Pension arrangements and economic thinking: unreal assumptions and false predictions in the case of Argentina

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Abstract

In accordance with mainstream economic thinking, the World Bank advised Latin American countries to reform and fully or partially privatize their pension systems. Argentina was one of the countries to follow these recommendations, which it did without first checking whether the arguments were valid or whether the theoretical assumptions were fulfilled. On the basis of publicly available statistical information and a historical review of the Argentine pension system, we conclude that most of the arguments put forward by the World Bank were refutable at the time of the reform, which did not solve the problems it set out to address. For this reason, decision-makers should heed the economic history of each country before following the recommendations of international organizations.

Keywords

Social security, economic systems, international organizations, pensions, economic reform, equality, retirement, retirement income, case studies, Argentina

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The beauty of social insurance is that it is actuarially unsound
(Samuelson, 1967, p. 88).

I. Introduction

In the 1960s, an important discussion began in mainstream economics about the impact of pension systems on intergenerational welfare and economic growth. In that discussion, which involved several explicit or implicit assumptions representing a greatly simplified version of the way pension systems work in different countries around the world, a view of individual optimality ended up predominating over the original view of social optimality.

Influenced by mainstream economic thinking, analysts at the World Bank and International Labour Organization (ILO) led a discussion in the 1990s that was mainly concerned with the optimal design of pension systems. While some advocated the adoption of individually funded systems, others advised carrying out parametric reforms to balance system revenues and outgoings, without structural reform. The empirical evidence gathered in the countries that carried out the pension reforms proposed by the World Bank shows that they did not achieve the results which that body anticipated. Argentina was one of the developing countries that decided to partially comply with the World Bank's recommendations. It reformed its pension system to implement an integrated system (Arenas de Mesa and Bertranou, 1997), the Integrated Retirement and Pension System, in which an unfunded and an individually funded subsystem coexisted for 14 years. The aim of this paper is not to recount the details of the reform or the causes that led to the abandonment of the funded system, since that task has already been carried out by other authors (Cetrángolo, 1994; Rofman, 2002 and 2003; Bertranou and others, 2012). Rather, it will attempt to show not only that the problems the integrated system was intended to solve worsened while it lasted (Bertranou and others, 2015), but also that most of the arguments put forward by the World Bank for the superiority of an individually funded system over an unfunded one were refutable at the time of the reform.

The article is structured in three sections. The first outlines the course taken by mainstream economic thought in the study of pension systems since the late 1950s. The second describes the role that two international organizations, the World Bank and the International Labour Organization, came to play in pension policy in Argentina and other Latin American countries. Lastly, the third section shows, based on a review of the relevant legal literature and the statistical information available, that pension reform in Argentina did not solve the problems it was intended to.

II. Pension systems and economic thought

In 1958, Paul Samuelson set out to find a general equilibrium solution for determining the behaviour of the long-term interest rate, probably without realizing that he was initiating a wide-ranging debate in economic theory about the impact of welfare systems on well-being. Following a tradition in political economy, the author imagined the famous Robinson Crusoe making a bargain with Mother Nature.[1] He asked her to provide him with future consumer goods when he reached an advanced age in exchange for present consumer goods, on a one-to-one basis. If Robinson were to keep perishable goods such as the grapes or melons he picked on the island, he would undoubtedly earn a negative rate of interest. If, on the other hand, he could breed rabbits that reproduced according to compound interest, he would get a positive rate of interest.

[1] In a clear allusion to David Ricardo, Marx (1887) says that political economy is fond of "Robinsonades".

In a world without money, but with a constant flow of equally productive new generations, pay-as-you-go pension systems would serve the same function as the hypothetical bargain with Mother Nature: to exchange consumer goods and services by intergenerational transfer. If the population did not grow, providing goods to current retirees would be equivalent to providing these goods to oneself at a later period. In other words, these goods would be provided at a zero interest rate. In contrast, in a population with a positive growth rate, providing goods to today's retirees would be equivalent to providing these goods at a positive interest rate. The opposite would happen if the growth rate were negative.

Samuelson (1958) argued that the biological interest rate that matched the population growth rate was socially optimal in a Kantian sense, i.e., as a categorical imperative, in answer to the question: what common rule can be established as universal and enduring over time by a representative individual? However, the biological interest rate is not the one that would spontaneously prevail in a market in which no generation made a bargain with another generation that was as yet unborn. The author thus concluded that pension systems constituted a Hobbesian or Rousseauian social contract ensuring the sustainability of pensioners' future income when it was not possible to accumulate physical capital or, alternatively, when money did not fulfil its function as a store of value, making it difficult to efficiently transfer the savings generated during the active stage to the inactive stage.

