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The taxation of Funded Pension Schemes and Budgetary Policy

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1. INTRODUCTION

The changes that are taking place in the structure of the population of many Western countries are likely to require considerable adjustments in their social security programs. A partial shift from pay-as-you-go (PAYG) to funding is one of the solutions frequently considered.[1] A larger reliance on funded pension schemes may contribute to moderating the effects of population ageing in two ways. First of all, the development of pension funds may offset the negative effects that the reduction of public pensions would exert on the income of retired citizens. It may therefore facilitate the reform of PAYG schemes and the reduction of the strain exerted by ageing on public finances. Secondly, a shift from PAYG to funding may offset the negative effects that ageing is likely to generate on the private saving ratio.

These proposals have been extensively examined, and are still in many ways controversial.[2] There is no consensus neither on the optimal relative dimension of PAYG and funded schemes, nor on the actual need for additional savings, and on the scale of the effects of pension reforms on savings.[3]

The tax treatment of supplementary funded pension schemes represents one of the main focus points of policy discussion. It is widely recognized that tax rules influence the way retirement savings are channeled and the charecteristics of funded pension systems.[4] They determine the dimension of funded schemes, their legal structure, their investment mix. They also influence the types of benefits paid by the schemes. Tax incentives have often been claimed as necessary for the development of supplementary funded schemes.

This paper, without entering into the PAYG versus funding argument, into the matter of the adequacy of saving levels, or into the definition of the general tax treatment of saving with respect to consumption, focuses on the budgetary implications of the tax treatment of funded schemes. In particular, it examines two related topics: the opportunity of providing advantageous tax incentives to funded pension schemes vis-à-vis other forms of saving, and the effects of different tax arrangements on budgetary outcomes. More specifically, by surveying the economic literature on the taxation of pension funds, the paper tries to assert two points:

a) There are limited reasons to provide a favourable fiscal treatment to supplementary funded pension schemes. In particular, there are no reasons concerning the level of savings. The shift from PAYG to funding is likely to increase private savings even if no special advantage is granted to funded schemes. Fiscal incentives, by

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1 OECD (1987); Hageman and Nicoletti (1989); Brittain (1992); World Bank (1994); Holzmann (1996); Davis (1996a).

2 See Aaron (1992), Duskin (1992), Pesando (1992); Munnel (1992); Schmähl (1992); Davis (1994); Disney (1996).

3 On the effects of the pension reform implemented in Chile in the 1980s see Holzmann (1996).

4 Davis (1993, 1994).

worsening public accounts, might actually reduce total savings. Incentives should be provided only where pension funds are considered to play a specific positive role in the capital or in the labour market, or in the provision of retirement income. This is likely to occur only in situations in which the financial markets are rather underdeveloped or in which there are no compulsory PAYG pension schemes.

b) Contrary to some recent proposals and to the reforms implemented in some countries, tax arrangements should not shift revenues from the future to the present. In other words, the budgetary effects of special tax incentives for pension schemes and, more generally, of expenditure-based forms of taxation, should be borne immediately. This would avoid a worsening of deficits in the future, when demographic factors will exert a greater pressure on public expenditure. It would also provide a clearer view of the budgetary cost of fiscal incentives.

Section 2 provides a general framework for examining the tax regimes of pension funds. Section 3 examines the opportunity of providing tax incentives to pension funds. Section 4 addresses the inter-temporal implications of different tax regimes.

2. ALTERNATIVE TAX REGIMES FOR PENSION FUNDS[5]

Funded pension schemes can be taxed at three points of their activity:

a) When contributions are paid into the fund.[6]

b) When investment income is earned by the fund.

c) When pensions are paid from the accumulated fund.

Before examining the different tax regimes, it may be useful to refer briefly to the two alternative (and polar) models of personal income taxation that are usually considered as terms of reference in the analysis of the tax treatment of savings and capital income: the comprehensive income tax (CIT) and the expenditure tax (ET).[7]

A CIT aims at taxing all forms of income equally. Income is usually defined in a very broad sense, that includes capital gains. According to a widely quoted definition by Simon (1938), income is "the algebraic sum of 1) market value of rights exercised in consumption and 2) the change in the value of the store of property rights between the beginning and the end of the period in question".[8]

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5 This Section draws largely from works carried out within the Institute for Fiscal Studies of London. See Dilnot (1992) and Johnson (1992).

6 This phase concerns the tax treatment of income devoted to pension funds by employees and employers; i.e., whether contributions are exempted from the personal income tax and social security contributions and whether employees' contributions can be deducted in the assessment of company profits.

