UNIVERSITÀ DEGLI STUDI DI SIENA

QUADERNI DEL DIPARTIMENTO
DI ECONOMIA POLITICA

Sergio Cesaratto

The Macroeconomics of the Pension Fund Reforms and the case of the severance pay reform in Italy

n. 549 – Dicembre 2008

Abstract - The controversial saving-investment relationship is central to macroeconomics in general, but in this capacity – perhaps less evidently – it is also central to the macroeconomics of pension reforms. Bearing this in mind, in this paper we shall review the main issues concerning these reforms and examine the recent attempt to boost the fully funded component of the pension system in Italy by employing the resources accumulated by firms on behalf of workers within the 'Trattamento di Fine Rapporto' (severance pay) scheme.

Jel Classification: E11,G23,H55

Sergio Cesaratto, Dipartimento di Economia Politica, Università di Siena

Introduction

As is well known, only a minority of Italian workers contributes to fully funded (FF) schemes. Since the reform of the public pay-as-you-go (PAYG) programme in the mid-nineties, based on the introduction of the *Notional Defined Contribution* (NDC) formula, both centre-right and centre-left governments have felt an urgent need to increase the number of workers contributing to private FF schemes. Indeed the NDC reform has severely curtailed future pensions, hence the necessity of finding new sources of income for future retirees. The expansion of FF schemes, however, has come up against two macroeconomic obstacles: (a) workers cannot easily be forced to save more while it is not possible to divert contributions from PAYG to the FF schemes, since this would create financial problems for the public programme; and, less apparent from the debate on pension reforms, (b) even if workers save more, it is analytically wrong to presume that their additional savings will lead to extra investment.

In Italy a solution was found in the change of destination of the 'Trattamento di Fine Rapporto' (TFR) (severance pay) - a sort of company-based mandatory saving fund that employers accumulate on behalf of their employees and that the latter withdraw at retirement (or when they leave the firm). Workers contribute about 7% of their wage to TFR monthly. Between January and June 2007 private sector employees had to decide whether they wished to retain the TFR within the firm or devolve it to a FF scheme. In the latter case, workers could choose between 'contractual' funds, that is industry-based funds managed by trade unions, or 'open' funds, that is standard private pension funds (PFs). The funds diverted to FF schemes have a favourable tax treatment.

This paper will discuss both the economic consistency of the reform and its empirical results, in the context of the evolution of the Italian pension system. The macroeconomic content of the reform seems fragile indeed: *prima facie* an existing saving fund (the TFR) has been used to expand the FF scheme. From a social security viewpoint, it will be interesting to examine the behaviour of workers faced with the choice between a safe saving path (the TFR) and a more risky, although possibly more financially rewarding, one (the FF scheme). The paper will also assess the success of the reform in terms of the number of new participants in FF schemes and of the financial returns, also considering the current financial crisis. Tellingly, the Italian government discussed a project to intervene to integrate the FF (sic) pensions of those retiring after September 2008.

Sections 1 and 2 discuss the macroeconomics of pension reforms with specific emphasis on the transition from PAYG-dominated systems to multipillar arrangements. Sections 3 and 4 illustrate the institutional details of the implementation of the TFR reform and its macroeconomic interpretation. Sections 5, 6 and 7 assess some results of the reform.

1. Pay-as-you-go and fully-funded programmes compared

As is well known, in a pure pay-as-you-go programme current contributions are used to pay current pension benefits, and this is generally true from the very inception of the system. In contrast, in the setting up phase of a genuine FF scheme, contributions should, in principle, be used to accumulate real reserves in the form of capital assets – such as securities representative of real capital assets. This original accumulation must consist of net capital accumulation, that is a net addition to the capital stock (Cesaratto 2005, pp. 95-98). This is easy to perceive if we recall the Keynesian concept of 'old age provision' as one of the main motivations for saving (Keynes, 1936, pp. 107-108). A successful fully funded reform increases the aggregate old age provision if there is a net addition to the aggregate capital stock.[1] According to the dominant neoclassical theory, the advantage of a FF reform would thus lie both in increasing the individual old age provision and in its capacity to increase the per capita capital endowment and per capita income. The saving-investment issue is therefore crucial to the economics of a FF reform (Cesaratto 2006b).

A *mature* FF scheme would resemble a PAYG scheme in so far as the younger generation of workers would buy the capital assets from the older generations, thus financing their old age. It is indeed true that in any mature pension scheme it is the active generation that has to sustain the older age group. This support takes place through a market exchange in a FF scheme and through a moral and political pact amongst generations in a PAYG scheme.

PFs and the State typically act as buffers in FF and PAYG systems, respectively.[2] In the first case PFs accumulate and then sell assets on behalf of workers; in the second case public social security agencies simply transfer the pension contributions from workers to retirees, although the State has a fundamental role in making participation in the system mandatory and retains the power to change the rules of the game. An advantage of a FF scheme is seen in the reduction of the role of the State to an external regulator of the system, without the power to change the market-based rules of the game. We shall not deal with this aspect, which we regard, in a sense, as ancillary to most fundamental macroeconomic questions.

The similarity of the two systems should not be overstated. According to various scholars, including Barr and Diamond in their survey on pension economics (2006, p.33), the resemblance of the two schemes would suggest that they would both meet the same troubles if the economic

[1] Unfortunately this is often forgotten, as if a genuine FF scheme might start with investment in government bonds, that are not representative of capital investment (or only partially and in a limited sense). Clearly, once launched, a genuine FF scheme may diversify so that we actually find all sorts of assets in its portfolio. We shall return to this issue later.

[2] Pension experts would appreciate that in principle a FF scheme might be State run and a PAYG system managed by private administrators.

dependency ratio – the ratio of retirees to workers – were to worsen as an effect of demographic trends. This argument is correct as far as it goes, but it fails to take full account of the *neoclassical* claim that the FF scheme is more robust than PAYG in facing this kind of shock. I have appraised this assertion elsewhere (Cesaratto 2007), indicating its flaws and concluding that it is not a solid one. What I want to recall here, however, are the complications regarding the inception of a FF scheme in economies that are already endowed with a PAYG scheme. In my opinion, the main objections to a FF reform lie in this area, which is connected to the saving-investment issue (Cesaratto, 2006b).

This approach makes also justice of a comparison between the two competing systems based on the difference in the rate of returns on contributions in PAYG and FF schemes, respectively: if a FF scheme cannot be created at will, that is by mere policy design, there is little meaning in basing policy judgement on such a comparison. In this respect Cesaratto (2005, p.91) criticised economists that: "just compare the rate of return on contributions in the two systems – the 'biological rate' of PAYG, and the rate of return on investment of [a fully funded] scheme – without discussing the transition difficulties and macroeconomic implications of adopting one of the two competing programmes" (see also Cesaratto 2006a, p.34). This methodological criticism has subsequently been adopted, almost literally, also by Barr and Diamond (2006, p.22): 'It is mistaken to focus on a pension system in steady state, while ignoring or underplaying the necessary transition steps to get from one steady state to another. …An error …is to argue that funding is necessarily superior because stock-market returns are higher than the rate of growth of the wage base, which determines the return to PAYG schemes' (this remark is repeated on pp. 31, 34-35, 36, 38).