Years later, Aaron (1966) demonstrated Samuelson's (1958) "social insurance paradox" whereby a pay-as-you-go pension system could increase the welfare of each individual if the sum of the population growth rate and the rate of growth in real wages exceeded the interest rate. Conversely, welfare would be reduced if the interest rate exceeded the sum of these rates, unless: (i) there were market imperfections that made the initial situation suboptimal, (ii) income redistribution were an objective of the social welfare function or (iii) there were economies of scale in public pension provision. However, all these considerations would be left aside in the economic analysis of pension systems, and the social optimum approach would ultimately be displaced by an individual optimum approach.

Thus, it would fall to Feldstein (1974) to turn Samuelson's article around by arguing that, in a world where a reliable volume of money is introduced, allowing value to be efficiently stored, pension systems are unnecessary because individuals can and should freely decide on their optimal amounts of intertemporal consumption and working hours. The idea that individuals do not need the State to meet their economic needs in old age had been introduced earlier by Friedman (1962), who described pay-as-you-go pension systems as a large-scale invasion of personal life. For Friedman (1962), individuals should be free to make their own mistakes, even if the consequence is that they live in poverty in their old age because they have not saved enough. This view was diametrically opposed to that of Samuelson (1975), who rightly considered that it was the very myopia of economic agents that made the existence of a paternalistic pension system optimal.

Feldstein (1974) suggested that pay-as-you-go systems produced two harmful effects on growth by interfering with individual decisions: (i) they reduced the incentive to save during the active stage and (ii) they reduced the labour supply by establishing fixed retirement ages. With regard to the net effect of a pension system on aggregate saving, Feldstein (1976) recognized that it needed to be estimated empirically because it was theoretically indeterminate, depending as it did on the relative strength of two effects: (i) the saving replacement effect and (ii) the induced retirement effect. The first effect entailed a reduction in saving during the active stage, a choice that individuals might make in anticipation of a pension benefit, while the second effect entailed an increase in saving to supplement the pension benefit and thus attain an optimal level of consumption over a longer retirement period. The author's estimates suggested that the United States pay-as-you-go pension system reduced private savings by 38%, which in turn reduced the volume of accumulated capital by 60% and, consequently, gross domestic product (GDP) by 11% (Feldstein, 1974).

Although Feldstein's (1974) empirical work was subject to serious methodological criticism (Darby, 1977; Esposito, 1978; Barro, 1979; Leimer and Lesnoy, 1982; Atkinson, 1995), his theoretical ideas ultimately prevailed in the economic literature. Franco Modigliani (1986) argued that the main parameter controlling the saving rate, given a certain level of output, was the length of the retirement period. According to the author of the life-cycle model, the pension system affects the length of this period by encouraging early retirement. Modigliani (1966) considered that consumption and saving decisions reflected intertemporal optimization by individuals as they sought to achieve their preferred distribution of consumption over the life cycle. These decisions were influenced by the population growth rate (which changes the relative proportion of young and old) and by productivity (which changes the level of income on which consumption and saving decisions are based).

Martin Feldstein's ideas were rapidly disseminated by countless authors via the design of dynamic general equilibrium models representing the functioning of an economy in accordance with neoclassical life-cycle theory under conditions of perfect information, perfect labour and capital markets, and homogeneous, rational individuals, which implies intertemporally consistent preferences and no myopia. One of the pioneering works in this line was that of Auerbach and Kotlikoff (1987), who argued that when the interest rate was higher than the population growth rate, pay-as-you-go systems decreased the welfare of future generations for two reasons. First, because future retirees would receive higher benefits if they invested their savings at the market interest rate. Second, because the crowding out of private savings caused by the existence of a pension system reduced capital formation, causing the economy to reach a steady state with a lower level of output per capita.

Auerbach and Kotlikoff (1987) observed that the complex relationship between contribution rates and eventual retirement benefits was misunderstood by most workers, for whom these rates were simply taxes on labour that ended up distorting the labour supply. For this reason, the authors suggested that the government should limit itself to requiring individuals to save in individual accounts whose funds would be invested at a given interest rate and then repaid at retirement. In that way, workers would interpret every dollar deposited in their account as a dollar transferred to their inactive stage, without any distorting effect on the labour supply.

Feldstein (1997) recognized that the real reason for people to drop out of pay-as-you-go systems was not that these were bankrupt or unsustainable, but that leaving them would improve the welfare of individuals, since a private system of individual accounts would be able to provide the same benefits as the pay-as-you-go system, but at a lower cost. The author established three conditions for a successful transition from a pay-as-you-go system to a private individually funded one: (i) the marginal product of capital must exceed the rate of wage growth, (ii) the rate at which future consumption was discounted must exceed the rate of wage growth and (iii) the economy must be growing. Feldstein (1997) considered that the transition would be successful because the private system required a lower contribution rate than the public system to deliver the same benefits. Thus, the transition generation would not have to make a very large effort to support retirees and would be able to save for their own retirement at the same time.

