents capital inputs,

N inputs of labour;

A technical level (the technology).

Through equation (1) observed that increasing the output of the economy can be determined as growth factors and input improving the technical level of production.

Assuming that the output increases in proportion to the increase of factors that determine the relationship (2) becomes:

$$\Delta Y = F(K, N) \cdot \Delta A + MPK \cdot \Delta K + MPN \cdot \Delta N \quad (2)$$

where:

$\Delta A$  is the increase of technical level of production;

$\Delta K$  growth factor production capital

$\Delta N$  growth factor production work;

MPK marginal product of capital;

MPN marginal product of labour factor.

Substituting equation (2) in equation (1) and by a contrivance of calculation (multiplication factor and dividing the second and third in the equation of K and N) results:

$$\begin{aligned} \frac{\Delta Y}{Y} &= \frac{F(K, N) \cdot \Delta A}{F(K, N) \cdot A} + \frac{K}{K} \frac{MPK \cdot \Delta K}{F(K, N) \cdot A} + \frac{N}{N} \frac{MPN \cdot \Delta N}{F(K, N) \cdot A} \Rightarrow \\ \frac{\Delta Y}{Y} &= \frac{\Delta A}{A} + \frac{\Delta K}{K} \cdot \left( \frac{MPK}{Y} \cdot K \right) + \frac{\Delta N}{N} \cdot \left( \frac{MPN}{Y} \cdot N \right) \end{aligned} \quad (3)$$

where:

$\frac{MPK}{Y} \cdot K$  is the percentage increase caused by capital income in total income,

$\frac{MPN}{Y} \cdot N$  a percentage increase is determined by working capital in total income.

If we consider that only these two factors would contribute to the income (the amount is equal to 1), noting  $\frac{MPK}{Y} \cdot K = v$  and  $\frac{MPN}{Y} \cdot N = (1 - v)$ , equation (3)

becomes:

$$\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \frac{\Delta K}{K} \cdot v + \frac{\Delta N}{N} (1 - v) \quad (4)$$

where:

$\frac{\Delta Y}{Y}$  is the growth of output (production, income),

$\frac{\Delta A}{A}$  the technical evolution of production,

$\frac{\Delta K}{K}$  increased factor of production capital,

$\frac{\Delta N}{N}$  growth factor production work;

$v$  share capital in total income,

$(1 - v)$  share of production factor labour in total income.

Equation (4) reflects the contribution of technical progress and other first term factors of production to increase output, the following:

- on the right shows the contribution to improve the technique and technology of production, which generates increased total factor productivity. In the modern age, the contribution of technological progress to output growth is crucial. Some of the calculations made by some economists have found that almost one third of the increase in GDP term, second and per hour-work is determined by technical progress.
- third on the right reflects the contribution of growth factors of production capital and labour. In the contribution factors to increase the output. Weight has a greater factor employment (estimated as representing about 75% of output growth in the economies of developed countries, this issue is highlighted and equation (4)). This does not mean that the stock of capital contribution to growth is minor (investments are absolutely necessary for the development of new technologies and techniques).

If it is assumed that there is no technical progress ( $\Delta A / A = 0$ ) and that growth rate employment is constant ( $\Delta N / N = m$ ), equation (4) becomes:

$$\frac{\Delta Y}{Y} = \frac{\Delta K}{K} \cdot v + m(1 - v) \quad (5)$$

In conclusion, economic growth depends on the rate of increase of capital.

Capital stock (K) determines income (Y), part of which is consumed, the other being saved. Part savings will determine the possibility of capital growth ( $\Delta K / K$ ), which will in turn influence the growth of income ( $\Delta Y / Y$ ) and finally, the stock of capital.

It notes that the economy there is an interdependence of the capital increase depends - through savings and income - the stock of capital.

Because GNP / capita remains unchanged during the transition, it is income and to record the same population growth rate (in circumstances where there is a technological level and a given capital per person).

$$\frac{\Delta Y}{Y} = \frac{\Delta N}{N} = m \quad (6)$$

In this case equation (4) becomes:

$$\begin{aligned} \frac{\Delta Y}{Y} &= \frac{\Delta A}{A} + \left( \frac{\Delta K}{K} - \frac{\Delta N}{N} \right) \cdot v + \frac{\Delta N}{N} \Rightarrow \frac{\Delta Y}{Y} - \frac{\Delta N}{N} = \frac{\Delta A}{A} + \left( \frac{\Delta K}{K} - \frac{\Delta N}{N} \right) \cdot v \Rightarrow \\ m - m &= \left( \frac{\Delta K}{K} - m \right) \cdot v \Rightarrow \frac{\Delta K}{K} = m \end{aligned} \quad (7)$$

$$\begin{aligned} \text{Because: } \Delta K &= sY - dK \Rightarrow (sY - dK)/K = m \\ &\Rightarrow sY = mK + dK \\ &\Rightarrow sY = K(m+d) \end{aligned}$$

It is noted that during the transition period is intended to maintain steady economic growth, savings  $sY$  is sufficient to achieve a volume of investment to ensure the coverage of capital depreciation ( $dK$ ) and for endowment capital surplus labour again entered into business. If the savings would be greater than  $sY$ , then net investment would be higher, so there will be an increase in capital stock per person, and as a consequence, there will be an increase in income per person. If the savings would be less than  $sY$ , capital stock per person would decrease and, as such, will decrease and income per person.

### 3. CONSTANT GROWTH

It will examine the possibility of a steady economic growth, from an initial size of the capital-labour and achieving a growth rate constant, i.e., will determine the rate of savings and the investment rate which exceeds the rate depreciation of capital and the population growth.

Changing capital-labour ratio will be given growth rate of capital-labour ratio. Use the following notations:

$a = K / N$  where size is a capital-labour ratio,

$b = Y / N$  where  $b$  is the size-capita income ratio (output / capita)

$s$  - saving

$d$  - capital depreciation.

Rate to increase the capital-labour ratio can be determined as the difference between the rate of growth of capital and growth rate of labour.

$$\frac{\Delta a}{a} = \frac{\Delta K}{K} - m \quad (8)$$



Because:  $\Delta K = sY - dK$  și  $\Delta K/K = m$ , resulting:

$$\frac{\Delta a}{a} = \frac{sY - dK}{K} - m \Rightarrow \frac{\Delta a}{a} = s \cdot \frac{Y}{K} - d - m \quad (9)$$

Replacing Y and K with their value on a person, resulting:

$$\frac{\Delta a}{a} = s \frac{b}{a} - (d + m) \Rightarrow b = \frac{a(d + m) + \Delta a}{a} \quad (10)$$

Savings function is the product  $s \cdot$  for each capital-labour relation. Capital-labour ratio is lower than the gross accumulation because:

- the depreciation of capital reduce the capital-labour, so that part of gross investment will be used to cover this loss;
- increase employment in a given stock of capital, makes the capital-labour ratio to decrease. Because this report is kept constant it is necessary that the stock of capital would be increased enough to offset population growth, i.e. the rate (ma). Investments necessary to maintain a constant capital ratio - work will be expressed as  $(m + d)$  (expressing the size of investment required to maintain constant stock of capital per person, i.e. per capita income). When gross investment, and hence savings are less than  $(m + d)$ , the stock of capital per person will decrease, they can not compensate for any depreciation of capital or the growth of population. The only way that leads to increased capital stock per person is savings, and hence gross investment to grow by more than one size  $(m + d) a$ . This investment can be represented graphically as a straight slope with positive, indicating the need to invest to maintain constant the capital-labour.

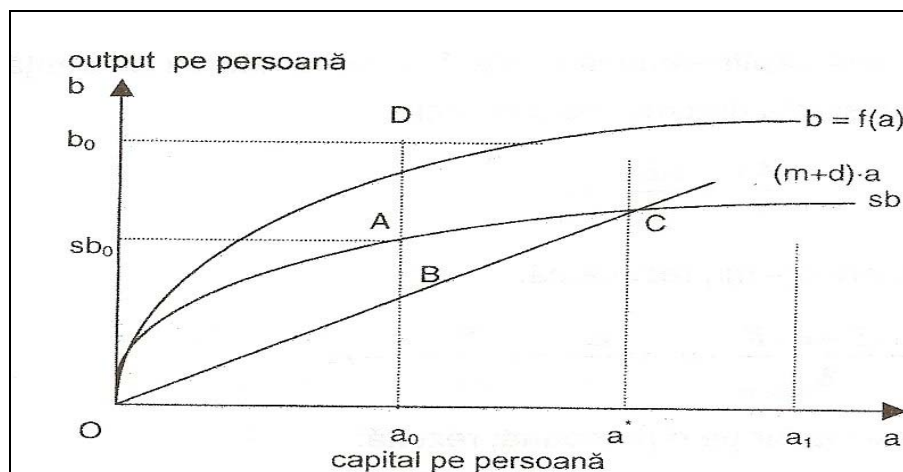


Figure 1. The ratio of savings, investment and capital accumulation [4]

Increased capital-labour ratio will be equal to the current economy or minus actual investment and the investment required is the segment, it is suggested on the horizontal axis of the arrows indicating the direction of the  $a_0$  to  $a'$ . The  $a_0$  moving to  $a'$ , the gap between savings and investment required (AB) is becoming smaller at the point C being equal to 0. Point C is when the capital-labour ratio becomes equal to  $a'$ , when the economy and investment are equal to the investment required (no longer record any growth since capital-labour ratio does not increase nor decrease).

If it starts from an initial capital-labour ( $a_1$ ) greater than  $a'$ , required investment will be higher than actual savings and investment. In this case the capital-labour ratio may increase with a size sufficient to enable the constant population growth and capital depreciation. Capital-labour ratio will fall to the  $a_1$   $a'$ , and as indicated by arrows.

In conclusion, be assured a convergence towards a constant level of  $a'$  the capital-labour ratio because:

- low levels of capital-labour ratio, savings and investments go beyond the level of investment required to maintain capital per person, which will increase the report;
- the high levels of capital-labour ratio, savings and investments can not exceed the level of investment required to maintain capital per person, which will sink this report.

Such a steady growth during the transition period can be ensured only if the income, capital and labour grow at the same rate and with increasing population.

#### 4. THE INFLUENCE OF GROWTH ON SAVINGS

Assume that growth rate increases savings (increase represented in Fig. 1 by a movement up the curve of the savings to  $sb$   $sb'$ ).  $sb$  curve suggests that the savings increases with increasing capital-labour ratio and increased income. In point C, where there is an initial state of equilibrium, savings have increased compared to the investment required to maintain a constant working capital ratio, which allow growth of this report. As such, the stock of capital per person will increase to reach the level of C' point where the greatest savings is enough to keep a larger stock of capital. But in C' and increased capital per person (from  $a'$  to  $a'_1$ ) and the output per person (from  $b_0$  to  $b'_1$ ). The savings have grown as the investments required, but an increase in the savings rate will rise long term, only the income and capital per capita, not growth rate in the future.

Increased savings rate raises the rate of growth of income, since capital-labour ratio increases from  $a'$  to  $a'_1$ . Because the capital-labour necessary to increase the capital stock to grow faster than labour and capital depreciation. This takes place during the transition from  $a'$  to  $a'_1$ , which increased savings per person, due to high saving, increasing investment and capital from the investment required, thereby increasing the capital-labour.

Increased savings rates and investment during the transition period, triggering the growth of capital stock per person and the income per person, but with a decreasing rate over time. If however the rate of growth of income and growth rate of the population are equal, growth rate raises the savings rate of income growth, because

growing rapidly and capital  $K$ , which exceeds the rate over time until the accumulation of capital below the rate of growth of population.

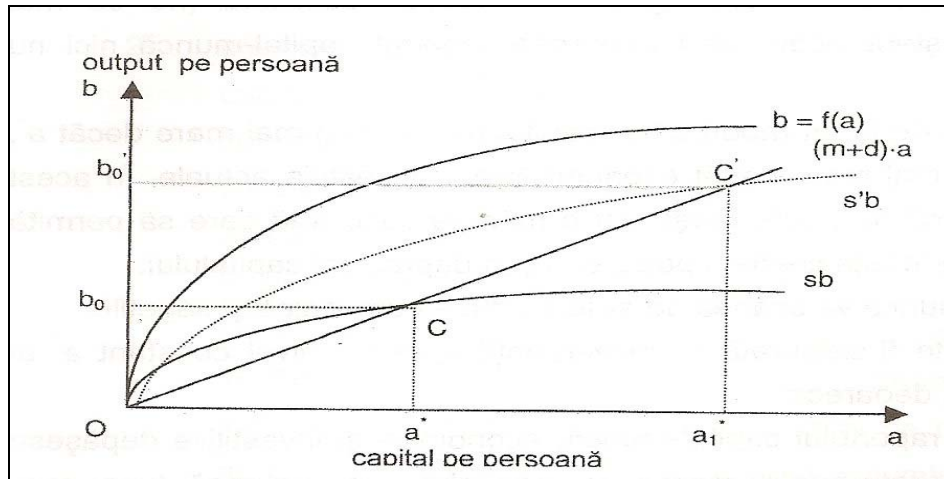


Figure 2. The influence of growth on savings and investment capital accumulation [4].

## 5. THE INFLUENCE OF POPULATION GROWTH ON ECONOMIC GROWTH

If the population growth rate rises from  $m$  to  $m'$  (fig. 3), then at each level of the capital - labour will require a larger amount of investment to maintain this report at constant.

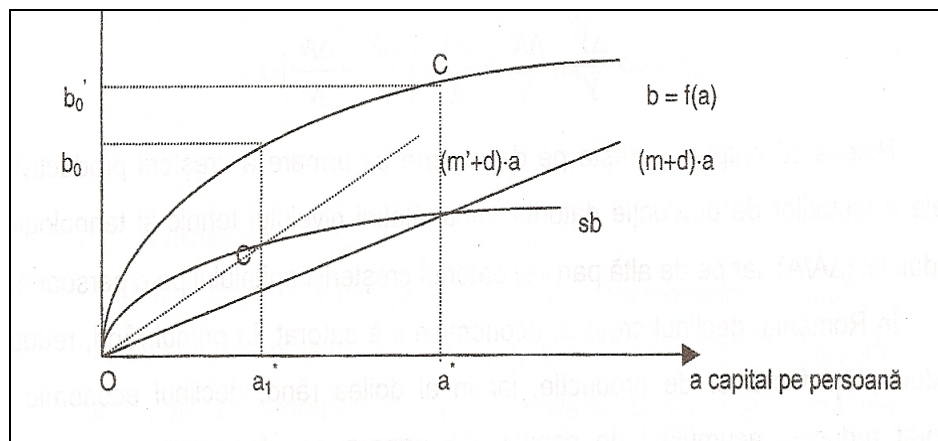


Figure 3. The influence of population growth on investment and capital first accumulation [4]

If the rate of population growth is changing, then C is not a state of equilibrium because the initial investment can not keep constant the capital-saving work and initial investment capital per person will decrease until it reaches a new equilibrium point C'. In C' fell to the level at which savings equal investment demand, the decrease will generate a decrease in income per person from  $a'$  to  $a'_1$ . Demonstrated that in those countries in transition which has a high rate of population growth, saving is too low to allow an increase in capital-labour ratio to ensure an increase in income per person. Therefore, in these countries, the reduction in the growth of population would be one of solutions to increase the income per capita. For Romania, the solution would increase savings, so investments, which allows growth of the capital-labour at least in population growth rate to maintain the current standard of living.

## 6. CONCLUSION

Output in the economy increased:

- due to increased total factor productivity of production due to technical improvements and technological level of production ( $\Delta A / A$ );
- while on the other hand due to increased capital per person.

In Romania, the decline in growth was due, first, reducing the productivity of factors of production, and secondly because the reduction of capital accumulation. Hence began a process of declining growth, the decline in GNP / capita. Economic growth was negative and the conditions under which a portion of GDP instead of being invested in factors of production and technical progress has been invested in areas that do not have a direct bearing on production material. Another factor which played an important role in triggering the state of economic decline was the economic legislation and often incoherent. Another problem rather delicate was her conscience and market economic thinking.

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## **ASPECTS REGARDING THE IMPLEMENTATION OF THE ACTIVE MEASURES OF INCREASING LABOUR EMPLOYMENT IN THE DISTRICT OF HUNEDOARA**

**ALINA FLEȘER, OANA DOBRE-BARON \***

**ABSTRACT:** *nowadays, unemployment still is a threatening as a result of the quantitative and qualitative lack of balance between labour demand and offer. Under such circumstances, a very important part is played by the implementation of certain active measures with a view of increasing the degree of labour employment and of diminishing the real unemployment rate.*

**KEY WORDS:** *unemployment, labour employment, active employment measures*

The restructuring of the Romanian social and economic system according to the demands of market economy has determined deep and important changes at the level of the labour market among which unemployment as a mass phenomenon. One can notice at the level of the whole country, as analyses have emphasized, unemployment connected problems that register high percents especially within the mining and mono-industrial areas (this being the case of the district of Hunedoara) as well as highly trained labour emigration.

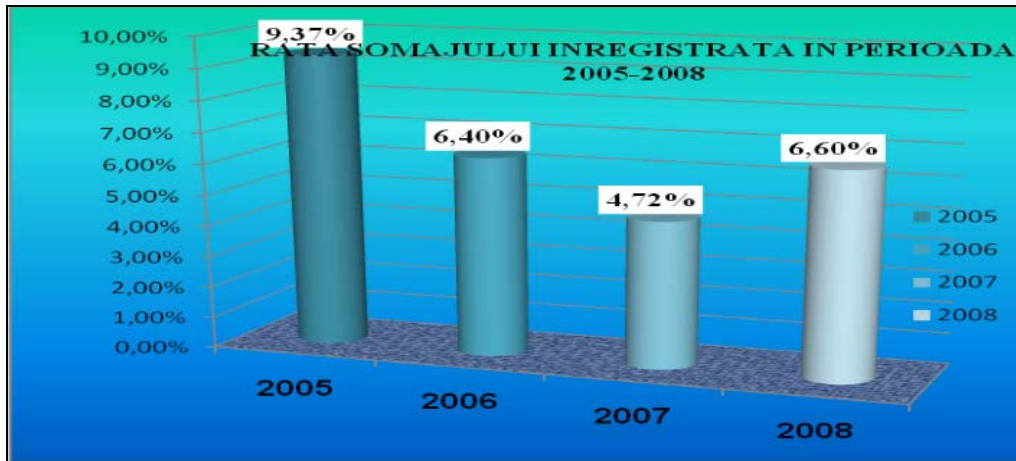
Beginning with 1997, in the district of Hunedoara a dramatic increase of unemployment rate has been registered (during the time it has witnessed an oscillating evolution); such a fact is mainly due to the dismissals that took place in the mining industry. During the analyzed period (2005-2008), the following evolution of unemployment rate and of the number of unemployed persons has been registered in the district of Hunedoara (figure 1 and 2).

Under such circumstances, one of the most important objectives of Romania's social and economic policies is the guaranteeing of a job and the providing of a decent living standard either owing to a person's direct labour or provided through social protection and assistance (that should play an important part in diminishing unemployment's effects upon less favoured population). At the same time, in order to

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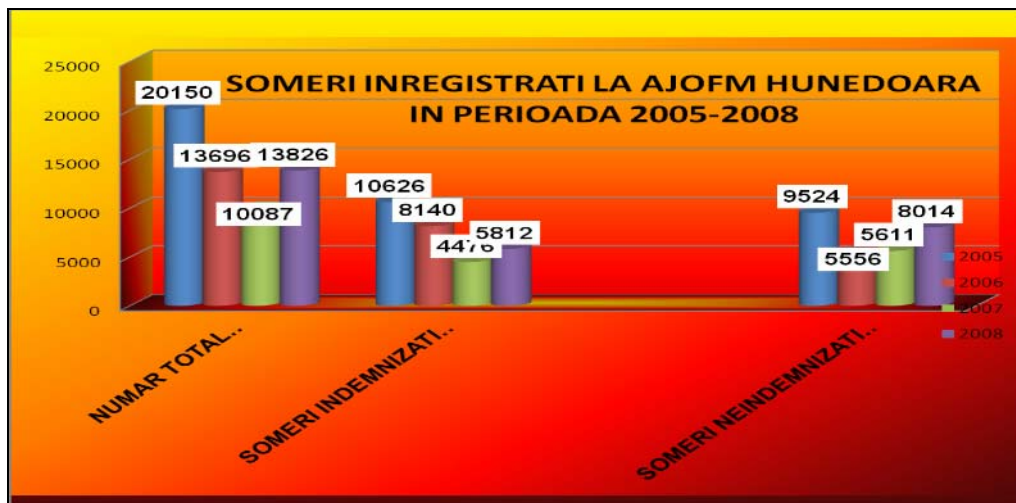
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increase the degree of labour employment it is essential to implement realistic active measures.