2. Saving, investment and FF reforms

There are at least two obstacles to a FF reform: (A) the marginal propensity to save cannot be raised at will; and, even if it were to be successfully increased, (B) the neoclassical causal relationship whereby more saving leads to more investment has been analytically shown to be invalid.

(A) Leaving aside the political difficulties of imposing a mandatory diversion of part of disposable income to PFs, this measure might be followed by a corresponding fall in discretionary (voluntary) saving. This substitution effect is less likely (i) if discretionary saving behaviour is mainly explained by a bequest intention and not by the old age motive,[3] and (ii) if workers are wealthy enough to save but myopic with regard to their old age provision. This difficulty has recently been remarked upon by Barr (2006, p.13) and Barr and Diamond (2006, p.30; see Cesaratto

[3] Note, however, that the bequest and old age motives cannot be clearly distinguished, since one can accumulate assets for both reasons and the actual final use may be decided by circumstances later in life.

2005, pp.117-122; 2006a, pp.37-39 for the references to previous literature). The political difficulties related to imposing further compulsory old-age saving are more probable when a PAYG scheme is already in place. The reform would indeed require workers to continue to pay PAYG contributions without expecting a PAYG pension, as well as contributing to the PFs to build their new FF pension.

Various proposals have been advanced to avoid painful shifts from PAYG to FF schemes, in the form of transition plans to avoid the double burden on workers of new mandatory old-age savings on top of the existing PAYG contributions. Naively, these plans (e.g. Holzmann 1998; and with regard to Italy: Castellino and Fornero 1998; Ceprini and Modigliani 1998; these plans are apprised in Cesaratto 2005, Ch.4) have relied on the full or partial diversion of PAYG contributions to a fully funded scheme, with the government intervening to make up for the payment of current pensions. This move would entail either:

(i) an increase in taxation, which, if levied on workers themselves, would mean that total mandatory social contributions were in practice increasing. This measure would clearly be equivalent to a double contribution from current workers – one to support the current PAYG retirees and the second to build their own FF pensions[4] - a measure that would be politically unpopular (and that might be matched by a fall in discretionary savings); or

(ii) an increase in public debt. In this case one could, in a first approximation, think that the PAYG contributions diverted to the PFs would be used to buy the public bonds issued by the government to make up for the social security deficit. Some commentators would jump to the conclusion that a funded system has, after all, been created, but closer scrutiny would easily reveal that this is not a genuinely fully funded scheme, in so far as the economy has not seen a net accumulation of real reserves (i.e. real capital assets).[5] The great Italian mathematician and actuary Bruno de Finetti was perhaps too optimistic when in 1956 he wrote: '[A]lmost all authors seem to agree that it would simply be window dressing if the capitalisation consisted in investments in public debt.' (de Finetti, 1956, p. 279, my translation).[6] And indeed Kotlikoff (1999, pp. 16-17) noted, referring to the famous World Bank (1994) report on pensions: 'In this putative shell game, workers, in the new regime, make contributions to their pension funds, rather than to the

[4] A double contribution would of course last as long as the last PAYG retirees existed.

[5] According to Orszag and Stiglitz (2001, p.22) this system would be a 'narrow prefunded' one, that is born without a net accumulation of savings. Genuine FF schemes are defined as 'broad prefunded' schemes. See also Geanakoplos, Mitchell and Zeldes 1998.

[6] In 1956 de Finetti anticipated the main elements of H.J. Aaron's 1966 paper, well know to pension experts, on which the latter built his fame. For a brief account of de Finetti's work, see the entry by Giancarlo Gandolfo in the *New Palgrave Dictionary of Economics* (1st edition).

government, and the pension fund turns around and gives the contributions right back to the government as loans'.[7]

While the arguments presented above have been endorsed by the literature by now (e.g. Cesaratto, 2005, Ch. 4, 2006a; Barr, 2006, p.8; Barr and Diamond, 2006, p. 35), the role of the saving-investment causal nexus in FF reforms has been somewhat misrepresented.

(B) Suppose that a FF reform is able to induce a rise in the marginal propensity to save, in spite of the abovementioned difficulties. In this regard Barr and Diamond (2006, p.33) concede that the connection between saving and investment is more complex than neoclassical theory would like it to be. More specifically, Barr (2006, p.13) acknowledges that: 'it may not be right to argue that additional savings are always translated into productive investment via adjustments in the interest rate – the Keynesian argument that higher saving together with sluggish investment may lead to stagnation rather than growth may not be wholly dead'. The reader would not, however, find any in-depth analysis of this point in Barr and Diamond. This is not surprising, since such analysis would undermine the very foundations of all 'modern' macroeconomics, which is firmly rooted in the pre-Keynesian idea that in the long run (full employment) saving determines investment.

It should be well known that, according to neoclassical economics, given the labour stock, an increase in the saving supply entails a higher capital-labour ratio. More specifically, a larger saving supply leads to a lower interest rate and, given a decreasing demand curve for capital, to a higher per-worker capital endowment. The idea that the demand for capital – of which the investment function is a scale copy – is a decreasing function of the interest rate depends on the decreasing shape of the factors' marginal product curve.[8] The capital theory controversy was initiated by the publication of a small book by Piero Sraffa (1960), suggesting that neoclassical

[7] Kotlikoff continues: 'So the cash flow from the workers to the government remains the same. In the old system, workers receive implicit I.O.U.s to future government pension benefits in exchange for their contributions, whereas under the new system they receive, via their pension funds, explicit I.O.U.s (government bonds) that promise to pay interest and principal. If the implicit and explicit I.O.U.s have the same present value, then the 'reform' has not reduced the present value of the government's future expenditure – it has simply relabelled them.' Having criticised the World Bank, Kotlikoff cannot resist proposing his (and Jeffrey Sachs') 'shell game'. He maintains, for instance, that privatisations might finance current pensions while PAYG contributions are invested in the global financial markets (1999, p. 22). Leaving aside the fact that a similar proposal was also advanced by the World Bank (1994, pp. 268–9), we may argue, paraphrasing Kotlikoff himself, that, in the first approximation '[i]n this putative shell game, workers, in the new regime, make contributions to their pension funds, rather than to the government, and the pension fund turns around and gives the contributions right back to the government [to buy the privatised companies]'. The final net effects on national savings would be nil (see Cesaratto, 2005, fn 18, p.173).

[8] In the case of fixed production coefficients (absence of factor substitutability) a decreasing demand curve for capital can be obtained using the substitutability of consumption goods for consumers (see e.g. Solow 1970, pp. 15-16).

capital theory was vitiated by logical faults.[9] The following years saw a pugnacious argument between a group of mainly Italian economists associated with Cambridge (UK) and top American economists located at the MIT in Cambridge (US) led by the don of neoclassical economics, Paul Samuelson.[10] Following Harcourt's (1972) contribution, the debate become known as the controversy between the two Cambridges.