7 The CIT and the ET are thoroughly examined in Meade (1978). See also Capital Taxes Group (1989).

8 The CIT tax base is therefore

$CIT_t = C_t + \Delta W_t$

An ET taxes consumption expenditure. Savings are exempted, while dissavings are taxed. Therefore, "the expenditure tax imposes an effective zero tax rate on the returns to savings in all forms ... the government is effectively a 'sleeping partner' in every act of saving and does not decrease the return to the saver."[9] More specifically, "the post-tax return to the investor on any asset is identical to the pre-tax return: the set of investments that are privately worthwhile in the presence of the tax is exactly the set that would be worthwhile if there were no tax at all."[10]

The deduction of savings from taxation can be achieved in two ways.

a) Allowing a deduction from income equal to the amount of new savings; this method has been defined as a "registered-assets expenditure tax (RET),"[11] since it would require the designation of a certain number of registered assets, for which the deduction would be available.

b) Exempting the return of savings. This has been called a "pre-paid expenditure tax (PET)".[12]

In some conditions (in particular if labour income and asset/pension income are subject to the same tax rate), the two methodologies are equivalent[13]. This means that the consumption tax is basically a tax on labour income.

The advantages and disadvantages of CIT and ET have been extensively examined in the economic literature.[14] As a matter of fact, most western fiscal systems include both CIT and ET features. Here it is relevant to note that CIT and ET "represent two alternative

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where C_t = consumption in period t (including the the rental value of services from durable goods)

ΔW_t = change in real net wealth.

9 Capital Taxes Group (1989, p. 17).

10 Keen (1991), p. 56.

11 Keen (1991).

12 In this case a problem may arise concerning the distinction between capital and labour income.

13 If the tax rate on labour income (t_w) is equal to the tax rate on pension income (t_p), the RET pension $P_{ret} = (w_1 - c_1) * (1 + r)^n * (1 - t_p)$ is equal to the PET pension $P_{pet} = (w_1 - c_1) * (1 - t_w) * (1 + r)^n$.

Where w_1 = labour income in period 1

c_1 = consumption in period 1

r = rate of return on assets.

See Robinson (1990). The two types of tax schemes obviously raise different implementation problems. As noted in OECD (1994), another major difference concerns the effects of anticipated changes in the tax rates. While they can substantially affect saving decisions in a RET system, they are not relevant in a PET system.

14 Among the most recent studies see Auerbach and Kotlikoff (1987), Pechman (1990), Keen (1991).

ways of interpreting fiscal neutrality in relation to the decision to save."[15] The former is neutral between consumption and saving, since it taxes income without regard to the way it is used. The latter is neutral between present and future consumption.[16] Both taxes are neutral with respect to the allocation of savings in the case of unintermediated savings. As to intermediated savings, neutrality in the CIT case requires the imputation of corporate income to individuals; in the ET case it requires an effective tax rate on intermediaries and investors equal to zero.[17] In principle, both taxes may achieve horizontal and vertical equity objectives. Both taxes face relevant administrative problems, although the CIT seems to fare worse in this area.[18] On the other hand, the transition from CIT to ET would be burdensome, since it would be necessary to identify consumption from previously taxed assets.

If the CIT is the term of reference, there is nothing inequitable in taxing both income devoted to saving and income earned from assets. Anything less would represent a favourable treatment. On the other hand, if consumption is the term of reference, taxation has to occur in a single phase. Anything more would represent an unfavourable treatment.

Coming to pension funds, a CIT would require the taxation of income in phase 'a' (when contributions are paid into the fund) and in either phase 'b' (when investment income is earned by the fund) or phase 'c' (when pensions are paid from the accumulated fund). Denoting with E (for Exemption) or T (for Taxation) the fact that taxation occurs in one of the three different stages, the following models would be consistent with a CIT approach: TET, TTE. An ET would require the taxation of income in phase 'c' (the RET method) or, alternatively, in phase 'a' (the PET method).[19] EET or TEE models would have to be used.

Although within western countries there are examples of regimes "which tax pensions at almost every conceivable combination of these points",[20] the EET regime is the most widespread. As will be shown in Section 4, this situation seems to be changing gradually.

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15 Johnson (1992, p. 134).

16 Without any tax, the ratio between present and future consumption is $1 / (1 + r)$.
With an expenditure tax, present consumption is $w_1 * (1 - t)$, and future consumption is $w_1 * (1 - t) * (1 + r)$. The ratio of the two is still $1 / (1 + r)$.
With a CIT, present consumption is $w_1 * (1 - t)$ and future consumption is $w_1 * (1 - t) * (1 + r * (1 - t))$. The ratio of the two is now $1 / (1 + r * (1 - t))$.

17 See Capital Taxes Group (1989).

18 It raises, for instance, severe problemes of inflation adjustment and capital gains accounting. See Dilnot (1992).

19 See the above note concerning the equivalence between RET and PET.

20 Dilnot (1992, p. 63).

3. SHOULD TAX-INCENTIVES BE PROVIDED TO PENSION FUNDS?

This section examines the main arguments that are usually put forward for providing fiscal incentives to pension funds, namely to raise the level of savings and to channel saving flows through pension funds rather than through other saving instruments. The analysis is based on the view that a neutral tax system, by minimizing the effects of taxes on the behaviour of economic agents, may raise revenues with the least distortion in the allocation of resources and with the least horizontal inequities.[21] Any deviation from neutrality in the taxation of savings should therefore be justified in terms of relevant economic or social objectives that cannot be achieved with other less distortionary means.