Source: AJOFM, Hunedoara

Figure 1. The evolution of unemployment rate during 2005-2008



Source: AJOFM, Hunedoara

Figure 2. The evolution of the number of unemployed persons during 2005-2008

At present, one can identify a series of services on Romania's labour market as well as on that of the district of Hunedoara:

**Financial services** - that include the payment of certain money indemnifications (unemployment aid, professional integration aid, support allocation, social aid), credits given under advantageous terms to small and medium size companies (IMM) or subsidies given to those companies that hire graduates.

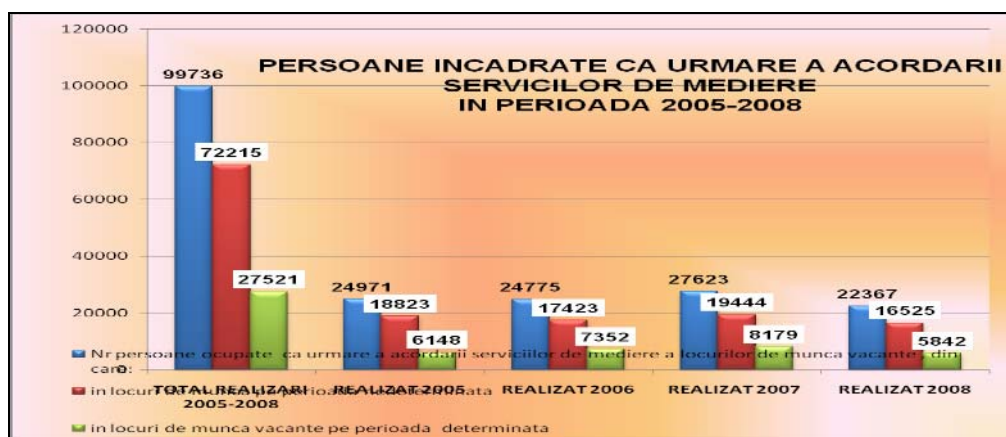


Source: AJOFM Hunedoara

**Figure 3. The employment of graduates of educational institutions by employment through subvention during 2005-2008**

*Labour intermediating services* - that include activities of labour mediation, counselling services regarding professional career, and business consultancy services. *Labour mediation* is a complex of activities owing to which they try to correlate demand and offer on labour market; it has as a final objective the employment of available persons and the occupancy of vacant jobs. The meeting between labour demand and offer should occur under certain terms capable of contenting both parts and of determining a durable professional relation [4].

In the district of Hunedoara, the following data have been registered as a result of giving mediation services during the analyzed period:



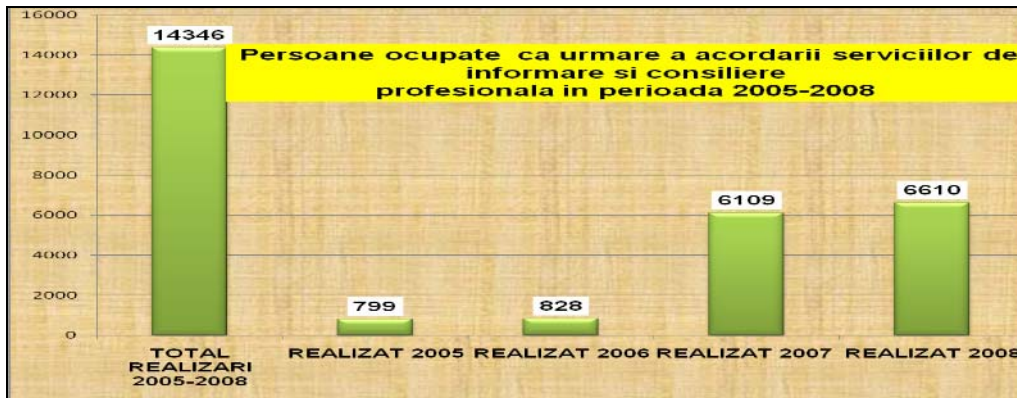
Source: AJOFM, Hunedoara

**Figure 4. Employed persons as a result of giving mediation services during 2005-2008**

*Business consultancy*, as a professional service, has as main objectives the following ones: cultivation of entrepreneurial spirit, entrepreneurial education addressed to a large number of persons apt or willing to create their own company,

stimulation of creativity, flexibility, and power of work of private entrepreneurs. We consider that the foundation of certain business consultancy centres with a view of explicitly implementing active measures capable of fighting against unemployment is a logic and welcomed measure especially under the present conditions in our country. The better organized and administrated such a centre the most positive the effects of its activity in the area it operates.

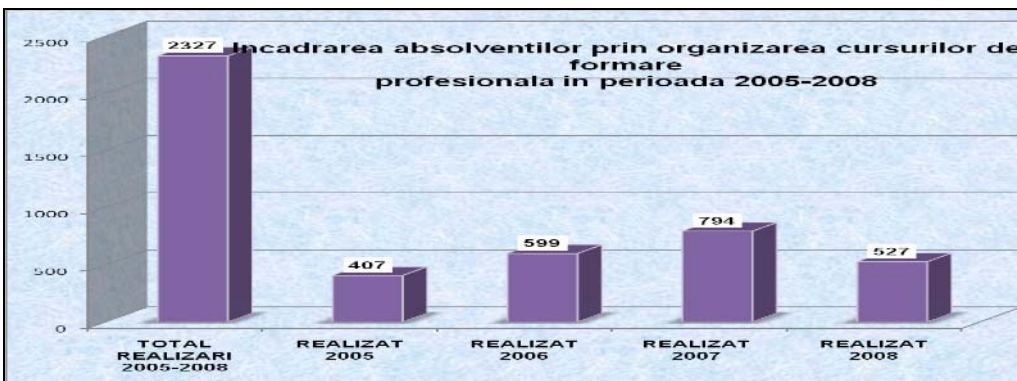
**Information services** - for those who require them and for the jobs suppliers. As one can notice in the below figure, the degree of employment due to the activities of information and professional counselling have witnessed an ascending trend.



Source: AJOFM, Hunedoara

**Figure 5. The degree of employment due to the activities of information and professional counselling during 2005-2008**

**Training services** - that include activities of professional training organized by specialized units (schools, universities, requalification and professional improvement centers).



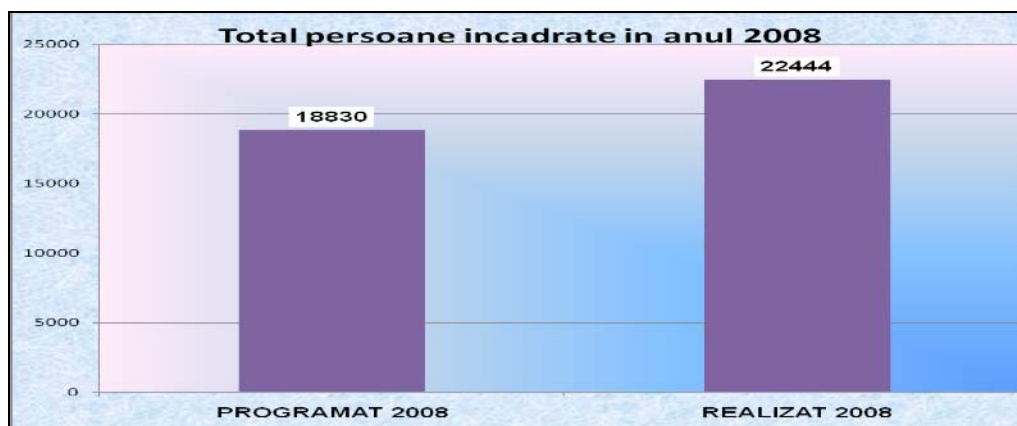
Source: AJOFM, Hunedoara

**Figure 6. Employed persons as a result of organizing professional training courses during 2005-2008**



In Hunedoara, during the period 2005-2008, the organization of professional training courses covering various jobs demanded by labour market had as a result the employment of 2,327 persons.

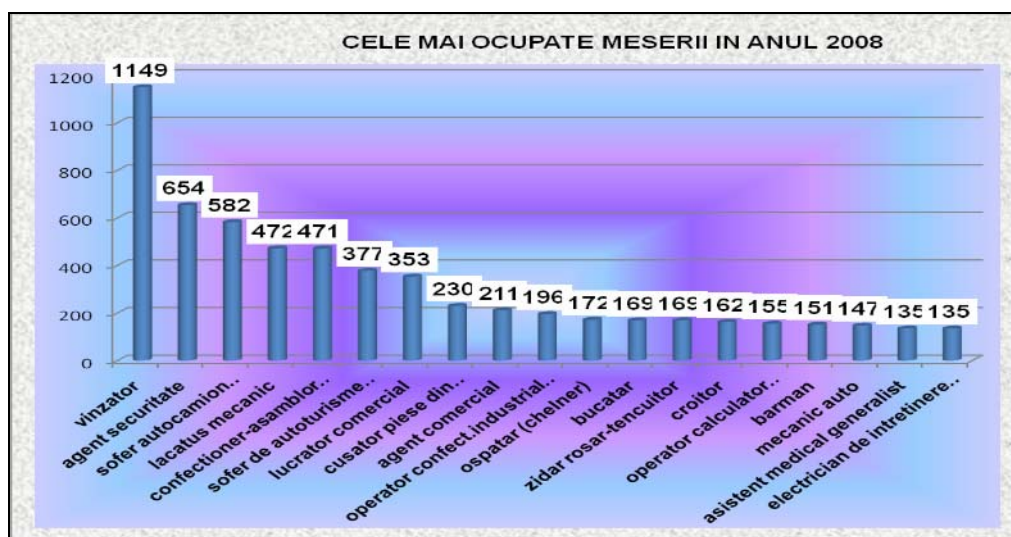
At present, through implementing various active measures of increasing employment, at the level of the district of Hunedoara, the total number of employed persons is 22,444.



Source: AJOFM, Hunedoara

Figure 7. The total number of employed persons in 2008

As regard the most demanded jobs, the structure during 2008, in the district of Hunedoara, is displayed as follows:



Source: AJOFM, Hunedoara

Figure 8. The most demanded jobs in 2008

Accordingly, in order to be part of the general trend of increasing employment and decreasing unemployment rate, *the main objectives of the Labour Employment District Agency of Hunedoara in 2008 were the following ones:*

- employing an increased number of persons who looked for a job in those vacant jobs offered by employees;
- implementing active and preventive measures for unemployed persons, inactive persons as well as for those persons who risk losing their jobs;
- diminishing long term unemployment through offering young persons occupational alternatives earlier than 6 months from their registration date and 12 months in case of adults, owing to professional training, reconversion, jobs offers or other employment measures (including the providing of professional orientation);
- increasing the active life of persons over 50 through including them in the area of active measures as priorities;
- supporting the employment of those persons belonging to the marginal area of labour market owing to active measures and providing other specific form of support;
- stimulating professional training through establishing a minimum rate of unemployed persons' participation to professional training courses (looking for a balanced representation according to the incoming environment of the unemployed persons: urban/rural, level of studies and age);
- intensifying the professional training of those persons who look for a job and reside in the countryside;
- supporting the employees with a view of hiring unemployed persons;
- fighting against local disparities regarding employment.

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## **POSTAL SERVICES LIBERALIZATION – CONDITION FOR ELIMINATING A RESERVED FIELD NECESSARY FOR FINANCING THE UNIVERSAL SERVICE**

**MARIA MIRABELA FLOREA IANC \***

**ABSTRACT:** *Although post is part of our daily life, many of us assimilating it with the image of the postman or with a stamped letter, we are few in the position of having been given the opportunity to go beyond the counters installed in posts, for a better knowledge of the complexity of this activity. The importance of post is given by the universal service that has been acknowledged and accepted by the entire world. Its preservation has to be followed by the increase of services quality that can be achieved only through a liberalization of postal services. It is necessary to liberalize the world postal services because not all the states provide the universal service in the same way. Posts improve the quality of traditional services on the market, implement and diversify new products and services of the type of the “new economy”. Postal services liberalization supposes on one hand, the improvement of services quality, modernization, costs decrease and structure alteration, and on the other hand, it supposes a legislation that would allow responsibilities separation between governments, postal operators and regulation authorities.*

**KEY WORDS:** *postal services liberalization, universal service, postal services*

The main problem presented by the organization is in defining the way to follow for maintain a performing and competitive postal environment that would continue to provide a superior quality universal service, against accessible prices to physical persons and companies in Europe, for the competitiveness economy interest, citizens' needs, no matter their geographical location, financial status or other factors, employment and sustainable development. Who has not stayed in line at the Post Office to send a simple registered letter, asking itself why there is no alternative desk where one would wait less in exchange for an additional price? Jokes mirror reality delightfully. A child wrote Santa Claus to send him a last generation computer and some candies. He received the first part of the present due to postal workers generosity that gathered the money and bought his computer. In his answer, beside the thanks, the

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kid added: “Santa, I know for sure that you sent me the candies, too, but those thieves at the post office must have eaten them”. Such a cliché about the post would only disappear in time. Today’s image of empty telephone cabins can only suggest the future of traditional postal desks, after the market liberalization.

To provide a minimum of postal services to poor and unfavoured people does not mean only to provide the same services to all the clients. Solidarity does not have to be mistaken to egalitarianism. To keep the monopole over the post means having only one option, one offer, just like during the times Romania had only one type of milk, one type of sugar, one type of drinkable oil, anywhere in the country.

According to the estimations of the European Commission, in EU postal services employ about 1.7 million employees and related services about 3.5 million people, being managed by about 135 million deliveries per year. In 2004, postal services achieved a turnover of 90 billion euro in EU, 1% of the GP, respectively. About two thirds of the turnover comes from letters and the rest from express packages and services, the latter being already opened for competition. In a field where costs are 80% with employees, liberalization implies major risks, first of all social ones. If we add substantial differences from a member state to another, we get the image of a very ambitious measure. For more than a decade, EU lawmakers have been preparing for the liberalization of the postal field, namely to allow new private operators to come to the market beside the traditional postal operators. The “green card” of postal services regulation in 1992 was followed by postal directives from 1997 and 2002, opening the way for a unique market of post in EU. Gradual and controlled liberalization of the postal field was launched ten years ago through the Directive 97/67EC, known as “the postal directive”.

The postal directive established common regulations for developing the internal market of postal services regarding: the universal service; reserved field (monopole); tariffs related principles and universal service providers’ accounts transparency; quality standards; technical standards harmonization; creating independent national regulation authorities. In complying with this directive, member states have the obligation to guarantee all universal service users reasonable prices that would guarantee all business days and not less than five days a week, in any point of their territory, at least: taking, sorting, transporting and distributing postal deliveries up to 2 kg and postal packages up to 10 kg; registered mail related services and declared value ones; related access points to the postal network all over the territory.

Communitarian regulations thus guarantee every inhabitant of the European Union a real communication service no matter the physical and human geographic characteristics of the territory it lives on. The universal services, as defined above, which includes both national services and transfrontier services has to comply with certain quality standards, especially connected to delivery terms, as well as services regularity and reliability established by member states (national services), as well as the European Parliament and Council (communitarian transfrontier services).

When a member state considers that universal service obligations are an uneven financial duty for the service provider, it can reserve it the monopole for taking, sorting, transporting and distributing internal mail to the extent it is necessary for maintain the universal service, transfrontier post and direct mail marketing, under the

following limitations: Deliveries having the weight smaller than 50 grams (or whose presentation tariff is not 2.5 times bigger than the public tariff applicable to the mail in the first weight stage in the fastest category).

The prospective study ordered by the Commission to an international consultant reaches the conclusion that the achievement of postal services internal market in all member states in 2009 is compatible to a high superior universal service. Nonetheless, the study stipulates that the risks for maintaining the universal service imply some “association” measures by most of the member states. The studied directive project stipulates total opening of the postal market as of 1<sup>st</sup> of January 2009, maintaining at the same time common standards of universal service at the actual level for all users in all member states of the European Union.

As of 1<sup>st</sup> of January 2009, member states shall not be authorized to give exclusive or special rights (reserved field) for creating and providing postal services. There will no longer be necessary for member states to compulsorily assign one or more providers of the universal service, but they could entrust the respective service, with a time limitation, to the market forces, leaving the member states to concern about the regions or specific services that the universal service cannot be provided for by the market forces and providing some public procurement agreements, so that those services be advantageously provided from the economic point of view.

When the provision of the universal service requires external finances, member states have to choose between the following possibilities: public procurements procedure; public reimbursement through direct subventions from the state; compensation funds provided through a royalty established for the service providers and/or users; “play or pay” mechanism connecting permits to universal service obligations or financing from a compensation fund.

The analyzed directive introduces at the same time a new requirement asking member states to assess the need to guarantee all operators the transparent and un-discriminatory access to postal infrastructure elements and to the following services: postal code system, addresses database, postal boxes, mail boxes, addresses alteration related information, re-delivery service, sender return service. Access to “sorting” and “delivery” segments of the network is not provided in the aforementioned regulations.

Unlike other fields, postal services liberalization could not be made at once, but gradually and in a controlled way. The main problem in the organization of the last stage of total opening the postal market in the Union is defining the way to follow for obtaining a performance and competitive postal field that could continue to provide quality services against reasonable prices to physical persons and companies in Europe. Also, a compensation fund seems inadequate: as a matter of fact, such a system has been experimented by only one member state (namely Italy) and a failure was recorded.

The same thing applies also for financing the universal service through public subventions, which leads to the exemption of already burdened public finances, which influences again users/ taxpayers. For the last ten years, tens of jobs have been reduced in the postal field (0,7% according to the Commission data), while numerous others have been replaced for unsecure jobs or inadequate working conditions in sorting centres, delivery services or postal offices. Even if various factors, like the new

technologies or competition from other communication means, for example electronic communication, partially explains this evolution, market opening remains the main reason. Consequently, the statement according to which postal services internal markets shall allow, by increasing competition, to unblock employment potential in this field for compensating jobs decreasing by historical operators – remains to be demonstrated.

As far as the field growth potential, we can draw-up only one opinion, namely the management of the apparently irreversible decline of traditional postal services, without rethinking them according to the communication needs supposed by the Lisbon strategy and knowledge society and without analyzing effects from the view of energetic efficiency. Views about market opening are divided, according to interests. Privileged operators in the current system are afraid of crocks and are sceptical about the advantages of deregulation. French post chief – Jean – Paul Forceville claims that 77% of the clients are satisfied with the current services of the post. He drew the attention that post deregulation in Great Britain has lead to dismissals. Only Finland, Sweden, Great Britain and Estonia have totally broke the monopole on the post market. Who takes the benefit from the multicolour offer? Wealthy clients, wanting diversified services corresponding to every pocket.

What about clients isolated in a mountain chalet? For them, a balance is searched between guaranteeing minimum services and market forces liberalization. Services flexibility and modernization does not have to mean less safety. But who would give the guarantee for minimum services? Some claim that consumer's protection regulations are enough, others insist on the post public financing.

Important steps have already been made in EU, but monopolies still exist upon the letters below 50 grams. There are success examples. In Great Britain where the field was open at 1<sup>st</sup> of January 2006, Royal Mail, holder of the record in the matter of strikes number, managed to transform, after liberalization, the gigantic losses into profits, distributed to employees, as the commissar Charlie McCreevy said.