The conditions for the success of a pension reform and the admissibility of the assumptions on which a neoclassical model of the type proposed by Martin Feldstein is based were scarcely analysed in advance of pension policy recommendations being made to countries such as Argentina. Perhaps this was due to Milton Friedman's famous principle: "The relevant question to ask about the 'assumptions' of a theory is not whether they are descriptively realistic, for they never are, but [...] whether the theory works, which means whether it yields sufficiently accurate predictions" (Friedman, 1953, p. 15). The fact is that international agencies such as the World Bank and the International Monetary Fund were quick to recommend that developing countries reform their pension systems in order to privatize them fully or partially. Conversely, ILO analysts predicted that the risks from this reform would be greater than those presented by the existing situation (Mesa-Lago, 1996).

III. The international debate: the World Bank versus the International Labour Organization

In line with mainstream economic thinking, the World Bank questioned the performance of pay-as-you-go pension systems in its famous 1994 report *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth*. The arguments put forward were as follows: (i) the redistributive potential of these mechanisms has sometimes been used to benefit the rich at the expense of the poor; (ii) beneficiaries face the political risk that benefits will be reduced by law, besides which many countries do not index benefits, and inflation causes them to lose purchasing power; (iii) pay-as-you-go mechanisms are unsustainable in the long run, as they benefit one generation to the detriment of another; (iv) social costs in the form of evasion and informal working conditions are considerable, and pay-as-you-go systems entail high labour costs that reduce productivity, employment and output; and (v) pay-as-you-go pension systems reduce aggregate saving and investment.

According to the World Bank (1994), income protection and income redistribution to prevent poverty in old age were two different objectives of the pension system and should be dealt with by a mechanism comprising different pillars. Such a mechanism would have a first non-contributory pillar financed by general taxation to deal with redistribution and poverty alleviation, while a second individually funded pillar would deal with income protection. Lastly, a third voluntary pillar would provide additional protection for those desiring it. With this design, the World Bank believed that countries could achieve two objectives at the same time: (i) make pension systems sustainable and (ii) alleviate poverty among older persons, all without distorting the economic variables involved in growth and employment.

Several Latin American countries, including Argentina, decided to follow the World Bank's recommendations and reform their pension systems, organizing them into a multi-pillar scheme. At the same time, analysts at the International Labour Organization who opposed the World Bank's recommendations challenged the Bank's arguments with the following counter-arguments: (i) many of the World Bank's theoretical postulates, such as the alleged distortion of the labour supply and the decrease in aggregate savings, lacked adequate empirical support; (ii) certain events, such as the increase in the dependency ratio caused by population ageing and the greater probability of the rich accessing benefits because of their longer life expectancy, were incorrectly associated with pay-as-you-go mechanisms, without considering that both events were independent of the pension mechanism adopted; (iii) the historical role of pay-as-you-go mechanisms in smoothing consumption and alleviating poverty among older persons in industrial countries was not recognized, and nor was the administrative efficiency with which these objectives were achieved; and (iv) too much reliance was placed on the markets of fund managers in developing countries (Beattie and McGillivray, 1995; Singh, 1996; Midgley, 1999).

Beattie and McGillivray (1995) recognized that, while perverse redistribution from poor to rich was inevitable in a system that aimed to diversify the longevity risk of a whole population, the poor who reached retirement age obtained higher replacement rates owing to the lump sum components contained in pension benefits, an argument that was also made by Barr (2002) years later. In relation to funding mechanisms, the authors stressed that benefits were open-ended and individuals would face enormous uncertainty in this regard, as they would depend on individual contribution capacity, the rate of return achieved by the fund manager, the amount of fees and administrative costs to be deducted from the fund, and actuarial calculations. Such calculations would discriminate against women because they live longer, resulting in gender bias (Arenas de Mesa and Montecinos, 1999), and the poor might obtain replacement rates below the minimum rates established by ILO (1967). The State would ultimately have to take measures to compensate individuals who did not obtain coverage or whose benefits were insufficient.

Singh (1996) collected empirical information on the Chilean case.[2] He used these data to argue against the World Bank's proposed reforms: (i) transition costs represented 5% of GDP, (ii) the poor population had a low effective contribution rate, (iii) the rich population enjoyed a higher average rate of return on funds and (iv) administration costs were high and fees represented 15% of contributions.