The arguments put forward for favourable tax treatment of pension funds largely apply to the special saving schemes aimed at encouraging household saving that have been introduced in several countries. These schemes have often been granted tax rules similar to those applying to pension funds.[22]

It should be stressed that the following analysis does not aim to question the fact that pension funds "are worthy and valuable organisations which serve an important social purpose. The relevant question is whether they have worth and value which implies that they should receive fiscal privilege additional to, and at the expense of, activities which are also worthy and valuable."[23]

3.1 The level of savings

Neither theoretical analysis nor empirical investigation support the view that tax incentives produce unambiguous positive effects on the level of savings.

The theoretical argument is based on the opposite income and substitution effects of any increase in the after-tax rate of return of private savings. The former effect may induce a reduction in savings because the individual needs less of it to maintain future post-tax income; the latter is likely to increase it by raising its net return.[24]

If the change in the after-tax return does not apply to all types of saving, the net effect is even more difficult to determine. As Engen *et al.* (1994, p.86) point out, "Saving incentive programs that raise the after-tax return on limited amounts of assets placed in designated accounts may be an even less effective way to stimulate private savings than increasing the rate of return on all saving. This is because a household does not need to reduce consumption or to raise labor supply to claim the tax advantages of a saving

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21 See Capital Taxes Group (1989), OECD (1994).

22 See OECD (1994).

23 Fry *et al.* (1985, p. 20).

24 See Leape (1990).

incentive. Instead, the contributions may be financed by transferring existing taxable assets, by increasing debt, or by reallocating current saving that would have been done anyway."

More specifically, for workers with a desired level of saving exceeding that provided by the pension plan, there is no substitution effect; the income effect is therefore likely to determine a reduction in saving. Tax incentives may be particularly inefficient where, for budgetary or distributive reasons, contributions to pension schemes are subject to a ceiling. If the ceiling is lower than the total amount of saving desired by a certain individual, the scheme has no effect on the marginal rate of return of saving. It generates only an income effect.

On the other hand, workers with a low desired level of saving may be forced to save more than they would have done otherwise. The illiquidity of pension entitlements may prevent them from reducing other forms of saving in order to compensate for the increase in pension savings. On balance, tax incentives for pension schemes lead to an increase in private saving when pension rights exceed the amount of saving that workers would have done on their own and lead to a reduction in private saving when pension rights are less than workers' desired level of saving.[25]

Taking the reduction in tax revenues into account, that determines a decline in public sector saving, the effects of tax incentives on national saving may be either positive or negative.

On the empirical side, despite extended investigation, there is no agreement on the actual effects of existing tax incentives. While many studies have suggested that tax incentives increase private saving and determine a small increase in national saving,[26] others have found no significant positive effect on national saving.

Engen *et al.* (1994), while examining the main saving incentive plans experimented with in the United States (IRAs and 401(k) plans), note that: "it is difficult to conclude from the aggregate data that changes in saving incentives were an important influence on saving behavior in the 1980s" (p. 96). They also show that survey data reveal little evidence of positive effects on private savings. "After accounting for the decline in tax revenues, the estimates imply little, if any, positive effect on national saving." (p. 150) The same view is held by Burman *et al.* (1990). They note (p. 279) that "IRAs were most attractive to taxpayers with higher incomes who liked to save and most contributions were made at the limit amount year after year" and that "universal availability of IRAs reduced net national savings because private savings increased (if at all) by only a fraction of the amount of individuals' tax reductions." Attanasio and DeLeire (1994) have found "evidence that supports the view that households financed

25 This topic is extensively examined in Munnell (1982).

26 See Dilnot (1992) and, among the most recent empirical studies, Poterba, Venti and Wise (1993), Venti and Wise (1994) and Feldstein (1995). Poterba, Venti and Wise (1995) point to "very little substitution" between saving in special American saving accounts and other forms of personal saving. According to them, most contributions to these accounts represent additional saving.

their IRA contributions primarily through reductions in their stocks of other assets"; less than 20 per cent of IRA contributions were found to represent additional saving.

As to the preferential treatment of pensions, according to Munnel (1992, p. 18), "the most reasonable conclusion is that the increase in private saving may well have been completely offset by a comparable increase in the federal deficit, leaving national saving unchanged". Along the same lines, Bernheim and Scholz (1992, p. 21), in examining the effects of tax incentives for retirement income in the United States, argue that "the current system is quite effective at providing pensions to those who reduce other saving in response, but is substantially less effective at providing coverage to those individuals for whom pensions would represent additional saving."