Sweden, which opened its market in 1993, has never needed state subventions for providing quality universal service. City Mail is the main Swedish post competitor, operating only in urban areas and industrial clients. Postal offices have lost their significance, many of their activity being transferred to kiosks, common stores in gas stations. Postal stamps price is, still, the highest in Sweden, of all the member states.

Privatization has developed in other countries as well, like Germany and Holland, the latter completely liberalizing only advertising mail. Delayed ones in privatization oppose to liberalization, in order to prevent operators in other countries to occupy their market. Economic patriotism thus relapses.

An independent actor, Pricewaterhouse Cooper (PWC) has drawn-up a report for the European Commission after studying the pluses and minuses of the postal market and their impact upon “universal” services (minimum compulsory) in various member states. The fact that the Directive has been proposed speaks for itself: plans have overcome minuses, liberalization is desirable.

The field of postal services is vital for commercial users and consumers that is why it is considered by the European Commission as “a general economic interest service”, which occurs after liberalization as well. In EU, universal service shall mean

the guarantee anywhere upon postal services of the same quality, at reasonable prices. In other words, a complete cover of the territory with minimum postal services. More specifically, no matter where it lives, a citizen must have access to a postal desk and a postal box.

“Universal service” is cheaper the more traffic or geographic density is lower. Cost differences occur not just between member states, but between regions as well. In Lapland, in the north of Sweden or Finland, the cost is higher than in Holland. The economic operator has only one purpose: profit. Treated as a necessary evil, general interest has to be respected. Neither compensation details have not been established yet nor those of risks taking from operators that would have to comply with their obligations. The size of universal services is the object of the third Directive of posts. If universal services obligations are excessive, then postal services beneficiaries will loose together with providers. Crossed subvention of non-profitable services by consumers would increase costs and consumers would reduce the number of deliveries. Universal services will thus be reduced.

Finally, a Romanian amendment in the European Parliament, and the Transport and Tourism Commission approved in June 2007 that postal services providers be able to diversify their activity by providing electronic services for financing “universal service”. This amendment does not include anything specific to Romania. Considered among the member states with a difficult topography or with difficulties in applying the Directive, Romania will probably be given the time to apply the 3<sup>rd</sup> Directive until 1<sup>st</sup> of January 2013, in order to identify its insurance formulas for the universal service. Left behind, our postal services will be an easy plunder for operators in other countries, in the conditions of market opening. Romanian postal services consumers will be divided: wealthy ones and giving ones shall enjoy a quality surplus, no matter the price. The poor ones could wake up without the means to send a letter. Great users, corporatists will be served better, with reasonable process in front of foreign more experienced giants.

Accepting the great risk of liberalization, we fight together with France for maintain this status-quo or do we remain neutral? A dynamic market can find its antibodies to diseases, and if we agree with the markets benefits, then I think that courageous approach, through potential competitive postal operators on a free European market would be a solution.

The European Commission called post reform as a “turnsole test” of EU ability to elaborate economic reforms and finish the sole internal market. It seems that the solution of introducing turnsole paper has not been defined yet, the British liberalism not managing to neutralize the French protectionism in order to give the favourite colour of the European Commission. We shall therefore have to, before any liberalization, establish regulations and a clear and stable framework. The reserved field shall not have to be cancelled after establishing the framework, including some really efficient and sustainable measures for financing the universal service that would be clearly identified and analyzed for every member state. These measures would have to be a previous condition for cancelling the only financing way which has proved its efficiency up to present, namely an adequate reserved field.

Consequently, postal services internal markets will allow, by increasing competition, employment potential unblocking in this field for compensating the decrease of jobs by historical operators – to be proved. Leaving from the most palpable symbol of European Union, Euro could then establish itself as the sole market of the post in EU shall occur together with the first European postal stamp. For now, we have not find something like that in the furthest plans of the European institutions. Meanwhile, the faith of the 3<sup>rd</sup> Directive is still ambiguous, as in the case of the characters in the famous film “The mailman always rings twice”.

**Conclusions.** Unlike the other fields in the network, the postal field is always characterized by a manual activity and direct contact with clients, being an important field on the matter of employment. It is estimated that in the European Union, over 5 million jobs directly depend on the postal field or are strongly connected to it. Manpower with fixed costs which is the greatest part (+/-80%) of the total cost is extremely exposed to the effects of some possible rationalization measures in liberalization and competitiveness. Postal services have a considerable social and economic significance for the economic, social and territorial cohesion and for applying the Strategy in Lisbon. They make a direct contribution to the development of social relations and fundamental rights of every person, to the creation of a contacts network and to the solidarity between people and territories, to the competitiveness of European economy and sustainable development.

We can analyze the fact that unlike other fields, postal services liberalization can be made gradually. Postal services market liberalization will draw new opportunities for players on the Courier market in Romania, capitalized through offer diversification, and further, through segmentation of clients according to their options regarding the existing services. On a medium and long term, courier companies could benefit from a growth of the number of clients and implicitly, of the turnover. Another consequence of these regulations is the growth of the competition in this market field. No doubt that the total opening of the market will encourage competition, which could generate further advantages for the final client. Another consequence of these regulations could be the competition increase in this market field. No doubt that the total opening of the market will encourage competition, which could generate further advantages for the final client.

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## **IMPLEMENTATION OF OPERATIONAL PROGRAMMES IN ROMANIA THE PERIOD 2007 - 2013**

**DANIELA FLORESCU, PETRE BREZEANU \***

**ABSTRACT:** *The access to Social and Cohesion Funds offers Romania a possibility to develop the regions which are lagging behind, to modernize transport and environment infrastructure, to support rural development, to create new employment opportunities, to sustain social policies which will lead to the growth of the standard of life. This research work displays a short presentation of structural instruments national level as well as on the institutions responsible for their implementation, on the principles and stages specific for projects with European financing. The existence of a strong institutional structure, capable to ensure the formulation and application of public policies, to keep the coordination processes inside ministries going, the implementation of national programs, increasing the application capacity of partnerships between local administrations, is absolutely necessary.*

**KEY WORDS:** *structural funds, irredeemable financing, management authorities, National Development Plan, convergence*

### **1. INTRODUCTION**

After 1989, Romania encountered unprecedented economic and social changes with major effects on the country and population. The ever growing integration to the world's economic flows represents a dynamic process and Romania must be prepared to render profitable all possible advantages especially in the current economic context when most countries face negative economic situations. Romania has the opportunity, because having registered before 2007 a GDP of approximate 35% of the European average, to continue through the Structural instruments, the economic reform in order to catch up with differences between the Romanian regions and the regions of the other seven European countries.

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## 2. STRUCTURAL INSTRUMENTS USED IN ROMANIA FOR THE PERIOD 2007-2013

Programming Documents based on which the Structural funds are implemented are the following:

**1. National Development Plan 2007 – 2013 (N.D.P.),** represents the document for strategic planning and multiannual financial programming with the purpose of stimulating the economic and social development of the country in order to achieve the objective of economic and social cohesion. It is based on a careful analysis of the social and economic situation of the country and includes the priority fields of investments for medium term as well as the financial sources for supporting the said investments.

**2. National Strategic Reference Framework 2007 - 2013 (N.S.R.F.),** it is the strategic document based on which the intervention priorities of Structural and Cohesion Funds are established according to the strategic priorities set in NPD. It represents a link between the national development priorities and European priorities. The financial support of European Union is allotted according to the strategy set up in this document.

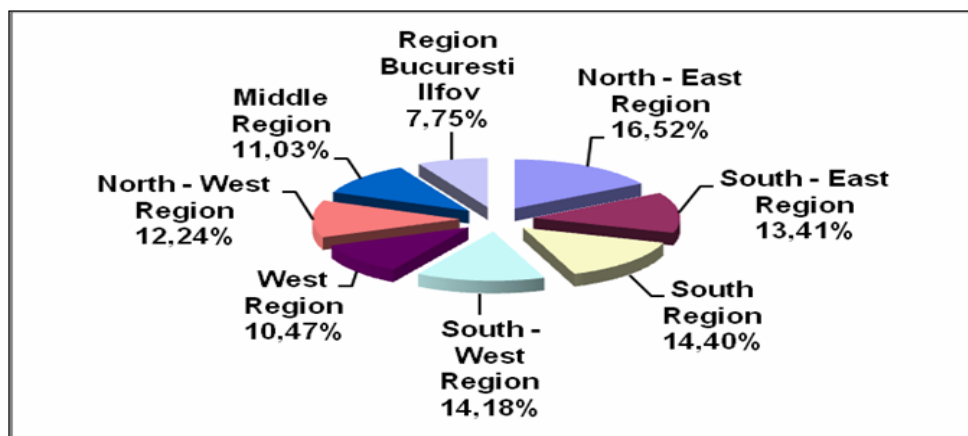
**3. Operational Programmes (O.P.),** represent programmes through which important elements of N.D.P. are implemented and which ensure the achievement of the general objective of the Regional National Strategy, namely the reduction of the disparities between Romania's Regions. Operational programmes present major fields of intervention which are co-financed by Structural and Cohesion Funds.

According to The National Strategic Reference Framework Romania prepared seven operational programmes under the Objective „Convergence” and cooperates with neighbouring states and EU member states for another 11 operational programmes for Objective „European territorial Co-operation”.

### **A. Romanian Operation programmes for Objective „Convergence”:**

- **Regional Operational Programme (ROP)** - is the programme which implements important elements of the National Strategy for Regional Development of NDP contributing together with the other Sectoral Operational Programmes to the achievement of the general objective of the Regional National Strategy namely the reduction of the disparities between Romania's regions and member states of European Union. The strategic objective of the regional programme shall be achieved by a fund allocation differentiated in each region according to the development of the regions and by a close coordination with the actions executed by the other operational programmes. Thus from the total number of financial allocations related to *Regional Operational Programme* for the period 2007-2013, in amount of 4.383,4 million euro (out of which 3.726,0 million euro from European Funds), the regions will receive between the minimum of 8,86% for the Region București Ilfov, considered the most developed region in Romania and 16,32% for the North-East Region, considered the poorest region of European Union (Figure 1);
- **Sectoral Operational Programme of Environment (SOP Environment)** - it is based on the objectives and priorities of environmental policies and European union

infrastructure development policies with the purpose of protecting and improving the quality of the life environment in Romania which should materialize in efficient public services taking in account sustainable development and „the polluter pays”. For the period 2007-2013 the total funds allocated for this programme are in amount of 5.610,7 million euro (out of which 4.512,3 million euro from European Funds) for investments in the following fields: the improvement of sectoral systems for environmental management; the improvement of the living standards by ensuring public utilities according to the quality and quantity standards required within the water and waste sectors; improvement of systems; implementation of a proper infrastructure for the prevention of natural risks.



**Figure 1. Regional allocation of the funds under the Regional Operational program**

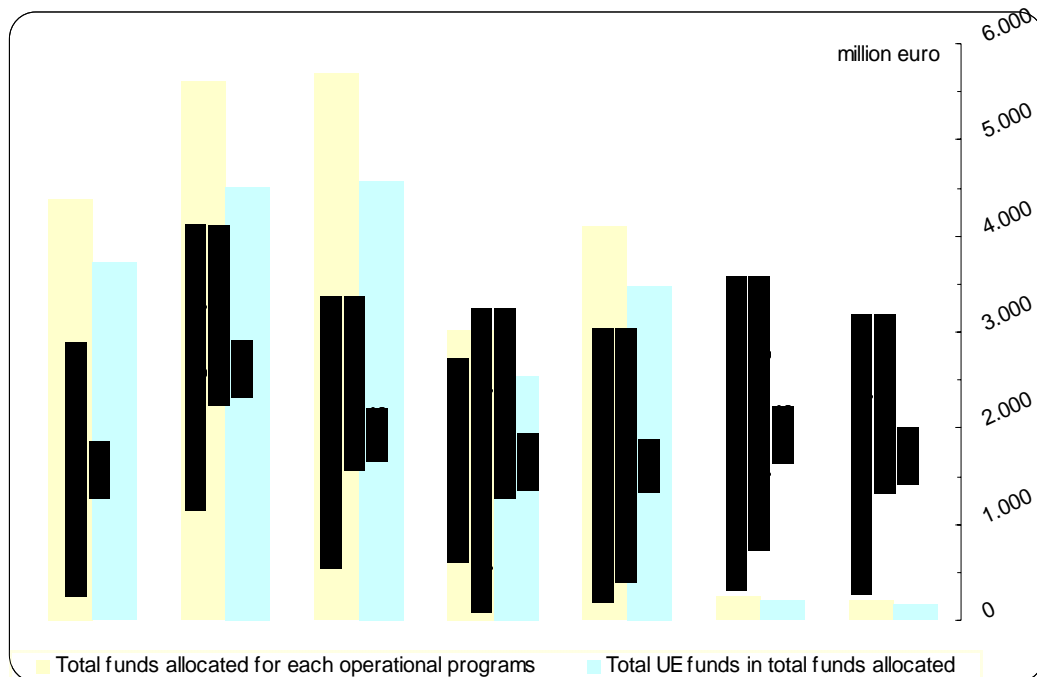
- *Sectoral Operational Programme for Transport (SOP-T)* - with the objective of promoting in Romania a sustainable transportation system which will allow rapid, efficient and safe transportation of persons and goods and services of a high quality level according to European standards. The funds allocated for this programme are in amount of 5.697,6 million euro (out of which 4.565,8 million euro from European Funds) for the improvement of road, railway, air, river and sea transportation systems with priority to the projects on the network TEN-T (Trans-European Network-Transport), so that it will improve the level of connection of the national and regional infrastructure to the international infrastructure.
- *Sectoral Operational Programme Increase of Economic Competitiveness (SOP-IEC)* - having as a main objective the increase of Romanian companies' productivity in order to reduce the disparities compared to the average productivity of European union hoping to generate, as a consequence of the measures which are to be taken, an average annual growth of productivity by approximately 5,5% and to allow Romania to reach approx. 55% of the European Union average productivity by 2015. In order to reach this objective there have been allocated funds for the period 2007-2013 in total amount of 3.011,1 million euro (out of

which 2.554,2 million Euros from European Funds). The programme aims at the stimulation of research – development – innovation activities with applicability in the economic field and increase of the energetic efficiency and the sustainable development of energetic sector.

- *Operational Programme Development of Human Resources (SOP-DHR)* - the objective of this programme aims at developing human capital and increasing its competitiveness by connecting education and lifelong learning to labour market and providing more opportunities to be on a modern and flexible labour market comprising 1.650.000 persons. Funds in total amount of 4.089,3 million euro (out of which 3.476,2 million euro European Funds). The investments in the improvement of the educational system and professional training will be sustained by correlating the educational offer with the request for workforce and the employers will be encouraged to invest in the employed workforce.
- *Operational Programme Administrative Capacity Development (OP-ACD)* - aims at the creation of a more efficient and effective public administration for the socio-economic benefit of Romanian society. This implies the improvement of the public policies cycle on the one hand and the improvement of quality and efficiency of the delivery of public services on a decentralised basis, on the other hand. Investments will be made for strengthening the public management capacity of ministries and for the implementation of modern methods in the field of human resources in order to improve individual performances of public servants. Funds in amount of 246.0 million euro (out of which 208.0 million euro European Funds) were allocated for this programme.
- *Operational Programme for Technical Assistance (PO-AT)* - with the objective of ensuring that the implementation of the structural instruments in Romania meets the principles and rules on partnership, programming, evaluation, communication, management, including financial management, monitoring and control on the basis of responsibilities shared between the Member States and the European Commission. Since it addresses needs identified for the whole system of management and implementation of structural funds, sometimes common for a range of actors, the programme is by its nature horizontal. The objective of the OPTA at the national level is to ensure support for the coordination and the implementation of the structural instruments in Romania, to ensure reliable managing and monitoring system for these instruments and to ensure appropriate communication to the general public about the European Funds. The funds allocated for the implementation of this programme for the period 2007-2013 are in total amount of 212.8 million euro (out of which 170.3 million euro European Funds), (Figure 2).

**B. Operational Programmes in co-operation with neighbouring states under the Objective „European Territorial co-operation”** can be structured as it follows:

- *Trans-border cooperation* - includes the Operational Programmes: Romania-Bulgaria, Romania-Serbia, Romania-Ukraine-Moldavia, Hungary-Slovakia-Romania-Serbia as well as and The Black Sea Basin Operational programme, for co-operation between riparian states.



**Figure 2. European Union's contribution in total funds for each operational program**

The first programmes will include actions focusing on:

- the development of physical infrastructure;
- consolidation of economic relations between neighbouring regions for a sustainable development, the development of tourism and border trade, promoting the integration of local markets
- the development of social and cultural links between communities and their inhabitants by a common use of the educational, cultural and health infrastructure;
- the common finding and application and use of solution and means of defence against natural risks such as floods, land sloping, etc.
- *Trans-national co-operation* - which includes the Operational Programme South-East European Space, has the following objectives:
  - the development of co-operation networks in the SME and innovation sectors;
  - ensuring co-operation for integrated water management (protection of the coastal areas and sea resources, protection and administration of the Danube basin);
  - carrying out trans-national activities for the prevention of natural and technological risks.
- *Inter-regional co-operation*, includes the following Inter-Regional operational Programmes: INTERREG IV, URBACT II, EPSON 2013 and INTERACT II, having the following main objectives:

- modernization of public services;
- perpetuation of the process of exchanging information and good practices regarding urban development;
- carrying out studies and correlating the information obtained for the promotion of common interest.

### 3. OPERATIONAL PROGRAMME MANAGEMENT STRUCTURE

All potential challenges regarding structural and cohesion funds depend on the capacity of administrative and institutional structures to manage these funds, on the improvement of the physical and human capital necessary for the use of the funds, on the possibilities of central and local authorities to participate to the co-financing of the project financed by European funds.

In Romania all Operational Programmes have a similar management structure:

- *European Commission* - is the executive authority of European Union responsible for the initiation and implementation of programmes and policies of EU budget and legislative authorities;
- *The Certifying and Paying Authority* - is the organizational structure within the Ministry of Finance responsible for certifying the statements of expenditure communicated to European Commission and for receiving the funds transferred to Romania from European Regional Development Fund, European Social Fund and Cohesion Fund and for ensuring the transfer of these funds to beneficiaries and of the related pre-financing and co-financing funds allocated from the state budget;
- *The Managing Authority* - according to European Union requirements, each operational programme is co-ordinated by a Managing Authority which is responsible for the implementation of the entire Operational Programme as it follows:
  - makes sure that the projects have been selected in compliance with the criteria established by the approved Programme;
  - monitors and controls the consistency of the co-financed expenses and national and communitarian rules;
  - reports on regular basis with regards to the activities executed within the programme and ensures compliance with information and publicity requirements of structural instruments;
- *The Intermediary Body* - The Managing Authority is entitled to assign certain responsibilities to one or several intermediary Bodies. Their responsibility is mainly to monitor and asses individual projects;
- *The Beneficiaries* - are those institutions implementing individual projects or grant schemes co-financed from Structural and Cohesion Funds within an Operational Programme. The beneficiaries can be institutions of the local or central public administration, non-governmental organizations (NGO-s) or partners from the private sector depending on the specific of the operations financed by the said programme.

