



PENSION NOTES

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Pension reforms based on individual funding and their impact on fiscal sustainability¹

I. Purpose

The purpose of this article is to present the effect of introducing an individually funded pillar on the fiscal sustainability of countries.

II. Conclusions

The evidence shows that the introduction of individually funded systems enables improving the financial sustainability of pension systems and reducing fiscal commitments to such systems in the long term, after an initial period of increased levels of debt.

The studies carried out² conclude that by 2050, the fiscal savings generated by the reforms that create individually funded pension systems, in order of importance and as a percentage of GDP, will amount to:

Country	Savings (% of GDP)	Year in which the Individually Funded System started operating	Type of System ³
Chile	211	1981	Sole
Uruguay	152	1996	Mixed Integrated
El Salvador	148	1998	Sole
Peru	103	1993	Mixed Competing
Mexico	66	1997	Sole
Colombia	18	1994	Mixed Competing

Source: "A Simulation of Social Security Reforms in Latin America: What Has Been Gained?" Zviniene and Packard, World Bank, 2004.

¹ Document drawn up by FIAP.

² "A Simulation of Social Security Reforms in Latin America: What Has Been Gained?" Zviniene and Packard, World Bank, 2004.

³ Types of system: (i) Sole System: in most cases, membership of the individually funded system is mandatory for dependent workers (the PAYGO system is eliminated); (ii) Mixed Integrated System: the individually funded system coexists with the PAYGO system. Contributions as a percentage of workers' income are distributed between both systems; (iii) Mixed Competing System: the individually funded system competes with the PAYGO system. Workers who were enrolled at the time of the reform and new workers entering the labor market must choose one of the systems. The worker's contribution is fully destined to the chosen system.

One must bear in mind that the scale of fiscal savings generated by a pension reform that introduces an individually funded component is not comparable between countries, since the design of the pension reforms is different in each country (parametric reforms and different transition periods). For example, the reforms in Colombia and Peru did not eliminate the public system, and therefore it would be expected that if the design had been different (eliminating the PAYGO system), the scale of fiscal savings would have been greater.

Although there are no similar specific studies for Central and Eastern Europe, the simulations of the World Bank for a stereotypical country in that area, show that in present value the reforms that create individually funded pension systems generate a fiscal profit in the long term. From 2040 onward, the fiscal deficit resulting from the reforms is less than it would have been if the reforms had not been implemented.

Considering the total pension debts (explicit and implicit) accumulated after the reform, it is concluded that the introduction of an individually funded pillar reduces fiscal pressures, and therefore improves the fiscal sustainability of systems in the long term.

In countries that have implemented reforms based on individual funding, the public pension debt is "explicit" and arises from the recognition by the government of the benefits of workers who contributed to the former PAYGO system and who in future must receive the pensions promised by such system. Nonetheless, in countries that have not introduced such reforms, this debt (called "implicit") is not registered in government accounting, despite the fact that the creditors do exist. As a result of this different treatment given to public debt (explicit and implicit) in countries with and without reforms, and of the pressure exerted by certain tax rules imposed by the European Union⁴, several Central and Eastern European countries have established: (i) incentives for the implementation of "counter-reforms" or "reversals" that do improve the short-term financial outlook, but also impair the long-term financial sustainability of the pension systems; and (ii) incentives to delay necessary pension reforms. In this regard, FIAP has pointed out to the authorities and international agencies the risks entailed for the development of the individually funded systems in the different treatment given to implicit and explicit debt in countries with and without reforms. The IMF, heeding these recommendations, issued a document⁵ recommending the use of a new indicator (the balanced budget "adjusted to pensions"), which provides equality of conditions for the fiscal assessment of pension reforms in a country, avoiding the encouragement of "counter-reforms" and the dismantling of individually funded programs.

In this context, several countries have opted to adjust the size of their "implicit" pension debt, not through structural pension reforms but rather by means of parametric changes (increases in the

⁴ We refer to the Stability and Growth Pact (SGP), which establishes a maximum fiscal deficit of 3% of GDP and a public debt of 60% of GDP.

⁵ ["A Fiscal Indicator for Assessing First and Second Pillar Pension Reforms,"](#) Mauricio Soto, Benedict Clements and Frank Eich, IMF, 2011.

retirement age or the contribution rate) and a reduction of pension amounts (less generous benefit formulas), which convert the so-called "Defined Benefits" systems into "Undefined."

