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The Tax Treatment of Government Bonds

Prepared by John Norregaard[1]

Authorized for distribution by Liam Ebrill

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Abstract

In their effort to finance fiscal deficits at a reasonable cost, governments compete with other users of financial capital. Governments, however, are in the unique position that they are the only debt suppliers that can determine the taxation of debt instruments they issue. Following an overview of the current tax treatment of government bonds in OECD countries, this paper argues that—on purely economic grounds—there are no reasons for exempting interest on government bonds. Administrative difficulties in capturing interest on many other debt instruments in the tax net may, however, provide a rationale for doing so.

Author's E-Mail Address: jnorregaard@imf.org

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SUMMARY

Governments in some developed and in many developing countries have introduced favorable provisions for the taxation of interest from government bonds, in some cases by fully exempting this source of income from taxation. Little is known about the specific reasons why governments have introduced these special rules, but presumably they reflect the perception that favorable tax provisions will facilitate the placement of government bonds. In other cases, the objective has been to subsidize specific public or quasi-public activities.

Similar to most other tax provisions, tax reliefs pertaining to interest from government bonds have potentially important implications for economic efficiency and distributional fairness. The increasing globalization of economies and financial markets has added important complexities to the impact of taxation on financial flows, including on government debt instruments.

The paper presents the present provisions for taxation of interest from government bonds in OECD countries, and proceeds to identify the main economic implications of exempting interest on government bonds from an efficiency as well as from an equity point of view. It demonstrates that the consequences of taxation may differ significantly between the closed-economy case and the case of an open economy, and that in this latter situation, the impact of taxation depends—inter alia—on whether residence or source-based taxation is the international norm. The paper concludes that, on economic grounds, there are no reasons for exempting interest from government bonds, and that only administrative difficulties in capturing other forms of interest in the tax net may provide a rationale for doing so.

I. INTRODUCTION

In 1996 most OECD countries had general government fiscal deficits (exceptions being Luxembourg, Norway, Australia, and New Zealand), on average on the order of 3 percent of GDP. To a large extent, these deficits were financed through the issuance of government bonds which are also used to refinance "old" debt. Consequently, governments are major players in financial markets, and the servicing of public debt generally constitutes significant items on the budgets. Prudent financing policies involve ensuring that the necessary volume of financing is available and at a minimum cost to the budget.

Exempting the interest on government bonds from income taxation is used in a number of countries, including in many developing countries, in order to make government bonds more attractive to portfolio investors. This paper gives an overview of current practices among OECD countries[2] in this respect, and discusses the rationale for providing (or for not providing, as the case may be) special tax concessions on these debt instruments. It focuses primarily on personal income taxation, although references are made also to taxation of interest under enterprise profit taxes. A particular and complex, but increasingly important, aspect relates to taxation of capital flows in an ever more integrated world economy. Some authors contend that globalization will prevent taxation of mobile capital, including bonds, and that globalization and the resulting tax competition among countries may lead to fiscal degradation (see, for example, OECD (1994) and Tanzi (1995 and 1996)). Seen in this context, tax reliefs for government bonds might be granted to keep governments at a competitive edge in capital markets. The question of taxation of government bonds has also become pressing in the context of the issuance of inflation-indexed bonds in a number of countries, an issue which will not be dealt with in this paper (see, for example, Price (1997) for a survey).

Section II provides a brief overview of the provisions for taxation of government bonds domestically. It also summarizes the key features of the taxation of international flows of interest, and the relevant tax regimes pertaining to cross-border income flows. The subsequent section discusses the rationale for providing tax concessions, and the efficiency and equity consequences of doing so, while Section IV contains some conclusions.

II. AN OVERVIEW OF INTERNATIONAL PRACTICES IN OECD COUNTRIES

A. Domestic Taxation

In 15 out of 24 OECD countries, interest from government bonds is liable to tax under the personal income tax (PIT), and is thus subject to tax at the marginal PIT rate applicable to

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[2]The discussion applies equally well to other countries, including developing and transition economies, but more material and information are available on OECD countries.

individual taxpayers, see Table 1 (which excludes the three countries which have recently joined the OECD).[3] In three of these countries, however, taxpayers have an option to choose between the withholding tax and the PIT on interest income from bonds (Belgium, France, and Portugal). In another three countries in this group of 15 countries, the withholding tax on interest is creditable against assessed PIT (Spain, Switzerland, and the United Kingdom). In four countries outside the group of 15 countries (Austria, Finland, Italy, and Japan), interest on government bonds is not subject to PIT, and the withholding tax on interest is the final tax paid. In Norway and Sweden, interest is formally taxed under the PIT, but at the flat rate applicable to capital income. In the remaining three countries (Greece, Iceland, and Turkey), interest from government bonds is not subject to tax. In the case of Greece and Turkey, this is in contrast to the tax treatment of most other interest income, whereas Iceland, as the only OECD country, completely exempts interest income from tax. It appears that there are significant differences across countries in the way interest income, including from government bonds, is dealt with for domestic income tax purposes.

Generally, in most countries, the tax treatment of interest as reported above reflects the tax policy toward capital income in general, although some countries (such as Greece and Turkey, as mentioned above) maintain some differences in the tax treatment of different capital income sources.

A special situation prevails in the United States, where interest on bonds issued by state or local governments is exempt from federal income taxes (personal as well as corporate). The same interest may be taxed by the states, although—typically—states exempt the interest income paid to residents from bonds issued by that state or its localities.[4] Similarly, state income taxes generally exempt interest income on federal government bonds. This "cross-exemption" of interest on government bonds should be seen in the context of the controversy in the United States concerning the constitutional authority of the federal government to impose a tax on the income from state and local government securities.[5] A particular development in the United States is the strong growth of so-called private purpose tax-exempt bonds, where state and local governments effectively transfer their tax-exempt borrowing authority to private individuals or firms for specific purposes in principle deemed to be of a high social value (e.g., for developmental projects, pollution control facilities, hospitals, construction of rental housing or stadia).