OECD (1994, p. 42) concludes a survey of Canadian, U.S. and Japanese experience by stating that "there is no consensus over whether a higher rate of return of saving increases saving in aggregate or reduces it, although in the case of particular tax schemes aimed at encouraging saving (especially for retirement), if total household saving has in fact increased, this may be due to factors such as advertising and increased public awareness rather than the effects of tax concessions on the rate of return."[27]

3.2 The composition of savings

The second argument that is usually put forward to justify a favourable fiscal treatment for pension funds concerns some positive effects that may be achieved by channeling savings through pension funds rather than through other saving instruments.

Three issues will be considered in turn: the effects of pension funds on the provision of resources for old-age, on capital markets, and on the labour market.

Let us first note that saving flows are very sensitive to tax incentives. Leape (1990) notes that in 1987 tax-privileged assets attracted about three-quarters of the total flow of UK savings. According to Engen *et al.* (1994) since 1986 contributions to specially designated savings accounts have amounted to about one third of personal saving in the United States. The relevance of the effects of tax rates on the composition of savings is stressed by OECD (1994), that surveys several econometric studies that have used micro-data sets on individual households.

3.2.1 The provision of adequate resources for retirement -- People obviously save for a variety of reasons, but society may be particularly interested in the level of their retirement saving. In fact, the lack of adequate resources for old age may increase poverty or, alternatively, may require society to provide welfare benefits. As Dilnot (1992, p. 69) points out, "individuals may not predict accurately their likely needs in old age, and it can be argued that this failure of perception or information is more serious

27 The same view is expressed by Skinner (1991) with regard to the introduction of Individual Retirement Accounts in the United States.

here than in other areas." Governments should therefore "distort choices using the tax system in an attempt to correct the deficiencies of individual preferences."[28]

If pension funds are considered more effective than other saving instruments in providing retirement income (because they increase the amount of saving of low income citizens, and because of the illiquidity of pension rights, that cannot be decumulated at will), it can therefore be argued that tax incentives are justified on the grounds of their positive effects on poverty and public expenditure.[29]

Two objections can be raised to this argument.

a) Tax incentives, by themselves, do not ensure that all workers (or all citizens) have an adequate retirement income. Bernheim and Scholz (1992) estimate that in the United States tax incentives fail to stimulate additional saving by low income households mainly because of their lack of perception of future needs. Munnel (1992, p. 17) notes that in the United States "less than one-half of the population is covered by a supplementary employer-sponsored plan, coverage tends to be concentrated among the higher paid, and the percentage of even the full-time work force covered by a traditional pension plan is declining. Thus, the tax incentives do not appear to be meeting the goal of providing supplementary pension income to those who would not save on their own, and are unlikely to do so in the future".

   Funded or unfunded pension schemes can ensure adequate income to all workers only if enrolment is compulsory, but once enrolment is compulsory, tax incentives are no longer necessary.

b) If the public sector is providing a compulsory PAYG pension or a tax financed universal basic pension that ensures a minimum income to all retired citizens, as is the case in most Western countries, it is not necessary to provide tax incentives to supplementary funded pension schemes. People's saving decisions may be considered sufficient or insufficient as to the total amount of saving, but this requires some action regarding all saving decisions, not just those concerning retirement saving and, even more specifically, those concerning funds accruing to pension schemes.

   Some distributional considerations also suggest to avoid providing tax subsidies to pension funds as the value of tax incentives usually increases with taxpayers' marginal rates. Furthermore, in many countries supplementary pension coverage tends to be concentrated among the better paid workers.[30]

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28 See also Blake (1991).

29 This view is clearly expressed by Davis (1993, p. 44), who suggests, on this ground, "that pension funds should be tax advantaged even if other forms of savings are not." Conversely, as noted in Lindbeck (1994, p. 21): "Governments in some countries (including Denmark and Sweden) have, in fact, confiscated portions of private insurance capital by special tax levies in situations when politicians believed that the returns on the funds had been 'too high' for a while."

30 This topic is extensively examined in Pestieau (1992).

3.2.2 Capital markets -- Two positive effects of pension funds are being put forward with regard to capital markets.[31] The first refers to the increased demand for long-term instruments,[32] the second to the institutionalization of asset management.

The first effect is related to the peculiar characteristics of pension funds, as opposed to those of other asset managers.

a) Inflows and outflows of funds are rather stable and predictable.

b) Liabilities are non-tradable, which means that there are lower withdrawal risks.[33]

c) The return on investment can be maximized with a long term perspective.

These features imply that the portfolio share of liquid assets can be small, while that of bonds and equities can be relatively high.[34] If a high demand for bonds and equities exerts positive effects on investment and growth, by providing more risk-capital to firms and by reducing long-term interest rates, there may be a case for providing incentives for channeling savings into pension funds.[35] More specifically, starting from the observation that "countries with large pension funds tend to have well-developed securities markets, while others (Germany, Italy) do not", Davis (1993, p. 39) suggests that "pension funds should be particularly beneficial to development of equity markets." He adds that this development "is seen as beneficial in providing risk capital for growing enterprises, as well as offsetting the potential fragility and/or dependence on bank finance which stems from high debt/equity ratios."