Putting it very simply, when we teach students the marginal product of labour in order to derive the labour demand curve and, given the labour supply, to determine the real wage rate, we warn them that the amount of the 'remaining factors' stays 'constant'. If the 'other factors' consist of land, there is no problem. If they included corn-capital, and consumption goods also made of corn, this would also be fine. Indeed both land and capital in a corn economy are easily measurable in physical units. Unfortunately, however, the capital stock consists of heterogeneous capital goods (say corn and tractors) and to aggregate them 'in value' we must necessarily know their price, and prices depend in turn on income distribution (on factors' prices). We then find ourselves in a vicious circle: to determine income distribution, e.g. the real wage rate, we must know prices, but to know prices we must first know income distribution. Moreover, even assuming that we could attribute (rather arbitrarily) a 'value' to the heterogeneous stock of capital goods, it would still be meaningless to draw the marginal product of labour while keeping the 'capital stock' constant. Any observant student would note that when the wage rate changes, the *value* of the capital stock also changes, making the entire exercise inconsistent.[11] This is the simplest way to grasp the problems in capital theory. These arguments were well known to the most rigorous early marginalists, such as Knut Wicksell, who tried unsuccessfully to solve them, as did Samuelson's pupils in the sixties.[12]

---

[9] Unfortunately, the belief that Joan Robinson (1953/4) opened the capital controversy in the early fifties is widespread. Ms Robinson actually took some hints about the problems in capital theory from Sraffa, but her paper lacked the rigour necessary to sustain the controversy.

[10] The atmosphere at the MIT was thus recalled by Sheshinski (1990, p. 41), a leading neoclassical economist: "When I came to MIT at the end of 1963, the factory producing with Solowian equipment was in high gear … The world was watching and, yes, guns were roaring – mostly applauding salvos, but sometimes 'shooting to kill'. They were also times of polemics. Before the age of fax machines, notes and counterexamples were hurried across the Ocean. Bob [Solow] or Paul would enter class with an airgram from Pasinetti or Garegnani or Robinson in hand, read their (tedious) numerical examples, and conjecture that they did not satisfy some basic assumptions. We would then rush home to invert 4 x 4 indecomposable input-output matrices and send off the next salvo across the ocean".

[11] But, as Joan Robinson once said, before receiving any satisfactory answer from her teacher, the student will herself become a university professor ready to skip this point.

[12] Famously, Samuelson concluded his 1966 'Summing up' of the controversy in writing: 'for those nostalgic of the old time parables of neoclassical writings, we must remind ourselves that scholars are not born to live an easy existence. We must respect, and appraise the facts of life' (1966, p. 583). Referring to Samuelson's summing up, Ferguson (1979, p. 269) admitted that the 'Cambridge Criticism is valid' and that his belief in neoclassical theory was just 'a statement of faith', relieved solely by the hope that *empirical* research might, in the future, circumscribe the relevance of the criticism – as if logical faults could be remedied by empirical

As far as this paper is concerned, the main result of the capital controversy is that it is not possible to draw a demand curve for investment as a decreasing function of the interest rate in a rigorous way. This result vindicates what Kaldor named as the 'Keynesian premise', namely that investment is independent of saving. As is well known, Keynes argued in his *General Theory* that, within the limits of full utilisation of productive capacity, it is investment that determines savings. Unfortunately, he also conceded some space to the traditional investment theory, later exploited by the 'neoclassical synthesis' to circumscribe the long run validity of the 'Keynesian premise'. After the capital controversy, the Keynesian premise can be thought of as valid both in the short and in the long term.[13]

We therefore conclude that even if a pension reform is successful in raising the marginal propensity to save, there is no reason to believe that this would lead to higher investment and to higher per worker capital endowment and productivity. Quite the opposite: Keynes' 'saving paradox' would apply, whereby, given the level of investment decided by the entrepreneurs, a higher marginal propensity to save entails a lower income level - just enough to generate an amount of savings equal to the given investment level.

3. Pension reforms in Italy

Italy has been one of the leading countries in pension reforms over the last fifteen years or so. The first step regarded the reshaping of the PAYG scheme towards a *Notional Defined Contribution* scheme, through the Amato reform of 1992 and the Dini reform of 1995.[14] These reforms implied a cut in pension benefits in the short run and especially in the long run, so that politicians and trade unions relied on the creation of a second FF pillar to compensate the fall in expected pensions from the first pillar.

The previous section illustrated the difficulties of creating a FF scheme from scratch. Since the early 1990's a stratagem has been found in the utilisation of the TFR, a mandatory severance-pay scheme (see Cesari et al., 2007)[15] in which 7.41% of gross wages are accumulated by private employees in a fund that may be interpreted as an 'occupational fund' at the corporate level. The

---

results! The same religious spirit was shared by Solow's definition of neoclassical distribution theory as a 'parable' (Solow, 1970, p. 1).

[13] Note that, also from an empirical point of view, the evidence in favour of an interest elastic investment demand function is 'at best, equivocal', as Blinder put it (1997, p.240). The best introduction to the relevance of the capital controversy in macroeconomics is Garegnani (1983).

[14] On NDC schemes see the World Bank (2001); on the Italian NDC reform see, e.g., Franco and Sartor (2006), Gronchi and Nisticò (2006); Cesaratto (2005, Ch. 2).

[15] In the US, the Bush administration found a similar device in proposing the utilisation of the funds accumulated by the Social Security 'Trust Fund' to extend the 'funded', saving-based pillar (Cesaratto 2006b, fn 11).

rule of thumb used by workers is that the TFR is roughly equal to one month's salary per year. Trade unionists and workers often call the TFR a 'deferred wage'. Unlike the US *401(k)* funds, the TFR funds are used directly by the firm, and should the firm go bankrupt a co-insurance fund managed by the main State pension agency (the National Social Security Institute - INPS) intervenes, so that an Italian Enron case can be ruled out. Indeed, 0.5 points out of 7.41 are devoted to this purpose. A yearly rate of return equivalent to 1.5% plus 75% of the inflation rate is yielded on the accumulated TFR funds. This implies that the real rate of return will be positive – net of 11% tax – up to an inflation rate of 4%.[16]

If we examine a fully operating TFR scheme over a period – at the company or the aggregate level – we may distinguish between (i) the TFR *flows*: the TFR *inflow*, on the one hand, out of gross salaries, and the TFR *outflow*, on the other hand, in the form of giving severance pay to those who leave the firm; and (ii) the TFR *stock*, that is the debt towards workers that firms accumulate as a result of the difference, or net flow, between the TFR inflow and outflow (typically the net flow is positive during the inception period when the outflow is nil). For firms this debt is equivalent to a loan obtained, say, through the emission of bonds. The TFR is therefore often said to be a cheap way for firms to borrow. Official estimations posit the yearly flow of TFR at about 19 billion Euros[17], while the stock is estimated at about 210 billion (Boeri, 2008). If the TFR inflow is diverted to PFs, then firms will have to find alternative and more costly channels of financing the TFR outflow, as long as they want to maintain the amount of capital stock – own and borrowed – intact.

