

## **ANALYSIS OF PENSION REFORMS IN EU MEMBER STATES**

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**ABSTRACT:** *The demographic situation in the European Union is changing. Demographic trends have a significant impact on social policies in each state and in particular on social security pensions. By 2050, the number of young active population will decrease dramatically. Meanwhile, the older population will triple. And so, the pension expenditure will increase and regarding this many countries reform they pension systems. Pension systems in the European Union are very different, due to the fact, that there is a tradition regarding the way that pensions are granted and the various phases of the reform process.*

**KEY WORDS:** *reform; pension system; expenditure; age limit pension; occupational pension.*

**JEL CALSSIFICATION:** *H55; J11.*

### **1. THE MAIN CHARACTERISTICS OF PENSION SYSTEMS IN THE EU**

Pension systems in the European Union are very different, due to the fact, that there is a tradition regarding the way that pensions are granted and the various phases of the reform process.

In the EU are found several types of pension schemes. They can be classified (Barr & Diamond, 2006) in different ways, taking into account two aspects, namely, how they are organized and the relationship between contributions and benefits. Thus, we can arrange pension systems: fully funded systems, the PAYG system, defined contribution systems (DC), defined benefit systems (DB) and notional defined contribution systems (NDC).

a) Fully funded systems and PAYG systems

Fully funded schemes are based on savings, contributions are invested in financial assets. Full financing, is thus a method of accumulating financial assets which

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are exchanged for goods at a later date. Even if, fully funded schemes may take usually several forms, mainly, they have sufficient reserves to pay all outstanding debts. If there isn't a redistribution across generations, a generation is constrained by past savings and thus a representative of such a system receives, no more than has contributed. Moreover, there is no direct distribution between individuals when an individual retires, will receive contributions, together with dividends and interest on which the system kept them for himself. This accumulation will finance through annuity or other forms, the individual consumption after retirement.

PAYG systems are usually state administered. They are based on the fact that the state may, but need not, accumulate assets in anticipation of future pensions, but may tax the working population to pay the pensions of existing and future generations of retirees. The vast majority of state pension systems are PAYG, but these systems can be administered by private corporations also. Only a state PAYG system is dependent on the presence of future tax base, because PAYG system administrated by corporations is depending on the presence of their future earnings to pay pensions. The most majority of states have considered this as unsatisfactory because of the risk of default.

From an economic perspective, the PAYG system can be viewed in several ways. From the point of view of the tax payer that contributes individually his claim for a pension is based on a promise coming from the state: if he now pays contributions will receive a pension in the future. Terms of this promises are quite precise, governed by a set of country-specific laws. On the other hand, from a common view, the state charge for a group of individuals and transfers income to another group. The state administrate the PAYG system from a macroeconomic perspective, different than other forms of income transfers. However, it should be noted that, determinants like who pays, who benefits and form of stimulation can be very different from other income transfer systems.

A major feature of the PAYG system is that relaxes the constraint that the benefits received by every generation has to be compensated by their contributions. Samuelson (1954) showed that in a PAYG system is possible for each generation to have more than contributed, provided that the growth rate of total real income to be higher than the indefinitely interest rate. This is possible when there is technological progress and / or when there is a permanent increase in population and an excessive accumulation of capital (Aaron, 1966). Because, this, empirical, is not relevant on long term, the role of PAYG system is to redistribute both the benefits and risks between generations.

b) The relationship between contributions and benefits.

The defined contribution system (DC) known as funded through individual contributions, assumes that each individual in an account paying a fixed part of its income. These contributions are used to purchase assets that are accumulated in the account to obtain a yield. At the time of retirement, the assets account finances post-retirement consumption through annuity or other methods. In a pure form of this system, that one that does not involve a redistribution of individual accumulation, consumption pensioners, given life expectancy and interest rate is determined by the size of the pension accumulated throughout life, maintaining the individual character of

each budget constraint over life. Even if the annuity protects the individual from the risk associated with longevity, a pure defined-contribution scheme, assumes that it faces some risks associated with varying rates of return on assets, the risks of future earnings and future price of annuities. One way to reduce these risks represents a minimum guaranteed pension.