Without entering into the matter of the benefits arising from a higher demand for bonds and equities, some considerations may oppose the provision of special fiscal incentives to pension funds. First of all, individuals may react to the increase in the demand for long-term assets by pension funds by decreasing their direct holdings of such assets. The net effect may therefore be rather limited and uncertain.[36] Moreover, if there is a lack of demand for long-term financial instruments, it would probably be more efficient to provide a direct incentive for holding them, rather then an indirect one by promoting pension funds. A direct incentive (for instance an abatement of the tax rate on dividends

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31 See Maré (1989), Pace (1990), Busana (1993) and Davis (1996b).

32 Davis (1994, p. 5), for instance, notes that "funding can also benefit the capital markets via the composition of saving (in long term instruments such as equities and bonds)."

33 Pension portability presents some risks for the individual fund, but does not affect total investments in pension funds.

34 See Davis (1996a). The effects of population ageing on the composition of pension funds' assets should be carefully examined. If ageing were to determine some divestment of assets, pension funds might increase the share of liquid assets. On the effects of the muturity of pension schemes on investment decisions see Davis (1994).

35 This view is clearly expressed in Blake (1991).

36 See Munnel (1982) and Pesando (1992).

or on long-term bond interest) would avoid the deadweight cost involved in subsidizing pension funds' demand for all assets.

The second positive effect of pension funds in the financial markets regards their contribution in concentrating asset management in large institutions. Collective saving management may be superior to individual management because of the economies of scale in transaction costs, in collecting and managing information, in risk-pooling.[37] It may also "serve as a catalyst to financial innovation."[38] According to Davis (1993, p. 42), in Western countries pension funds "have stimulated innovation, promoted liquid market structure, boosted the demand for capital market instruments (by increasing saving) as well as making demand more sensitive to return and risk, and aided the broader development of capital markets."[39] The institutionalisation of asset management may also produce positive effects on corporate governance, by putting more pressure on firms to focus on return on equity and provide more and better quality information to shareholders. Moreover, institutional investors can better monitor the performance of firms and be more effective in removing underperforming managers.

The fact that institutional investors exert a beneficial role does not justify special tax incentives for pension funds,[40] since it is not evident that the latter produce positive effects that other institutions do not deliver. The case for providing incentives to all institutional investors is also not very strong. If institutional investors are more efficient than individuals in saving management, they should play a large role even without tax incentives.[41] There might be a reason to provide incentives only where the financial markets are rather underdeveloped and there is a need to accelerate the development of institutional investors.

The actual behavior of pension funds has also shown some drawbacks. United States and United Kingdom pension funds have been accused of "short-termism", of being unwilling to invest in small companies and in new high-risk ventures, of having increased capital market volatility.[42]

Some other objections regard specifically the granting of incentives to pension funds. As the Capital Taxes Group (1989, p. 38) notes, "It also seems highly likely -- though concrete evidence is hard to come by -- that the tax privilege accorded to pension funds

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37 See the extensive analysis of Davis (1996b).

38 Pesando (1992), p. 131.

39 See also Blake (1991) and Bodie (1991).

40 A different view is expressed in Ghilarducci (1994). Since "Private pensions embody public subsidies" and "Pension funds are, in large part, creatures of the tax code" (p. 10), public policy should shape pension regulation in order to "systematically encourage pension funds to pursue long-term, economically productive investment strategies in the course of normal, everyday management" (p. 9).

41 In recent years the role of institutional investors has actually increased in many Western countries (Davis 1996b) without an evident increase in tax incentives.

42 See Blake (1991), Davis (1993) and Ghilarducci (1994).

and life assurance companies breeds inefficiency: the tax advantages are such as to insulate the savings institutions from competitive forces which would otherwise force them to keep costs at the minimum".[43]

Finally, while the capital market benefits of a favourable tax treatment of pension funds are uncertain, fiscal incentives are likely to create distortions. According to the Capital Taxes Group (1989, p. 37), "the link between effective tax rates and distortions to the pattern of saving has been clearly established. The consequences of this are apparent for the structure of the retail financial service industry, where the vast majority of savings vehicles are sold primarily on relative merits of their treatment by the tax system. The profitability of the underlying investments is often of secondary importance, to the obvious detriment of the ability of the capital markets to channel savings into the most efficient investments."

3.2.3 The labour market -- Private pension schemes can be used by firms to regulate labour turnover. A variety of objectives can be actually pursued.[44]

a) Defined benefit schemes with a vesting[45] period or with progressive benefit accrual allow firms to pay workers less than their marginal product in the first part of their career and more in a second stage. This profile reduces turnover, and therefore hiring and training costs. It also allow firms to invest more funds in workers' training. As a result, for example, in the United States "job mobility and pension coverage are highly correlated, with tenure on the job considerably longer for workers participating in pension plans" (OECD, 1993b, p. 74).

b) Defined benefit schemes, by increasing the cost of being laid off, may also increase work effort and reduce shirking (and monitoring costs).

c) Company schemes may also be used to encourage employees to leave the firm when there is excessive employment or a need to rejuvenate manpower.