#### 4. PRINCIPLES OF PLANNING AND IMPLEMENTATION OF NON-REFUNDABLE FUNDS

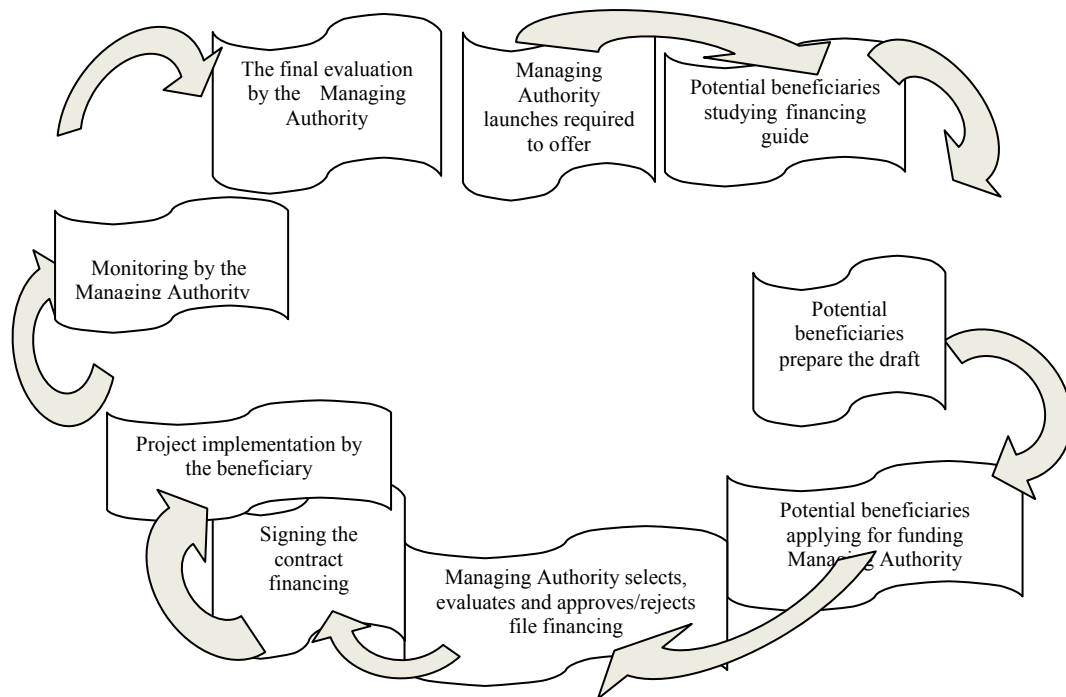
The planning and implementation of structural funds is based on five fundamental principles:

- *the principle of focusing on priority objective for the purpose of development*, according to which the focus should be on those territories or populations facing the biggest difficulties so that a limited number of intervention fields can be established;
- *the principle of programming or internal coherence*, is the most laborious one, requiring a long period of time as it results in the elaboration of multiannual development programmes based on a joint decision;
- *the principle of additionality or external coherence*, according to which the support from structural funds should be additional and should not replace the resources used by the national, regional and local authorities for the development of their region and of the labour market;
- *principle of partnership*, according to which there is a close co-operation between European Commission and the national, regional or local managing authorities;
- *principle of subsidiarity*, according of this principle is that the managing authority appointed by the member state is entitled to select and monitor the projects which are to be financed.

#### 5. SPECIFIC STAGES OF THE PROJECTS WITH EUROPEAN FINANCING

In 1992, the European Commission adopts a range of instruments necessary for the elaboration and management of a project named „Project Cycle Management”. Based on these we identify the following stages:

- *Identification*, represents the process of elaboration and submission of project proposals by potential beneficiaries to intermediary bodies within each programme;
- *Assessment*, represents the examination of all project proposals submitted subject to the specific criteria of each programme, priority axes, field on intervention or operation awarding a score (Figure 3);
- *Hierarchisation and Selection*, implies the communication of the previous stage scores and the approval of the list of projects selected for financing;
- *Negotiation and Signing*, is a stage resulting in the signing of the financing contract by the beneficiary and the managing authority);
- *Implementation and Monitoring*, during this stage the activities proposed by the beneficiary are carried out and the managing authority is monitoring the compliance with the contract provisions, based on the reports;
- *Final assessment*, with the purpose of ensuring the beneficiary’s compliance with all details specified in the initial project as well as the contribution of the investment to the achievement of general and specific objectives of the operational programme.



**Figure 3. Steps taken to obtain the financing and implementation**

According to the specialists, a project is considered successful if the project continues to produce benefits to target groups for a long period of time after the closing of the main part of the grantor's assistance.

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## **WOMAN IN THE LABOUR MARKET, IN POST-COMMUNIST ROMANIA**

**ROXANA GHIȚĂ-PLEȘA \***

**ABSTRACT:** *The research was conducted in Petroșani Municipality, on an intentional lot, composed exclusively of women and covered a brief overview of how women perceive their status and their role in society and also the willingness and confidence in their abilities of surpassing “lower condition”, focusing in particular, on their professional life.*

**KEY WORDS:** *discrimination in the labour market; female empowerment; socio-professional status; equal opportunities; autonomy and independence*

With the transition from the traditional society, in which man was the dominant and productive role, and the woman, although she participated in productive activities, also had to do almost all the household tasks (cooking, childcare, etc.), to the industrial and post-industrial society, characterized by a massive entry of women into employment, was necessary to reconsider both the political, professional, cultural status of woman, and the status and role in the family. In other words the assertion of women on political and professional plan, in public life, requires a reconsideration of the role of family tasks.

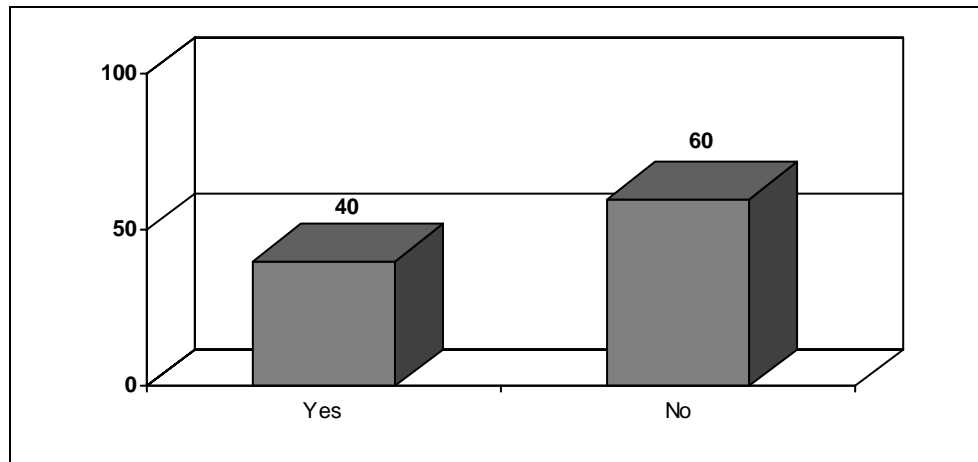
Recent studies indicate a number of significant changes in gender relations, but not a “revolution”: it’s rather about developments on a line of continuity, than a break from the traditional behaviour. In most societies known to history, woman was valued not only as the wife-mother, but also as trader.

Despite the strong presence of women in the labour market, they were often viewed as a second-hand workforce, unable to devote fully to the job and carrier, because of their role of being the main provider of domestic services. This aspect led to a high level of gender segregation in employment, a phenomenon strengthened by the lack of acknowledgement of legislation regarding the “equality of chances”.

Women are subjected to an institutionalized sexism (sexual stereotypes, prejudices and discrimination). Although sexual discriminations in access to educational career were legally removed in most developed countries or developing countries, however, in reality, they still exist.

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**Figure 1. Women have a more difficult access to the labour market (%)**

The answers respondents gave to that question surprise us, because the proportion of those who believes that women have a more difficult access to the labour market is in some disagreement with the reality of Romanian society, whereas as we detail below, at least in functions of a higher hierarchical level women are not easily accede, the main reason being the prejudice that men are more effective in such functions.

There is a widespread distrust of the ability of women to exercise a function of a higher level, starting from the premise that women have a less decision-making compared to men, presuming that men are self-possessed, reacting better in extreme circumstances, whereas women, due to their stronger emotional and affective component wouldn't be very suitable for leadership roles, decision-making positions involving higher responsibilities.

Regarding the reasons why some respondents believe that women have more difficult access to the labour market, render in figure 2.

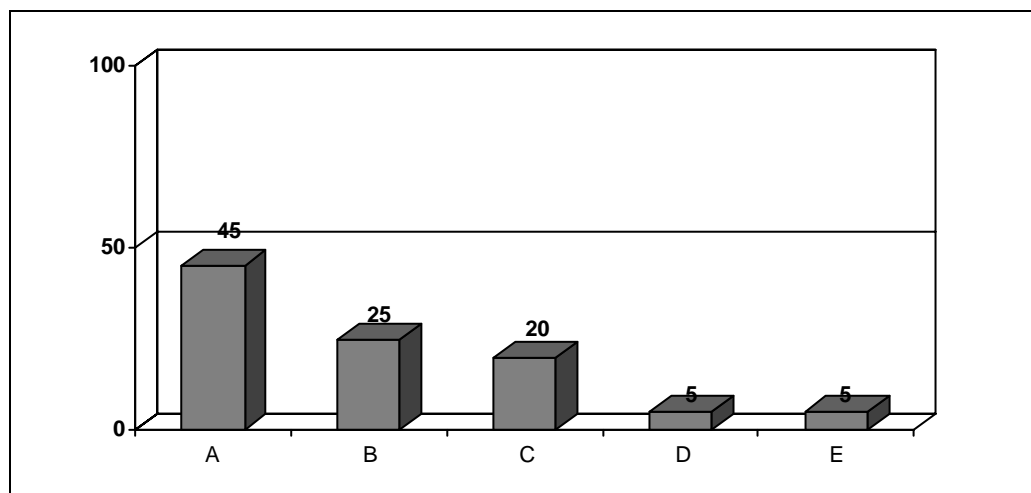
Almost half of those, who believe that the difficult access of Romanian women on labour market is a fact of society itself, agree that discrimination in the labour market is the main reason of this state of fact.

The direct discrimination means differential treatment of a person against it, because of him/her belongings to one sex or because of pregnancy, birth, maternity or paternity leave. It is known that women often lack access to different positions, on the motivation that some jobs can be performed only by men.

Shall state that is considered discrimination on the basis of sex and the sexual harassment of a person by another person at work or elsewhere in which it operates. Regarding this practice our research's subjects agreed on the fact that exists sexual harassment at working place, but the way how women react to these practices has influence on weather these practices will continue or not.

But the major problem that arises relates to the fact that women do not know whose decision-making body or institution must address in such situations and often they do not take any action, because they fear that they could loose even that job where

they are sexual harassed, possibility of finding another good job, in socio-economic condition of nowadays in Romania, being quite small, especially for women.



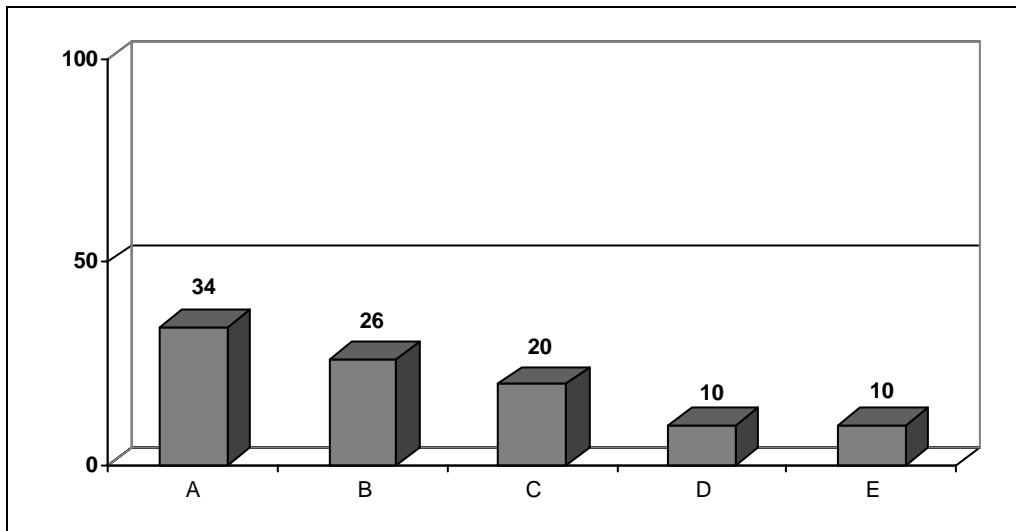
A – Discrimination in the labour market  
 B – Large family responsibilities, that prevent a development of a professional career  
 C – The mentality that women should take care of household chores and men should preserve the family financially;  
 D – Lower level of training;  
 E – Else (there are to be hired only women until a certain age, low offer of prestigious jobs for women)

**Figure 2. The reasons why women have more difficult access to the labour market (%)**

Although it isn't the main reason reported, however a significant percentage of respondents believe that the women's access on labour market is slowed down, to some extent, by the fact that women assume, in a widely way, the responsibilities of children's education, work which not allow them to build a professional career, as most of time they dedicate to the family.

Expectations of subjects regarding the opportunities and conditions their jobs offer is rendered in figure 3.

Respondents wish, in the first place for recognition of professional merits, understanding by this to be motivated extrinsic positively, with praise and appreciation, but mostly by motivator wages or other material rewards. Not less important is the ability of the employer to provide training for employees, this aspect being important also for employees but especially for employer, by achieving a team of skilled specialist, very well trained. It is interesting the fact that women want to have challenging conditions at work, training opportunities and promotion, which prove the fact that women are not passive employees, but on contrary they want to gain access as high as possible in professional hierarchy, they wish for leading positions and want to be competent professionals.



*A – Recognition of professional merits*

*B – Challenging conditions for training opportunities and promotion*

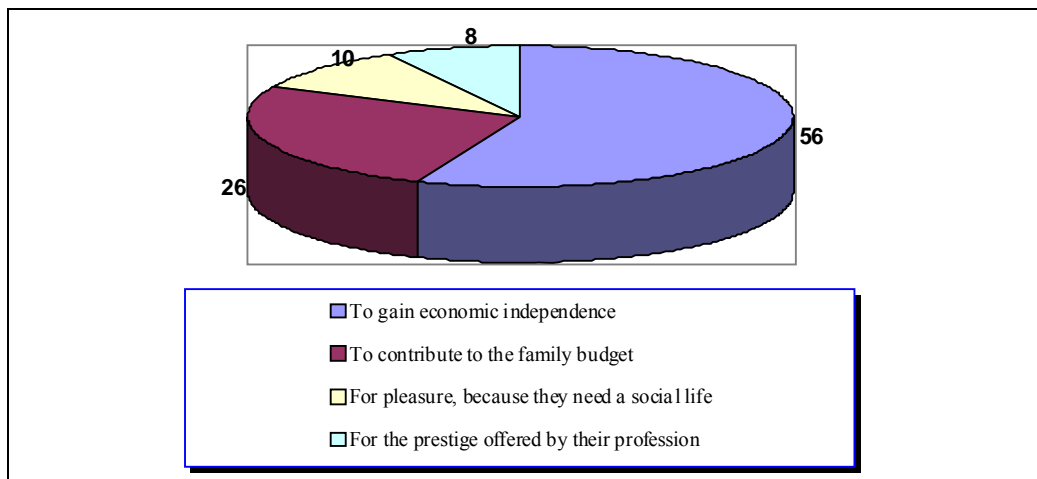
*C – Material benefits*

*D – Long-term material security*

*E – A right relationship with the boss*

**Figure 3. Expectations of subjects regarding their jobs (%)**

In nowadays society's conditions it is very difficult to support a family when there is only one member bringing its income, usually the man. That is why more and more women got a job and some of them even managed to build solid careers. Women have realised that economic independence from the spouse or family it's what gives them power and freedom to live their own lives and to not allow of being led by someone else.

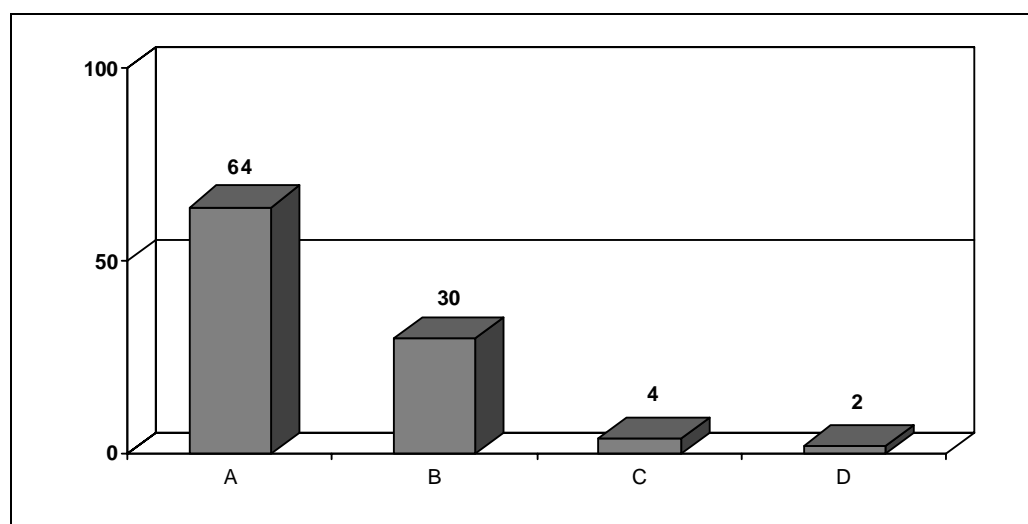


**Figure 4. Main reason why women work, from their point of view (%)**

More than half of the women work mainly to gain their financial autonomy, in such way they are able to separate from their families or conclude easier a marriage that is no longer working. Economic independence gives women higher possibility to be heard, to express their opinions and stop being so tolerant with the multitude of failures that may occur in the family living (violent husbands, alcoholic fathers, etc). On the other way, it is known that women, as a social group, are hired especially in the fields where wages are lowest, leading to what sociologists call “feminisation of poverty”. As regards the areas where women would manage better than men, there is a wide consensus from subjects that these areas are in order of frequency: teaching and education, social protection and social assistance, financial and banking sectors, that is exactly those fields of activities which are traditionally reserved mostly to the women and are based on activities that involve working with children, with underprivileged people or activities which largely involve public relations, taking in consideration the fact that women have a higher oratorical capacity.

It is a fact that the vast majority of employees in education are women. In regards with women inclination to the domain of social protection and social assistance it is envisaged that women are more sensitive, having perhaps a greater empathic capacity to understand people in difficulty, to show compassion and help others and regarding the financial and banking domains these are fields of activities where women are considered more suitable.

The percentage rather low of women which are working by vocation, because they need a social life, or because that profession gives them a high prestige, being probably well paid in the same time, point out, once again, that women get, generally speaking, jobs with a low prestige.



A – It is necessary of understanding and agreement between spouses, so that family life not to be affected;

B – The woman is capable to manage also familial obligations;

C – Family life is highly affected;

D – It is preferable that woman takes care of family in the first place and career second.

**Figure 5. The influence of woman's political or professional career on family life (%)**

Almost two thirds of respondents declared that, when woman has a political or professional career it is necessary that relations between the two partners or spouses to be based on understanding and mutual agreement to avoid the situation when interfamilial conflicts may occur because of this.

Almost a third of subjects believe that women are able to accomplish their family's duties, managing in the same time also working programme, which is not always 8 hours, without this leading to conflicts or family problems or working problems.

Family life is not affected if the wife has a political or professional career, if there is understanding and agreement between spouses, so in that case, accepted by the vast majority of subjects, woman is able to have a successful professional career, but also a harmonious family life.

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## **“INVESTMENT READINESS” - CORRELATION OF THE CAPITAL DEMAND AND SUPPLY FOR SMES**

**LAURA GIURCA VASILESCU \***

**ABSTRACT:** *In the context of the international financial crisis, the necessity to attract new financing sources and to ensure the correlation between the capital supply and demand became a new challenge for the firms, especially for the SMEs. The concept of "investment readiness" refers to the capacity of entrepreneurs to understand the specific needs of the investors and to be able to answer to them through relevant information, a high level of credibility and trust that can determine the investor to finance the project or the business. The SMEs should be prepared for investment if they want to satisfy the investors' requirements and to attract the necessary funds. In fact, the central idea of the investment readiness is the necessity to take into consideration the both aspects of SMEs' financing: the capital demand and the capital supply.*

**KEY WORDS:** *investment readiness, SMEs, financing, demand, supply, capital*

### **1. INTRODUCTION**

The European Union recognizes the importance and benefits of the entrepreneurship and innovations generated by the SMEs and have already taken numerous initiatives in order to support the financing of SMEs. But despite the efforts done at the EU level and the member states regarding the financing sources, the level of the funds invested in SMEs is still reduced, especially in the initial stages of firms' development. But the stimulation of the offer should be correlated with the demand in order to ensure an efficient market. In these conditions, there are necessary supplementary efforts regarding the demand for funds. Besides, the international financial crisis generated many difficulties concerning the funds' accessing by the SMEs and this led to the increase of the gap between the demand and supply of capital.