III. Explanations and definitions

The public PAYGO systems

The PAYGO system is a defined benefits system in which current contributors finance the pensions of retirees. In these systems, the pensions paid in any given year are financed exclusively with the collection of contributions in that same year, without looking to the future.

Most of these systems are financed "as-you-go," i.e., pensions and benefits are paid with the taxes collected in each period, without any accumulation of contributions or their increase due to returns. This means that there are no financial reserves for covering pension payment commitments. Hence, when the pension revenue of the pension systems does not suffice for paying the promised benefits, part of the fiscal revenue must be destined to financing the corresponding deficit.

In these systems, when active workers are forced to pay contributions in exchange for a promise of future benefits (pensions), governments acquire a commitment. The present value of commitments to pay future pensions is called "Implicit Pension Debt" (IPD). When due, this pensions commitment must be paid with the flow of future contributions or with other taxes, which makes this financing mechanism similar to "debt issuance"⁴.

The individually funded systems

In an individually funded system, on the other hand, pensions are financed with the contributions paid in by workers throughout their working lives, plus the returns resulting from the active management of the portfolios, which are paid into the individual accounts of members.

In these systems, contrary to the PAYGO system, there is a clear effort-to-benefit ratio, which curtails evasion since it generates an incentive for contributing. Contribution frequency depends on the degree of formality of the labor market.

The individually funded systems also have an automatic financial adjustment mechanism, since assets must be equal to liabilities at all times.

⁴ Nonetheless, there are four differences with debt issuance: (i) In a PAYGO system, creditors are required by law to participate and do not voluntarily enter into the agreement, as occurs in the issuance of bonds; (ii) There is no market in which to trade the "promises of future pensions," whereas people can sell their government bonds relatively easily in the secondary market; (iii) Whereas the return (at least the nominal return) of government bonds is known, the final value of a pension promise depends on a set of variables in the formula for calculating the pension, as well as the possibility that the government could change this formula in response to other fiscal necessities; and (iv) The mandatory nature of the pension arrangement implies that there is some tax element in mature schemes, generally through an implicit return rate on contributions that is below the market interest rate.

The transition from a PAYGO system to an individually funded system

Different countries have reformed their pension systems, and in many cases these reforms have involved a transition from a PAYGO system to a multipillar system with an individually funded component.

When a country replaces a traditional defined-benefit PAYGO system with a new one based on the individually funded accounts, the IPD of the PAYGO system with its creditors becomes explicit. This "explicit debt" arises from two transitory components:

- a) **Operational deficit of the PAYGO system**: when members switch to the new system, they generate a financial breach in the former plan ('operating deficit'), since they transfer their contributions from one to the other.
- b) **Recognition by the Government of the benefits of workers who contributed to the former PAYGO system and who must receive the pensions promised by the system in future**: the Government must compensate workers who switch from the former system to the new one for previously paid-in contributions, in accordance with the implicit social contract that characterizes defined benefit systems. In most countries, this compensation has taken the form of a bond issued by the government (called the "recognition bond" in Chile), which is paid at the legal retirement age and depends on the number of years and the amounts of the contributions paid into the former system.

It should be noted that there are aspects of the transition in the different countries, in terms of its extension and the different formulas for funding it, as each of them had made a different effort for eliminating (totally or partly) the PAYGO system or for establishing mandatory investments in government securities. The objective of this document is not show this type of details but rather to emphasize that reforms based on individual capitalization of savings significantly improve fiscal sustainability.

Depending on the design of the pension system of the country in question, there may be another source of physical costs of a permanent nature associated to expenses in the solidarity pillar. These expenses may coincide over time with the transitory components, but are independent of the transition itself. For example, in Chile, until the pension reform of 2008, this pillar consisted of the State Minimum Pension Guarantee (GEPM, a benefit for those who had contributed for at least 20 years), and a non-contributory benefit for the low-income elderly and disabled (Welfare Pensions - Pensiones Asistenciales - PASIS).

The reversal of an individually funded system

Reversing an individually funded system entails, in the short term, increasing tax revenue (contributions paid into the individually funded system are now redirected to the PAYGO system), thus reducing the fiscal deficit.

However, what occurs in the mid and long-term is a significant increase in the IPD (the IPD replaces the explicit debt).