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[3]OECD (1994) contains a comprehensive description of the tax treatment of a number of different savings instruments, including tax provisions pertaining to the acquisition, holding, and disposal of the instruments. This note deals exclusively with the taxation of the holding of bonds. Tanzi and King (1995) provides an overview of the issues and trends in the international taxation of financial assets.

[4]The system is described and discussed in more detail in Fisher (1988).

[5]Although the Supreme Court in a 1988 decision ruled that the federal government does in fact have the authority to tax state and local bond interest (see Fisher, op. cit., p. 241).

Table 1. Tax Treatment of Holding of Domestic Government Bonds[1]

Country	PIT Annual Income From Asset	Other Taxes Annual Income From Asset	Other Taxes Value of Asset	Tax Rates (Percent) Top Rate	Tax Rates (Percent) Withholding Rate
Australia	Y	N	NA	48.4	N
Austria	N	Y[2]	N	50.0	22.0
Belgium	Y[3]	Y[3]	N	55.0	10.0
Canada	Y	N	NA	49.8	N
Denmark	Y	N	Y	58.1	N
Finland	N	Y[2]	N	60.0	20.0
France	Y[3]	Y[3]	Y	59.9	35-50
Germany	Y	N	Y	53.0	N[4]
Greece	N	N	Y	40.0	N
Iceland	N	N	N	41.34	N
Ireland	Y	N	N	48.0	N
Italy	N	Y[2]	NA	51.0	12.5
Japan	N	Y[2]	N	50.0	20.0
Luxembourg	Y[5]	N	Y	52.5	N
Netherlands	Y[5]	N	Y	60.0	N
New Zealand	Y	N	N	33.0	N
Norway	Y[6]	N	Y	43.5	N
Portugal	Y[3]	Y[3]	N	40.0	20.0
Spain	Y[7]	N	Y	56.0	25.0
Sweden	Y[6]	N	Y	51.0	N
Switzerland	Y[7]	N	Y	43.0	35.0
Turkey	N	N	NA	50.0	N
United Kingdom	Y[7]	N	NA	40.0	20.0
United States	Y	N	NA	45.9	N

Source: OECD (1994).

Notes: Y = yes; N = no; NA = not applicable.

[1]As of January 1, 1993. Tax provisions in this area are revised only infrequently.
[2]Final withholding tax applies.
[3]Taxpayers can opt between the withholding tax and PIT. Abatements apply below certain limits.
[4]A withholding tax of 30 percent with a substantial threshold was introduced in 1993.
[5]Interest income is tax exempt below certain limits.
[6]Interest is taxed as capital income at a flat rate of 28 percent in Norway and 30 percent in Sweden.
[7]Withholding tax applied on interest payments is creditable against assessed PIT.

Table 1 also reports for all 24 countries the statutory tax rates applicable to personal income (whether interest is included as personal income or not) in the form of the highest marginal PIT rate (including the average local government rates in countries with subnational personal income taxes). The table also shows the tax rates (typically withholding rates) applicable to interest on government bonds if different from the PIT rates. Obviously, there are significant differences in the level of personal taxation of interest across countries, but also substantial differences within countries between the top marginal rates of the PIT and the withholding rates on interest on government bonds, including in the countries where the withholding tax is—or may be chosen as—the final tax paid. Such differences between marginal PIT rates and withholding rates on interest income may also have an important bearing on the extent to which international flows of interest are disclosed for domestic tax purposes, as described in the subsequent section.

Table 1 shows that a number of OECD countries levy taxes on the value of the bonds, in some cases by including the asset value in the base of the net wealth tax. This is done either in addition to the taxes on the income from the bonds or, as in Greece, as a substitute for income taxation of the bonds. The remainder of this note focuses on the income taxation of government bonds.

Although the tax reforms implemented during the last decade in the majority of OECD countries generally have aimed at broadening the tax base through repeal of exemptions and allowances, the reforms have broadly left the tax provisions pertaining to government bonds unchanged (although Italy went from exemption of interest on government bonds to final withholding in the latter part of the 1980s).

B. International Taxation

The issues arising in this context are generally far more complex than in the domestic case, since taxation of international income flows depends on the interaction of two or more countries' tax systems, and on the specific provisions which may have been agreed upon in bilateral tax treaties, as well as on the ability of domestic tax administrations to capture cross-border income flows. This section will address a few key issues pertaining to the taxation of international interest flows.

Generally, OECD countries have concluded bilateral double taxation agreements in order to promote transparency in matters of international taxation and to avoid double taxation of cross-border capital and income flows. These agreements follow the principles of the OECD Model Tax Convention on double taxation (OECD (1992)). A crucial issue is whether the regime governing the taxation of cross-border flows and the resulting apportionment of the tax between different countries follows the principles of source taxation, with the source country having the taxation rights, or residence taxation, with the taxation rights falling to the country of residence of the taxpayer. From the standpoint of elimination of double taxation, the criterion of residence may be preferable since it allows all elements of a taxpayer's

situation to be taken into account resulting in a fair tax on net income (whereas most source-based taxation is levied on gross income flows). From the standpoint of the tax authorities of the source country and, in particular, from that of preventing tax evasion, source-based taxation may be preferable.

In the case of interest income, the OECD double taxation model recommends shared taxation in the sense that the source countries are allowed a "modest" withholding tax which shall not exceed 10 percent of the gross amount of interest (Article 11 of the OECD Model Tax Convention). This withholding tax is typically creditable (but generally within certain limits) against the taxpayer's tax liability in the residence country so that the tax is shared, but the total tax paid corresponds to the (relevant marginal) tax rate in the country of residence. Current standard withholding tax rates applicable to interest on government bonds and other interest paid to nonresidents are presented in Table 2. Actual withholding tax rates may be lower under bilateral double tax agreements.