Two reform bills, the most important one in 1993 and another in 2001, have attempted to encourage workers in the private sector to devote their incoming TFR flow to PFs.[18] There are two main kinds of PFs: the first, commonly known as 'contractual funds', are industry-based and instituted within national labour contracts or by professional associations. The second, 'open', type coincides with standard PFs. The contractual funds would entrust the practical management of the TFR funds to external financial companies. Given the limited success of these reform bills, in 2004 the centre-right government emanated a third bill that proposed further tax advantages for both workers and firms and, more importantly, a default clause ('silenzio-assenso') whereby a worker's

[16] With an inflation rate of 4% the gross rate of return would be 1.5% + 3% = 4.5%. The after tax rate would be approx. 4%. The severance pay may be partially withdrawn by workers before their separation from the firm to finance, e.g., health expenditure, or the purchase of a house.

[17] Of which 1 billion was already devoted to the PFs before the 2007 reform, cf. Messori (2007), fn 40. Other estimations posit the value of the TFR flow in the industrial sector at 16.2 billion Euros, including the financial sector at 18 billion, Chiorazzo and Milani (2007).

[18] Note that only the forthcoming TFR inflow is diverted to the pension funds, not the stock. reform bills, once they retire, workers have to transform half of their accumulated savings into an annuity.

TFR flow would automatically be diverted to a contractual PF (if existent) unless the worker explicitly opposed this and opted to maintain the TFR within the firm. In 2006 the centre-left government, with the Trade Unions' consensus, rescheduled the reform, implementing it one year earlier, from 1st January 2007. Workers were given six months to decide which PF – 'contractual' or 'open' – they wanted to direct their TFR flow to, or to expressly oppose this designation. If they explicitly opted for a contractual fund and added about 1.2 percent of their gross salary to the TFR flow, employees would also benefit from a similar addition from the employer. If, instead, they adhered to PFs only by default, they lost out on the employer's contribution.[19] In this case the TFR was devolved to a contractual fund or, if there was none, to a special PF administered by INPS.[20] Whatever their preferred PF contractual or open - workers had the option to select the degree of risk of their financial investment.

A particular collateral feature of the recent implementation of this reform, although not of our direct concern, regards the destination of the TFR flow expressly left within the firm (that is flow that is not been opted out explicitly or by default). Firms with more than 50 employees have to switch these funds to a special account held by INPS on behalf of the Treasury, which should be employed, it was argued, to finance infrastructure (6 billion Euros were expected in 2008). Nothing would change for the individual workers in terms of TFR rights, but firms would lose the TFR inflow. Ultimately, the only not-opted out TRF flow that would remain within firms would be in those with less than 50 employees. Firms were promised financial compensation in the form of tax relief for the higher costs of finance in all cases in which they lost the TFR flow.

4. The macroeconomics of the TFR reform

As we have said, the TFR is a mandatory saving plan at the firm level, so what the TFR reform actually does is transform one saving scheme into another. Even if we reason in neoclassical terms, we have no motive to believe that this would spur investment and economic growth. In Kotlikoff's parlance, we are facing another 'shell game'. In the first approximation, we may even think that the PFs that collect the TFR flow will use it to finance the firms that have lost the TFR flow. Of course things are actually more complicated, in the sense that the PFs will not necessarily

[19] To summarize, a worker who has allocated all his/her TFR to a closed fund has conferred: 7.41% points of the gross wage, minus 0.5% which is transferred to INPS for the TFR insurance, plus an additional 1.2% points of his/her gross wage, plus 1.2 % points of the gross wage added by the employer, for a total of 9.30 % points. Since the precise size of the employer's contribution is decided by industry labour contracts, it is likely that this contribution enters in the wage bargaining process. It is thus legitimate to suspect that in most cases the employer's contribution is deducted from otherwise expected increases in workers' gross wages, i.e. it is paid by the workers themselves.

[20] Workers who opt for pension funds only by default are treated as particularly risk-adverse individuals and, according to the regulations, their funds must be managed in a particularly prudential way, guaranteeing full preservation of the principal and having the TFR rate of return as the benchmark.

directly invest in firms that have lost the TFR flow, but will buy a plethora of national and foreign assets. However, there is more than a grain of sense in arguing that this reform simply led to a reshuffling of financial flows, with no direct impact on investment (e.g. some subjects will stock less government bonds, selling them to the PFs, and hold more private financial assets).

But will workers receive more through this more tortuous method of lending their savings? Looking at the data, as we shall do later, this is doubtful. But let us continue to reason in abstract terms. A higher interest rate should be expected since workers' savings are now lent at a market interest rate. However, firms are fully compensated for the higher interest costs of external finance (compared to the very low cost of TFR),[21] so the only change is for the public budget, which also bears the costs of the tax advantages granted to the PF savings, which mainly benefit richer workers (including professionals etc.).[22] Therefore, even admitting that higher interest revenues from the TFR managed by the PFs actually accrue to workers, having subtracted the administration fees, this advantage is fully paid by the State and it is questionable whether this is the best way to spend tax-payers' money. Moreover, if we suppose that most of this money is paid by the workers themselves through higher taxation (e.g. via fiscal drag) and by cuts in social spending (that is by cuts in their social wage), then the reform would be, *at best*, a zero sum game for employees. The financial sector is likely to be the only net gainer.

---

[21] In 2001 a government commission estimated that the *unsuccessful* 'take-off' of the second pillar over the period 1996-2000 implied savings of about 2 billion Euros (Commissione ministeriale per la valutazione degli effetti della legge n. 335/1995 e successivi provvedimenti). The State budget for 2007 allocated 414 million Euros for 2008 and 460 for the following years as tax relief for firms. These are estimated to be very generous (Chiorazzo and Milani, 2007). *In addition to this*, the former centre-left government introduced substantial reductions of the tax wedge in favour of firms, of the order of over 4 *billion* Euros, claiming that this should also have appeased firms for the cost of the 'lost' TFR, which was of the order of hundreds of *millions* of Euros.

[22] Financial returns both from the TFR left to the firm and from the TFR invested in the PFs are taxed 11% (compared to 12.5% generally applied to other financial assets). However, whereas the TFR contributions (irrespectively of whether they are left with the firm or diverted to the PFs) are not part of taxable income, the accumulated stock at the end of the working life is treated differently: in the former case the stock is taxed on the basis of the income tax rate, which for an ordinary worker is at least 23% and in the latter case the stock is taxed 15% or even less, depending on the number of years of contributions (after 15 years the tax rate is reduced by 0.3% for every additional year, so after 35 years of contributions the final rate is 9%). Note that tax savings from deducibility depend on the marginal rate, which is progressive, so those savings are highly regressive, as often denounced in the literature critical of FF schemes. Moreover, yearly contributions to the PFs are deducible from gross taxable income up to 5,164€, to the advantage of higher earners (an ordinary employee would on average contribute 1400/1500 Euros per year). Self-employed workers do not accumulate the TFR, but they benefit from the tax relief granted to those affiliated to pension funds, which is odd in view of the high tax avoidance by this class of workers in Italy. It is not hazardous to maintain that most of the tax relief is accrued to richer workers. In this regard, data from the UK are impressive. According to Agulnik and Le Grand (1998) tax relief is highly regressive, with half the benefit received by the top 10% of taxpayers and a quarter by the top 2.5%. Arber and Ginn (2004) estimate an expenditure on tax relief and rebates of over 2.5% of GDP and rising. Notably, richer workers would have saved anyway.