Given the fact that traditional fiscal indicators do not incorporate the projected IPD levels, it may appear that a country that has implemented this kind of reversal has solved the issue of the financial sustainability of the pension system, but in reality, that is not the case: it is simply trying to solve a problem today, at the cost of aggravating a problem in the future.

IV. Relevant estimates regarding the effects of reforms based on individual funding on fiscal sustainability

After an initial period in which their debt levels increase, in the long term the individually funded systems manage to improve the fiscal sustainability of the pension system. For some Latin American countries, the estimates made by a **World Bank study in 2004** are the main reference in the pertinent literature that proves the above assertion.⁵ Chart No.1 shows a projection of the level of IPD as a % of GDP, for several Latin American countries, comparing the scenarios of "with" and "without reform" based on individual funding.

Chart No. 1
Implicit debt of some Latin American (% of GDP, with and without reform scenarios)⁶

Year	Chile		Colombia		El Salvador		Mexico		Peru		Uruguay	
	With reform	Without reform	With reform	Without reform	With reform	Without reform	With reform	Without reform	With reform	Without reform	With reform	Without reform
2010	24.7%	152.3%	76.5%	83.4%	19.6%	59.0%	16.7%	31.2%	12.5%	44.1%	146.0%	207.9%
2020	10.1%	179.6%	114.3%	125.7%	9.9%	78.4%	18.0%	44.0%	11.8%	60.4%	147.9%	235.0%
2030	2.9%	201.1%	155.9%	170.8%	3.0%	102.4%	17.6%	58.1%	12.6%	80.3%	153.0%	266.7%
2040	0.4%	208.7%	193.2%	210.3%	0.3%	126.2%	16.1%	71.5%	13.8%	100.8%	158.1%	295.2%
2050	0.0%	210.8%	219.8%	237.9%	0.0%	148.3%	14.0%	79.6%	14.9%	118.1%	160.9%	313.3%

Source: "A Simulation of Social Security Reforms in Latin America: What Has Been Gained?" Zvinienne and Packard, World Bank, 2004.

It can be seen that in the countries in which the PAYGO system was closed down (Chile, El Salvador and Mexico), the IPD drops rapidly over time. In the countries in which the PAYGO system remained open (Colombia, Peru) however, or in the countries in which the PAYGO system complements the individually funded system (Uruguay), reforms dramatically reduce the growth of public pension debt (measured through the IPD).

As can be seen, for example, in the case of Chile, the estimates show that by 2050 the IDP would have dropped from 211% of GDP without the 1981 pension reform, to zero after the reform. In