Similarly, Singh (1996) criticized the argument that a country would develop through capital market growth, which the World Bank claimed would come about simply by virtue of the creation of a market for pension fund managers. The author questioned whether the development of such markets would result in higher growth. He argued that, according to Keynes' *General Theory of Employment, Interest and Money* (Keynes, 1936), the likelihood of speculation and overvaluation in the short term was higher when markets of this type were more developed. Countries such as Germany and Japan, meanwhile, had industrialized prior to the development of their capital markets. According to the author, it was paradoxical that reformist theories had most support in the United States and the United Kingdom, countries where capital markets had played a critical role in the economy.

In the same vein, Midgley (1999) interpreted the reformist wave as a direct consequence of the free-market ideas advocated by Friedman and Hayek, authors who fervently opposed post-war welfare State policies. Accordingly, the term "reform" was used euphemistically to denote the privatization of the welfare system advocated by those who considered that social security had become irrelevant (Midgley, 1999, p. 95). Midgley denounced the United States pension fund management industry for lobbying for the privatization of the pension system and the United States media for publishing inaccurate reports predicting the bankruptcy of the pay-as-you-go system. A similar accusation had been made by Mesa-Lago (1996) in one of the first critical articles on pension reform, in which he mentioned the "international consultants who believe in the universality of the Chilean model" (Mesa-Lago, 1996, p. 82) and give only a few pages to the diagnosis of the public pension system of the country they are studying, instead using the bulk of their reports to reproduce the Chilean recipe.

Years later, renowned economists such as Orszag and Stiglitz (2001) undertook a theoretical refutation of ten myths about social security systems that were very often found in the economic literature and were among the main arguments put forward by the World Bank. They discussed, for example, the supposed increase in aggregate savings when pay-as-you-go mechanisms were abandoned, the supposed higher expected rate of return associated with funded mechanisms, the incentives generated in the labour market by each mechanism, the degree of competition in the pension fund management market, and the role of governments in each mechanism. Barr (2002) masterfully showed that demographic shocks were adverse not only for pension systems organized using a pay-as-you-go mechanism, but also for those organized with an individually funded mechanism. On the other hand, the pay-as-you-go mechanism makes it possible to exploit the second demographic dividend (Lee and Mason, 2010) via public investment in human capital, while the individually funded mechanism does not.

With regard to the main cause of the differences between the World Bank and ILO, Mesa-Lago (1996) argues that both agencies proposed multi-pillar systems, with the differences lying in the second pillar. While the World Bank suggests private management of funds with State regulation, defined contributions from workers and employers and undefined benefits, ILO suggests public management of funds under a social insurance system, financing from individual and employer contributions and taxes, defined benefits and partial and collective capitalization. Queisser (2000) stresses that, while the World Bank pays more attention to property rights acquired through the payment of contributions and accrued interest, ILO conceives provision in old age as a collective social duty whose main objective is to guarantee a minimum of income security for both current and future beneficiaries.

While the ILO was against the use of social security systems as a tool for capital market development, Queisser (2000) suggests that the dogmatic approach characterizing the debate between

[2] Chile was the Latin American pioneer in pension reform in the 1980s, and its case is often cited as paradigmatic.

World Bank and ILO analysts gradually gave way to a predominantly pragmatic approach, to such an extent that the once conflicting positions began to converge in some respects. This had already been observed by Mesa-Lago (1996), who stated that, despite the intractable disagreement between the two organizations on structural pension reforms, ILO began to consider some of the economic objectives and the World Bank included social aspects such as equity in its analyses. Thus, in 1999, Joseph Stiglitz, as chief economist of the World Bank, criticized the recommendations of the report produced five years earlier by the Bank, most particularly for assuming first-best conditions. For its part, ILO stated that pension benefits would only be considered adequate if they operated "in synergy with employment instruments and fiscal and other economic policies" and did not bring "unwanted economic consequences" (ILO, 2011, p. 33).

Similarly, Barr and Diamond (2009) note that, from the point of view of individuals, the purpose of the pension system is to smooth consumption and provide insurance against the risk of living too long or not long enough. However, governments have the additional objectives of alleviating poverty and redistributing income, as well as efficiency and economic growth goals that would seem at first sight to be unrelated to the pension system, but which end up being affected by it. Accordingly, the analysis must avoid "tunnel vision" and seek solutions that are optimal with respect to all these objectives. To this end, the authors advise against sticking closely to the theoretical framework of optimums. In their view, assuming that individuals make optimal decisions and that labour and insurance markets and saving institutions function ideally simplifies the analysis, but does not reflect the reality in most developing countries.