It may be concluded that: (a) the reform merely changes the financial flows in the economy, with no clear macroeconomic effect (certainly not a higher savings rate which, according to conventional theory, is preliminary to the creation of a new FF scheme), and (b) even admitted that ordinary employees receive higher returns from the PFs compared to those received from the TFR, they are likely to pay those higher returns themselves, at least partially, through higher taxation and cuts in social spending.

Another argument in support of the TFR reform is that the diversion of the TFR flow to the intermediation of the financial sector will help improve the rather underdeveloped Italian capital market, by inducing greater participation by small and medium companies (SMEs) in particular.[23] The justification would be that the presence of institutional investors (such as the PFs) capable of assessing the investment opportunities offered by promising SMEs would encourage investment in their assets, thus reducing for these firms the cost of having access to the stock market. All this would presumably spur investment by the SMEs. The idea that inefficient firms (with a lower marginal product of capital) that lose the cheaper TFR finance would be purged in favour of more innovative firms (with a higher marginal product of capital) that can afford a higher interest rate, is at odds with the government compensation given to all firms that 'lose' the TFR. More importantly, this is frankly too tenuous an argument for a pension reform to rely upon: the superiority of the Anglo-Saxon type of capital market over the continental bank-based European model is not clear (for a criticism of the presumed efficiency of the Anglo-Saxon model, see Glyn, 2006, Chapter 3).[24]

Thus, the only macroeconomic effect of the TFR reform would concern the abovementioned acquisition by the Treasury of the not-opted out TFR funds in the larger firms and their use, supposedly, to finance public investment. From a macroeconomic viewpoint this would sound like a Keynesian measure. Noticeably, this way of financing public investment looks more expensive compared to standard debt financing, since the government not only has to pay a rate of return on the TFR funds borrowed from workers – say at a real level comparable to that of long-term treasury bonds – but also has to compensate firms for the 'loss' of the TFR inflow. Moreover, we do not know whether the public investment concerned would have been made anyway. It is possible that this investment really is additional, since while the accruing TFR is a current source of additional finance, future pension payments do not officially appear as debt - as all pension debt is 'implicit' - so they do not count in terms of respecting the European treaties. In short, the government has received fresh money without raising either taxation or the public debt. The expected 6 billion

[23] Notably, this argument recognises that, *prima facie*, the reform just leads to a reshuffling of the financial flows.

[24] The TFR reform has been also criticised, arguing that there is a risk that savings are taken abroad instead of being invested at home. I have appraised this argument elsewhere (Cesaratto, 2005, pp. 219-220).

Euros of TFR flow have actually accrued to the Treasury. However, this has nothing to do with pensions.

As said above, the reform only concerned private employees, which is not surprising. In the public sector the severance pay scheme, which in the private sector is comparable to a savings scheme at the firm level, roughly works on a pay-as-you-go principle: current contributions are used to pay the accumulated TFR to those who retire or leave a public job. If the State allowed public employees to divert their TFR flow to the PFs, the payment of the accumulated TFR would have to be financed in some other way. To take the most straightforward case, if it were financed by issuing public debt, then the greater private savings of the public employees (corresponding to the TFR flow accruing to the PFs) would be precisely compensated by the smaller public savings; *prima facie* the PFs will use the accruing TFR flow to buy the treasury bonds issued by the government. Another 'shell game'.[25]

The difficulties of financing the reform in the public sector explain why this has not yet been implemented, leaving aside some marginal cases (the main one being the contractual fund in the public schools sector that, however, involves only 6% of potential members), in spite of the stated political will to do so.[26]

5. The impact of the reform on affiliation to PFs

As mentioned above, Italian private sector employees had the first 6 months of 2007 to decide whether to divert their TFR flow to contractual or open PFs, or to leave them with the firm they worked for. If they did not explicitly express their will, the TFR flow was automatically diverted to a contractual PF. Table 1 shows that by October 2008 the number of *private employees* (those affected by the TFR reform) affiliated to PFs increased to 3.6 million, from 2.16 million at the end of 2006 - a 65.9% raise. Most of the new members (834 thousand out of 1,440 thousand) opted for the contractual funds, while the remaining employees decided for the open funds or other forms of private pension schemes. It can be seen that most of the increase occurred in the year (2007) in which the reform was implemented. The *total* number of employees affiliated to the PFs

[25] To consider other cases, if the government raises taxation – an unpopular move indeed – discretionary private savings might fall, partially or totally compensating the larger private savings from the diverted TFR. It is possible that there would be a net increase in the saving supply from the private sector: in this case, however, the Keynesian-Sraffian critique would apply. If the government cuts other expenditures the public budget is not affected but, once again, the net increase in private savings may have deflationary effects.

[26] The public budget currently allocates around 100 million Euros per year to finance the TFR reform in the public sector. The cost of financing the reform for all public employees would be significantly larger.

has grown from 3.2 million in December 2006 to 4.8 million in October 2008- an increase of 50.8%.[27]

Table 1 - Number of private workers affiliated to pension funds, 2006-2008.
Absolute values and rates of growth

	October 2008	December 2007	December 2006	Variation % Oct.08/Dec.07	Variation % Oct.08/Dec.06
Contractual funds	2,053,286	1,988,639	1,219,372	3	67.9
of which: private employees	*1,907,917*	*1,848,220*	*1,095,546*	*2.9*	*73.7*
Open funds	785,088	747,264	440,486	4.8	77.7
of which: private employees	*377,113*	*340,506*	*83,585*	*10.7*	*351.1*
Other funds	1,988,778	1,824,188	1,524,366	na	na
of which: private employees	*1,316,166*	*1,213,409*	*982,324*	na	na
Total	4,827,152	4,560,091	3,184,224	5.3	50.8
of which: private employees	*3,601,196*	*3,402,135*	*2,161,455*	*5.4*	*65.9*

Source: COVIP

According to official sources, almost 100% of workers explicitly expressed their choice: only 60 thousand workers declined (COVIP, 2008a, p.16).

The success of the reform must of course be evaluated by considering the pool of workers potentially affiliated to a PF, that is the reform reference pool. The official figures focus upon contractual funds. According to the supervising authority COVIP, the natural reference pool consists of workers belonging to sectors in which a contractual, industry-based PF was available, in consideration of the fact that a contractual fund is the most natural choice for an employee. Reviewing the indications in this regard by the contractual funds, COVIP (2008a, p.20) has suggested a reference pool of 9.6 million employees. This figure would, however, drop to 7.1 million if the industries in which contractual PFs were authorised during 2007 (too recent to be able to accumulate a significant membership) were excluded. If, therefore, we consider only the sectors in which well established contractual funds were present, 26% of the workforce was affiliated to them on October 2008 (compared to 15% in December 2006). If another group of pre-reform PFs

[27] Official sources estimate the number of self-employed workers affiliated to open PFs at 560 thousand in October 2008, in 2007 this number increased by 120 thousand. Although this class of workers was not affected by the TFR reform, it is possible that the attention paid to the reform in the mass media promoted this substantial increase (COVIP, 2008a, p.18).

with a clear industry reference pool were added, the participation rate would rise to 32% (ibid., p.21). Had those affiliated to the open PFs been added, the final target of 40% of affiliates set by the centre-left government can probably be considered as having been approached.