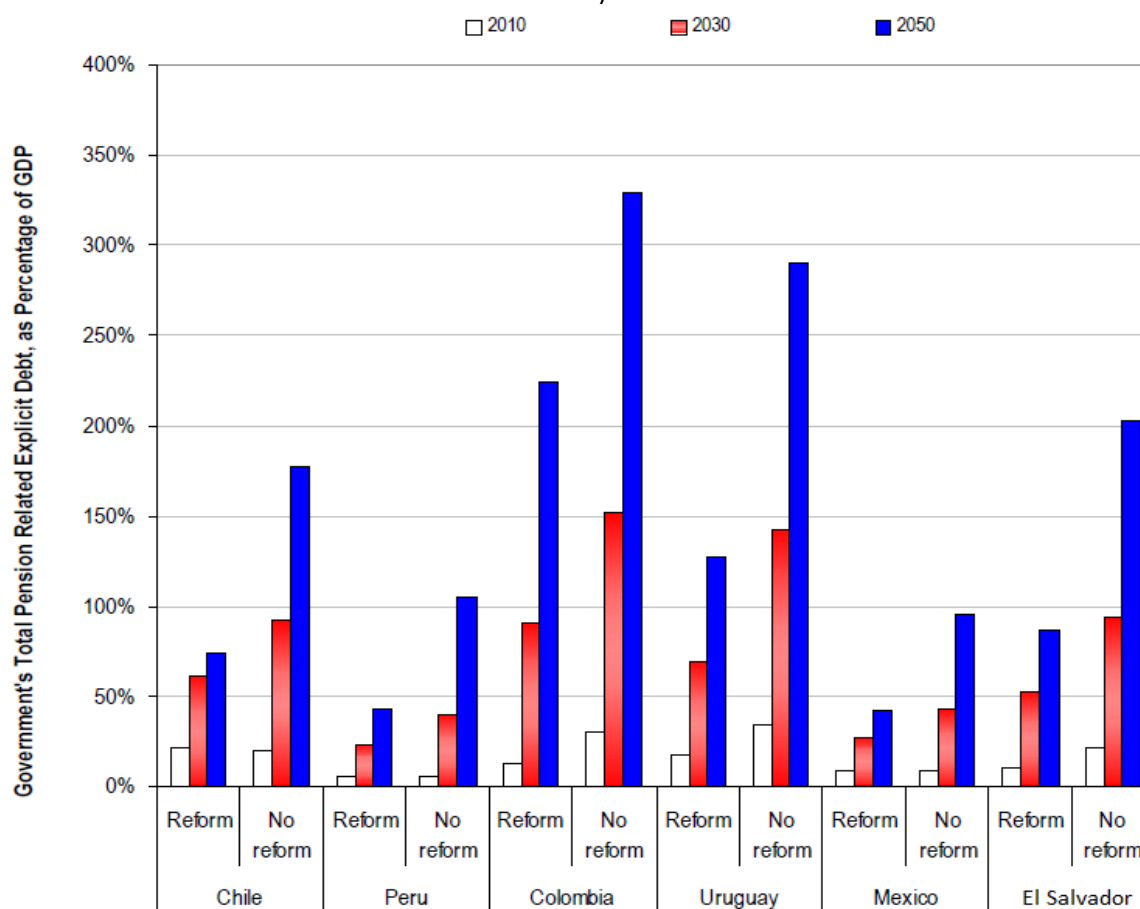
⁵ "A Simulation of Social Security Reforms in Latin America: What Has Been Gained?" Zvinienne and Packard, World Bank, 2004.

⁶ The approach used for measuring the IPD is the "practical termination liability approach," whereby the commitments of the public pension system to all current members must be estimated. In order to compare IDP between countries, the World Bank recommends using this approach, since: (i) it is less susceptible to arbitrary manipulation; (ii) it avoids having to use questionable assumptions relating to income; (iii) it does not require projecting many variables in the future; and (iv) it is the most relevant measure for reformers.

other countries the size of the fiscal savings generated by the reform by 2050, in order of importance, amounts to: 152 p.p. (Uruguay); 148 p.p. (El Salvador); 103 p.p. (Peru); 66 p.p. (Mexico); and 18 p.p. (Colombia). (See Chart No. 1)

Although the changes in IDP reveal the extent of the pension reform and how countries choose the transition from one regime to another, a better measure of fiscal sustainability is the rate at which the total public pension debt accumulates after the pension reform, compared with the rate of accumulation of total pension debt that would have occurred if the pension reform had not been implemented. Graph No. 1 shows the total pension debt (explicit and implicit) accumulated after 2001, in the "with" and "without reform" scenarios. As can be seen, the estimates are conclusive since pension reforms reduce fiscal pressures and therefore improve the fiscal sustainability of systems in the long term.

Graph No. 1
Total accumulative pension debt (explicit and implicit) since 2001, with and without reform (% of GDP)