Over the last few decades, different authors have sought to incorporate into general equilibrium models elements such as uncertainty (Ermolieva, 2004; Auerbach and Lee, 2009), imperfect labour markets (Krueger, 2006; De la Croix, Pierrard and Sneessens, 2010), imperfect capital markets (Fehr and Habermann, 2005; Verbic, 2008; Hosseini, 2015), preferences for bequests (Kotlikoff, Smetters and Walliser, 2007) and family welfare (Fuster, İmrohoroğlu and İmrohoroğlu, 2007; Fehr, Kallweit and Kindermann, 2015), the heterogeneity of individuals' productivity (Wang and others, 2004; Nishiyama and Smetters, 2005; Buyse, Heylen and Van De Kerckhove, 2012), risk aversion (Binswanger, 2007) and the likelihood of survival (Chauveau and Loufir, 1997), rationality-limiting elements such as myopia (Docquier, 2002; Kiraly and Simonovits, 2016; Börsch-Supan, Hartl and Leite, 2017) and inconsistent preferences (İmrohoroğlu, İmrohoroğlu and Joines, 2003; Fehr, Habermann and Kindermann, 2006; Kumru and Thanopoulos, 2010), while also carrying out demographic projections for specific countries (Meijdam and Verbon, 1997; De Nardi, İmrohoroğlu and Sargent, 1999; Börsch-Supan, Ludwig and Winter, 2006; Krueger and Ludwig, 2006). These efforts always yield quantitative results that depend on the value of the parameters assumed in the specific model. For this reason, the usual conclusion in investigations of this kind is that the result changes when the parameters are modified, and it is not possible to predict the outcome without a detailed knowledge of the characteristics of the specific pension system being modelled and the peculiarities of the economy in which it is embedded.

IV. Unreal assumptions and false predictions in the case of Argentina

Five arguments put forward by the World Bank in its report *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth* (1994) will now be discussed. The discussion is conducted both in theoretical terms and on the basis of empirical information concerning the Argentine case.

1. The redistributive potential of pay-as-you-go mechanisms has been used to benefit the rich at the expense of the poor

The basis for the World Bank's first argument is that the poor tend to have shorter lifespans than the rich and enter the labour force earlier. As a result, they finance benefits for longer and often do not reach the minimum retirement age or do not survive for as long after retirement. The poor do indeed live shorter lives than the rich, regardless of the pension mechanism a country adopts. The real solution to this dilemma would be to establish different minimum retirement ages for people with different income levels or to allow different regimes to operate for activities that take a heavier toll on health. In fact, in Argentina there are several differential schemes that take into account this inequality in the distribution of life expectancy by activity.

Furthermore, the distribution of pension coverage by income level did not become more equitable after 14 years of the mixed mechanism. Table 1, based on data from the Permanent Household Survey (EPH) carried out by the National Institute of Statistics and Censuses (INDEC), shows active pension coverage by per capita family income decile two months before the mixed system came into force (May 1994) and during its last quarter of operation (the fourth quarter of 2008). It also shows inactive pension coverage in May 1994 and in the third quarter of 2005. This latter period is taken to avoid the influence of the Pension Inclusion Plan, which eased the requirements for accessing benefits in November that year, artificially raising inactive coverage.

Table 1
Argentina: distribution of pension coverage[a] before and after the mixed system came into operation[b]
(Percentages)

Per capita family income decile	Active coverage, May 1994	Active coverage, fourth quarter of 2008	Inactive coverage, May 1994	Inactive coverage, third quarter of 2005
Decile I	29	10	70	48
Decile II	48	28	68	63
Decile III	56	41	66	66
Decile IV	57	55	67	65
Decile V	58	55	75	65
Decile VI	61	64	68	63
Decile VII	62	69	70	67
Decile VIII	63	76	74	70
Decile IX	67	80	74	66
Decile X	67	85	73	64

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of the one-off Permanent Household Survey (EPH) (May 1994) and the continuous EPH (third quarter of 2005 and fourth quarter of 2008).
[a] Active coverage: percentage of employees subject to pension deduction (weighted individuals). Inactive coverage: percentage of persons above the minimum retirement ages who receive a pension or retirement benefit greater than zero (weighted individuals).
[b] The mixed system (Integrated Retirement and Pension System) began operating in July 1994.

It can be seen that active coverage decreased in the first five per capita family income deciles and increased in the top five deciles between 1994 and 2008, which implies greater inequity in the distribution of access to pension protection for active workers. Inactive pension coverage decreased in all income deciles but did so proportionally more in the case of older persons in the first income decile than in the rest, which also implies greater inequity in access to pension protection during the inactive stage. It can thus be concluded that the introduction of an individual capitalization mechanism did not solve the problem of inequity in access to pension protection, a result that could have been foreseen at the time of the reform.