Since companies should be expected to pay for advantages accruing to them, these objectives would justify a favourable tax treatment for funded schemes only where there were benefits external to the mother-companies of the pension funds. This cannot be taken for granted. The increase in flexibility achieved by an individual company may even determine negative effects for the whole economy.

a) Vesting rules and non neutral accrual of pension rights may reduce labour mobility. Furthermore, in defined benefit schemes, if the contribution rate is constant over the different ages of the workers, while salaries increase with age, there is an

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43 According to Blake (1991), some distortions might also arise from the incentives provided against the direct holding of shares by individuals, since individuals and pension funds may have different views about the activities of the companies whose shares they own.

44 See Lazear (1989), Arvin (1991) and the survey provided in Busana (1993).

45 "Vesting refers to the provision that an employee covered by a private pension plan will, after meeting certain requirements, retain a right to the benefits he has accrued even though his service with the employer terminates before retirement." (Munnell, 1982, p. 34).

incentive to stay with the same firm since all past contributions would be upgraded to the final salary.[46]

b) When workers are encouraged to take early retirement, there may also be negative effects on labour supply and on public finance accounts.

3.3 Some conclusions

The studies surveyed in the previous sections allow a clear conclusion: there is no clear cut evidence to justify a favourable fiscal treatment for pension funds as compared to other forms of saving. While the benefits of fiscal incentives are rather uncertain, the unbalanced distribution of the benefits and the distortions raised by them suggest reducing tax incentives vis-à-vis other forms of saving as much as possible.

In particular, there are no clear-cut reasons concerning the level of savings. Any increase in private saving that fiscal incentives to pension funds might produce is likely to be offset by the decline in public saving due to tax cuts. Moreover, the shift from PAYG to funding that will be prompted by the cuts in public pensions is likely to increase private savings even if no special advantage is granted to funded schemes.

Incentives should be provided only where pension funds are considered to play a specific positive role in the provision of retirement income[47] or in the capital market. This is likely to occur only in situations in which there are no compulsory pension schemes or in which the financial markets are rather undeveloped. In the latter case, incentives should be provided on a temporary basis.

Whether existing fiscal privileges of pensions funds should be removed by "levelling down" or by "levelling up" (i.e., respectively, by treating pension funds as other non privileged forms of saving or by treating all forms of saving as privileged pension funds) is bejond the purpose of this paper. This leads to the fundamental choice of a CIT versus an ET.[48]

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46 Many governments have introduced regulations aimed at limiting these negative aspects. See Altman (1992).

47 In this case fiscal incentives should be provided only to benefits paid out periodically (i.e., to pensions) . The widespread practise of allowing a more lenient fiscal treament to lump sum payment at retirement is inconsistent with the objective of ensuring adequate means through all the retirement period. See Altman (1992).

48 See Chapter 12 in Fry *et al.* (1985).

4. TAX OPTIONS AND BUDGETARY OUTCOMES

Several recent studies have provided a useful framework for understanding the options available for the taxation of pension funds. They have highlighted their consistency with the different concepts of tax neutrality, their equity implications, their administrative requirements. One relevant aspect has been rather neglected.[49] It regards the different constrains that tax regimes pose for the public sector at various points of time. Namely, while TEE regimes raise present revenues and reduce future ones, EET regimes work the opposite way, shifting revenues towards the future.

The first part of this section will briefly review some recent developments in legislation and in the policy debate. The second part will provide a simple framework for understanding the issue. The third will focus on the contrast between these developments and the budgetary perspectives of many Western countries.

4.1 Recent developments

While the EET regimes have long been the most widespread, in recent years there has been a tendency towards the introduction of TEE or TTE regimes.

a) In 1990 New Zealand shifted the tax treatment of pension funds from EET to TTE.[50] From that year employers' contributions are subject to a withholding tax of 33 per cent, employees' contributions are non-deductible, investment earnings are taxed at 33 per cent (without adjustments to account for inflation), and pensions or lump-sum payments are tax-free. The reform aimed at achieving tax neutrality between different types of saving and capital income and at increasing revenues. According to Stephens (1993, p. 54), "The real reason was a desire to bring forward tax revenue for budget deficit purposes."

b) In the late eighties Australia shifted from EET to TTT.[51] Contributions, previously untaxed, are taxed at 15 per cent; the tax is levied on the fund. Investment earnings, net of expenses and with capital gains adjusted for inflation, are taxed at 15 per cent. To offset the tax on contributions, taxes on benefits were reduced by 15 percentage points.

c) In the United Kingdom, the 1986 Budget introduced the Personal Equity Plans (PEPs) in order to increase direct investment in equities of UK companies listed on the Stock Exchange.[52] In these plans, within a certain annual limit, assets are

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49 With the relevant exception of Bovenberg and Petersen (1992).