Defined benefit systems (DB), assume that an individual's pension is not based on accumulation, but on his salary and possibly the number of years worked. A feature of this system is how wages are introduced in formula for calculating benefits. In a final scheme, the individual pension is based on his last year income or the income from recent years. Alternatively, the pension can be established on real wages or relative one of a person over a long period, or even during the entire career. In any case, the monthly pension of a person can be, in fact, indexed wages until retirement. The individual contribution is generally a share of his salary, and so contribution is conceptually dependent variable that ensures financial balance of the system.

Defined benefit system can be administered by the state or by employers. When the system is state administered and funded by the contributors, the risk of negative results is supported by current taxpayers, instead, where there is a taxpayer subsidy, the risk is borne by taxpayers. In practice, governments change the share of benefits and contributions, when there isn't a balance between revenue and expenditure, changes that can be automated (indexed) or may be a result of legislative changes. In a situation where the system is administered by employers, the risk of the multiple rates of return of assets is borne by the employer, and, if the company uses surpluses to cover certain periods / increases pensions or changes the formula in relation to expectations, risk falls on a combination of current employees (through the effect of the profit of the company), the shareholders and taxpayers, and former or future employees.

Pure notional defined contribution systems (NDC), are conceptual in a way similar to pure defined contribution schemes because the risk is common, but otherwise different in the sense that they are not fully funded and can be wholly the PAYG type.

As we have shown above, there are several types of pension schemes. In EU Member States, common is that the public sector is involved in pension systems and so we obtain public pension systems, but the importance of the provisions on occupational and private pensions varies from one country to another. Also a common feature, is the statutory earnings-related to age limit.

Public pension system provides most often a guaranteed minimum pension for those who do not fit in the scheme or for those whose retirement income is small. Thus, in Denmark and the Netherlands, the public pension system provides, in the first instance, a fixed pension, which may be supplemented through earnings from private occupational pension schemes. In the UK, complementary to this form, pension may be supplemented from public earnings-related state second pension, and in Ireland, the pension can be supplemented through earnings-related pensions for public service employees.

On the other hand, a number of Member States: Sweden, Bulgaria, Estonia, Latvia, Lithuania, Hungary, Poland and Slovakia have modified some pension

schemes, passing a part of the public pension system in the "care" of private pension system. Usually, this decision is statutory for each individual, the insurance contract ending between the individual and the pension fund, but participation in a funded system is subject to participation in the public pension system and is mandatory for new entrants to the labor market work, except Swedish, which is mandatory for all employees and voluntary for older employees, except Lithuania, where is voluntary for all age groups.

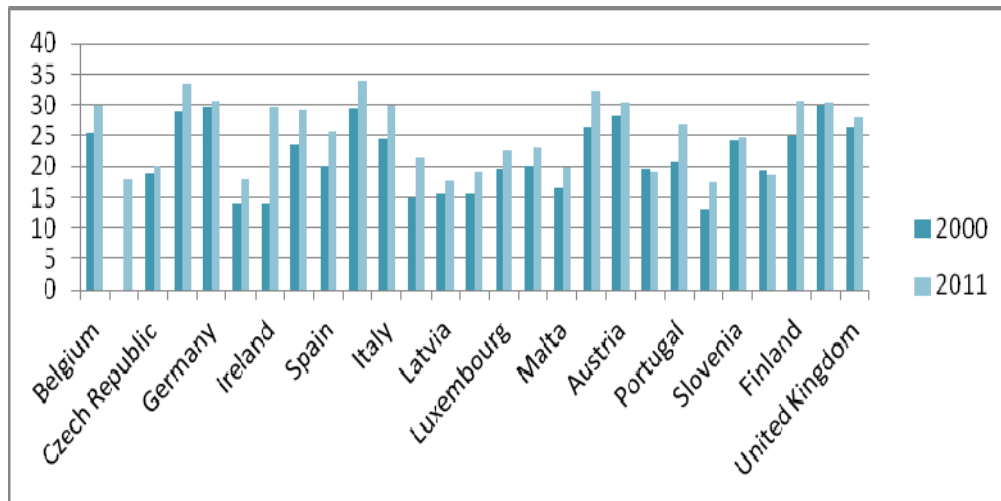
Not only the type of system varies from country to country, but the types of benefits provided by them also. Thus, most pension systems besides providing pension for old-age, provides disability pensions, survivors or early retirement. However, some countries have specific programs for some of these benefits.