2. Beneficiaries face the political risk of benefits being cut by law; many countries do not index benefits, and inflation causes them to lose purchasing power

This argument implicitly assumes that pay-as-you-go mechanisms struggle more to cope with inflation and that political risk only exists with these mechanisms. Despite their criticisms of the Chilean pension reform, Arenas de Mesa and Montecinos (1999) seem to subscribe to this argument, claiming that the private system in Chile moderated the risks that existed before the reform by indexing pensions to inflation and that private pension funds were less prone to mismanagement or political use.

However, neither political risk nor the effects of inflation depend on the pension mechanism adopted. Kay (2009) effectively refuted the idea that political risk existed only with pay-as-you-go mechanisms, mentioning two events in Argentina's pension history as examples of it while the mixed mechanism was in operation: asymmetric pesification in 2002 and the nationalization of funds held by private managers in 2008. These events will now be described.

In December 2001, Decree No. 85 referred in its preamble to "the severe economic and social crisis" affecting Argentina, which made it "essential to adopt measures" that would ensure "that all sectors of the population, in consideration of the ineluctable principle of solidarity", would contribute "to the attainment of balance in the public finances". With this rationale, a state of emergency in the pension system was declared for a period of one year. During this period, nominal pensions were to be reduced by 13%. According to Rofman (2002), beneficiaries would then go on to suffer a real reduction in their pensions of around 28.5% as a result of the nominal reduction of 13% combined with the inflation of the first quarter of 2002.

For their part, all financial system creditors, including private pension fund managers and thus the beneficiaries of the capitalization subsystem, were obliged to accept the conversion to pesos and return of their dollar deposits at a rate of 1.4 pesos per dollar, as stipulated in Decree 214. Three days before the publication of this provision in the official gazette, a dollar was worth 2.05 pesos, according to the Central Bank of the Argentine Republic.

Seven years later, Law No. 26425 provided for the unification of the pension system into a single pay-as-you-go scheme to be called the Argentine Integrated Social Security System (SIPA). The funded system was absorbed and replaced by the new system. The funds accumulated up to that time in the individual capitalization accounts would become part of the Sustainability Guarantee Fund (FGS). The FGS could only be used for the payment of pension benefits and its assets would be invested "according to appropriate criteria of security and profitability, contributing to the sustainable development of the real economy so as to secure the virtuous circle between economic growth and increased pension resources". At the end of 2010, the assets of the FGS, of which almost 60% were invested in government securities, represented 12% of GDP. These assets were equivalent to 197% of pension spending administered by the National Social Security Administration (ANSES) that year (Bertranou and others, 2011).

Lastly, it could be argued that the existence or otherwise of a mechanism for indexing pension benefits does not depend on the pension mechanism adopted. Since 2009, under the new pay-as-you-go mechanism, Argentina has actually had a pension mobility (readjustment) formula, set out in Law No. 26417, whereby benefits are updated in line with changes in wages and pension system resources. In December 2017, this formula was modified by Law No. 27426 to replace the indicator associated with pension system revenue by an indicator associated with the general price level, and the weighting of the latter was increased.

3. Pay-as-you-go mechanisms are unsustainable in the long term, benefiting one generation at the expense of another

The third argument is based on the idea that any pay-as-you-go system is sustainable in its early years of operation but becomes unsustainable as the population ages because the number of contributors decreases and the number of beneficiaries increases. Thus, pay-as-you-go systems favour the first generations of beneficiaries to the detriment of subsequent ones. Once again, it can be said that the ageing process is independent of the pension mechanism and that what is important is to determine which mechanism can best take advantage of demographic dividends. At the same time, while it is not denied that the first generations of Argentines enjoyed greater benefits than subsequent ones (Diéguez and Petrecolla, 1974; Arza, 2006), this cannot be attributed entirely to population ageing but is largely owing to the performance of the labour market.

According to the 1991 National Population, Household and Housing Census, there were 4.8 persons over 18 years of age and below the current minimum retirement age in Argentina for every person over that age. The two subsequent censuses showed a slight reduction in this ratio to 4.6 persons of working age for every older person of retirement age. This implies that, in 19 years, the number of working-age individuals for every individual of retirement age changed by just 0.2 persons. However, the number of formal workers per pension system beneficiary is half the value indicated. Table 2 shows the pension sustainability ratio in May 1994 (before the mixed mechanism came into operation) and in the fourth quarter of 2008 (the last quarter in which it operated). This version of the sustainability ratio, which includes the number of actual contributors rather than potential contributors, is taken because the difference can be substantial in contexts of unemployment and labour informality.