50 The reform is extensively examined in OECD (1993a). See also Stephens (1993).

51 See Dilnot (1992) and Munnell (1992).

52 See Capital Taxes Group (1989).

purchased out of taxed income. The returns on the assets (dividends, interest, capital gains) are exempt from tax (TEE). A new type of tax-exempt saving account (Tax-Exempt Special Savings Account - TESSA) was introduced in the following years. It allows bank and building society deposits to be tax-exempt if held in the account for at least five years.

d) When legislation concerning funded supplementary pension schemes was introduced in Italy in 1992, contributions to funded schemes were subjected to a 15 per cent withholding tax.[53] Tax credits proportional to the tax levied on contributions were granted on future pensions.[54] This scheme, which would have actually represented a form of compulsory acquisition of special public bonds, aimed at ensuring that the development of funded pension schemes determined a net increase in revenues for a considerable period (CER 1993). The scheme was abolished in 1995.

Theoretical work has argued along the same lines. In 1989 The Capital Taxes Group formed by the Institute for Fiscal Studies in London suggested a considerable extension of the Personal Equity Plans. The aim of the new plan (named EXPEP) was that of reducing tax induced distortions in the allocation of personal saving by taking all returns out of tax (as those on pensions and housing already are). The plan would also remove the problems caused by inflation and by capital gains evaluation that are inherent to any tax on saving return. For equity reasons there would be an annual limit on contributions to the fund. As to the budgetary effects, the Capital Income Group noted (p. 4) that "An EXPEP has far lower start up costs for the government than an ET, since the tax loss is only that which would be paid on returns. Under an ET there is a loss of revenue at the time of saving".

In the United States, the substitution of the "deductible IRA" (based on EET criteria) with a "backloaded IRA" (based on the TEE criteria) has been frequently considered. According to Burman *et al.* (1990), the latter type of IRA is "politically more attractive because it seems to offer a way of introducing a saving incentive without at the same time raising the federal deficit."

Munnell (1992) has proposed to change the United States pension fund system from EET to TTE. According to Munnell (p. 19), the present treatment "costs a lot in forgone revenues, creates horizontal inequities, and does nothing to increase saving." It is therefore advisable to move towards a CIT and to include in each taxpayer's base the change in the present discounted value of future retirement benefits. This objective can be approximated by taxing both contributions on pension funds and earnings on pension fund assets. A flat rate of 15 per cent could be applied, with rebates on pension benefits for low income earners and surcharges for high income earners. In order to avoid that existing assets escape income tax, Munnell suggested a one-time assessment of these

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53 See Ruggiero (1993).

54 Tax credits were to be calculated on the basis of the rate achieved by each pension fund on the remaining 85 per cent of the contributions paid to pension funds.

assets. A 15 per cent levy would raise one-time revenues amounting to 15 per cent of United States outstanding debt.

4.2 Sources of budgetary imbalances

In order to examine the budgetary effects of these changes, let us consider a situation in which each citizen works in the first half of his/her life and gets a pension in the second half. Let us also assume that funded pension schemes are created in period 1 and reach maturity in period 2.

Under a TEE system, in period 1 net contributions to funded schemes are

$$F^1 = f * Y^1 * (1-t_w)$$

In period 2, net contributions are

$$F^2 = f * Y^1 * (1-t_w) * (1+w) * (1+n)$$

while net pensions are equal to

$$P^2 = f * Y^1 * (1-t_w) * (1+r)$$

Where:

f is the contribution rate to funded pension schemes
Y is taxable income
t_w is the tax rate on wages
t_p is the tax rate on pensions
w is the rate of growth of wages
n is the rate of growth of the number of workers
r is the return on pension fund assets

Under an EET system,

$$F^1 = f * Y^1$$

$$F^2 = f * Y^1 * (1+w) * (1+n)$$

$$P^2 = f * Y^1 * (1+r) * (1-t_p)$$

In period 1, when funds are build up, tax revenues are respectively equal to

$$T_{TEE}{}^1 = t_w * Y^1$$

$$T_{EET}{}^1 = t_w * Y^1 * (1-f)$$

In period 2 tax revenues are respectively equal to

$$T_{TEE}^2 = t_w * Y^2 = t_w * Y^1 * (1+w) * (1+n)$$

$$T_{EET}^2 = t_w * Y^2 * (1-f) + t_p * P^2 = t_w * Y^1 * (1+w) * (1+n) * (1-f) + t_p * f * Y^1 * (1+r)$$

This simple model makes it clear that:

a) As already pointed out in Section 2, if $t_w = t_p$, the two solutions are equivalent from the pensioners' point of view; if $t_w > t_p$, pensioners prefer EET.