The increase in international mobility of capital has led to significant downward pressures on these withholding rates, and has led a number of countries to abolish them since the mid-1980s. The table shows that now more than half of OECD countries allow gross payment of interest to nonresidents, and even more so under bilateral agreements. This reflects the outcome of a difficult balancing between the need for revenue from an income stream which will permanently leave the country, and the need to attract much needed savings from abroad.

A sensitive and much debated issue is whether cross-border interest flows are actually disclosed for taxation in the residence country.[6] Generally, the administrative difficulties of capturing international flows of, for example, interest income increase manyfold compared to those of similar domestic flows, and depends to a large degree on administrative arrangements agreed bilaterally between countries. In cases of a withholding tax rate on interest paid to nonresidents, which is reduced or eliminated under a treaty, the source country may require documentation from the taxpayer on his residency, and may in such cases notify the residence country. However, this checking procedure is used fairly rarely, and in all probability a non-insignificant fraction of international interest flows goes untaxed in the countries of residence.[7]

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[6]See, for example, OECD (1994, Chapter 7), for a discussion of this issue.

[7]The 1989 German case of introduction of a 10 percent withholding tax on interest is illuminating in this respect: the tax was followed by a severe capital flight, and was repealed shortly thereafter (but reintroduced in another format in 1993). Since the withholding tax was levied at a rate well below those applying in residence countries, the presumption is that many taxpayers in the countries of residence avoided the tax. Section III below presents empirical evidence which purports to support the competing view that the degree of evasion in this respect is fairly limited.

Table 2. Withholding Taxes on Interest on Selected Assets
Paid to Nonresidents
(As a percentage, before relief under double tax agreements)

Country	Bank Deposits	Government Bonds	Corporate Bonds (other than Eurobonds)
Australia	10	10	10
Austria	-	-	-
Belgium	10	10	10
Canada	25	-	-
Denmark	-	-	-
Finland	-	-	-
France	-	[1]	-
Germany	-	-	-
Greece	10	10	10
Iceland	-	-	-
Ireland	-	-	27
Italy	30	12.5[3]	12.5 or 30[4]
Japan	15	20	20
Luxembourg	-	-	-
Netherlands	-	-	-
New Zealand	15	15	15
Norway	-	-	-
Portugal	20	20	25
Spain	25	-	25[5]
Sweden	-	-	-
Switzerland	35	35	35
Turkey	10	15	10
United Kingdom	-	25[6]	25
United States	-	-	-

Source: OECD (1994).

[1]For bonds issued since October 1, 1984.
[2]For bonds issued between October 1, 1984 and December 31, 1986: 10 percent.
[3]If issued after September 20, 1986.
[4]The lower rate is for quoted and the higher for unquoted companies.
[5]Generally nil for residents of other EC countries.
[6]Except certain designated bonds.

In a situation of generally diminishing withholding tax rates, this potential for abuse may have perverse consequences, in the sense that it provides strong incentives for all investors in country A to hold their financial assets in country B and vice versa. The incentive for nondisclosure increases obviously with increasing discrepancy between the withholding rate in the source country and the relevant marginal PIT rate in the residence country, in cases where foreign-source income is subject to PIT.

These and other aspects of international capital taxation have been extensively discussed in the context of the planned tax harmonization within the European Union: it has been argued that the existing diversity of national tax regimes for capital, and particularly the generally favorable treatment given to interest paid to nonresidents, produces economic distortions that are not compatible with the notion of a single capital market within the Union (see, for example, Paemen (1996)).

III. ECONOMIC IMPLICATIONS

No information is readily available on the reasons why different governments have chosen different policies for taxing interest on government bonds, but presumably a key consideration for those governments that have opted for tax exemption has been the need to make government debt instruments comparatively more attractive to portfolio investors, perhaps combined with the somewhat illusory perception that by exempting the bonds, the debt servicing cost—and thereby fiscal deficits—will be lowered. For some governments, the "aesthetic" factor associated with the illusion that a tax exemption will reduce the size of the government may also play a role (although it is true only in a narrow accounting sense, similarly to other tax expenditures). The granting of exemptions for government bonds may also be associated with a wish to subsidize specific activities (e.g., construction of hospitals, stadia), or with subsidization of the borrowing costs of lower levels of government by the central government (as in the United States). A potentially important explanatory factor in some countries may be the fact that interest in general may be difficult to capture in the tax net.

This section seeks to identify the main economic implications of exempting interest on government bonds from tax, from an efficiency as well as from an equity point of view. In the presence of taxation of the return to financial assets, the formation of the interest level and structure will typically differ importantly between the closed economy case and the open economy case, and in the latter case it depends—inter alia—on whether residence or source-based taxation is applied. The discussion that follows distinguishes between these different cases.

A. Closed Economy Case

Assume for the sake of simplicity that financial markets are fully competitive, that there are only two debt instruments, one of which is tax-exempt government bonds whereas interest

from the other is fully taxable, and that all taxpayers are taxed with the same flat (or marginal) rate equal to t. In this case, interest arbitrage will ensure that—at the margin—after-tax rates of return are equalized. With pretax rates of return equal to r_t and r_e on the taxed and the exempt assets, respectively, we have:

$$r_t * (1-t) = r_e \qquad (1)$$

The percentage spread between the two (gross) rates of return will thus equal the tax rate. Obviously, in this case, at the margin, the government is indifferent with respect to the choice between the two debt instruments: looked at from a budgetary point of view, (1) expresses the fact that for taxable bonds, the interest expense minus the tax revenue it generates exactly equals the interest expense in the case of tax-exempt bonds, so that the net impact on the budget in future periods, ceteris paribus, will be the same in the two cases.[8] Ergo, from a budgetary point of view, there is no rationale in this case of uniform tax rates for introducing tax-exempt bonds in a situation where interest generally is subject to tax (or—if the initial situation is one of global interest exemption—for introducing taxation of government bonds).