Table 2

Argentina: pension sustainability ratio,[a] 1994–2008

(Number of formal workers per pension system beneficiary)

Period	Sustainability ratio
Before the mixed mechanism came into operation (May 1994)	1.61
Minimum value (May 1996)	1.54
Maximum value (third quarter of 2006)	2.40
Last quarter the mixed mechanism was in operation (fourth quarter of 2008)	2.01

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of the one-off Permanent Household Survey (EPH) (May 1994 to May 1996) and the continuous EPH (third quarter of 2006 to fourth quarter of 2008).

[a] Number of employees subject to pension deduction relative to the number of pension beneficiaries (weighted individuals).

It can be seen that the sustainability ratio did not alter substantially during the period the mixed mechanism was in force. With a change of less than one formal worker per beneficiary, the evolution of this indicator reveals the inability of the labour market to provide formal employment for all Argentines, a difficulty that aggravates those inseparable from population ageing, regardless of the pension mechanism adopted.

4. The social costs in terms of evasion and informal working are considerable; pay-as-you-go systems entail high labour costs that lower productivity, employment and output

Underlying this argument is the idea that evasion and informal work are always an individual choice of workers themselves, resulting from their inability to perceive the direct relationship between the contributions made and the expected pension benefits. This inability is held to be the main incentive to evade pension contribution obligations. From employers' point of view, meanwhile, it is often argued that high labour costs create disincentives for the formalization of workers.

In Argentina, employers' contributions were reduced on several occasions with the aim of encouraging greater formalization of dependent workers. In September 1980, for example, the Secretariat of State for Social Security issued Resolution No. 192 abolishing employers' contributions. The preamble of this resolution argued that reducing social charges for companies would improve competitiveness and remove an impediment to the hiring of labour, "thus allowing full employment to be maintained". This rule was in force for four years until repealed by Law No. 23081 in September 1984. Employer contributions were then reinstated at a level of 50% of what they had been in September 1980, i.e., 7.5%.

In August 1991, under Law No. 23966, employers' contributions were set at 16% of wages. This proportion was ratified by Law No. 24241, the Pension Reform Act, passed in September 1993. However, seven months before the integrated mechanism came into operation, Decree No. 2609 was passed, establishing a mechanism for reducing the employer contributions stipulated in the law that had been passed by Congress. Its preamble stated, as in 1980, "that a priority of national economic policy is to lay the foundations for sustained growth in economic activity, productivity and employment", "that with this objective in view it is particularly necessary to implement measures aimed at reducing the level of costs in the economic process" and that the "reduction of payroll contributions should be considered as a step towards their total abolition".

The mechanism consisted in applying different degrees of reduction according to the region of the country and the economic activity concerned, although a later regulation, Decree No. 372 of 1995, would extend the reduction mechanism to all economic activities except those carried out by the State. Thus, for example, the largest reduction was 80% and applied to the provinces of Chaco, Formosa and part of Santiago del Estero, where employer contributions were reduced to 3.2%. The smallest reduction was 30% and applied to the Federal Capital and Greater Buenos Aires, where employer contributions fell to 11.2%. The reductions continued to be modified by emergency presidential decrees until December 1998, when, by virtue of Decree No. 1520, employer contributions reached a value of 1.43% for the northern region and 5.01% for the central region.

According to the Ministry of Labour, Employment and Social Security (MTEySS, 2003), despite continuous reductions in social charges, the unemployment rate began to rise in 1994 and reached 21.5% of the economically active population in May 2002. During this period, moreover, 80 out of every 100 jobs created were informal, meaning a loss of resources of US$ 80 billion. At the same time, employment promotion measures, consisting of reductions in employer contributions, fixed-term contracts, probationary contracts and work placements for young people, did not achieve the objective of reducing unemployment (MTEySS, 2003). In view of this, the labour reform carried out by Law No. 25250 of May 2000 extended the trial period for collective employment agreements from 3 to 6 months, or up to 12 months in the case of small enterprises. The reform also granted an additional reduction in employer contributions to employers that increased the number of employees on open-ended contracts. This reduction brought employers' contributions down by a third of the standard rate or by 50% if the new hires were men aged over 45, female heads of household of any age or young people up to 24 years

old. According to Bertranou and others (2011), the effect of these incentives was less than expected and the recession that began in 1998 aggravated the problem of unemployment and non-compliance with social security obligations.