However, Boeri and Zingales (2007) have criticised the way the reference pool has been artificially shrunk, arguing that the genuine reference pool is the total number of employees in the private sector (about 13 million). The participation rate on October 2008, calculated as the ratio of the number of employees affiliated to all sorts of PFs (3.6 million) to the total number of employees in the private sector would be 27.7% - far from the former government's target. As mentioned above, only a small minority of the over 3 million public employees are affiliated to PFs.

The data available show very different rates of affiliation according to the size of firms. In large firms the rate of affiliation is close to 50% (mostly to contractual funds), whereas in sectors characterised by smaller firms the rate is limited to single digit figures. Disappointingly, younger workers - those who are supposed to be most interested in building their second pillar - show the lowest affiliation rate, although following the reform the distribution by age of those affiliated shows greater participation by the younger generations. According to sample data presented by Boeri and Zingales (2008), workers in small firms have little confidence in the PFs and trust their employer more (who in turn might have forced them to retain the TFR within the firm, although this was not clearly shown by their data). This might depend on the absence of contractual funds (for 1.5 million workers) for small companies. In addition, in many small-firm sectors employees did not benefit from the additional contribution by the employer if they devoted their TFR flow to a contractual fund. In contrast, in large unionised firms the higher percentage of new affiliations can be explained by the presence of well established and advertised contractual funds (moreover, the fact that the TFR not devoted to the PFs would go to the Treasury may have encouraged workers to adhere to the PFs).

In spite of the fact that almost 100% of employees made a deliberate choice, most conventional commentators have indicated the lack of information and employees' 'financial illiteracy', especially in sectors characterised by SMEs, as factors that may explain the low rate of participation in PFs. This position should be evaluated in view of a comment by Roberto Perotti (*Il Sole 24 Ore*, 30 November 2008) in which the financial ignorance of the macroeconomist *vis à vis* the financial crisis that exploded in autumn 2008 is admitted: 'economists have been found unprepared, mainly because the knowledge about important details, quite technical but fundamental, has not filtered down from financial experts to macroeconomists in time' (my translation). If this

information failed to reach the most credentialed minds in the economics profession, how could an ordinary worker receive it?[28]

6. The impact of the reform on workers' financial returns on savings

We argued above that the main results of the TFR reform are not macroeconomic since it consists, at least in the first approximation, in a reshuffling of existing financial flows. It remains to be seen whether or not workers gain by participating in the shell game. Of course, it is too early to evaluate the impact of the reform on the future welfare of workers, whose pensions will be severely curtailed by the full operation of the NDC reform. It would also be a cheap criticism to do so in the midst of the present financial and economic crisis, in which the exoteric nature of many financial products and techniques has made it difficult for even financial professionals to distinguish between legal and illegal frauds. Nonetheless, the significance of this crisis for pension reforms cannot be neglected, as the current troubles show that periods of bad performance might be the norm rather than the exception in an age of financial deregulation (Glyn, 2006, Chapter 3). Since, however, employees had the possibility to devolve their TFR to PFs long before the 2007 reform, an evaluation of the financial outcome of this choice over a significant number of 'normal' years is still possible.

According to the official projections (RGS, 2006, pp. 119-120), assuming a yearly real rate of return of 2%, the diversion of 6.91 % points of the gross wage, corresponding to moving the TFR to the PFs, would imply that in 2050 the net substitution rate (the ratio between the first pension cheque and the last wage, both net of taxes) for an average employee with 35 years of contributions paid would be 77.2% instead of 61.4%, with only the public component. By comparison, in 2005 the public pillar provided a net substitution rate of 79.6. The comparison, however, is not fair, since employees retiring in 2005 also got their accumulated TFR which, in principle, could be transformed into an annuity, so that the true replacement rate was well above 79.6%.

The question concerns, also, the reliability of the hypothesis on the rate of return from PFs. This leads us to the endless discussion about the performance of the PFs - or more generally of the financial markets – vis a vis the rate of returns from public PAYG schemes. In this case the comparison regards the performance of the PFs compared to that of the TFR, the latter clearly being taken as the benchmark to assess the performance of the former. For instance, the legislator stated that for those workers who tacitly accepted that their TFR be diverted to the PFs - therefore without explicitly selecting a (more or less risky) specific line of financial investment - the PFs must

[28] For a thoughtful discussion of the pervasiveness of imperfect information in an inherently uncertain terrain such as social security, see Barr and Diamond (2006, pp.20-21).

guarantee a safe rate of return, comparable in real terms to that of the TFR, by investing in a prudent way.

Table 2 shows the actual performance of the contractual and open PFs over the period 1999-October 2008. Comments by the supervisory authority for PFs (COVIP, 2008a, p.36) suggest that performance of PFs from 2003 to 2007 was satisfactory: according to COVIP's calculations the overall performance of the contractual (more prudent) PFs over this period was 25%, and that of the open funds was 25.5%, compared to 14.3% for the TFR. The performance of the PFs worsened in 2007 when the open funds lost 0.4% on average against a gain of 2.1 by the contractual funds, with the TFR outclassing both, by reaching a return rate of 3.1%. In the first 10 months of 2008 the open funds lost 12.6%, the contractual funds lost 6.7%, and the TFR gained 2.8%. The losses have been quite marked in the most risky investment lines: -21.9% in the case of the contractual funds and -23.6% for the open funds. [29] In a hearing before Parliament, COVIP (2008b) maintained that only a few PFs had 'toxic' assets in their portfolios, and these were for irrelevant amounts.

Table 2 - Pension funds and TFR: net financial rates of return. 1999-October 2008

Pension funds	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*
Contractual	11,20	3,60	-0,50	-3,40	5,00	4,50
Open	24,00	2,90	-5,60	-13,10	5,70	4,30
TFR	3,10	3,50	3,90	3,10	2,80	2,50
	2005	*2006*	*2007*	*2008* (October)	*1999-2007* (geometric averages)	*1999-2008*
Contractual	7,50	3,80	2,10	-6.7	3,67	2,59
Open	11,50	2,40	-0.4	-12.6	3,07	1,38
TFR	2,60	2,40	3,10	2,80	3,00	2,98

Source:COVIP

[29] With regard to the contractual funds, only 1.4% of workers opted for the most risky form of investment line (mainly in shares); this percentage was much higher, 30.2%, in the case of open funds.