## **2. ANALYSIS OF PENSION EXPENDITURES IN THE EU MEMBER STATES**

Pension systems are very different in the Member States, due to shape that benefits have and because of the stage of the reform. Regarding the legal retirement age, compared with average exit age from the labor market, something that leads to increased pension expenditure in most countries, average exit age from the labor market is higher than retirement (legal). In many cases, this is due to the existence of early retirement schemes and / or other government programs that financially support the elderly, people who choose to retire early. On the other hand, in countries like Finland, Sweden, the retirement age is flexible, but built with incentives to determine the person remain active on the labor market.

Pension expenditure in EU Member States varied in the period 2000-2011 (the latest year for which data are available). For most countries (25) there were increases in these expenses as a percentage of GDP, the most notable increase (Figure 1.) were observed in Ireland (about 15.8 percentage points), Cyprus (6.80 pp), Portugal (6.11 pp), countries that have experienced population increases in recent years. A number of states have maintained constant the amount of expenditure, while Slovakia and Poland have negative trends. As a percentage of GDP, the highest level of pension expenditure recorded in France and Denmark (33.77% and 33.26%), followed by the Netherlands (32.05%), Germany, Finland and Sweden, with a approximately equal proportion of 30 %. In contrast, the lowest level recorded in newcomers states: Bulgaria, Romania, Estonia with 18%. In many countries, pension spending grew faster than GDP, but in others (UK, Czech Republic, Slovenia) the growth was slower.

Future projections show that trend growth of these expenditures will keep in the most majority of member states (Table 1.). Increases will not be spectacular, except for Greece, whose spending will double horizon of 2060, reaching a value of 24.1% of GDP, compared to 11.6% in 2010, Cyprus (the difference will be of 10.8 percentage points), Luxembourg (expenses as a percentage of GDP will rise from 8.6% in 2010 to 23.9% in 2060). There are, however, countries where the trend is downward: Denmark, Estonia, Italy, Poland, Sweden. It should be noted, however, that these reductions are significantly lower than net increases in other states. The horizon of 2060, Greece and Luxembourg, will have to allocate more than 20% of GDP to cover pensions, while Estonia and Latvia only 5%.



Note: for Bulgaria no data available in 2000

Source: own processing based on data from Eurostat

**Figure 1. EU member states pension expenditure, as a percentage of GDP, the years 2000, 2011**

### 3. PENSION EXPENDITURE PROJECTIONS IN THE EU MEMBER STATES

A number of states have implemented reforms in the pension system, transferring part of the public to a private compulsory. Currently, the private system is not well developed, but its importance will increase in the future. Precisely in this sense, further, we will consider costs both in terms of projections for the public and the private perspective.

#### 3.1. Public system

At EU level, the projections show an increase of 2.3 pp pension on expenditure in GDP between 2010-2060. At the member state level, there are large variations (Table 1.) regarding the expenses (Poland registered a drop of 2.8 percentage points, while Luxembourg an increase of 15.3 percentage points). Expected increase is due to the increase of pensions for old age, and those anticipated. In turn, the age limit is expected to grow more than the invalidity or survivors, due to population aging. Thus, in Luxembourg, increasing costs for age limits pensions as a percentage of GDP is more than 10 percentage points, while in five other countries it will be between 5 and 10 pp. In the case of Estonia, Poland, Italy and Denmark percentage will decrease below baseline in 2010, but for the most majority of states modification will be around 5% or below. Regarding expenditures related to other pensions (disability and survivor's pension) in most member states projections show that will decrease, possibly due to issue legislation that limit these types of pensions and a much healthier population.