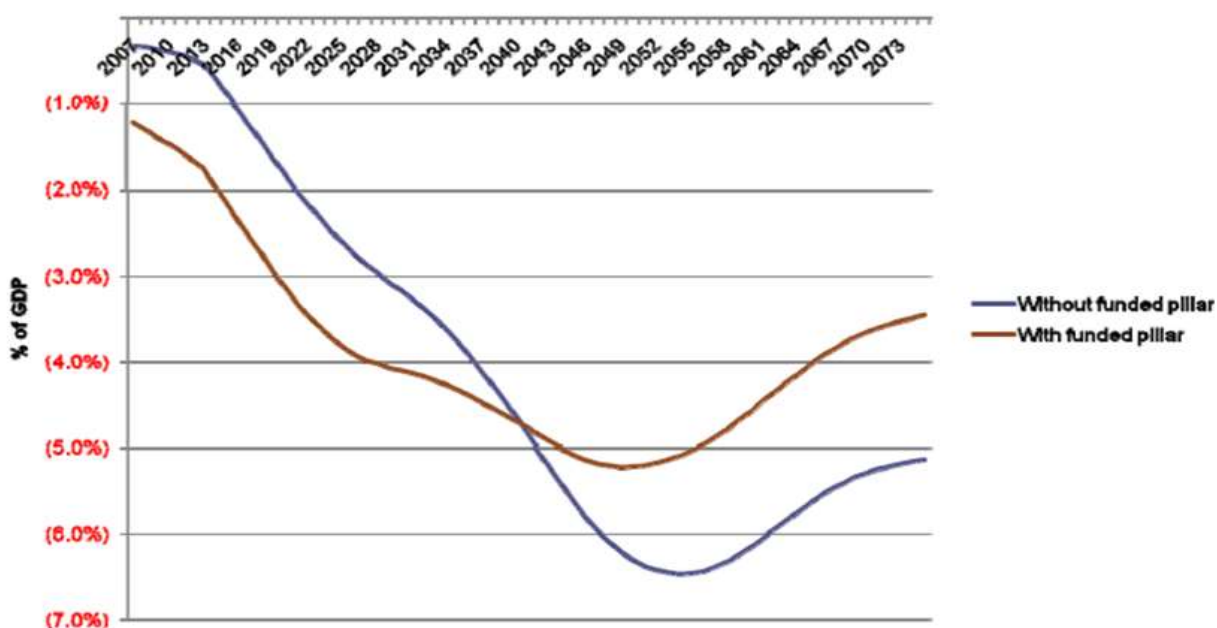


Source: "A Simulation of Social Security Reforms in Latin America: What Has Been Gained?" Zvinien and Packard, World Bank, 2004.

In the case of the Central and Eastern European Countries that have carried out reforms based on individual funding, there are no comparative papers showing IDP projections (and therefore the fiscal savings expected in the long term) in the "with" and "without reform" scenarios.

However, Juan Yermo (2011)⁷ shows that for a stereotypical Central or Eastern European Country (in a time horizon ranging from 2007 to the 2073), at present value, there is a fiscal profit, since the present value of future fiscal profits are considerably higher than the fiscal losses in the short term (these occur due to the cost of the transition involved in making part of the IDP "explicit") (see Graph No. 2). As can be seen, the projection shows that the fiscal profits of the pension reform based on individual funding arise as of 2040; from that year onward, the fiscal deficit (pension revenue minus explicit and implicit pension expenses) resulting from implementing the reforms is less than it would have been if they had not been implemented.

Graph No. 2
Projected fiscal deficit of the pension system for a stereotypical Central or Eastern European country



Source: The World Bank.

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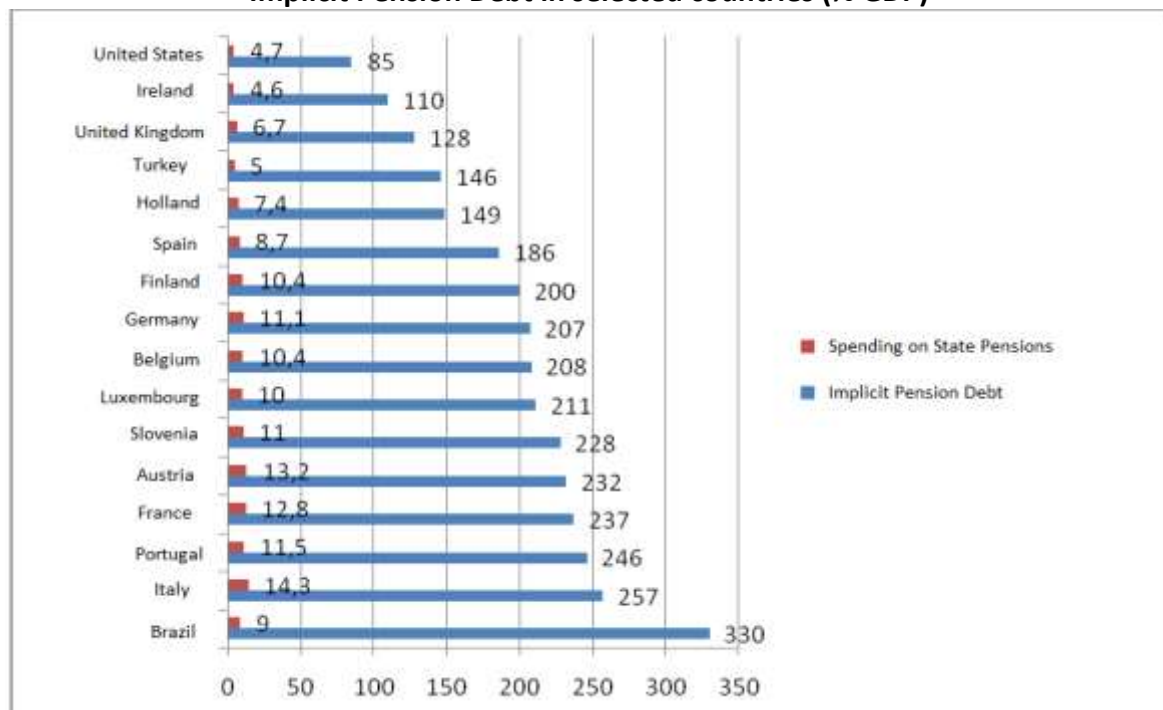
⁷ "Unwinding pension reforms – An OECD perspective", Juan Yermo. In the 2011 FIAP book "Advancing in the Strengthening and Consolidation of the Individually-Funded Pension Systems" (Dominican Republic).