Unsurprisingly, COVIP (ibid.) insisted that the performance of the PFs had to be appreciated over longer periods of time. Yet, to do so does not necessarily benefit the PFs. If we look at the geometric averages over the periods 1999-2007 and 1999-2008 we see that the TFR rate of return is either not far below that of the PFs or, if 2008 is included, it beats the PFs. These results, although drawn from too short an experience, would suggest that it is not certain, as argued by supporters of the TFR reform, that the PFs would easily beat the returns from the TFR while, at the same time, guaranteeing safe forms of investment.[30] COVIP (2008b, p.6) also maintains that the advantage of the reform lies in the fiscal benefits and in the employer's contribution to workers who have deliberately devoted their TFR to the PFs. This is not correct, since the fiscal advantages are largely financed by the employees themselves, and the contribution from the employer is clearly part of the real wage. It is therefore quite misleading to mask as financial returns what is actually workers' money.[31] If we take into account the costs of the tax relief to the firms that have 'lost' their TFR, one might be tempted to conclude that the only certain net gainer of the reform is the financial sector.

Evocatively, at the time of writing, the government was discussing a bill to sustain the PFs of those retiring between 31/08/2008 and 31/08/2009 (*Il Sole 24 Ore*, 23/11/2008). This intervention would offset the losses due to the fall in the stock markets since September 2008 and be limited to the TFR devoted to the (now no longer fully funded) FF funds. Another planned intervention was to give retiring workers the opportunity to postpone transformation of the capital accumulated into an annuity until the stock market has recovered, and a third was to limit the provision of information to PF members regarding the performance of their funds to every three months, instead of one, in order to avoid 'irrational' decisions.

---

[30] Cesari et al. (2007, pp.14-19) show that the average returns from investment in Italian shares in the post-WW2 period have been significantly higher than those from treasury bonds or from the TFR, and with a low probability of negative results for long-term investments in spite of their short period volatility. From this they derive the standard advice that only young workers should invest their TFR mainly in shares, while older workers should prefer short-period assets and bonds. In the case of the TFR reform, however, the potentially higher returns over very long periods of time should be considered in view of the costs of the reform for the public purse.

[31] In this regard, as an example of the unreliable information workers receive even from the contractual funds managed by the Trade Unions, these funds include the employer's contribution in the financial return of the PFs. By doing so, for instance, Cometa, the main contractual fund for metalworkers, was able to show a 20.3% return over the period 1/1/1999-31/10/2008 (2.02% per year) compared to a 10.4% (1.04% per year) return of the TFR left with the firms (*Il Sole-24Ore*, 29/11/2008). However, if we exclude the employer's contribution from the returns, and include it in the capital invested by the worker, then the total return is only 6.8% (0.7 per year), which is lower than the TFR return. Cesari et al. (2007, fn. 36) also include the employer's contribution in the revenue from the TFR invested in the PFs, although they concede that the decision of the worker to divert her TFR to the PFs could influence her wage, albeit only in small firms. This is likely to happen more generally (see above fn.19).

7. An assessment and a proposal

From the point of view of increasing the number of employees affiliated to the second pension pillar, the TFR reform has been a mixed success. Only one third of Italian private sector employees adhere to PFs, mainly by employing their TFR funds, and almost none do so in the public sector. The financial performance of the funds has not been impressive, to put it mildly. Debate is open as to whether the financial crises that followed the deregulation of national and international financial markets are the exception or the rule, and whether the development of PFs is itself part of the possibly increasing instability. It is, of course, difficult to take sides in this kind of debate, although the Keynesian-Kaleckian tradition would lean towards the structural instability of capitalism.[32]

In judging the TFR reform, two arguments presented above should be kept in mind:

(a) the TFR reform is based on a change of management of an existing saving plan; any improvement in financial performance is, therefore, marginal and based on the supposition of higher returns from the financial markets than the TFR rate of return. Presumably, this will not be enough to radically improve the future retirement income of workers.[33]

(b) the TFR reform is costly for the State and, at the end of the day, it might be the public purse that pays for the possible higher return that workers may get from the change of management of their TFR funds. Being an unrepentant 'neo-Ricardian', I feel able to use a 'Ricardian vice' way of reasoning. As said in section 3, the TFR reform may be thought of as a 'shell game' in which the TFR flow is diverted from firms to the PFs which, in turn, lend them back to the firms. Since firms now obtain the TFR funds at a higher cost, the State covers the difference. The alleged higher returns on the TFR funds, financed in theory and in practice by the State, are shared between workers and the financial sector.[34] Workers, however, finance the costs for the State through the tax system and by possible cuts in social spending. One might wonder whether it would not have been more convenient for the State to give this money directly to workers, e.g. in the form of tax relief on

[32] See Pivetti and Barba (2009) for an analysis that connects the increasing indebtedness of North American households with the necessity to sustain effective demand in that country. They point out the intrinsic fragility of this solution.

[33] Estimations provided by Brugiavini (2007) suggest that if the rate of return from the PFs is 5.4% and half of the accumulated savings of an ordinary employee with 38 years of contributions are transformed into an annuity (calculated at a rate of 2%), the annuity would be of 4,667 Euros. If the rate of returns from PFs is 2.8%, the annuity would be 3,317 Euros. By contrast, half the accumulated TFR, which is supposed to yield a rate of 2.4%, would produce an annuity of 2,796 Euros. The difference between the last two cases is not striking.

[34] In a more complicated world, the PFs would invest the funds in other directions, in Italy or abroad, whereas firms would borrow from other either national or foreign sources. If the PFs invested in the wrong directions, the public money would not even return to workers.

the accumulated TFR. My personal opinion is indeed that the TFR should not have been touched, but for two improvements: (i) extending the inflation coverage to 100% instead of the present 75%; (ii) extending to the TFR the tax advantages presently granted to the PFs which, in turn, should be limited to avoid too many advantages for medium-high income savers; (iii) assuring workers of the possibility of transforming part or all of the accumulated TFR capital into an annuity at a convenient cost.

Conclusions

In this paper we have first pointed out the difficulties that surround the inception of a FF scheme, from scratch or through transition from a PAYG scheme. The main contention is that a FF scheme cannot be created by the stroke of a pen, since it meets with formidable obstacles: workers' saving decisions cannot be managed through legislative reforms, and even if workers' saving supply increases, there is no analytical or empirical reason why capital accumulation should grow. Various ways of bypassing these difficulties have been proposed by 'pension experts' and politicians. Very often a 'solution' has been found by generating and using a public sector surplus – that is public savings – to pay for the transition.[35] The Italian way out of the conundrum has been to use an existing company-based savings plan to set up a new one. In Kotlikoff's parlance this looks like a further 'shell game'. In addition, while it is true that workers *might* expect a higher rate of return on their TFR saving once it has been devoted to the PFs, this supposed advantage (if any) must be matched to the costs borne by the State in compensating firms for the vanished TFR - costs that are at least partially passed on to the workers themselves. All in all the TFR reform has mainly affected workers employed by medium-large companies. Employees of SMEs have generally deliberately decided to leave the TFR with the firm, perhaps because forced to by the employers themselves, or because they did not have direct access to large contractual PFs - the sort that workers naturally tend to trust most. Workers are often blamed for improvidence with regard to their old age, and of financial ignorance. On the contrary, the majority of Italian employees have made an explicit and difficult choice about their old age income, while having to deal with the most deceptive capitalist market, that is the financial market. A ten year experience of TFR managed by the PFs suggests that, even leaving aside 2008, the PFs have not financially outperformed the TFR. If 2008 is included, the TFR has beaten the PFs. Only time will tell us who made the right choice.

