

# **THE SUSTAINABILITY OF PENSION SYSTEMS: NEW INDICATORS**

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## **Abstract**

Financial sustainability is a crucial concept when evaluating and comparing public pension systems. Even if there are some attempts to improve the measure of the sustainability, the mostly used indicator is given by the ratio between the pension expenditure and the GDP. It may be recognised that this indicator does not take into account two factors that may cause a different impact of the pension expenditure on the public finance, namely the pension taxation and the contribution income.

Hence, the paper aims at studying a new version of the indicator concerning the sustainability, which considers the pension expenditure after deductions of the relevant taxation and the contribution income. The proposed index would represent a more suitable measure of the financial sustainability and facilitate comparisons between different countries of the impact of the actual financial cost on the public finance.

## **1. The most common measure of sustainability**

As recognized by European Union “the challenge for pension policies is to put in place a system that is financially sustainable so that the basic purpose of pension systems, namely to deliver adequate retirement incomes and to allow older people to enjoy decent living standards and economic independence, can be achieved”<sup>1</sup>. Nowadays the financial crisis imposes to consider the sustainability of a national pension scheme as a crucial issue. This implies that technicians must adopt adequate indexes to define sustainability.

Up to now the key indicator used to measure sustainability is the pension expenditure ratio that is the ratio (in a given year) between the total expenditure amount related to the gross domestic product (GDP). This relative indicator has an intuitive interpretation as it measures the part of domestic product aimed at covering pension expenditure. Moreover it is easy to calculate and hence it is largely used in the international comparisons.

However, this indicator alone does not bring to light the main factors affecting the amount spent in pension system. To cope with those critical aspects the pension expenditure ratio should be always accompanied by a detailed expenditure analysis. This is done, for example, in the Ageing Report edited by the European Commission (AWG)<sup>2</sup>. In the report the overall ratio of the public pension expenditure to GDP is expressed as the product of the five main factors, i.e. the dependency ratio, the coverage ratio, the employment rate, the benefit ratio as well as the labour intensity.

However, even if accompanied by a comprehensive analysis, the ratio does not ascertain if a pension system is affordable by the public finance. Moreover, in the international comparisons the index can be misleading as some factors affecting the public finance are not considered.

It must be recognised that, over time, actuaries have introduced a number of indicators, each of one reflecting a specific performance. A typical example is given by the annual assessment rate (pay-as –you- go rate), i.e. the ratio between annual expenditure and the amount of salaries on which contributions are levied. In this case the purpose of the indicator is to measure the relative burden of pension expenses in respect of the salaries. Even in this case the indicator has been always supplemented by a thorough analysis.

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<sup>1</sup> An Agenda for Adequate, Safe and Sustainable Pensions – European Commission - White Paper 2012

<sup>2</sup> See “The 2012 Ageing Report: Economic and budgetary projections for the EU27 Member States (2010-2060) Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG)

## 2. The proposed indicator of sustainability.

Gross public expenditure is far from representing a perfect measure of the level of social security. In some countries the taxation has a great impact on income benefits; hence the social redistribution of resources is lower than indicated by the gross expenditure indicator,

Then, a first step towards a consistent index is given by considering the pension expenditure net of taxation. This has been done, in respect of some Countries by the AWG Report.

The net expenditure is also considered by some OECD analysis. For example in setting up the indicators for social spending<sup>3</sup>, it is argued that it is essential to take account of tax systems' effect on social protection. In fact, the overall effect can be considerable and vary across countries. Hence, it significantly affects cross-national comparisons of social expenditure.

This OECD paper illustrates the main taxation burden on benefit income and contributions in the different Countries. Among other considerations, it is stressed that tax systems affect levels of social expenditure in three ways: i.e. direct taxation of benefit income, indirect taxation and other fiscal measures, In any case for pension expenditure it is suggested to adjust the gross figures by considering direct taxation on income benefits.

Another factor that greatly affects the burden for the public finance is the amount of contributions paid by (or on behalf of) the social insured persons.

Let us consider the example of Italy. In Italy, pensions are treated as personal income and are therefore subject to personal tax (excluding treatments linked more strictly to assistance), while other countries adopt more preferential tax treatments. This condition reduces the positive gap in spending Italian pension in respect of many European countries. Similarly the high contribution rate (for Italy amounting at 33% of the employees' wage) reduces the actual burden of pension expenditure on the gross domestic product.

The above considerations lead to define the sustainability indicator as the ratio:

$$I_{new} = \frac{\text{Gross pension expenditure} - \text{Pension taxations} - \text{Pension Contributions}}{GDP}$$

All the values that appear in the formula are usually collected by the national statistical offices. In order to show the actual performance of the new indicator, in the next table the figures drawn from the Ageing (AWG) 2012 Report are used. For this exercise only the projected figures relevant to the years 2010 and 2030 are taken into account and they refer to some countries where all the values were available.

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<sup>3</sup> OECD paper "Is the European Welfare State Really More Expensive? INDICATORS ON SOCIAL SPENDING, 1980-2012; AND A MANUAL TO THE OECD SOCIAL EXPENDITURE DATABASE (SOCX)"

**International Comparisons: Ratio in respect of GDP as % - Values as in Ageing (AWG) Report**

	<b>Projection year: 2010</b>				
	<b>Italy</b>	<b>Finland</b>	<b>Germany</b>	<b>Spain</b>	<b>European Union</b>
<b>Public Pension Gross</b>	<b>15.3</b>	<b>12.0</b>	<b>10.8</b>	<b>10.1</b>	<b>11.3</b>
<b>Public Pension Net</b>	<b>12.8</b>	<b>9.9</b>	<b>9.1</b>	<b>9.5</b>	<b>10.0</b>
<b>Contributions</b>	<b>11.0</b>	<b>9.9</b>	<b>7.4</b>	<b>10.9</b>	<b>8.7</b>
<b>New Indicator</b>	<b>1.8</b>	<b>0.0</b>	<b>1.7</b>	<b>-1.4</b>	<b>1.3</b>
	<b>Projection year: 2030</b>				
<b>Public Pension Gross</b>	<b>14.5</b>	<b>15.6</b>	<b>12.0</b>	<b>10.6</b>	<b>11.9</b>
<b>Public Pension Net</b>	<b>11.9</b>	<b>12.8</b>	<b>9.9</b>	<b>10.0</b>	<b>10.2</b>
<b>Contributions</b>	<b>11.1</b>	<b>12.0</b>	<b>7.9</b>	<b>10.9</b>	<b>9.1</b>
<b>New Indicator</b>	<b>0.8</b>	<b>0.8</b>	<b>2.0</b>	<b>-0.9</b>	<b>1.1</b>

As shown in the table and in the next graphs, the new indicators show a performance very different in respect of those relevant to the gross ratio.