Appendix 1

The importance of the size of the implicit pension debt for introducing an individually funded pillar

In several countries, the acknowledgment of implicit and explicit debt has meant that they have had to postpone the decision or desist in trying to adopt structural reforms of their systems (see Graph No. 3). This is the case in countries such as Brazil, Italy, Portugal, France, Austria, Slovenia and Luxembourg, among others, which have an IDP level higher than 200% of GDP, implying a high explicit fiscal load for governments should they decide to introduce an individually funded pillar.

Graph No. 3
Implicit Pension Debt in selected countries (% GDP)⁸



Source: European Commission (2006), (2004) World Bank.

The countries that have not introduced structural reforms to their pension systems have made parametric reforms, which consist, for example, in: raising the retirement age, reducing pension amounts, decreasing the indexation of pensions, increasing the contribution rate. All of this is done in an attempt to extend the life of the existing PAYGO systems and avert their collapse. These parametric reforms have greater political viability, but constitute a partial and short-term solution with a limited economic impact compared to the individually funded structural reforms.

⁸ The implicit pension debt is shown for different years and different discount rates. In the year 2000, at an annual discount rate of 4%: Brazil and Turkey (Source: "Implicit Pension Debt: Issues, Measurement and Scope in International Perspective"; R Holzman, R. Palacios, A. Zvinienė; March 2004; World Bank). In the year 2005, a 3% annual discount rate: United States, Ireland, England, Holland, Spain, Finland, Germany, Belgium, Luxembourg, Slovenia, Austria, France, Portugal, and Italy (Source: "General government pension obligations in Europe", Reimund Mink, European Commission, 2006).

Appendix 2

The negative effect of the reversal of reforms based on individual funding

The reversal of reforms in some Central and Eastern European countries ("dismantling" or "quasi nationalization" of the individually funded pillar, with the subsequent return to the former PAYGO systems), only exchanges one kind of debt for another (explicit for implicit) and harms the overall fiscal situation in the mid and long term, mainly for the following reasons:

1. The fiscal problem facing most of the governments of the Central and Eastern European countries is the result of the erosion of the assets of the former pension system and the recent financial crisis. Demographic trends (increased life expectancy and declining fertility rates) have strongly impacted these PAYGO systems, making them unsustainable. The defined-benefits of the PAYGO systems are in many cases higher than the contributions paid in by workers during their active lives, which is bringing pressure to bear on the countries with these systems to increase retirement ages and decrease the benefits provided.
2. The financial sustainability of pension systems was among the main reasons that the governments of Central and Eastern European countries implemented private, defined contribution individually funded pension systems, since they needed to improve the prospects of the public sector deficit. Hence, the measures proposed by these Governments would only exchange one type of debt for another and would harm the fiscal status in the mid and long-term. They would be trying to solve a problem today at the cost of aggravating a problem in the future.
3. There is a disparate accounting treatment of the public debt of countries that have reformed their pension systems, versus those that have not reformed them. In countries with reforms, the "explicit" accounting public debt arises from the acknowledgment by the government of the benefits of the workers who contributed in the former system who must receive the pensions promised by that system in future. However, in countries without reform, this debt called "implicit", is not registered in government accounting, despite the fact that the creditors do exist.