Some more realistic deviations from this simple "benchmark" case may be discussed under the headings of efficiency, equity, and compliance.

Efficiency considerations

Intertemporal efficiency

A key question in the literature on capital income taxation has been the double taxation of savings inherent in systems of global income taxation, and the extent to which this may have an adverse impact on the level of savings, capital accumulation, and hence on economic growth.[9] The focus here, however, is not the potential efficiency gains associated with global exemption of savings, but the more narrow one of the efficiency and other implications of exempting specific debt instruments, but leaving the return on the majority of instruments subject to tax.

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[8]This simple example disregards the possibility of a multitier system of government where gains and losses may be distributed asymmetrically between the different levels of government. It also disregards the possibility of arbitrage with other types of portfolio investments, such as equities.

[9]See, for example, OECD (1994) and Tanzi (1995). A common view is that while the elasticity of savings with respect to the after-tax rate of return is fairly modest and, therefore, that the impact of taxation on the overall level of savings is minimal, taxation is a significant determinant of the composition of savings. The competing view, that reducing or repealing capital income taxes may significantly affect long-term savings ratios and capital accumulation, has been supported by Summers (1984) and Lucas (1990).

The intramarginal process

Whereas at the margin, portfolio investors in a competitive environment are indifferent with respect to the choice of savings asset, the process by which this equilibrium is reached may well have important ramifications for the final composition of assets. However, since the nature and the outcome of this "intramarginal" process is highly speculative, this question will not be pursued here. Suffice it to say that to the extent that a government, by introducing tax-exempt bonds, actually succeeds in attracting a larger volume of financing than it would otherwise have achieved, the problem "reduces" to one of potential crowding out of private investment,[10] with adverse effects on overall welfare if the social rate of return on the public spending is lower than that on the private investment forgone (which by no means needs to be the case). Two points should be made in this context.

First, in the case of a highly competitive financial market, based on computerized and instantaneous trading of large volumes with minimal transactions costs, there would seem to be little scope for exploiting intramarginal interest differentials. Second, the mirror image of any (intramarginal) gains of private portfolio investors—for example, in connection with investments in newly issued tax-exempt government bonds—is invariably higher financing costs to the budget, leading to a larger future deficit unless taxes are raised and/or other expenditures compressed.

Noncompetitive financial markets

If the domestic financial market is poorly developed, or for other reasons is highly compartmentalized, the simple competitive outcome may not emerge. The precise implications of this situation for government financing costs are, however, hard to predict in any general and systematic way. Tax exemptions on government debt instruments may in such cases be used primarily for the purpose of mobilizing scarce domestic savings.

In a noncompetitive environment, the government may even use its powers (for example, as a contractor) to coerce financial institutions, private enterprises, or other agents to buy its debt at less than the market price.[11] While this would imply an implicit fiscal cost to the investor, it may be done independently from the decision to subject or not the return on financial assets to income tax.

Another case which may resemble the noncompetitive situation arises when there are excessive transactions costs. Such impediments to a well-functioning capital market may even

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[10]Since the economy is closed, total savings will equal total investment.

[11]One example of this is the forced placing of municipal bonds in South Korea through obligatory bond purchases in connection with sales of automobiles and bidding by private contractors for public construction projects.

be created by the government itself, through selective taxes on transactions with securities, as it is seen in many countries, including in some transition economies.[12]

Generally, apart from very special cases, it seems difficult to establish a convincing rationale for introducing exempt government bonds in order to overcome market imperfections, unless the act is related to a global weak compliance concerning interest taxation, as described in more detail below.

Subsidization

The government may want to subsidize and thus expand specific activities by lowering the borrowing costs through tax exemptions, if these activities are considered to have a high social rate of return. As described above, in the United States this is done by the central government vis-à-vis state and local government borrowing as well as for specific private sector activities (through the issuance of private purpose tax-exempt bonds). As shown below in the section on equity, this is generally an inefficient way of providing a subsidy, since the loss of revenue will typically be larger than the saving on borrowing cost for the borrower. A more efficient policy will be to tax fully all interest, and to provide an explicit budgetary subsidy to the activity (or the subnational government) in question.

Fiscal illusions

Governments may be affected by the illusion that the nominally lower borrowing costs associated with tax-exempt bonds reflects also overall or effective lower borrowing costs, and thus expand borrowing and public expenditures beyond what they otherwise would have done. This may result in crowding-out effects and other economic inefficiencies, and lead to larger future deficits.

Equity and the allocation of revenue

Under this heading, two different issues will be discussed, namely the question of distributional fairness when marginal tax rates differ across individuals, and the question of revenue allocation and tax shifting in a system of several layers of government with "cross-exemption" of bonds. Although the focus now is on equity, both cases have important efficiency implications.

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[12]Spahn (1995) gives an overview of current financial transaction taxes in a number of countries, and Shome and Stotsky (1995) review the potential efficiency consequences of financial transactions taxes in general.

A progressive personal income tax: distributional inequities

Consider a situation in which the assumption of equation (1) above of identical (marginal) tax rates is relaxed, in favor of a more realistic system of progressive marginal rates. This assumes a global income tax, where interest income is added to income from other sources for tax purposes. If initially the two gross rates of return, r_t and r_e, are identical, all portfolio investors—independently of the level of their (positive) marginal tax rates—would obviously benefit from substituting exempt for taxable bonds. Through interest arbitrage, the changing portfolio composition would be associated with an increase in r_t and a decline in r_e, thereby gradually making investments in tax-exempt bonds less profitable, and eventually making them unprofitable starting with the taxpayers with the lowest marginal rates. When the percentage difference between r_t and r_e has become larger than a taxpayer's marginal tax rate, the taxpayer will invest only in taxable bonds. A new equilibrium is established where (1) holds for the marginal investor, with a marginal tax rate equal to t^*:[13]

$$r_t * (1-t^*) = r_e \qquad\qquad (2)$$

Taxpayers with a marginal tax rate $t < t^*$ will invest in taxable bonds only, while taxpayers with $t > t^*$ generally will place new investments only in exempt bonds.