The SMEs have to be ready for investment if they intend to satisfy the investors' requests and to attract the necessary funds. In fact, the concept of investment readiness is based on the necessity to take into consideration the both sides of SMEs' financing: the capital demand and the capital supply. Thus, the "investment readiness"

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refers to the capacity of entrepreneurs – looking for financial resources – to understand the specific needs of the investors and to be able to answer to them through relevant information, a high level of credibility and trust that can determine the investor to finance the project or the business. For short, “investment readiness” reflects the entrepreneurs’ ability to answer to the expectations of the investors when it is presented the business idea or the ensuring of the attractiveness of a business for investors.

## 2. ANALYSIS OF THE CORRLATION BETWEEN THE CAPITAL DEMAND AND SUPPLY

The investors are reticent when it is about financing the SMEs because the high risks and costs that can not be compensated by the incomes. In fact, between the investors and the entrepreneurs there is an asymmetry regarding their expectations: the investor look for minimizing the risks and maximizing the profit and the entrepreneur considers that its project is feasible and, in general, it is oriented towards a sustainable development of the firm, without looking for the immediate profit.

The disfunctionalities were manifested regarding both the funds supply and the funds’ demand for SMEs. Regarding the *funds supply* for SMEs, the most affected are the firms at the first stage of development because the banks are not interested to invest in start-ups as long as they are considered risky and do not present sufficient guarantees. Besides, the payment of the principals and the interest rates represent an important financial effort for the firms that increase in the expansion stages of the business because the increase of the need for supplementary funds. On the other side, the number of business angels (private individual investors) is reduced and this type of investors search innovative firms in the expansion stage and which have a high potential for growth.

The venture capital funds interest to invest in seed and start-ups are also limited because they are looking for mature business and intend to beneficiate by a rapid development of the invested firms in order to get a higher increase of the firm’s value and its shares at the end of the investment period. Regarding the *demand*, many entrepreneurs do not have sufficient information regarding the financing opportunities and often perceive the loss of control of the firm as unacceptable.

There are three main causes to explain the lack of knowledge of the entrepreneurs regarding the financing: *lack of knowledge about financing*. Many entrepreneurs are unaware of the available and suitable options for financing which sources would be relevant to their adopted business strategy. For them, bank loans remain the preferred source of external finance and they often do not realize the benefits of a stronger capital structure for survival and expansion; *fear of losing control*. In Europe, some entrepreneurs do not seek for venture capital funding because they are afraid that it will mean giving up control of their business to the investors. However, investors do not only provide funding, but can provide knowledge and advice, becoming partners in the business. Equity investors also require greater disclosure of information about the firm than debt finance; *Information asymmetry*. Many SMEs with growth potential do not succeed in raising the finance they need



because of the low quality of their presentations. The entrepreneurs are not aware of the key factors that drive the investment decisions of equity investors and are not prepared to answer questions about these or lack some of the capabilities investors are looking for. Also, many business plans and management teams may have quality in them, but are insufficiently developed or are inappropriately structured and do not provide the assurances equity investors need.

### **3. MEASURES TO PROMOTE THE INVESTMENT READINESS PROGRAMS**

Many entrepreneurs need counselling regarding the knowledge of the advantages and disadvantages of using alternative forms for financing as well the way to present the investment projects to the potential financing investors. This is why the investment readiness programs should be based on the best practice at the European level and to join any type of financing measures. In fact, few member state (Ireland, Spain, France, Austria, Great Britain) have already introduced measures to identify the financing gaps and developed investment readiness programs, helping the SMEs to understand what are the available options for financing, to establish a development strategy for their business, to elaborate business plans and to increase their equity. Thus, an investment readiness program can teach the entrepreneurs that the presentation of a business plan have to be adapted in order to answer to the investor' expectations and also the way of preparing the financing proposal, of approaching a project in function of the financing source or the importance to know the exigencies of the financing investors.

The investment readiness programs aim to correct failures between the demand and supply capital market. They are designed to assist entrepreneur, especially innovative entrepreneurs that have firms with growth potential, raise external finance, in particular equity finance. These programs can include activities of training, guidance and advice, mentoring, technical support, networking and they usually contain tools for: assessing a business strategy, explaining the sources of financing and more specifically the advantages and disadvantages of raising equity finance; understanding investors' requirements; structuring an attractive business plan; improving the quality of presentation and the negotiation with the investors; connecting the SMEs with investment plans with potential investors.

The investment readiness programs can be public (for instance, in Ireland and Spain) or private (France and Austria). In Great Britain are available also the public investment readiness programs and the private ones. But regardless the type, all programs have as final objective supporting the SMEs in attracting the financing sources. Reaching this objective suppose a process consisting of few stages. A first stage is the business evaluation and the elaboration of the business plan. Other aspects refer to the evaluation of the most appropriate financing form and its characteristics. As well, should be analyzed the potential barriers for attracting the investment (for instance the intellectual property assets).

Finally, should be ensures that the firm present properly the aspects regarding the investment. The quality of presentation and the convincing business plans are very

important for the success in attracting the funds and the investment readiness programs can help the firms in that sense. In all states there are numerous public and private organizations which offer support for the SMEs in doing their business. Some of these organizations are specialized in counselling the SMEs for financing problems. In general, the investment readiness programs are offered by: business angel and venture capital fund networks; incubators and sciences parks; national and regional business development agencies; accountants and consultancies; business schools and universities. Banks or other financial institutions are not necessarily direct providers of investment readiness programs but some of them offer financial management information to their SME customers and work with business angel or venture capital networks making referral of SMEs seeking risk capital.

The gap existing between the capital demand and supply is usually used to justify the intervention of the public authorities for correcting the market disequilibrium. Regarding the investment readiness programs, the possible contribution of the public sector is less obvious even there are some initiatives in that sense. That is why there are necessary measures to promote a simulative entrepreneurial environment and the public factors can play an important role in promoting the investment readiness programs, especially for attracting relevant partners, public and private as well.

#### 4. CONCLUSION

There were done considerable efforts by the European Commission, the governments of the member states and diverse local and regional organizations in order to stimulate the funds' supply for the SMEs. But the offer stimulation should be correlated with the demand for the funds. In this context, the investment readiness program intends to correct the disequilibrium between the supply and demand on the capital market. The investment readiness programs are designed to assist the entrepreneur, especially the entrepreneurs of the innovative firms with growth potential, to increase the external financing sources. At the European Union level should be taken measures for promotion the investment readiness programs, for identification and promoting the best practices and encouragement of creation the networks of stakeholders. On the other side, the SMEs should be aware of the potential benefits brought by the investment readiness programs and to participate actively to these programs that have as main purpose the stimulation of attracting investment funds, thus, being created the premises for a future development of the firms.

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## THE ROLE OF EMOTIONS IN ORGANIZATIONAL BEHAVIOUR

BLANCA GRAMA, DANIELA BOȚONE \*

**ABSTRACT:** *According to the specialized literature from the field of organizational and economic psychology, the work group is defined as two or more persons who interact and pursue common goals, have stable relationships, are to some extent interdependent and realize they are in fact part of the group. Work in an organization takes a third form, i.e. emotional work/emotional labour: emotional labour reflects the management of emotions. This happens through mental effort, sometimes consciously, sometimes not, and its purpose is the change of personal feelings or emotions, so that these are in accordance with the "emotional rules" established by the formal group's norms, having a higher or lower intensity, on a shorter or longer period, instantly or slowly. Identity confusion, socio-professional stress, professional dissatisfaction, organizational silence are just a few of the negative effects of emotional labour, respectively of the discrepancy between the required emotion and the emotion experienced in reality by the employees of a large number of organizations.*

**KEY WORDS:** *emotional work, organizational behaviour, organizational citizenship behaviour, emotion, group*

Pre-eminently, the individual is an emotional being; emotions are the most important resources of the individual and are also displayed at the workplace; emotions can be educated, and the benefits obtained from this process are enormous for the personal efficiency but also for the organizational efficiency.

Recognizing the existing emotions within organizations is essential. Organizations that are interested in maintaining a "healthy emotional environment" will cause less suffering and will obtain more efficiency and a more productive behaviour - states American management professor Neal M. Ashkanasy (2003).

Of course, we cannot talk about an ideal type of perfectly healthy emotional environment within organizations, with a complete absence of stressors; this would be impossible and, as Hans Selye stated, "complete freedom from stress means death to the individual". Therefore, there will always be a certain amount of stressors (except

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for the professions that through their content of tasks and preparation of employees involve a great deal of social and professional eustress and distress, risk and responsibility, that will affect both in a favourable way the employee's behaviour (eustress reactions), and in an unfavourable way (distress reactions).

The important thing is how the intensity, frequency and type of stressors are managed both at the individual's (employee's) level, and also at an organizational level, through specific actions of the decision factors. For this purpose, organizations should maintain, support the value of a "constructive emotional culture, which in turn may create an organizational behaviour that will directly contribute to the health of the employees" (N. M. Ashkanasy, 2003).

Organizations are complex entities, in which employees work with their hands, associating to this type of work a various quantity of physical effort (manual work); the same employees working with their intellect (intellectual work), the intellectual effort ranging this time also, according to the specific job requirements. This specific activity can be easily assessed in terms of number, frequency, intensity, tasks repetition (job description) and in terms of psycho-physical and psycho-social abilities (job specification).

Work in an organization takes a third form, i.e. emotional work/emotional labour (Septimiu Chelcea, 2008). The term "emotional work" has been described for the first time in psycho-sociology in 1979 by Arlie Russell Hochschild and has been synthesized in the paper *The Managed Heart: Commercialization of Human Feeling*, 1983. According to the author, emotional labour reflects the management of emotions. This happens through mental effort, sometimes consciously, sometimes not, and its purpose is the change of personal feelings or emotions, so that these are in accordance with the "emotional rules" established by the formal group's norms, having a higher or lower intensity, on a shorter or longer period, instantly or slowly.

Identity confusion, socio-professional stress, professional dissatisfaction, organizational silence are just a few of the negative effects of emotional labour, respectively of the discrepancy between the required emotion and the emotion experienced in reality by the employees of a large number of organizations. Thus, we can differentiate professions according to the intensity of emotional labour that must be displayed; thus, the professions that require the obligation to express the feeling of hospitality are professions with intensive emotional labour because the word hospitality combines images of kindness and smile.

J. G. Van Maanen and G. Kunda (1989) (after, Chelcea, 2008), assert that the approach of emotion as a state is more likely a question of context and it depends on each employee's style to emotionally adjust to a particular context; consequently emotion can be controlled and "played" by each individual as one knows, can or is required by the job's specifications. In this context, emotion becomes instrumental.

Currently, it is estimated that half of the jobs impose emotional labour and three quarters of the women's jobs require the management of emotions. Characteristic for women are the situations of flight attendants and policewomen: the firms must control their emotions, to express positive emotions in every situation, even in the case of imminent danger, and on duty policewomen mustn't express any emotion. (S.

Chelcea, 2008). Arlie Hochschild (1983) refers to the trust of the employee in the morality of the emotional game.

When an employee considers that he/she conforms "willingly" to a certain emotional game imposed by the task, he/she remains faithful to the emotional rules (for example, to appear sad when it is required by the situation), the game is interiorized and becomes a part of the employee's mind; in this situation the employee understands the emotional game, he/she identifies with it, expresses and follows it.

To follow the emotional game in an "unwillingly" is another form of emotional labour but the employee does this, being forced by the specific regulation of the profession or by the superior's requirements; in this situation, the employee does not understand the purpose of his behaviour, does not share the same objective and is inclined to outrun the objectives of his work, sometimes resorting to cynicism.

According to the theoretical approaches, the conceptualizations of "emotional labour" can be classified into three categories:

- in the first category fall those theories which conceive emotional labour as an emotional state which originates in social, organizational norms and requirements;
- in the second category fall those theories which suggest that emotional labour consists of assumed behaviours, to coordinate and control an explicit or implicit emotional state;
- the third group of theories explains the emotional labour through a close relation between states, behaviour, and/or situational factors. In this category also fall the conceptualizations of J. Morris and D. C. Feldman (1996, after, Chelcea, 2008), which defined emotional labour as an assembly of five situational factors (frequency, duration, variety and intensity of the emotional display) and a factor, individual state (emotional dissonance).

A recently appeared model in psycho-sociology is the model defined by Alicia Grandey (2003). She constructed a comprehensive model of the emotional labour in which the concept is more likely defined as an act than an emotional state, with situational factors and variable effect. Emotional labour is an emotional regulation process enacted by the response to the organizational rules, such as the interaction expectations in the field of services. Emotional regulation is used when the confrontation with the organizational requirements felt by the employees takes place and it can be acquired by surface acting and deep acting (after, A. Hochschild, 1983).

Analyzing the role of emotional dissonance in the prediction of the emotional labour, W. J. Zerbe (2002) distinguishes between "the degree of incongruity between felt and displayed or mimed emotions" and "the incongruity between displayed, expressed emotions and local, situational norms".

Emotional dissonance should be viewed as a pure emotional state that occurs prior to the act of emotional labour, it is not a conflict between felt emotions and the objective organizational requests (written rules or instructions of the supervisor); emotional dissonance is rather the result of discrepancy between felt emotions and an employee's perceptions about the type of emotional display required by the situation (after, Goleman, 2007).

Thus, emotional labour is nothing but motivated, voluntary behaviour, expressed by the employees of an institution, in their desire to reconcile their emotions, feelings, following the installation of emotional dissonance.

How often will it be required in the job description to be kind, to smile graciously? It remains to be seen!

With great implications in the culture of each population, we are currently witnessing a real emotional culture, providing the emotional nuances specific to emotional labour performed by employees of organizations, institutions from different geographical areas. Management of emotions does not always cause alienation of the individual from his work, but only in the case of individuals who have an impulsive emotional orientation.

Taking into account the ability of individuals to react actively, to relate differently to a situation, thus leading to an economy of emotions and according to the sympathy theory developed by Candace Clark (1987) individuals do not automatically apply the norms of the emotional culture: they are actively engaged in exchanges of emotions with other individuals, from which they expect to obtain a profit. It leads to a "microeconomics" of emotions - we offer emotions and expect emotions in return: love for love, sympathy for sympathy etc. - but also to a "micro-politics" of emotions, given the fact that according to the social position, emotions are associated with emotional resources.

It might be a little bold to associate the term "economy of emotions" to a complex of emotions such as sympathy, because by showing sympathy to a person, we provide support for overcoming the critical situation, we encourage it, which represents a genuine pro-social behaviour. (S. Chelcea, 2008).

Both in daily life and at work we are invaded by emotions. We start with the emotion of joy or feeling of happiness that we were accepted to a job interview, but what emotions shall we face in the next stages of our professional development? What emotions are we meant to experience? Analysis of mental demands of the new profession (from the field of public relations, customer relations, advertising, etc.) in the light of psycho-socio-cultural theories of emotions could suggest some ways of preventing alienation, socio-professional stress, cynicism, and organizational silence, in the case of emotional labour suppliers.

Thus, identifying the role that emotions and emotional life play in the social and organizational behaviour will contribute to the development of a more sensitive point of view regarding their impact on the workplace, emotions that arise not only in dramatic situations, but also in the daily tasks where they often go unnoticed and influence the professional performance of the employee.

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## **GENERAL ASPECTS ON THE EMERGENCE OF CSR PRACTICE AROUND THE WORLD**

**GEORGETA GRIGORE**\*

**ABSTRACT:** *On every continent, corporate social responsibility (CSR) is being practiced in a historical manner for several decades. While in some regions philanthropic activities have been taking place even before using the concept of CSR, in other areas this concept has become familiar at a later date as it has appeared and developed while being brought mostly by multinational operating in the area. The aim of this paper is to briefly draw some elements related to the emergence of CSR practices on different continents.*

**KEY WORDS:** *corporate social responsibility, emergence, socially responsible company*

### **1. INTRODUCTION**

Corporate social responsibility (CSR) practices have been adopted in a different way in different corners of the world. On every continent, CSR is being practiced in a historical manner for several decades. While in some regions philanthropic activities have been taking place even before using the concept of CSR, in other areas this concept has become familiar later as it has appeared and developed while being brought mostly by multinational operating in the area. In the following sections, I will briefly draw some lines on the emergence of CSR practice in different corners of the world.

### **2. EUROPE**

The European Union countries are famous for the dramatic consequences for the profits race within the context of globalisation: mad cow crisis, financial scandals, and de-localisation. These events have generated discussions on the need of an acceptable framework for this race.

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Several actors grouped their responses in a new domain of the business world: corporate social responsibility. This new dynamic emerged beyond the fundamental economic bases: legal framework and agreements between social partners.

As conceptual and practical framework in Europe, CSR emerged from two streams: the historic paternalist view of large enterprises from the 19<sup>th</sup> century and the influence of the Anglo-Saxon view on companies in the 80s.

On every continent, CSR is being practiced in a historical manner for several decades. In its new forms, CSR appeared in the USA thirty years ago. Then it spread out in Europe where it has been improved. The large corporations have incorporated CSR into their production units in different corners of the world.

The new forms of CSR are characterized by the vision the company has about itself. Firstly, it is about the negative effects of this process on society; secondly, it is about how it can actively contribute to societal welfare and not necessarily only to its personnel. In its later stage, CSR develops creativity which goes beyond the traditional charitable actions.

### **3. ASIA**

Even though the concept is relatively new in Asia, the relationship between companies and society has always been an important facet of the social structures. In some regions, the Asian countries have always had companies whose activities towards society were based on religion. The CSR stake and concept as it is understood now has appeared in the 90s.

In Asia, this process has emerged along with the new companies coming from the west and establishing production units on the continent. The CSR movement has also been accompanied by the civil society actions encouraging an increase in demand and hope for social responsibility from companies. This has proved to act as a stimulus also for the Asian companies – especially those willing to do trade with the west – in order to build an image of a socially responsible company.

It is also important to understand the industrial model in Asia. Contrary to the western companies where these play an important role in the industry, in Asia, the major players have an important stake in economy.

### **4. AFRICA**

When the role of the large multinationals increased in the 60s, norms and quality became non-imperative differential criteria and very useful ones for the internal dynamics of companies. Several initiatives have been taken to an international level in order to introduce an adequate institutional framework with the aim to facilitate the standardization and certification process. Even though the veritable endogenous initiatives are rare in Africa, it is important to acknowledge that, in favour of globalization and different international cooperation agreements, the operational judicial dispositions have been translated into the promotion of certain norms and their harmonization within the process of regional integration.

Therefore, the ISO 9000 norms on quality, ISO 14000 on environment, HACCP on hygiene and the norms on social responsibility are part of the new generation for the economic actors (SA 8000).

All the functions of a company are taken into consideration and contribute at their level to the global policy on social responsibility. Besides the importance of this issue, these are not enough approached on the African continent compared to the Nordic countries. One of the main reasons would be that Africa is practically absent from the international trade and it has very few large companies operating.

## **5. LATIN AMERICA**

The evolution of the concept from the enterprise philanthropy to social responsibility is worth looking at. If at the beginning it was focused on ethical investment, it soon became a strategic approach where the last step incorporated the ethics issue in a company.

The theoretical way of thinking, the evaluations and promotion of CSR practices are being considered in every Latin American country. The progress on CR related issues is more advanced in countries with important industrial development and with a significant number of large companies as part of the economy. The CSR concept has spread around the region quickly. This has been adopted by the national and international companies from every country. Many of them have already had philanthropic activities before adopting CSR related initiatives.

## **6. CONCLUSIONS**

The CSR concept is differently understood in companies depending on different contexts in different regions of the world. The institutional context has an important role to play in developing the CSR practice. Also, the relational contexts among different agents (public powers, enterprises, syndicates, NGOs) differ across continents and regions.

In less developed socio-economic spaces, where even though the ecological situation is less favourable, the environmental issue related to CSR goes beyond the need to implement high social standards.