**Table 1. Pension expenditure projections in the EU, per types of expenditure as a percentage of GDP**

Country	Pension expenditure - total				Age limit pension expenditure			Other pension expenditure (disability, survivors)		
	2010	2030	2060	2010/2060	2010	2060	2010/2060	2010	2060	2010/2060
Belgium	10.3	13.9	14.7	4.4	9.5	14	4.5	0.8	0.7	-0.1
Bulgaria	9.1	8.6	11.3	2.2	7.3	10	2.7	1.8	1.3	-0.5
Czech Republic	7.1	7.1	11	3.9	6.5	10.5	4	0.6	0.6	0
Denmark	9.4	10.6	9.2	-0.2	7.4	6.7	-0.7	2	2.5	0.5
Germany	10.2	11.5	12.8	2.6	10.2	12.8	2.6	x	x	x
Estonia	6.4	5.6	4.9	-1.5	5.5	4.3	-1.2	0.9	0.6	-0.3
Ireland	4.1	5.4	8.6	4.5	2.7	7.2	4.5	1.4	1.4	0
Greece	11.6	17.1	24.1	12.5	8.8	17.7	8.9	2.9	6.4	3.5
Spain	8.9	10.8	15.1	6.2	6	12.1	6.1	2.9	3	0.1
France	13.5	14.2	14	0.5	13.5	14	0.5	x	x	x
Italy	14	14.8	13.6	-0.4	13.5	13.3	-0.2	0.5	0.3	-0.2
Cyprus	6.9	10.8	17.7	10.8	5.3	14.2	8.9	1.6	3.5	1.9
Latvia	5.1	5.9	5.1	0	4.7	4.8	0.1	0.4	0.3	-0.1
Lithuania	6.5	8.2	11.4	4.9	5.4	10.3	4.9	1.1	1	-0.1
Luxembourg	8.6	14.2	23.9	15.3	5.8	20.1	14.3	2.8	3.9	1.1
Hungary	11.3	11	13.8	2.5	9.5	12.7	3.2	1.8	1.1	-0.7
Malta	8.3	9.3	13.4	5.1	5.3	11.1	5.8	3	3.3	0.3
Netherlands	6.5	9.3	10.5	4	4.5	9	4.5	2	1.6	-0.4
Austria	12.7	13.8	13.6	0.9	9.6	11.1	1.5	3.1	2.7	-0.4
Poland	10.8	9.4	8.8	-2	9.3	7.9	-1.4	1.5	0.9	-0.6
Portugal	11.9	12.6	13.4	1.5	9.6	10.8	1.2	2.3	2.7	0.4
Romania	8.4	10.4	15.8	7.4	6.9	14.2	7.3	1.5	1.6	0.1
Slovenia	10.1	13.3	18.6	8.5	7.3	15	7.7	2.8	3.6	0.8
Slovakia	6.6	7.3	10.2	3.6	4	6.2	2.2	2.6	4.1	1.5
Finland	10.7	13.9	13.4	2.7	8.2	12	3.8	2.5	1.4	-1.1
Sweden	9.6	9.5	9.4	-0.2	7.2	8.2	1	2.5	1.2	-1.3
United Kingdom	6.7	7.6	9.3	2.6	6.1	9.1	3	x	x	x

Note: x – no data available

Source: Ageing Report: Economic and budgetary projections for the Eu-27 member states (2008-2060), European Commission, Brussels, 2009, [ec.europa.eu](http://ec.europa.eu)

In conclusion, the concerns of Member States aim:

- decrease in generosity of the public pension system in order to make these programs more sustainable financial, given the demographic trends;
- increasing the legal retirement age;
- restrictions in access the forms that allow early retirement pension and strengthen incentives targeting life, which would lead to a smaller increase in the retirement age limit for early retirement.

### **3.2. Private system**

In light of fiscal pressures due to demographic trends, many countries have encouraged the adoption of occupational and private pension schemes, so that the role of these schemes has increased. However, the role of privately administered pensions is quite limited in present, if we talk in terms of income that is provided, this income is mainly provided by public authorities. But as can be seen from table 2, private pension income will increase.

Currently, most of the occupational pension schemes are defined benefit schemes. However, many of these schemes have been transformed into defined contribution schemes, as also were the private systems from the start. Increasing the role of defined contribution schemes had and will have important implications for asset values depending on the rate of return.

Overall, net contributions to private pension schemes and the occupational has increased in recent years, but most of the funds are to be considered far from mature. In other words, at this moment, there are few states with a number of people retired or will retire soon and that they can base on income from these funds.