Assuming that the middle-income group comprises the marginal investor, high income groups will benefit from investing in tax-exempt bonds instead of in taxable bonds, with the net gain equal to $r_t * (t-t^*)$. Since in this situation, $t * r_t > r_t - r_e = t^* * r_t$ (i.e., the loss in tax revenue stemming from the high-income taxpayers investing in tax-exempt rather than in taxable bonds is larger than the savings in interest expenses of the borrowing government), investments in tax-exempt bonds by high-income taxpayers will result in a net loss for the budget, identical to the global net gain for the taxpayers in question. Consequently, in this situation, introduction of tax-exempt bonds will be beneficial for high income taxpayers only, and thus be distributionally unfair. The net gain for these taxpayers is financed by the budget. The reason for this outcome is that the market will establish only one global price for each type of bond, determined by the marginal investor (i.e., price discrimination is not possible), whereas the gains for individual taxpayers vary positively with the level of their marginal tax rates.

The impact on equity of these investment incentives may be exacerbated to the extent that the level of saving relative to income increases with the level of income, in which case the "pool" of savings available for high-income individuals is much larger than for other income groups. This is, at least in part, reflected in Chart 1 which shows, for selected OECD countries, the ratio of interest income to gross income within deciles. Apart from obvious cross-country differences in the precise profile of the savings ratio, a common feature is the U-shaped relationship, with the highest ratios for the low and high income groups. Although the lowest deciles typically are very heterogenous with respect to the types of taxpayers they comprise,

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[13]Disregarding potential risk differentials between the two assets.

Chart 1. Interest in Percent of Gross Income
(Selected OECD Countries)
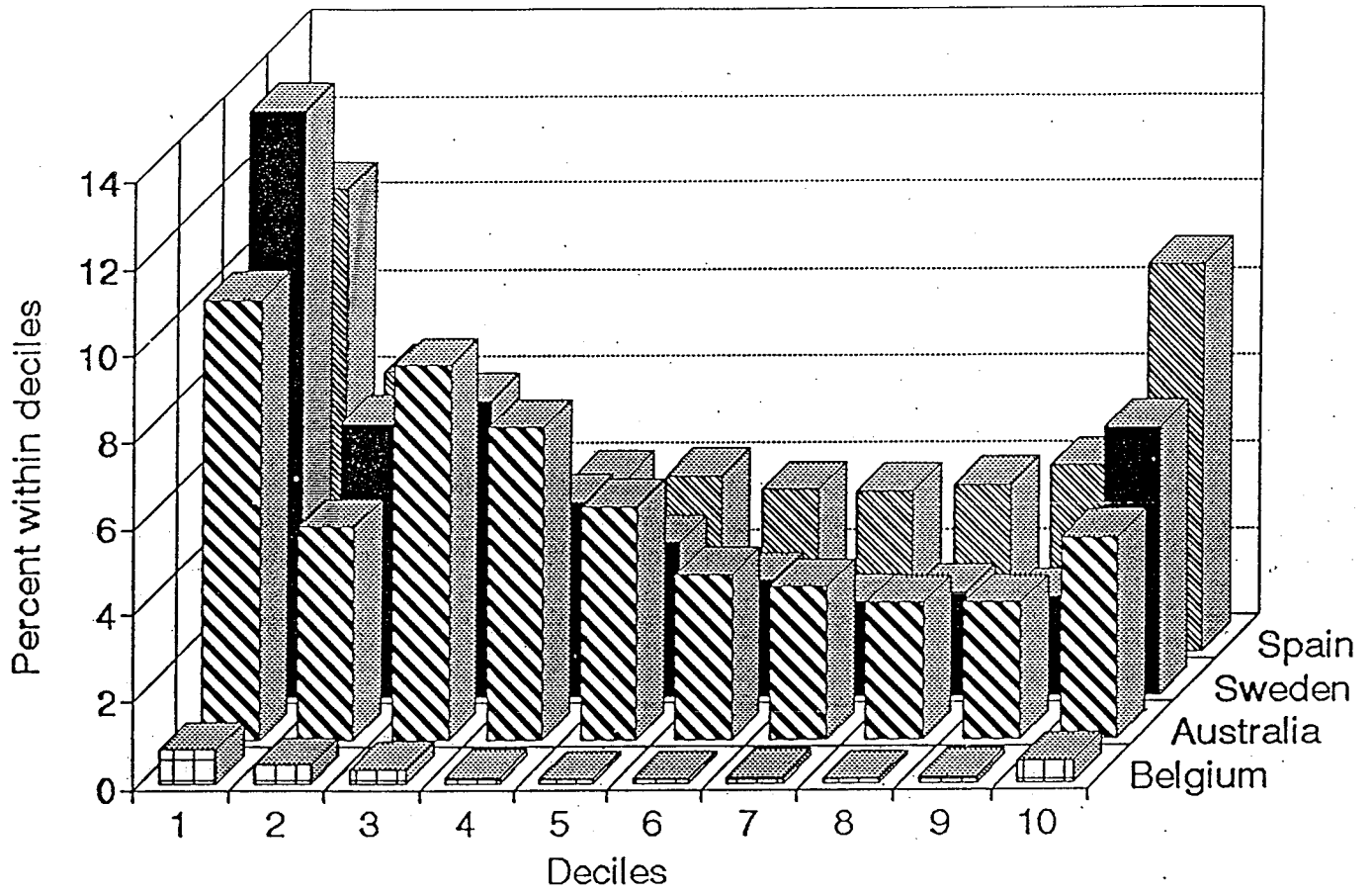
Source: OECD (1990).