b) During the period when funds are built up, EET determines a smaller income tax base than TEE.

c) When pension funds have matured, if $t_w = t_p$, EET provides higher revenues than TEE if $(1 + r) > ((1 + w) * (1 + n))$. If $t_w > t_p$ (because of the different average incomes of workers and pensioners), EET provides higher revenues than TEE if $t_p * (1 + r) > t_w * ((1 + w) * (1 + n))$.[55]

d) Any shift from EET to TEE determines a one-off increase in revenues.[56]

The choice of system of pension fund taxation has relevant intertemporal implications that ought to be considered in the assessment of fiscal sustainability. While under a TEE system the government gives up the possibility of taxing part of citizens' future income, under an EET system it acquires a share in the pension funds. It actually acquires "an implicit tax claim on funded pension schemes, which can be computed as the product of the average income tax rate on pension benefits and the assets of pension funds."[57] This means that under EET a government is less vulnerable to increases in interest rates than it appears to be on the basis of the conventional public debt.[58] If $(1+w) * (1+n)$ is significantly lower than $(1+r)$ and t_w is not much higher than t_p, an EET system also provides more revenues than a TEE system.[59]

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55 In order to evaluate the relevance of t_w / t_p, one can consider that, if

a) maturity is reached after 40 years, and

b) $(1 + r) / ((1 + w) * (1 + n)) = 1.02$,

then: $T_{EET}^2 > T_{TEE}^2$ if $t_w / t_p < 2.2$.

56 If the shift from EET to TEE takes place in time 2, $T^2 = t_w * Y^1 * (1 + w) * (1 + n) + t_p * f * Y^1 * (1 + r)$. The increase in revenue is equivalent to the tax on existing pension assets envisaged by Munnell (1992). This tax could allow a transition from EET to TEE with limited administrative burden.

57 Bovenberg and Petersen (1992, p. 5). According to them, on the hypothesis that the average tax rate on supplementary pension benefits is 20 per cent, in 1989 the tax claim on pension funds represented 16 per cent of GDP in the Netherlands, 12 per cent in the United Kingdom, 9 per cent in the United States, and 4 per cent in Japan.

58 Bovenberg and Petersen (1992) note that an increase in interest rates tends to increase public revenues both where the windfall gain is used to pay higher pensions and where it is used to reduce contributions. In the latter case, the amount deducted from taxable income would be lower.

59 See the note to point c.

By shifting from EET to TEE a government obtains some one-off revenues and foregoes the claims on future pensions. In evaluating the change, two elements ought to be considered: the likely effects on budgetary stance and the difference between the rate of interest on public debt and the return on pension fund assets. If the occasional increase in revenue does not induce the government to relax its budgetary stance, the change determines an improvement in budgetary perspectives where the interest on public bonds is higher than the return on pension fund assets. It determines a worsening of budgetary perspectives in the case where the government can borrow at a lower rate of interest.

4.3 Some conclusions

The choice of the tax system of pension funds should be examined taking the demographic and public finance perspectives of Western countries into account. In most of these countries the old-age dependency ratio is likely to increase substantially, especially after the year 2010, when the baby-boom generation will start retiring. This means that coefficient 'n' might assume rather low or even negative values. Several recent studies have reported that demographic changes are likely to increase the share of social expenditure on GDP considerably in the next decades.[60] The increase in pension and health expenditure should largely outweigh the benefits resulting from lower expenditure on education and children's allowances. This expenditure pressure would occur in a situation in which there is no significant scope for tax increases and public deficits are already relevant as is the case in many countries. Generational accounting analyses have confirmed that in some countries there is a large imbalance between the fiscal treatment of present and future generations of citizens.[61] In order to avoid a debt explosion, massive adjustment in taxes or expenditure rules will have to be applied.[62]

In this scenario, a shift from EET to TEE or a similar policy change[63] might increase revenues in a first phase and might reduce them afterwards, when ageing will put more pressure on budgets. This effect will be magnified if the one-off revenues related to the shift are used by government to relax their fiscal stance. In some Western countries, it will also be magnified by the increase in contributions to funded pension schemes that is likely to occur in a first phase because of the cuts operated on the public PAYG pensions.

As Bovenberg and Petersen (1992, p.12) point out, an EET tax "seems to provide better insurance against the unexpected shocks in an ageing society with mature pension funds because the government has a broader tax base at its disposal." Furthermore, since the EET is likely to require smaller changes in tax rates than the TEE, it "may reduce the deadweight losses and uncertainties associated with the tax system."

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60 Heller, Hemming and Kohert (1986), OECD (1988), Leibfritz *et al.* (1995), Franco and Munzi (1996).

61 See Office of Management and Budget (1994), Auerbach *et al.* (1993), Franco *et al.* (1994).

62 See Hagemann and Nicoletti (1989).

63 Like the introduction of a witholding tax on contributions, and of a related tax credit.

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