Regarding the expenditure projections for the occupational pension (Table 2.), only 6 countries (Denmark, Ireland, Spain, Portugal and the Netherlands) have been developed such projections, the other states saying they don't have such schemes. Among them may be noted that in Portugal, Spain, Sweden and Ireland this expenditure level is very low, below 2.5% Of GDP, while in Denmark and the Netherlands, the level is over 5%. In the Netherlands, the occupational pension expenditure will increase from 5% of GDP in 2010 to 12.1% in 2060, growth of 7.1 pp, while in Denmark, Spain, Sweden and Ireland, growth will be lower, 3.2 pp , 0.3 pp, 0.7 pp and 1.3 pp respectively. There is a negative projection, which is found in Portugal where the occupational pension expenditure as a percentage of GDP will decrease from 0.6% in 2010 to 0.5% in 2060.

A number of states have implemented mandatory private pension schemes (Bulgaria, Germany, Estonia, Lithuania, Latvia, Hungary, Poland, Slovakia, Sweden and Romania), while in Denmark, Belgium, Greece, Spain, Netherlands, Portugal, Czech Republic and Malta do not have such systems. For some of these countries, private pension spending will begin to appear in 2020, except Sweden who began to pay pension since 2010 and Lithuania which will begin in 2015.

**Table 2. Occupational and private pension as a percentage of GDP**

Country	Occupational		Private pension expenditure			
	2010	2060	2010	2015	2020	2060
Belgium						
Bulgaria					0	1.7
Czech Republic						
Denmark	5.7	8.9				
Germany						
Estonia					0.1	1.8
Ireland	1.4	2.7				
Greece						
Spain	0.4	0.7				
France						
Italy						
Cyprus						
Latvia					0.1	4.9
Lithuania				0.1	0.3	2
Luxembourg						
Hungary					0.1	2.2
Malta						
Netherlands	5	12.1				
Austria						
Poland					0.1	1.9
Portugal	0.6	0.5				
Romania					0	1.9
Slovenia						
Slovakia					0.1	2.2
Finland						
Sweden	2.6	3.3	0.1	0.2	0.3	1.4
United Kingdom						

Source: Ageing Report: Economic and bugetary projections for the Eu-27 member states (2008-2060), European Commission, Brussels, 2009, [ec.europa.eu](http://ec.europa.eu)

In the horizon of 2060, the highest level of spending as a percentage of GDP will be recorded in Latvia (4.9%). Even though at the present time, funds are not highly developed, they expected an increase in pension expenditure as a percentage of 0.5% in 2020 to an average of 2% in 2060 (except Latvia), meaning an increase of 3 times level. Percentage of expenditure mandatory private pension system in the horizon of 2060 will range from 1.4% of GDP in Sweden to 4.8% in Latvia.



#### 4. CONCLUSIONS

Demographic changes without precedent in recent years, will have a major impact on the welfare states in the European Union because growth rates are likely to remain low in the coming years and the number of taxpayers is shrinking while the population is aging. As a result, public finances are unsustainable and tend to compromise the social security and pension systems in general. Consequently, most countries have reformed their pension systems in order to reduce pension expenditure and ensure pension systems financially sustainable.

Demographic change in recent years is an important challenge for pension systems in the Member States of the European Union, even for the most developed one. Thus, increasing the number of older people, while increasing longevity inevitably lead to an increase in pension expenditure, showing thus, ensuring the financial sustainability of pension systems.

Demographic trends among other factors support the financial difficulties facing public pension systems in most EU states. Due to these difficulties, many European countries (Bulgaria, Romania, Estonia, Latvia, Hungary, Poland, Slovakia and Sweden) have reformed their public pension systems. So they either have redirected some of the contributions from public schemes to privately administrated or proposed supplementary pension schemes. At this point, these schemes are still in accumulation phase but the importance of their implementation will see in the coming decades, especially in the context of the age pyramid roll and globalization, the latter one by component labor migration that puts the problem due to the portability of pensions, measures for coordination at EU level of private pension funds.

More and more countries have reformed their pension systems adopting a multipillar system that can face pension expenditure which is increasingly higher. The trends observed from researching on a European level, require certain measures aimed at: increasing the retirement age, increasing full season subscription, equalize retirement ages for men and women.

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