the relatively high interest ratios in these deciles presumably reflect a "pensioner effect," with many elderly taxpayers having some amount of interest-bearing savings, but an overall low current gross income. It should be noted, that despite the fairly high interest-to-income ratios of the lowest income groups, the fraction of the total amount of interest income that they receive is very low, see Chart 2.[14]

Deductibility of interest expenses would constitute yet another factor that would tend to reinforce the distributional inequities described so far, since high-income individuals—in case of unlimited interest deductibility—would engage in interest arbitrage by borrowing and deducting the associated interest expenses, and reinvesting the money in tax-exempt bonds with a net gain (still assuming that the middle-income group comprises the marginal investor).[15]

A final factor which may reinforce the distributional inequities is the fact that, in some cases, the tax-exempt bonds are sold in fairly large denominations, which of course will further restrict the set of potential purchasers.[16]

The incentives of the high-income groups to invest in tax-exempt bonds may be curtailed to the extent that the country in question operates a system of "minimum taxes," such as is the case in, for example, the United States, whereby a floor is set for the minimum amount of tax a taxpayer has to pay for a given level of gross income. Although minimum taxes typically leave a significant incentive to invest in tax-exempt bonds, they do set a limit as to how much a high-income individual can reduce tax liability through investments in tax-exempt financial instruments.

The string of tax reforms implemented in OECD countries (and in many other countries) during the last two decades have had as common denominators broadening of tax bases through the repeal of various tax concessions combined with reductions in statutory marginal

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[14]For OECD countries, the fraction of total (taxable) interest income accruing to the first two deciles (i.e., to the lowest incomes) is typically on the order of 5 percent, whereas the last two deciles combined receive about 50 percent of all interest income (see OECD, 1990).

[15]Note that if borrowing and deductibility were unlimited, the arbitrage process would result in a dominant market position of the high-income receivers, in which case they would become the marginal investors, resulting in a new equilibrium with a percentage interest spread equal to the marginal tax rate of the high-income receivers.

[16]This constraint may have been eased in recent years with the proliferation of mutual funds, investing in bonds, and selling shares, also in small amounts.

Chart 2. Distribution of Interest in Deciles
(Selected OECD Countries)
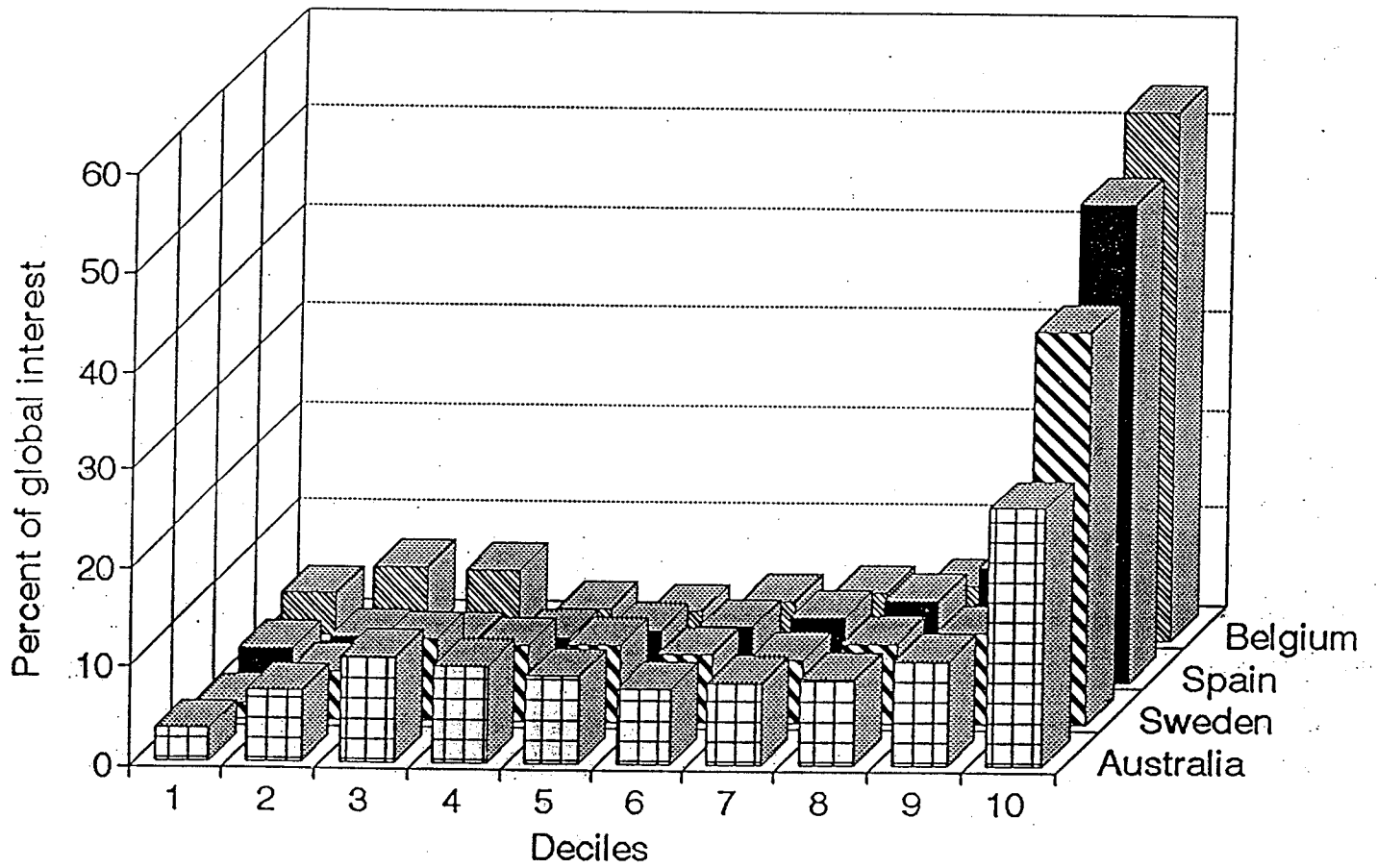
Source: OECD (1990).

income tax rates.[17] Consequently, these reforms have tended to reduce the benefits of higher-income groups from investing in tax-exempt bonds, a fact which establishes yet another reason why "flattening" of the rate schedule need not have unwarranted distributional consequences.[18] The effective impact of the reforms on investment incentives, of course, also depends on how the reforms have affected the taxation of alternative financial and real assets, such as shares and housing.