Large transnational companies from the Nordic area tended to transpose their CSR model towards east and south but this does not necessarily meet the local needs of the place where it is implemented. Norms, definitions and concepts need to be adapted to the social and economic situation of the region or continent.

Some companies implement CSR practices by themselves, others get together into partnerships with different actors interested in organisational behaviour. Other stakeholders can be NGOs, syndicates, shareholders organisations, consumers associations, or public bodies and local governmental agencies.

The CSR dynamics is rather qualitative at a global scale, companies are willing to take CSR initiatives on a voluntarily basis and adapted to the local situation; a large number of stakeholders are aiming at a uniform standards framework which would allow a better estimation of the companies' CSR behaviour and even regulations that

would allow a better sanctioning of certain trans-nationals when required as acting outside their established territories.

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## **THE ROLE OF A FOUNDATIONALIST APPROACH TO MORAL KNOWLEDGE IN ETHICS MANAGEMENT OF ECONOMIC ORGANIZATIONS**

**SABINA IRIMIE, IBRIAN CĂRĂMIDARU,  
CONSTANTINA MĂRGULESCU \***

**ABSTRACT** *The aim of this paper is to investigate the pragmatic function that a foundationalist architecture of moral knowledge may have in managing ethics in an economic context. The role of studying values using a foundational structure is to make the values that are basic for some members to become derivative for the rest of the members or at least to be constantly considered as relevant criteria in decision-making processes. The Ethical Delphi is proposed as an efficient tool for homogenizing values that cannot otherwise be asserted. Hence, those values could not be formalized in standard tools for managing ethics.*

**KEY WORDS:** *Business Ethics, Foundationalism, Organizational Studies, Applied Ethics, Ethical Delphi*

### **1. INTRODUCTION**

In order to get a glimpse of the theoretical epistemological problems concerning moral knowledge we must correctly expose the foundationalist architecture of knowledge in the realm of moral enquiry.

Men generally adhere to a large, but finite, set of beliefs labelled together as knowledge. The sentence, in the logical sense, is the constitutive element of knowledge, and that is because the sentence is the simplest element of a discursive practice that might have the attribute of truth-value.

The classical/modern theory of knowledge has imposed three criteria for an assertion in order to be regarded as knowledge:

- To be true;
- To be believed by the subject;

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- The subject is justified in believing it.

These criteria are usually expressed in equating knowledge with justified true belief (JTB). In Edmund L. Gettier's seminal paper *Is Justified True Belief Knowledge?* published in 1963 [7], the author considers that this (JTB) is not a sufficient condition for knowledge since a subject could have a false justification for holding a statement, but nonetheless the assertion could be true according to the *correspondence truth theory*- the question of course would be- is this knowledge? There are different answers to this question [2], [9] and we would consider justification necessary for knowledge since no better definition of knowledge appears in the market of ideas.

Keeping in mind the scope and length of this paper we will focus only upon aspects related to the justifiability of beliefs, in as much as the managerial pursuits have to be neutral concerning the capacity for truth-aptness of moral beliefs and the status of moral statements as being worth believing (whatever this might mean). The latter considerations are related more to the ontological status of moral assertions than to their epistemological rank. So, who requests and what is requested for statements to have a rational justification/ a foundation? Why couldn't someone hold a set of beliefs without having to be held responsible for its justification?

Is not just because of some philosophical matters that the beliefs which someone might hold should be somehow justifiable and at least this is requested at the academic level for the sake of *intellectual honesty*. Nowadays researchers (such as R. Audi [1] and A. Plantinga [11]) have investigated the historical nature of the different types of intellectual obligation to give an account for the holding of beliefs. The term *justification* has a normative ring to it, and it ends up in the responsibility of the individuals concerning the control capacity upon the manners in which beliefs are formed and upon their state of mind in the processes of beliefs formation.

The rationality of a belief is thus deontological related to the concept of evidence (i.e. proof). We can speak of strong propositional evidence that offers certitude to the assertion to be justified or of weak inductive evidence that confers some degrees of probability to the belief thus justified.

The whole problem of justification could be stated as follows: does any belief deontological request a propositional support other than its own postulation? Or can this support be requested/offered no matter what contents of the belief in case are? Well, if the answer is yes, do we not end up in infinite regress? Is there any possibility that in an attempt as such we shall support the  $n+1$  belief with the very belief we were trying to justify in the first place? Are there any beliefs that might not request any other support than their own assertion? In answering such questions the following three options/alternatives (known as Agrippa's trilemma) exist for the regress problem of justification:

- Some beliefs are unsupported
- Beliefs can be supported by an infinite chain of justification
- Beliefs can be supported by a circular chain of justification.

The second solution is the most counterintuitive, it is really hard to show how an infinite chain of justification can justify anything whatsoever. The other two answers are the most common in the theory of the architecture of knowledge (we would rather use the term architecture, as Audi often does, instead of structure –which

is loaded with numerous connotations from getsaltism/structuralism/theory of systems), that is - foundationalism and coherentism.

*Foundationalism* holds that some beliefs can be justified without being supported by any further beliefs (this sort of beliefs are usually named *basic* beliefs). The major problems for foundationalism are how many basic beliefs do we need and what type of beliefs can be placed as basic in the chain of justification. We notice that the number of assertions is a problem also in the scientific axiomatization theory [6].

Classical foundationalism accepts as basic only tautologies (self-justifying logical or mathematical assertions) and sentences describing direct empirical observations. Thomas Reid was almost alone in his proposal to give credit to the natural intuition concerning general assertions that can be regarded as basic although they lack the status required by classical foundationalism (examples of properly basic beliefs that cannot match the classical standards include: the existence of the past and the existence of other minds). Following Reid, Plantinga thinks that a belief is *properly basic* if the person holding it is in some significant way warranted in doing so. As Boa and Bowman observe [3] several important implications of Plantinga's notion of basicity need to be understood:

1. A belief may be basic for a person at one time but not at another.
2. A belief may be properly basic for one person but not for another.
3. The fact that a belief is basic for someone does not mean it is *groundless*.
4. Plantinga's claim that some beliefs can be properly basic does not imply that just any belief can be basic.
5. The idea that a belief is properly basic is to be distinguished from two other concepts. To say that a belief is basic is not a statement about the degree of confidence or certainty with which it is held. The firmness with which a person holds a certain belief is not directly related to whether that belief is basic for him.
6. It is possible to abandon beliefs that one held as basic beliefs, even as properly basic. Any argument or information that removes the ground for acceptance of a belief is called a *defeater*.

*Coherentism* entails that all beliefs are inferentially justified, the image of a web of beliefs that support one another via a system of mutual relations can be easy to reduce to mere logical consistency. In order to avoid strict circularity we must have a large sphere of beliefs and to add other requirements to the system of beliefs such as – predictive power and explanatory capacity.

A combination of the two architectures might lead to something called *Foundherentism*. Keith DeRose [5] is an advocate of this option taking into account *the problem of the amount of non-transferred warrant* that a belief might need in order to be considered properly basic, he gives a virtual example of two beliefs that are not basic (they lack the sufficient amount of non-transferred warrant) but they can transfer some warrant to each other in order that both of them would be at the same level of justification.

## 2. THE ARCHITECTURE OF MORAL KNOWLEDGE - MORAL FOUNDATIONALISM

We should notice so far that the problem of the structure of knowledge is not a descriptive matter but a normative one, it points to ways that would give our beliefs a consistent manner in which they could be justified.

The problem of the architecture of moral knowledge starts from the debate concerning the cognitive status of moral claims. And this is of course a problem of metaethics rather than one of substantive ethics (a term that W. Sinnott-Armstrong uses instead of the common normative ethics). Peter Tramel [12] classifies theories of moral epistemology as shown in table 1.

**Table 1. Approaches to Moral Knowledge**

<b>Traditional Approaches</b>	<b>Non-Traditional Approaches</b>
Foundationalism	Reliabilist Theories
Coherentism	Non-cognitivist Theories
Contextualist Theories	Ideal Decision theories
Traditional Skepticism	Politicized Theories

Tramel shows some traits of the traditional approaches, they are committed to five assumptions (2 moral and 3 epistemic):

- [Moral] Cognitivism
- [Moral] Realism
- [Epistemic] The Necessity of JTB
- [Epistemic] Internalism – the proper function of cognitive faculties
- [Epistemic] The Priority of Epistemic Structure

From these traits can be inferred some ontological aspects entailed by moral foundationalism:

1. Moral claims relate to moral facts that can be morally assessed with qualifiers such as *good or bad*
2. Moral beliefs presuppose the possibility of knowledge of moral facts in the first place.

There are two classical moral foundationalism theories in the terms of Tramel:

- *Moral Sense Theories*- “that asserts the existence of a uniquely moral sense by which we perceive rightness or wrongness”;
- *Moral Epistemic Intuitionist Theories* “imply that we can non-perceptually recognize some moral truths in a way that can non-inferentially justify us in believing them.”

## 3. THE MANAGERIAL RELEVANCE OF THE ARCHITECTURE OF MORAL KNOWLEDGE

What is the managerial relevance of this entire theoretical framework? First of all -managing values in economic organizations has a primary duty to search what kind



of values it shall deal with. And afterwards - to notice whether these values are part of beliefs that might function as basic in the foundational moral structure of the members that the organization places in different internal social networks. Obviously, individuals cannot that easily figure out their basic values, even if they might have the feeling that some are core and others are peripheral or transitive values. However, the ongoing search for values is the most important managerial task in building up the tools incorporated in a coherent *Plan for Managing Ethics*. Values commonly held by different types of stakeholders will end up being named, listed, emphasized in all the tools – the credo, the code of ethics, the code of conduct, etc.

An approach that consistently focuses on values as decisional criteria will lead to regard values as a restriction upon the area of given managerial option - in a given economic decision making process. This idea can be illustrated in figure 1.

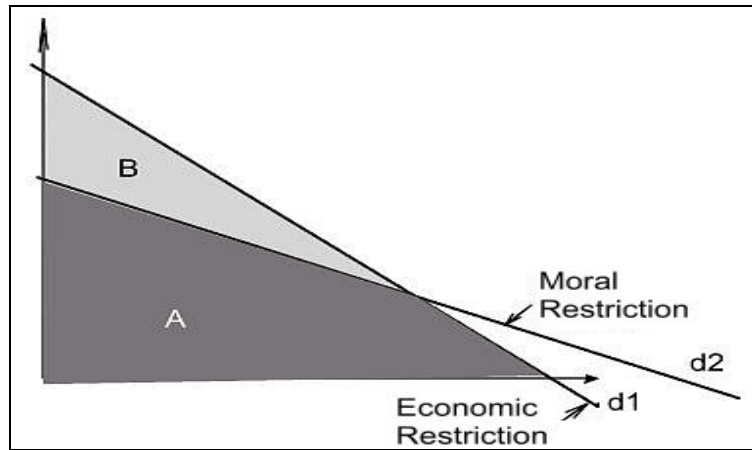


Figure 1. Economic and moral Restrictions upon the decisional area

Initially the surface determined by the economic restriction (imposed upon the quadrant by curve  $d_1$ ) was given by the points of the A+B surface representing the decisions with economical feasible outcomes. After considering the moral restriction as decision criteria (represented by  $d_2$  curve) the area is diminished by surface B, there are of course decisions that might be moral, but inefficient-below  $d_2$ , but at the right of  $d_1$ .

In establishing the set of values to be managed in an economic context, managers got to have in mind a clear vision of the whole range of values that are expressed somehow by the stakeholders who will be affected by the future decision to be made. Let's suppose - as an ideal situation - that all the stakeholders ( $S_i$ ) can identify their values (the elements of  $VS_i$ ) and afterwards split them into basic and inferred values.

$$VS_i = \{V_{i1}, V_{i2}, \dots, V_{in}\} \tag{1}$$

And after a process of selection for each of  $V_{ij}$  elements the stakeholder should decide whether:

$$V_{ij} \in B_i \text{ or } V_{ij} \notin B_i \quad (2)$$

After all the  $B_i$  has been collected by the management - the intersection of those elements should give us the basic common values multitude  $B_0$ :

$$B_0 = \{B_1 \cap B_2 \cap B_3 \cap \dots \cap B_{an}\} \quad (3)$$

Even in this ideal situation - where values can be identified and sorted as basic and non-basic we can obtain a situation where the members of the organization (considering for a while that they are the only stakeholders) might not find a single value that enjoys the basic status for all of them, this should mean:

$$B_0 = \{\emptyset\} \quad (4)$$

Well, this does not at all mean that they do not share any moral values (this can hardly be possible) and this can be expressed as follows:

$$\{VS_1 \cap VS_2 \cap VS_3 \cap \dots \cap VS_n\} \neq \{\emptyset\} \quad (5)$$

The fact that the members might not share values as basic means that, perhaps in their foundational structures the values that are spread as basic for some are just derivative for other and the other way around.

In the realm of the planning function of management one of the key issues is the unpredictability of individual behaviour. Generally values regulate behaviour in a more compelling way than managerial policies can that is why the study of values that already exist in the background of each member's structure of moral knowledge should lead to a more predictable future, if the values found are homogenized.

Hence, *the role of studying values using a foundational structure is to make the values that are basic for some members to become derivative for the rest of the members or at least to be constantly considered as relevant criteria in decision-making processes.*

How can this be done? In the ideal example that we have given you just transpose in a systematic manner all the values expressed as basic in the formal tools of ethics management and these end up being regarded as the core values of the organization. This situation can be illustrated in figure 2.

As has been clearly stated this is an ideal example, it is an instructive, tough oversimplified way of looking at the issue of moral values all across the organization and over its social boundaries. Here are a few points to ponder upon:

- ✓ The foundationalist scheme is a normative path, hence - somewhat "fictitious". Members of the organization might not be familiar with the idea that some of their beliefs are basic, but all the while they think that some values are more important than others;
- ✓ The point is not to build up a strategy for striving to get the members to expose their values within a foundationalist framework. Keep in mind that asking for an iteration of values might be a factor of dissension (the brilliant French economist G. Abraham-Frois once pointed out that clearly exposing some planning matters might be an action that prevents some

actors from acting the way which was envisioned for them, just because they will know their future context for action.)

- ✓ As we showed elsewhere [8] this is a static vision upon the systems of values, a postmodern view would require a blueprint that would continuously emphasize the idea that values are in an ongoing process of change in the flow of human experience since they cannot be called ultimate or absolutes as far as they are regarded as elements of transitive metanarratives.

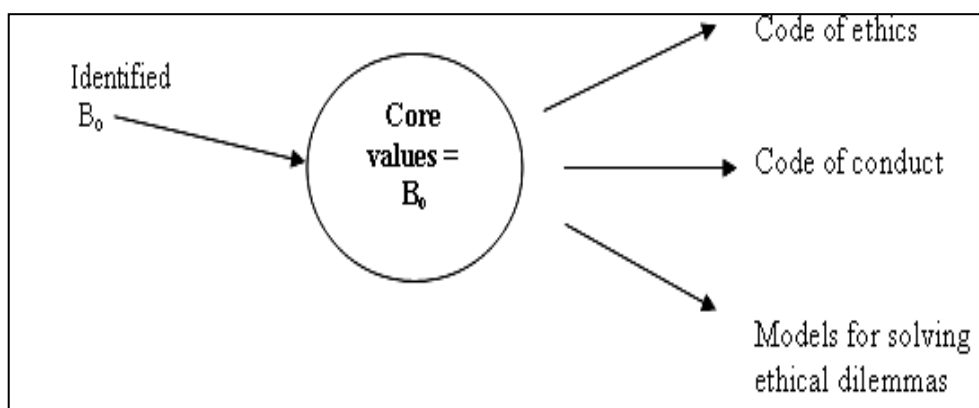


Figure 2. Transposing the basic values into the tools of managing ethics

#### 4. THE ETHICAL DELPHI - A TOOL FOR INVOLVING TACIT BASIC VALUES

Millar and Tomkins [10] elaborated a handbook for decision-making processes which involve contexts that require moral reasoning or an appeal to moral assessment of the results of the decision to be pursued and the means of obtaining them in the area of bioethics.

The authors mentioned above maintain the classic idea of the Delphi method as an iteration of questionnaires given to anonym experts that are members of a panel. They define Ethical Delphi (ED) as follows:

*"An ethical Delphi is an iterative participatory process between experts for exchanging views and arguments on ethical issues. The method is structured around the notion of a virtual committee where the exchange of ideas is conducted remotely through a series of opinion exchanges (in the form of 'Rounds'). Anonymity of the participants is central to the process. This feature aims to eliminate external power relations and personal influences that may interfere in the discussion of ethical dimensions within a committee environment."*

ED is generally regarded as a means for collecting and homogenizing opinions in a system of ethics, which is widely recognized as coherentist, i.e. the ethics of principles. The ethics of principles tries to focus on certain moral principles as a basis for reflection concerning the rules, values, and value judgments which can be inferred

from the principles in situations that require specific moral norms. There is an ongoing process of balancing principles with rules because the principles are not regarded as basic (in the sense that we ascribed to *basic*), they have to cohere with the rest of the elements of the ethical sphere.

Making ED work is altogether a managerial issue concisely represented by the following succession of steps from figure 3.

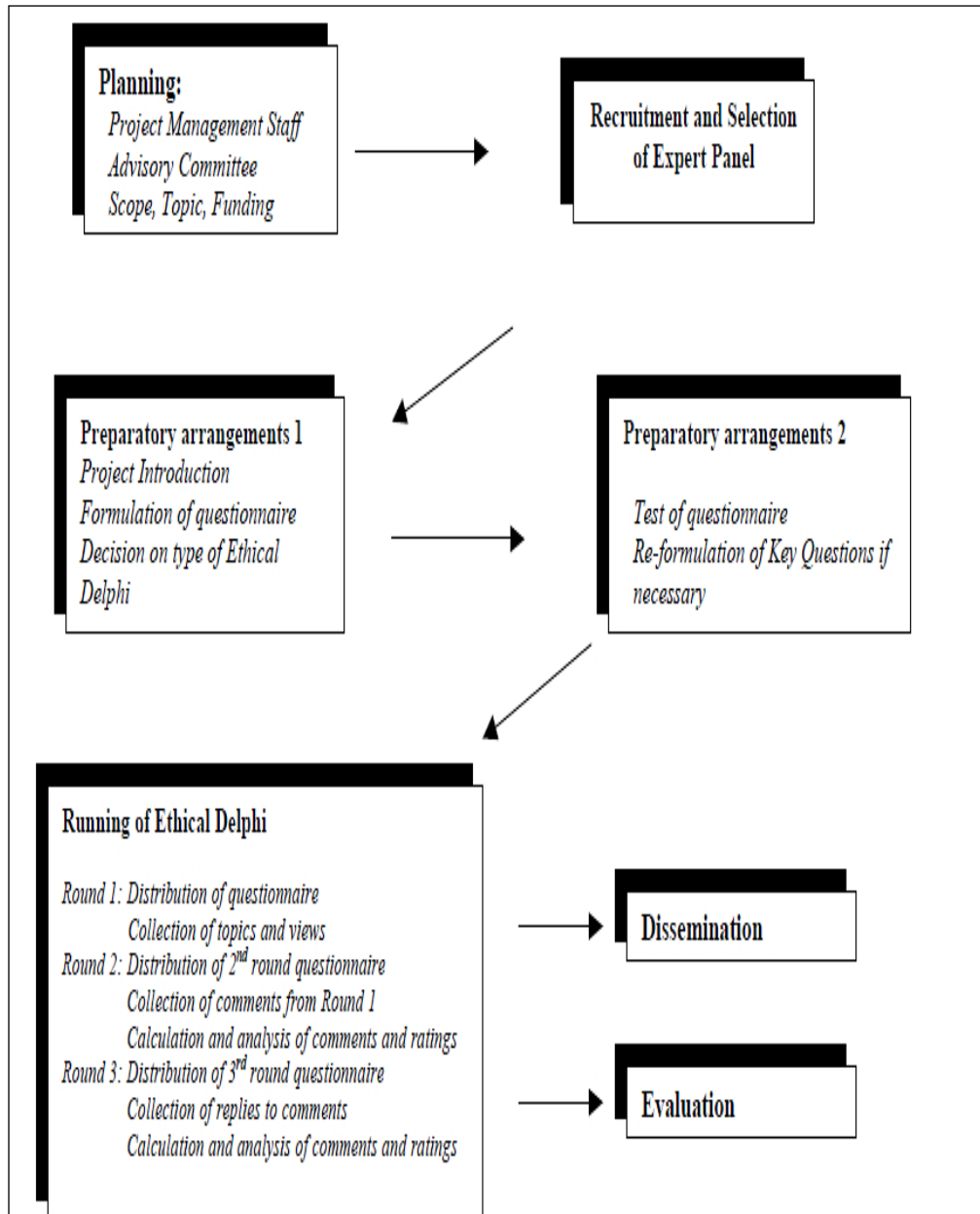


Figure 3. The Steps of ED

There are two reasons motivating us to think that the ED might serve as a tool for tacitly involving basic values without even mentioning them in any of the iterations. We will mention them in the following conclusions.