[35] The famous and allegedly successful Chilean transition to a FF scheme was also based on crafting a budget surplus first (cf. Cesaratto, 2005, Ch. 4).

References

Agulnik, P. and Le Grand, J. (1998), Tax Relief and Partnership Pensions. *Fiscal Studies*, 19: 403-428.

Arber, S. and Ginn, J. (2004), Ageing and gender: Diversity and Change. Centre for Research on Ageing and Gender, University of Surrey (UK).

Barr, N. (2006), Pensions: Overview of the Issues, *Oxford Review of Economic Policy*, 22 (Spring): 1-14.

Barr, N.and Diamond, P. (2006), Economics of Pensions. *Oxford Review of Economic Policy*, 22 (Spring): 15-39.

Blinder, A. (1997), Is There a Core of Practical Macroeconomics That We Should All Believe? *American Economic Review*, 87 (May): 240-243.

Boeri, T. (2008), TFR come tardiva e fallimentare riforma, Convegno FT global events, Milano, aprile.

Boeri, T.and Zingales, L. (2007), Indipendenti sono le autorità o i numeri? www.lavoce.info.

Boeri, T. and Zingales, L. (2008), *Chi ha paura dei fondi pensione?* Milano: Anima Finlab, (www.fondianima.it).

Brugiavini, A., (2007), Tfr o fondi pensione, una scelta di convenienza. www.lavoce.info.

Castellino, O.and Fornero, E. (1997), Privatizzare la previdenza sociale? Condizioni, modalità e limiti. *Politica economica*, 13: 3-25.

Ceprini, M.and Modigliani, F. (1998), *Social Security*: una proposta per l'Italia. *Economia Italiana*, n. 2: 275-305

Cesaratto, S. (2005), *Pension Reform and Economic Theory: A Non-Orthodox Analysis*. Cheltenham: Edward Elgar.

Cesaratto, S. (2006a), The Transition to Fully Funded Pension Schemes: A non-Orthodox Criticism. *Cambridge Journal of Economics*, 30: 33-48.

Cesaratto, S. (2006b), The Saving-Investment Nexus in the Debate on Pension Reforms. In N. Salvadori (ed.), *Economic Growth and Distribution. On the Nature and Causes of the Wealth of Nations*. Cheltenham: Edward Elgar.

Cesaratto, S. (2007), Are PAYG and FF Pension Schemes Equivalent Systems? Macroeconomic Considerations in the Light of Alternative Economic Theories. *Review of Political Economy*, 19: 449-473

Cesari, R., Grande, G, Panetta, F. (2007), La previdenza complementare in Italia: caratteristiche, sviluppo e opportunità per i lavoratori. *CeRP Working Paper* 60/07.

Chiorazzo, V. and Milani, C. (2007), Imprese ben compensate. www.lavoce.info.

COVIP (Commissione di vigilanza sui fondi pensione) (2008a), *Relazione per l'anno 2007*. Rome (www.covip.it).

COVIP (2008b), Hearing to the Senato of the Republic. Rome, October (www.covip.it)

de Finetti, B. (1956), Sicurezza sociale e obiettivi sociali. In B. de Finetti (1965), *Un matematico e l'economia*, Milano: Franco Angeli.

Ferguson, C.E. (1979), *The Neoclassical Theory of production and Distribution*. Cambridge: Cambridge University Press.

Franco, D., Sartor, N. (2006), NDC in Italy: Unsatisfactory Present, Uncertain Future, in R. Holzmann, E.E. Palmer (eds), *Pension Reforms: Issues and prospects for Non-Financial Defined Contribution (NDC) Schemes*. Washington, DC: The World Bank.

Garegnani, P. (1970), Heterogeneous Capital, the Production Function and the Theory of Distribution. *Review of Economic Studies*, 37: 407–436.

Garegnani, P. (1983), Notes on Consumption, Investment and Effective Demand. In J.Eatwell and M.Milgate (eds), *Keynes's Economics and the Theory of Value and Distribution*. London: Duckworth.

Geanakoplos, J., Mitchell, O.S. and Zeldes, S.P. (1998), Would a Privatized Social Security System Really Pay a Higher Rate of Return? *National Bureau of Economic Research Working Paper Series*, n. 6713.

Glyn, A. (2006) *Capitalism Unleashed. Finance, Globalization and Welfare*. Oxford: Oxford University Press.

Gronchi S., Nisticò S. (2006) Implementing the NDC Theoretical Model: A Comparison of Italy and Sweden, in R. Holzmann, E.E. Palmer (eds), *Pension Reforms: Issues and prospects for Non-Financial Defined Contribution (NDC) Schemes*. Washington, DC: The World Bank.

Harcourt, G.C. (1972), *Some Cambridge Controversies on the Theory of Capital*. Cambridge: Cambridge University Press.

Holzmann, R. (1998), Financing the Transition to Multipillar, *World Bank Social Protection Discussion Paper*, n. 9921.

Keynes, J.M. (1936), *The General Theory of Employment, Interest, and Money*. London: Macmillan.

Kotlikoff, L.J. (1999), The World Bank's Approach and the Right Approach to Pension Reform. http://econ.bu.edu/kotlikoff/adb.pdf

Messori, M. (2007), I problemi aperti nella previdenza complementare italiana. *Quaderni europei sul nuovo welfare*, n. 7 (www.newwelfare.org).

Orszag, P.R.and Stiglitz, J.E. (2001), Rethinking pension reform: ten myths about social security systems. In P.R. Orszag and J.E. Stiglitz, *New Ideas about Old Age Security*. Washington, DC: The World Bank.

Pivetti M. and Barba A. (2009), Rising Household Debt: Its Causes and Macroeconomic Implications - a Long-period Analysis, *Cambridge Journal of Economics*, 33: 113-137.

Robinson, J. (1953/4), The Production Function and the Theory of Capital. *Review of Economic Studies*, 21: 81-106.

RGS (Ragioneria Generale dello Stato) (2006), Le tendenze di medio-lungo periodo del sistema pensionistico e sanitario. Rapporto n.7, Roma.

Samuelson, P. (1966), A Summing up. *Quarterly Journal of Economics*, 80: 568-583.

Sheshinski, E. (1990), Fixed Costs in Investment Theory. In P.Diamond (1990), *Growth/Productivity/Unemployment – Essays to Celebrate Bob Solow's Birthday*, Cambridge, MA: The MIT Press.

Solow, R.M. (1970), *Growth Theory: an Exposition*. Oxford: Clarendon Press.

Sraffa, P. (1960), *Production of Commodities by Means of Commodities. Prelude to a Critique of Economic Theory*. Cambridge: Cambridge University Press.

World Bank (2001), *Notional Accounts – Notional Defined Contribution Plans as a Pension Reform Strategy*. Washington DC.

World Bank (1994), *Averting the Old Age Crisis, Policies to Protect the Old and Promote Growth*. Oxford: Oxford University Press.