A further analytical complexity pertaining to the distributional consequences arises when the group of investors is mixed, comprising taxable individuals, corporations, and institutional investors, which may or may not be taxable. In equilibrium, the difference between the rates of return on the two debt instruments will depend on which investor group comprises the marginal investor. If, for example, the marginal investor is a corporation, then the percentage interest spread will equal the corporate and not the personal income tax rate.

The discussion has so far assumed a global income tax with interest income, except on government bonds, being taxed at par with other income sources. As referred to above, however, some countries (e.g., Austria, Finland, and Italy) apply a flat and final withholding tax to all or most domestic interest income, whereas (most) other income sources in these countries are taxed on a global basis. This system thus eliminates the differential tax treatment of different types of interest income, and taxes all taxpayers receiving interest with the same tax rate, independently of their income level. While easy to administer and less prone to tax avoidance and evasion, such a system of final withholding violates the principles of horizontal and vertical equity, since the same amount of income may be subject to widely different tax rates depending on the nature of the income, and large incomes may be taxed more mildly than lower incomes, depending on the composition of income.[19]

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[17]Subsequently, however, some of these countries have at least in part reversed the base-broadening/rate-cutting strategy by introducing new reliefs, particularly for capital income taxation. This holds, for example, for the reform measures introduced in the United States subsequent to the comprehensive 1986 tax reform.

[18]Although, in this case, the beneficial distributional impact follows from the existence of a financial instrument, tax-exempt government bonds, which according to the arguments presented in this paper should not have been issued in the first place.

[19]Note that the taxation system dealt with so far (i.e., interest income taxable under a global income tax, but with tax exemption for government bonds)—although beneficial to higher income groups as explained above—violates the principle of vertical equity to a lesser extent than a system of flat withholding, since the former system would still leave lower income receivers with a higher after-tax rate of return than higher income receivers, whereas the latter system would leave all income levels with the same after-tax rate of return.

Cross exemptions between tiers of government

In applying the situation of progressive marginal rates to a system of multiple tiers of government (as exemplified by the United States), two different aspects are worth emphasizing.

First, assuming that the rationale for granting tax exemptions to state and local bonds from the federal income tax is to provide a subsidy to state and local government borrowing, the subsidy will be inefficient since, as shown above, the loss of federal income tax revenue will be larger than the savings in borrowing costs of the state and local governments issuing the bonds, the difference being equal to the aggregate gains of high income individuals investing in tax-exempt bonds. In this situation, it would be more efficient to repeal the exemption, and to replace it by a direct cash subsidy to state and local governments to cover a fraction of their borrowing costs.

Second, since the loss in federal income tax revenue following the issuance of tax-exempt bonds by any one individual state in principle will be borne by federal taxpayers in all states, a free-rider problem has emerged, with individual states seeking—by issuing more and more tax-exempt bonds—to shift the tax burden to the taxpayers of other states, while at the same time maintaining the benefits of tax-exempt bonds on borrowing costs. This may in turn lead to a larger borrowing volume than would otherwise have been the case.

Both of the above-mentioned cases may add significant economic inefficiencies to the inequities of exempt bond issues.

Compliance: making a virtue of necessity

Particularly relevant for developing countries is the practical administrative argument for exempting interest on government bonds that, because of comparatively weak tax administrations, interest income in general goes largely untaxed. If this is the case, exempting government bonds—or any other interest-bearing debt instruments for that matter—would hardly amount to more than making a virtue of necessity (although government bonds per se are fairly easy to capture in the tax net). As referred to below, a similar type of argument may be applied to developed countries in the case of taxation of international interest flows: if present bilateral administrative arrangements are inadequate to capture fully cross-border interest flows in the tax net, reverting to interest exemptions may be the only way out for governments to attract the necessary financial capital to finance their budgetary deficits in a noninflationary way. Thus, while applying source taxation to government bonds in the form of a final withholding tax might be an efficient way of preventing tax evasion, this might render government bonds unattractive to portfolio investors.

B. International Considerations

With the abolition of exchange and other controls on international capital flows it is now relatively easy for financial assets to be held across borders. The tax policy issues that arise in this context are, however, far more complex than for the domestic case, and only a few key aspects pertaining in particular to tax-exempt bonds will be dealt with here.

At a general level, taxation of savings in the closed economy case may have very different implications from taxation in an open economy in the sense that in a closed economy, since investment equals savings, taxation of the income from all savings would reduce both savings and investment and increase the level of interest.[20] In contrast, in an open economy with integrated financial markets, taxation of the returns to saving in a particular country would typically leave the investment possibilities and the cost of capital faced by the companies in that country unaltered, and thus not affect the level of investment, whereas domestic savings would decline, with the shortfall being covered by capital imports. The level of the (gross) interest rate would be unchanged, and would equal the international equilibrium rate.[21]

As before, however, the relevant question here is the more narrow one of the probable impact of introducing tax-exempt government bonds in a situation where capital income in general is subject to tax. At the outset, it is necessary to distinguish between the two basically different cases of residence-based taxation and source-based taxation, to determine whether international arbitrage equates pre- or posttax rates of return (and assuming at the moment that there are no compliance problems). It should be noted that probably no country adheres strictly to one of these two "pure" principles of taxation, so in practice the picture is more complicated than presented in what follows.