## 5. CONCLUSIONS

The conclusive question would be: why pick ED and not some other instrument for homogenizing the foundationalist structure of values in the organization?

1. Because ED tacitly reveals basic values, almost any other quest for an iteration of basic values fails to reveal them. Men cannot always express their fundamental convictions and beliefs; thus, the process of belief formation is hard to describe. Another issue would be exhaustively relating the beliefs held to one another.

At any given time most of our beliefs are non-occurrent. We might say that they are stored in memory and await retrieval upon reflection. In contrast to occurrent beliefs, these are dispositional beliefs [1].

2. Because ED is a constructive way to homogenize values on the path leading to organizational consensus. Numerous tools in applied ethics cannot be separated from their *ethics of principles* framework.

These tools start from principles that have already been affirmed, whereas in ED, all the comments made in the iterations of answers encompass values which might not be found in the elements of the *Plan for Managing Ethics*, no matter how wide the *Plan's* approach might be.

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## **COORDINATION OF MANAGEMENT ACTIVITIES - A CONDITION SINE QUA NON OF A PERFORMANCE MANAGEMENT**

**CLAUDIA ISAC, LUMINIȚA VOICHIȚA,  
ANCA JARMILA GUȚĂ \***

**ABSTRACT:** *Starting from the current international context in which performance management is key to overcoming the financial crisis, the content of the work we have addressed in detail and co-ordinate the management process. Thus, we presented two forms of coordination, coordination of horizontal and vertical coordination, disparities and convergence between them and coordinating role in system management functions.*

**KEYWORDS:** *formal organization, informal organization, coordination function, vertical coordination, horizontal coordination*

### **1. INTRODUCTION**

Outside of formal, established under the company's objectives and recognized by official documents (organization, rules of organization and operation, the job description), be bounded informal structure that forms the basis of individual goals or aspirations and sympathies of the members. Relations are established between formal and informal structures are complex and management must be directed so that the two become complementary and converging.

### **2. CONVERGENCE OF FORMAL AND INFORMAL ORGANIZATION**

In general, informal organization brings together all groups and voluntary nature of interpersonal relationships that characterize social and professional relationships that are established naturally and spontaneously between business components to meet personal interests. Between informal and formal organization are

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closely interdependent, due to some common elements, such as that both constitute the same company and at all hierarchical levels, the achievement of targets and a dynamic character. Analysis of these common elements of both types of lead structures and to detect differences between formal organization and informal organization, such as: formal organization designed to achieve the objectives and informal company on track to meet targets for group or individual employee can handle a single job in the formal structure of the company, but may be a member in several informal groups, formal organizational structure is established according to rules, regulations, principles and established by official documents, while the informal structure consists of groups of people relations are established between spontaneous and flexible.

In any company, organization coexist alongside the informal elements of structural organization, the two structures there are strong ties of interdependence arising from the existence of common elements such as: Both are in the same company, the human element is also included, both aimed at achieving the objectives own, possess a high dynamic of change over time given the objectives pursued, are general, is being found in all organizations, regardless of hierarchical level, industry or size. Of course, the two forms of organization there are some differences but that does not serve to separate them, but on the contrary, increases in greater interdependence of formal-informal: the high mobility of the informal structure is not rigid by obligation to comply with certain provisions, official regulations specific regulatory or formal organization, establishment and operation of informal organization aimed at achieving personal needs and desires while the formal organization is an instrument of overall objectives that harmonize with the interests of individual groups.

The impact of the informal structure of the formal structural organization may be perceived positively, stimulating in cases where informal groups identify with organizational subdivisions and informal leader is invested with formal authority or negatively, when informal groups bring together individuals operating activity under different labour departments or belong to different hierarchical levels. Informal focus group activities to the objectives arising from self-interest will feed in this case lack of interest in the tasks arising from the structure plan, reduce accountability, unnecessary consumption of time for informal communication, etc. It is therefore a need to identify the informal leader (not always coincide with the union leader of the firm) and active broadcasters because starting from the axiom that the most effective in influencing group may act by attracting leader by developing a complex of measures to motivate informal collaboration between manager and leader.

### **3. COORDINATION FUNCTION OF MANAGEMENT**

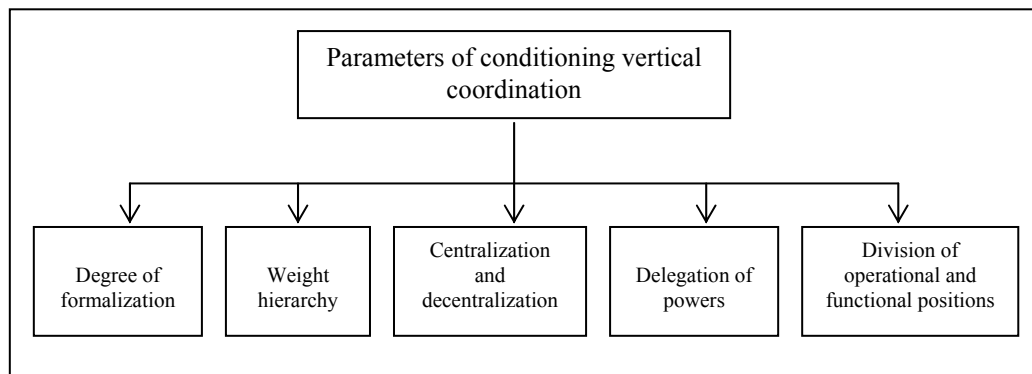
Thus a major goal of the management company must be represented to identify forward, building upon the values of informal organization in the enhancement of the functionality of formal structures. The interface between the two sides of business organization is ensured through the coordination function of management. Actions taken by managers that the content management process stages are its functions and all functions that form the content management process. Specialized foreign literature there is widely accepted delineation of these functions or a consensus on their numbers,



renowned author proposes the following: H. Fayolle: provision, organization, command, coordination, supervision, L. Gulick: planning, organizing, staffing, coordination, records, preparing budgets H. Koontz, CO'Donnell: planning, organizing, staffing, management, control, W.J. Duncan: planning, organizing, controlling H. Church: design, equipment, order, record, operation; H.B. Maynard: planning, execution, control. In our country management literature devoted management process following five functions: forecasting, organization, training, coordination, control. Concerning attribute management and coordination function, it is meant to ensure the activities of the firm adapt to conditions in each stage of its evolution. At the same time, coordination is achieved by synchronizing the actions of managers, the decisions taken at various hierarchical echelons, the action taken by employees from different structural compartments to achieve efficient projected goals. Exercise coordination function is therefore necessary as a result of the strong influence that the company felt it from inside her and outside, due to mutations caused by the turbulent nature of the environment. With regard to "threats" inside, upper management is required to harmonize the conduct and actions of employees organized in informal groups while facing external challenges through formal organization or reorganization proceedings "in the dynamic of the company or of its divisions in response to changing environmental requirements. Addressed by the links between formal and informal organization, coordination can be examined both vertically and horizontally.

#### 4. VERTICAL COORDINATION

Vertical coordination, aimed at linking activities at higher levels and lower average levels for the achievement of company objectives. The main parameters which determine the effective exercise of vertical coordination are: degree of formalization, hierarchical weighting, centralization and decentralization, delegation of powers and division of operational and functional positions (figure 1).



**Figure 1. Parameters of conditioning vertical coordination**

Formalization is the extent to which words company policies, tactics, rules, job descriptions and other official documents, describing explicit operational directions to be taken in certain situations. In this view, formalizing the way towards vertical

coordination handle the expected behaviours of employees. Thus, policies plot limits deployment of strategic actions, procedures and rules define subsets of actions and describe the steps to be followed for solving specific problems, descriptions of items and features detailing the tasks and duties conferred upon persons occupying those positions or functions. Typically, the degree of formalization increases with increasing firm size is reduced for smaller businesses (with up to 10 employees) who work exclusively sometimes informally (with little documentation describing the specific procedures and rules) and higher for corporations facing multiplication problem interdependence of employees and departments. Although the main mobile formalization organizational structure is related to increase its functionality by clarifying and logical ordering of activities, such initiatives have often degenerated into excessive formalism. In such cases, written regulations, rigid and detailed, binding supplies issued attitude of passivity, lack of initiative, obedience. Bureaucracy is excessive in these circumstances formalization product.

The degree of centralization of authority reflects the concentration of the upper echelons of the organizational structure. Structural problems caused by this parameter are related to regulation report centralization-decentralization as a way of sharing decision-making power within the firm. Both centralization and decentralization has some advantages. Thus, a high degree of centralization facilitates effective coordination of efforts and resources company, prevents excessive independence of structural subunits is reflected negatively on the overall implementation strategy, provide horizontal and vertical integration decisions, promotes leadership by concentrating power levels Top of the management. In addition, decentralization may also be preferred because of its advantages such as job enrichment subordinates at the lower levels, encouraging initiative and creativity, efficient use of time managers, increasing the operability of the decisions, avoid overcrowding managers at higher levels. Although the degree of centralization / decentralization varies from one firm to another in relation to its specific developments to performance management that have marked the last two decades tend to tilt the balance in favour of decentralization. In fact, most companies today are characterized by a degree of decentralization resulting from factors such as firm size and complexity increase their activities, the geographical dispersion of territorial subunits, unprecedented technological complexity of research and production processes, environmental turbulence etc.

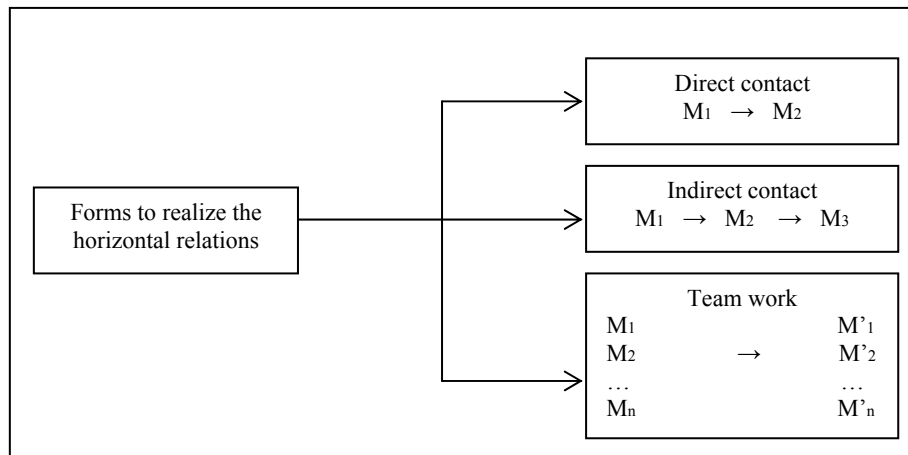
Delegation of powers is another parameter of vertical coordination involving the transfer of responsibility and authority for the decisions of a managerial level to another immediately below. Unlike decentralization which standing downward movement of tasks and powers, the delegation is temporary, covering a period set by managers and subordinates. Addressed by some authors as a distinct method of management, delegation facilitates vertical coordination exercise by relieving managers of the task solving problems of marginal importance and tasks related to lower levels of the company. Meanwhile, the delegation may be circumscribed parameters informal organization in that its use promotes development of special relations between managers and subordinates are grafted on the psychological foundation of mutual trust. Operational position means a job or function constituting the organizational structure invested with authority and responsibility necessary to

achieve the major objectives of the company. Functional position is associated with a job or function designed to provide specialized knowledge and support operational work. Circumscribes the functional positions of activities not directly contribute to the aim of activity, but the existence and the way they conduct the proper functioning of the entire company. Operational or functional positions and departments differ in relation to company type analyzed. For example, a manufacturing firm productive departments are considered operational, while the sales and procurement are functional departments. For a company operating a commercial activity, the roles are almost reversed: sales and supply are invested with authority operational departments. Among the departments with functional role in any company are listed: human resources, legal, marketing, environmental protection.

## **5. HORIZONTAL COORDINATION**

Horizontal coordination is intended to harmonize activities in hierarchical levels similar or close, but belonging to different departments. According to Jay R. Galbraith, frequency of use increases the extent of multiplication of horizontal links information processing requirements relating to production. By facilitating the transfer of information between organizational subunits positioned on the same levels, horizontal coordination mechanisms supplement the actions of specific vertical coordination traditional pyramid hierarchy. Four major directions are known to promote horizontal coordination: buffer resources, information systems, horizontal relations (cooperation) and managers Coordinators. Resources buffer facilitates the adaptation to internal and external environmental conditions and initiate change. Firms often use resources like buffer surplus staff, extra time, the stock or additional equipment to minimize the efforts required for their distribution among organizational subunits and allocation processes to ensure flexibility.

One of the secondary functions of information systems is closely linked to facilitate horizontal coordination of business components. Thus, some functional parameters of the information system confer a high degree of flexibility progressive organizational structure by reducing the number of compartments and hierarchical levels and simplify the organizational relations. In other words, building a solid information system built around an efficient information communication is the major premises timely intelligence and coordination of efforts of employees. Horizontal relations facilitate aligning employees to the same hierarchical level, to cope with sharing of complex problems without the involvement of superiors. Since their development and deployment of hierarchical lines ease the bridges between departments, offices, departments, workshops. Horizontal relations are sometimes called "bridge relations". The main ways of realizing the horizontal relations (figure 2) are: direct contact made between mid-level managers or lower in order to coordinate activities and resolve complex tasks; connection through the liaison agency role exercised by a manager who handle effective communication and continuous coordination between departments performing common; task forces and interdepartmental work teams are groups set up a temporary rule to make recommendations on a topic or solve a specific problem.



**Figure 2. Forms to realize the horizontal relations**

The best known type of interbranches group currently used is called quality circles. In essence, a quality circle meets a group of people in the composition of different organizational departments who meet regularly to identify and solve problems related to quality, productivity, working conditions, etc. what employees face in their work. Success of quality circles enjoyed in Japanese companies is closely linked predecizional nature of these meetings, often evidenced in the formulation of solutions that are sometimes implemented to improve the average level of managerial echelons (s sections and workshops). If the positive impact of quality circles on improving the organization is clearly formal, literature mentions a number of other organizational forms experienced by Japanese firms to facilitate horizontal coordination. To this end, it is a series of small informal groups that have different names and modes of operation taking into account the objectives concerned: "Committees of productivity, etc. Kaizen teams. Coordination of activities involving several functional departments and / or operational managers is subject coordinators. In relation to specific work performed, they are called project managers, product managers or brand managers.

## 6. CONCLUSIONS

In essence, managers Coordinators act as agents of horizontal coordination without hierarchical authority over the employees and functional departments that coordinate. Consequently, the designation of any manager coordinator should use a Multi-assessment of knowledge, skill, skills, managerial skills involved in contact with other managers and employees.

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## **POST ISSUE PERFORMANCE EVALUATION OF IPO'S - AN EMPIRICAL STUDY**

**P. ISHWARA \***

**ABSTRACT:** *Primary market is the segment in which new issues are made whereas secondary market is the segment in which outstanding issues are traded. In the primary market, issues may be made in four ways, namely public issue, rights issue, private placement/private equity and bonus issue. The IPO's are regulated by SEBI in terms of SEBI guidelines: SEBI has framed the guidelines in 1992, which were changed many times keeping in view the inconsistencies, market development and changing needs of the capital market. A new set of guidelines was issued in the years 2000.*

**KEY WORDS:** *primary market, namely public issue, rights issue, private placement/private equity and bonus issue, SEBI guidelines*

### **1. INTRODUCTION**

The liberalization policies ushered in by the government, in 1991, have brought about a new dimension in the capital market as well as corporate environment in India. The investment climate improved considerably following the modification of licensing procedures and the freedom to fix issue prices for new issues etc. The abolition of the Capital Issue Control Act, 1947 also welcomed a new era in the primary capital markets in India. Control over the pricing of issues, and designing and tenure of the capital issue were abolished after establishment of Securities and Exchange Board of India (SEBI) on April 12, 1988.

The issuers, at present, are free to make the price of the issues under the ambit of SEBI. Before the establishment of SEBI, the quality of disclosures in the offer documents was very poor. SEBI also formulated and prescribed stringent disclosure norms in conformity to global standards. These favourable developments lead to rapid growth in the quantum of financial investment. Thus, the primary capital market in India has been witnessing tremendous growth in the number of new issues hitting the market, surpassing the normal growth that is expected as a result of growth economy.

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Primary market is the segment in which new issues are made whereas secondary market is the segment in which outstanding issues are traded. It is for this reason that the primary market is also called New Issues Market (NIM) and the secondary market is called Stock Market. In the primary market, new issues may be made in four ways, namely public issue, rights issue, private placement/private equity and bonus issue. Public issues involve sale of securities to members of public through prospectus. Rights issue involves sale of securities to the existing share holders/debenture holders. Private placement involves selling securities privately to a selected group of investors. Issue of bonus shares involves sale of securities to the existing shareholders at a free of cost. In the primary market, equity shares, fully convertible debentures (FCD), partially convertible debentures (PCD) and non-convertible debentures (NCD) are the securities commonly issued by non-government public limited and private companies. Government companies issue equity shares and bonds. Primary market has become very active in India after the abolition of controller of capital issue.

## 2. SEBI GUIDELINES FOR IPO'S

The IPO's are regulated by SEBI in terms of SEBI guidelines: SEBI has framed the guidelines in 1992, which were changed many times keeping in view the inconsistencies, market development and changing needs of the capital market. A new set of guidelines was issued in the year 2000; which are also amended subsequently.

The salient features of these guidelines are given below:

- Promoters should contribute a minimum of 20% of the total issued capital, if the company is an unlisted one. Promoters' contribution is subject to a lock-in period of 3 years.
- Net offer to the general public has to be at least 25% of the total issue size for listing on a stock exchange.
- Minimum of 50% of the net offer to the public has to be reserved for investors applying for 10 or less marketable lots of shares.
- In an issue of more than Rs. 100 crore the issue is allowed to place the whole issue by book building.
- There should be at least 5 investors for every 1 lakh of equity offered.
- Allotment has to be made within 30 days of the closure of the public issue and 42 days in case of a rights issue.
- All the listing formalities for a public issue have to be completed within 70 days from the date of closure of the subscription list.
- Indian Development Financial Institutions and Mutual Funds can be allotted securities up to 75% of the Issue amount.
- Allotment to categories of FII's and NRI's /OCB's is up to a maximum of 24% which can be further extended to 30% by an application to the RBI supported by a resolution passed in the General meeting.
- Securities issued to the promoter, his group companies by way of firm allotment and reservation have a lock-in-period of 3 years. However shares

allotted to FII's and certain Indian and Multilateral Development Financial Institutions and Indian Mutual Funds are not subject to lock-in periods.

- The minimum period for which a public Issue has to be kept open is 5 working days and the maximum for which it can be kept open is 10 working days. The minimum period for a rights issue is 15 working days and the maximum is 60 working days.
- A public issue is affected if the issue is able to procure 90% of the total issue size within 60 days from the date of earliest closure of the public issue. In case of over subscription the company may have the right to retain the excess application and allot shares more than the proposed issue which is referred to as the 'green-shoe' option.
- A rights issue has to procure 90% subscription in 60 days of the opening of the issue.