Lastly, in July 2001, Law No. 25453 set the unified social security contribution for four of its subsystems at a total of 16% for employers in general and 20% for employers in the commerce and services sector. Budget Law No. 25565 of 2002 raised each of these rates by 1 percentage point. According to the National Directorate of Social Security Policies, policies lowering employer contribution rates represented a loss of resources of the order of US$ 28 billion for the social security system as a whole over the period 1994–2002 (MTEySS, 2003). Table 3 shows the employment rate and the percentage of wage earners subject to pension deduction in Greater Buenos Aires in May 1994 and October 2001, i.e., two months before implementation of the mixed mechanism and three months after the establishment of the unified social security contribution, which raised employers' contributions to offset the reductions brought in by decree, but did not restore them to their original levels.

Table 3

Greater Buenos Aires: employment and formality rates, 1994 and 2001

(Percentages)

	May 1994	October 2001
Employment rate	89	82
Employees subject to pension deduction	55	51

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of the one-off Permanent Household Survey (EPH) (May 1994 to October 2001).

It can be seen that the reduction in employer contributions does not seem to have been sufficient to increase employment or labour formality, as these variables declined by 7 and 4 percentage points, respectively, during the period analysed.

5. Pay-as-you-go pension systems reduce aggregate saving and thus investment

Lastly, the final argument could be said to allude to one of the fundamental assumptions of a neoclassical model of economic growth: the understanding of saving as synonymous with real investment. The crowding out of private savings caused by the pay-as-you-go mechanism would thus be expected to translate into lower investment and thence lower employment and output. However, this assumption can be easily refuted in Argentina, where five money laundering laws were passed between 1987 and 2016 (Laws No. 23495 of 1987, No. 24073 of 1992, No. 26476 of 2008, No. 26860 of 2013 and No. 27260 of 2016). All these laws provided for remissions of tax debts for undeclared assets in the country or abroad and granted reductions in tax rates on the condition that the individuals or companies concerned regularized their tax situation. The mere fact of these laws being passed would seem to demonstrate that in Argentina the savings of individuals are not always converted into real investment, but that a large portion is taken out of the country in expectation of a new money laundering law that will allow it to be repatriated or declared. This implies that it would be a mistake to justify economic policies solely on the grounds that they increase aggregate saving and, a fortiori, to reform a pension system exclusively on the basis that this variable can be expected to increase.

V. Conclusions

In mainstream economic thinking, a view of individual optimality came to be enshrined in the study of pension systems. This had a very great influence on international organizations such as the World Bank, which strongly encouraged pension reforms in Latin American countries. Argentina was one of the countries in the region that followed these recommendations: in July 1994, it introduced an integrated pension mechanism in which a pay-as-you-go subsystem and an individually funded subsystem coexisted for 14 years, until it was abolished in November 2008.

In Argentina, as in other developing countries, many of the postulates upheld by the World Bank to defend the superiority of capitalization mechanisms over pay-as-you-go mechanisms were easy to refute at the time of the reform. The conclusion is that most of the arguments consisted of fallacies, since they concerned real problems whose solutions did not depend on the pension mechanism adopted. This is the case with the difference between the life expectancy of rich and poor, the process of population ageing and the political risk entailed by nominal or real reductions in pension amounts. At the same time, there is no conclusive information to support common assumptions of economic theory in the case of Argentina, such as the notions that saving is automatically transformed into investment or that a reduction in labour costs is immediately followed by a higher level of employment and labour formality.

It is concluded that some of the problems that the structural reform failed to solve could have been alleviated by implementing parametric reforms. Thus, for example, inequality of access to the pension system could have been reduced by setting special minimum retirement ages for low-income individuals or by making access requirements more flexible, as was done in 2005 with the implementation of the Pension Inclusion Plan. With regard to the risk of benefits losing their purchasing power, the solution would be to implement benefit adjustment formulas that can only be amended by law, as was done in 2009, thus reducing the discretion of governments to decide on the indexation of benefits.

However, it would appear that other problems considered to stem from the pension mechanism, such as unemployment, labour informality and the failure to convert saving into investment, are beyond the scope of pension policy and should be tackled with other economic policy instruments. Thus, although ILO recognizes that one of the requirements for deeming pension benefits to be adequate is that they operate in synergy with economic policy, this does not mean that the objectives of the pension system itself should be subordinated to those of economic policy.

In conclusion, the assumptions which mainstream economic thinking relied on in recommending pension system reforms that would totally or partially eliminate the pay-as-you-go system were not fulfilled at the time decision-makers decided to accept the suggestion. In view of this, decision-makers should not lightly follow the recommendations of international organizations, which sometimes base their proposals on dogmas of economic theory, often without taking account of conclusive empirical information on the countries or the particular characteristics of each. It is hoped that the conclusions of this article will contribute to the academic and political debate on the optimal design of pension systems in Latin America, especially at a time when arguments that have already been refuted by the experience of many countries' economies and pension systems are once again being urged.

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