### **3. TRENDS IN THE PRIMARY MARKET**

The revival of the primary market, which started in 2003-04, gathered momentum in 2004-05 and further invigorated in 2005-06, 2006-2007. Strong macro-economic fundamentals, sustained growth of the manufacturing sector, active institutional support led by FIIs and mutual funds, positive investment climate, sound business out look, encouraging corporate results and buoyant secondary market induced large number of companies to raise resource from the primary market. Apart from several mega issues, large number of small and medium sized companies' mobilized resources through public and rights issues.

The private sector continued to dominate the primary market activities during these years. There was overwhelming response to most of the public issues reflecting risk appetite of the investors in general and sustained investment activities in particular. Regulatory reforms such as introduction of proportionate allotment and margin requirement for the Qualified Institutional Buyers (QIBs) and special allocation to mutual funds with in the QIBs category also contributed to brisk activities in the primary market.

### **4. PRIMARY MARKET DURING 2006-2007**

During April-November 2006, 66 companies accessed the primary market and raised Rs. 17,418 crore compared to 71 companies raising Rs. 10,393 crore during the same period in 2005 (Table 1). The total amount mobilized was higher by 67.6 percent during April – November 2006. The corporate have mopped up Rs. 15,914 crore through public issues in April – November 2006, compared to Rs. 9,362 crore during the same period in 2005. The amount raised through rights issues in the current financial year up to November was also higher at Rs. 1,505 crore compared to Rs. 1,031 crore in 2005. There was a substantial rise in the initial public offerings as there were 37 IPOs, which raised Rs. 15,189 crore during April-November 2006. During April-November 2005, there were 41 IPOs which mobilized Rs. 5,890 crore.

During November 2006, 10 companies accessed the primary market and raised Rs. 3,575 crore. The amount raised was the second highest for any month in the current financial year up to November. The companies raised Rs. 2,834 crore and Rs. 741 crore through 8 public issues and 2 rights issues, respectively during the month; of the public issues, 7 were Initial Public Offering (IPOs) (Rs. 2,808 crore) and one was Further Public Offering (FPO) (Rs. 26.4 crore). All issues were equity issues at premium except one, which was a partly convertible debenture. All issues were from the private sector. Industry - wise, largest amount of resources were mobilized by the finance sector (Rs. 1,566 crore), followed by cement and construction (Rs. 1067 crore), telecommunication (Rs. 491 crore) and food processing (Rs. 303 crore). There were 4 mega issues during the month viz Parsvanth Developers Ltd. (Rs. 997 crore), Lanco infratech Ltd. (Rs. 1,067 crore), Tata Teleservices (Rs. 491 crore) and Sobha Developers Ltd (Rs. 569 crore).

**Table 1. Resources rose through public and rights issues 2006-07**

Particulars	2006-07 (April-November)		2005-06 (April-November)	
	No.	Amount (Rs. Crore)	No.	Amount (Rs. Crore)
<i>Public Issues</i>	42	15,914	51	9,362
IPOs	37	15,189	41	5,890
FPOs	5	7,24	10	3,471
<i>Rights Issues</i>	24	1,505	20	1,031
<b>Total</b>	<b>66</b>	<b>17,418</b>	<b>71</b>	<b>10,393</b>

## 5. HOW NEW ISSUES HAVE FARED DURING THE FINANCIAL YEAR 2007-2008

Subscribing to new issues is always not profitable. Through promoters and merchant bankers sold these issues as if they are destined to be blue chips by palming off promises, some of these issues have, in fact, robbed the investors instead of making them prosperous. The review of the performance of 107 issues, which were listed on the stock exchange during the financial year 2007-08, is presented in the following tables.

**Table 2. Post issue evaluation of IPO's (during the financial year 2007-08)**

SL	Name of the Company	Offer Price (Rs)	List Price (Rs)	Listing Gain/Loss (%)	Trading Price (In upward trend) 15 <sup>th</sup> Jan 2008	Gain/Loss (%)	Trading Price (In downward trend) 22 <sup>nd</sup> April 2008	Gain/Loss (%)
01	Cambridge Technology Enterprises Ltd	38	48.9	28.68	80	110.5263	38.75	1.97
02	Autoline Industries Ltd	225	261.15	16.7	247.5	10	204.85	-8.95
03	Pochi Raju Industries Ltd	30	45	50	43.35	44.5	27.85	-7.16
04	Global Broad cast News Ltd	250	471.1	88.44	1160.5	364.2	119.7	-52.12



05	Akruthi Nitmans or ciyy Ltd	540	701.35	29.87	1187.25	119.8611	1084.95	100.91
06	House of Pearl fashions Ltd	550	500	-9.09	295.3	-46.3091	162.55	-70.44
07	Cinemax India Ltd	155	175	12.903	144.1	-7.03226	113.95	-26.48
08	Technocraft Industries (India)Ltd	105	125	19.04	79.8	-24	67	-36.19
09	Redington India Ltd	113	140	23.89	390.2	245.3097	349.4	209.20
10	Transwarranty Finance Ltd	52	60	15.38	44.05	-15.2885	22.4	-56.92
11	Firstsource Solutions Ltd.	64	75.1	17.34	68.4	6.875	43.75	-31.64
12.	Power Finance Corporation Ltd	85	104	22.35	267.5	214.7059	160.5	88.82
13	Indian Bank	91	105	15.38	217.3	138.7912	155.65	71.04
14	SMS Pharmaceutical Ltd	380	349.9	-7.92	303.9	-20.0263	204.9	-46.07
15	Lawreshwar Polymers Ltd	16	15.9	-0.625	11.51	-28.0625	7.83	-51.06
16	C&C Constructions Ltd	291	350	20.27	268.25	-7.81787	207.75	-28.60
17	Euro Ceramics Ltd	165	151	-8.48	250.2	51.63636	137.8	-16.48
18	Mundra LifeStyle Ltd.	90	94.8	5.34	96.95	7.722222	47.6	-47.11
19	Oriental Trimaxs Ltd.	48	42	-12.5	28.6	-40.4167	19.15	-60.10
20	Vijayeshwari Textiles Ltd	100	90.05	-9.95	55.95	-44.05	36.65	-63.35
21	Mindfree Consultings Ltd.	425	599	40.94	462.85	8.905882	475.25	11.82
22	Briadcast Initiaives Ltd.	120	117	-2.5	54.34	-54.7167	38.5	-67.91
23	Grinix Accessories Ltd.	120	110	-8.34	207.25	72.70833	176.45	47.04
24	Idea Cellular Ltd	75	92.4	23.2	146	94.66667	108.85	45.13
25	Indus Fila Ltd	170	160	-5.88	323.75	90.44118	418.1	145.94
26	Raj Television Network Ltd	257	275	7.00	194.6	-24.2802	139.1	-45.87
27	Astral poly Technic Ltd.	115	115	0	211.9	84.26087	184.65	60.56
28	AMD Industries Ltd	75	65.1	-13.2	61.3	-18.2667	34.4	-54.13
29	Jagajanani textile Ltd.	25	22.4	-10.4	14.75	-41	7.83	-68.68
30	Abishek mills Ltd.	100	94	-6	84.2	-15.8	48.55	-51.45
31	Page Industries Ltd.	360	341.9	-5.02	490.85	36.34722	437.4	21.5
32	Gremach Infrastructure Equipments & Projects Ltd	86	92	6.98	418.4	386.5116	141.8	64.88
33	ICRA Ltd.	330	525	59.04	916.55	177.7424	699.9	112.09
34	Orbit Corporation Ltd.	110	90	-18.18	939.1	753.7273	455.8	314.36
35	Advantha India Ltd.	640	640	0	1350.8	111.0625	940.8	47.00
36	Forties Health Care Ltd.	108	105	-2.78	104.35	-3.37963	85.6	-20.74
37	Hilton Metal Fprging Ltd	70	75	7.14	58	-17.1429	30.95	-55.78
38	Bhagavathi Banquests & Hotel Ltd.	40	46.35	15.88	83.7	109.25	73.05	82.62
39	MIC Electronics Ltd	150	210.25	40.16	920.6	513.7333	707.3	371.53
40	Binani Cement Ltd.	75	75	0	118.7	58.26667	87	16.00
41	Insecticides India Ltd.	115	105	-8.69	87.1	-24.2609	53.75	-53.26
42	Glory Polyfilms Ltd.	48	50	4.16	96.75	101.5625	66.25	38.02
43	Asahi songwon colours Ltd	90	93	3.34	59.1	-34.3333	45.55	-49.38
44	Nitin fire protection Industries Ltd.	190	332.5	75	570.35	200.1842	469.55	147.13
45	Time technoplast Ltd.	315	415.55	31.92	932.85	196.1429	817.2	159.42
46	Decolight ceramics Ltd.	54	57	5.56	37.45	-30.6481	24.55	-54.53
47	Meghmani organics Ltd.	19	33.25	75	37.65	98.15789	23.65	24.47
48	Nelcast Ltd	219	252.05	15.09	164.05	-25.0913	118.15	-46.05
49	DLF India	525	582	10.85	1207.5	130	676.25	28.80
50	Vishal Retail Ltd	270	472.5	75	913.3	238.2593	817.2	202.66
51	Roman tasmit Ltd	175	295	68.57	181.4	3.65143	84.4	-51.77
52	Ankit metal & power Ltd	36	37.9	5.27	94.35	162.0833	79.9	121.94
53	Celestial labs Ltd	60	70	16.67	57.4	-4.33333	37.8	-37.00
54	ICICI Bank Ltd	940	995	5.85	1410	50	882.3	-6.13

55	Spice communications Ltd.	46	55.75	21.19	52.07	13.19565	35.65	-22.5
56	Surya chakra power corporation Ltd.	20	30	50	46.75	133.75	26.7	33.5
57	BEML Ltd.	1075	1199	11.53	1640.25	52.5814	1097.8	2.12
58	Housing development & Infrastructure Ltd.	500	567.5	13.5	1358.1	171.62	702.75	40.55
59	Allied digital services Ltd.	190	332.5	75	967.75	409.3421	848	346.31
60	Evernon systems India Ltd.	140	245	75	1063.05	659.3214	673	380.71
61	Simplex Projects Ltd.	185	323.75	75	436.6	136	229.4	24.00
62	Alpa laboratories Ltd.	68	60	-11.76	44.4	-34.7059	29.05	-57.27
63	Omaxe Ltd.	310	400	29.03	515.8	66.3871	224.45	-27.59
64	Omnitech Infosolutions Ltd.	105	183.75	75	214.1	103.9048	159.45	51.85
65	Zyloy systems Ltd.	350	525	50	366.4	4.685714	293.45	-16.15
66	IVR – prime urban developers Ltd.	550	500	-9.09	401.15	-27.0636	220.7	-59.87
67	Repex refrigerants Ltd.	65	69.1	6.30	191.35	194.3846	207.05	218.53
68	Central Bank of India.	102	130.1	27.54	136.25	33.57843	96.5	-5.39
69	SEL manufacturing company Ltd.	90	87.9	-2.34	161.45	79.38889	414.8	360.88
70	Asian grantio India Ltd	97	100.15	3.24	105.35	8.608247	69.15	-28.71
71	Puravankara projects Ltd.	400	399	-0.25	443.2	10.8	278.05	-30.48
72	Take solution Ltd	730	876	20	1122.55	53.77397	822.5	12.67
73	K.P.R. Mill Ltd.	225	201.2	-10.57	163.25	-27.4444	103.7	-53.91
74	Motilal aswal Financial Services Ltd.	825	999	21.09	1924.8	133.3091	756.05	-8.35
75	Indowind energy Ltd.	65	80.25	23.46	138.75	113.4615	82.2	26.46
76	Daggar forst tools Ltd.	45	43	-4.44	45.3	0.666667	28.1	-37.55
77	Mangum ventures Ltd.	30	36.95	23.16	31.1	3.666667	16.8	-44.00
78	Kaveri seed company Ltd.	170	201.15	18.32	316.2	86	280.25	64.85
79	Power grid corporation of India Ltd.	52	85	63.46	143.2	175.3846	105.8	103.46
80	Dhanus retail India Ltd.	295	300.2	1.76	316.9	7.423729	259.15	-12.15
81	Koutons retails India Ltd	415	515	24.09	976.45	135.2892	788.8	90.07
82	Consolidated construction consortium Ltd.	510	801	57.05	1150.4	125.5686	694.55	36.18
83	Supreme infrastructure India Ltd	108	189	75	156.15	44.58333	100	-7.40
84	Saamya Biltech (India) Ltd.	10	17.5	75	23.7	137	12.81	28.10
85	Mythas Infra Ltd.	370	480	29.72	820.5	121.7568	649.05	75.41
86	Circuit systems (India)Ltd.	35	42	20	38.6	10.28571	23.25	-33.57
87	Rathi bars Ltd.	35	38	8.57	33.8	-3.42857	17.68	-49.48
88	Allied computers International (Asia) Ltd.	12	21	75	45.05	275.4167	25.45	112.08
89	Varun industries Ltd.	60	105	75	137.35	128.9167	87.1	45.16
90	Bak valley cements Ltd.	42	65	54.76	61.55	46.54762	35.35	-15.83
91	Religare enterprises Ltd.	185	323.75	75	638.7	245.2432	389.05	110.29
92	Mundra port & special economics Zone Ltd.	440	770	75	1035.15	135.2614	665.85	51.329
93	Empee distilleries Ltd.	400	400	0	320.6	-19.85	176.95	-55.76
94	Edelweiss capital Ltd.	825	1143.75	75	1583.25	91.90909	838.2	1.6
95	Renaissance jewelers Ltd	150	190	26.67	141.95	-5.36667	81.2	-45.86
96	Kolte – patil developers Ltd.	145	220	51.72	232.8	60.55172	112.25	-22.58
97	Kousalya infrastructure development corporation Ltd.	60	67.9	13.17	84	40	41.45	-30.91
98	Jyothi laboratories Ltd.	690	799	15.80	860.1	24.65217	665	-3.62

99	Barupur cements Ltd.	12	18.45	53.75	42	250	23.55	96.25
100	Ellerx services Ltd.	315	320	1.59	353.8	12.31746	291.1	-7.58
101	BGR energy system Ltd.	480	801	66.88	775.8	61.625	458.05	-4.57
102	Transformers & rectifies India Ltd.	465	701.1	50.77	716.35	54.1828	458.05	-1.49
103	Brigade enterprises Ltd.	390	399.7	2.49	355.65	-8.80769	192.65	-50.60
104	Aries agro Ltd.	130	150	15.38	209.65	61.26923	147.5	13.46
105	Forwal auto components Ltd.	75	79.85	6.47	79.65	6.2	27.25	-63.66
106	Mankisha Ltd.	160	200	25	141.35	-11.6563	89.15	-44.28
107	Precession pipes & profiles company Ltd.	150	160	6.67	142	-5.33333	91.4	-39.06

The following tables are used to present information pertaining to top ten companies stocks given maximum returns to the investors and maximum losers during the time of listing, bull and bear market conditions during the financial year 2007-2008.

**Table 3. Top 10 gainers in listing**

SL.No	Company Name	Gain (in %)
01	Global broad cost News Ltd	88.44
02	Nitin fire protection industries Ltd	75.00
03	Meghmani Organics Ltd	75.00
04	Allied Digital Service Ltd	75.00
05	Evernon System India Ltd	75.00
06	Omnitech Infosolutions Ltd	75.00
07	Simplex Project Ltd	75.00
08	Roman tarmat Ltd	68.57
09	BGR energy systems Ltd	66.88
10	Power Grid corporator Ltd	63.46

**Table 4. Top 10 losers in listing**

SL.No	Company Name	Gain (in %)
01	Orbit corporation	-18.18
02	AMD industries Ltd	-13.2
03	Oriental trimex Ltd	-12.5
04	Alpa laboratories Ltd	-11.76
05	K.P.R. Mills	-10.57
06	Vijayashwari Textiles	-9.95
07	House of pear fashions Ltd	-9.09
08	Insectides India Ltd	-8.69
09	Euro ceramics	-8.48
10	Evinix Accessories Ltd	-8.34

**Table 5. Top 10 gainers in bull market**

SL.No	Company Name	Gain (in %)
01	Orbit corporation	753.72
02	Evernon systems ltd	659.32
03	MIC Electronics	513.73
04	Allied digital services	409.34
05	Gremach infra. & equipments Ltd	386.51
06	Global broadcast news ltd	364.2
07	Burnapur cements ltd	250.00
08	Redington India ltd	245.30
09	Religare enterprises ltd	245.24
10	Vishal retails	238.25

*BSE & NSE indexes 20728.05., 6206.80 dated 15.1.2008*

**Table 6. Top 10 losers in bull market**

SL.No	Company Name	Gain (in %)
01	Broad cost Initiatives Ltd	-54.71
02	House and Pearl fashions Ltd	-46.30
03	Vijayashwari Textiles	-44.05
04	Jagajanni textiles	-41.00
05	Oriental trimex	-40.41
06	Alpa Laboraories Ltd	-34.70
07	Asahi songwon colors Ltd	-34.33
08	Decolight Ceramics Ltd	-30.64
09	Lawarsshewar Polymers	-28.06
10	IVR prime urban Dovp. Ltd	-27.66

*BSE & NSE indexes 20728.05., 6206.80 dated 15.1.2008*

**Table 7. Top 10 gainers in bear grip market**

SL.No	Company Name	Gain (in %)
01	Evernon systems India Ltd	380.71
02	MIC Electronics	371.53
03	SEL manufacturing Ltd	360.88
04	Allied Digital services	346.31
05	Orbit Corporation	314.36
06	Refex Refrigerants Ltd	218.53
07	Redington India Ltd	209.20
08	Vishal retails Ltd	202.67
09	Time technoplast	159.42
10	Indus Fila Ltd	145.94

*BSE & NSE indexes 16783.87 and 5049 dated 22.4.2008)*

**Table 8. Top 10 losers in bear grip market**

SL.No	Company Name	Gain (in %)
01	House and Pearl fashions Ltd	-70.44
02	Broad cost Initiatives Ltd	-67.91
03	Oriental trimex	-60.10
04	IVR prime urban Dovp..Ltd	-59.87
05	Alpa Laboraories Ltd	-57.27
06	Transwarranty finance Ltd	-56.92
07	Hilton Metal forging Ltd	-55.78
08	Decolight Ceramics Ltd	-54.53
09	AMD Industry Ltd	-54.13
10	K.P.R. Mills Ltd	-53.91

*BSE & NSE indexes 16783.87, 5049 dated 22.4.2008*

## 6. MAJOR FINDINGS OF THE STUDY

1. In the financial year 2007-08, 107 companies entered capital market through IPOs, and successfully listed in the BSE and NSE.
2. These companies belong to different sectors like, Construction, Textile and Garments, IT and ITES, Financial services.
3. Private companies are dominated in the new issues.
4. Out of 107 issues, 86 companies gained in listing their shares in BSE and NSE and rest of the companies reported negative return to the investors.
5. As far as the listing gains are concerned individual stock like Global Broad Caste News Ltd gained above 88.0 per cent return in the financial 2007-08.
6. At the same time some stocks listed below offer price and incurred nearly 19.0 per cent loss for example Orbit Corporation
7. During the peak market (Bullish) conditions i.e. when BSE SENSEX Indices 20,728 and NSE 6206.80 on 15<sup>th</sup> January 2008, out of 107 companies, most of the companies i.e. 80 companies share are traded for high prices and reported handful return to the investors.
8. In the peak market, many individual stocks like Orbit Corporation, Evernon Systems Ltd, MIC Electronics gave high rate of returns to the investors
9. In the bearish trend (declining) when BSE SENSEX 16,783.87 and NSE 5049 on 22<sup>nd</sup> April 2008, some of the individual stocks like Evernon System India Ltd gave 380.71 per cent returns and maximum loss incurred companies like House and pearl fashions Ltd (i.e. -70.44 %).
10. Last but not least, the study shows that, Market forces and Individual companies' performance reflect stock performance.

**7. CONCLUSION**

Unlike in the past, the key characteristics of the prospective issues are one or a combination of well-established companies or promoters. In the forthcoming year will witness some super mega issues, mid sized issues, and private companies will dominate in numbers.

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