Residence-based taxation

According to the residence principle (which is becoming the international standard of taxation of returns from savings), the country of residence taxes the saver uniformly on his worldwide capital income, regardless of the source of income (domestic or foreign). Assuming that withholding taxes at source under bilateral agreements generally are modest (or nil) and creditable against the tax liability in the residence country, the taxes at home will determine the overall tax level on the saver, independent of the source of the income. In this situation, interest arbitrage will tend to equalize pretax rates of return internationally. As the gross return to capital in equilibrium is equal to the marginal product of capital, it follows that a universal use of the residence principle will result in equalized marginal products of capital across countries, and thus entail an optimal international allocation of investment, maximizing

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[20]The argument here assumes that the substitution effect outweighs the income effect in the determination of household savings.

[21]See OECD (1994, Chapter 7), for a discussion of these issues.

future world output. This is also called a situation of capital export neutrality, since the tax system is neutral with respect to a resident investors choice of location of his investments. Since the tax rates on capital income may vary across countries, capital export neutrality is consistent with varying after-tax rates of return across countries.[22]

If in this situation of integrated financial markets characterized by high capital mobility the government in a particular country starts issuing tax-exempt bonds (and realistically assuming that the exemption can be extended only to residents), interest arbitrage will establish a new equilibrium similar to (1) or (2) above in the domestic case. But since $r_t > r_e$, only domestic or resident investors will invest in the tax-exempt paper: nonresidents will invest in the bond with the highest gross or pretax return, in this case the taxable bond, which will also provide the highest posttax return in the investor's resident country. Consequently, if the borrowing requirements are large relative to the size of the domestic financial market, issuing tax-exempt bonds does not seem to constitute a productive solution, since it almost automatically will restrict the potential group of buyers to domestic investors, only.

Source-based taxation

According to the source principle of taxation all types of income originating in the country are taxed uniformly, regardless of the place of residence of the recipients of the income. It follows that residents of the country are not taxed on their foreign-source income and nonresidents are taxed equally as residents on income originating in the country. This situation is one of capital-import neutrality, since the tax system does not discriminate between domestic and foreign investors making the same investment in the country in question.

In a theoretical environment of global source-based taxation of income from capital, international interest arbitrage would tend to equalize after-tax rates of return on savings or portfolio investments. Since the net return to capital in equilibrium is equal to the consumer's (intertemporal) marginal rate of substitution, it follows that the intertemporal marginal rates of substitution are equated internationally, implying that the international allocation of world savings is optimized. Since tax rates typically would vary across countries, pretax rates of return would not be uniform, implying an inefficient allocation of world investments.

In a situation of uniform after-tax rates of return, nonresidents may also invest in tax-exempt government bonds as long as their rate of return is equal to (or larger than) the after-tax rate of return on bonds subject to a withholding tax at source. Thus, in this case, the potential market for tax-exempt bonds is much larger than in the previous case of residence-based

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[22]For a formal presentation of these concepts and their economic implications (see, for example, Frenkel and Razin (1992, Chapter 12)). Razin et al. (1996) argue that the residence principle is the efficient international tax principle in a world characterized by a perfectly functioning capital market, but that with a less than perfect world capital market, this principle may no longer be efficient.

taxation. At the margin, in the new equilibrium, (1) will again hold (with t representing the withholding rate of tax), so that the government would be indifferent as to the choice between the two debt instruments, and with most of the other results presented above for the purely domestic case still being valid, including concerning the distributional consequences of final withholding rates on interest income. Since, as mentioned, most countries apply mainly some sort of residence-based taxation for income on capital, and since withholding rates at source in many countries have been reduced and in some completely eliminated, the scenario presented here is—albeit of theoretical interest—of less practical relevance than the previous case of residence-based taxation.

More generally, the question of which taxation regime (residence or source) is applied in different countries is key to whether activist use of tax instruments to attract foreign capital (inter alia, to finance government deficits) would be rational or not. If, for example, capital exporting countries tended to use residence-based taxation while capital-importing countries would use mainly source-based taxation, reductions of withholding tax rates among the latter would not benefit the foreign investors, and thus would not affect the incentives to export capital, but would solely affect the allocation of the tax revenue between the two Treasuries in favor of the Treasury of the residence country (unless otherwise modified by tax-sparing arrangements under bilateral treaties—and still assuming no compliance problems). Tax policies by capital-importing countries may be effective in attracting foreign capital only to the extent that tax-sparing clauses are included in bilateral treaties or if capital-exporting countries adopt the source principle and exempt from tax foreign-source income.[23]

Since most countries in practice use a combination of the two principles, the specific effects on investment incentives and on pre- and posttax rates of return on international portfolio investments remain largely an empirical question. Huizinga (1994 and 1996) analyzes the international incidence of withholding taxes on public interest accruing to nonresidents and finds that pretax rates of interest in most cases are somewhat sensitive to the tax withheld at source (most notoriously on Japanese investors who have dominated international portfolio flows). Thus, nonresident interest withholding taxes on public debt increase before-tax interest rates by a fraction of the tax withheld, and thereby reduce the net-of-tax interest cost of public debt. This reflects the fact that foreign taxes paid are creditable, but generally within limits, against tax liabilities on the interest received in the residence countries of the investors. Moreover, the extent of the gross up of withholding taxes has risen in recent years, which reflects the curtailments of foreign tax credits in many countries. Huizinga argues, contrary to the commonly held view, that the limited markup of interest withholding taxes testifies to the fact that international investors by and large do not evade home country taxes on foreign-source interest income. Thus, the main role of international interest withholding taxes on government debt is redistributive, by enabling the borrowing countries to capture part of the

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[23]However, as pointed out by Maugüé (1996, p. 64), in practice, most states that have adopted the principle of source taxation and capital-import neutrality do not exempt from taxes foreign passive investment income such as interest, dividends, or royalties.

tax revenues associated with the interest income. It follows that a harmonization of nonresident interest withholding tax rates may be desirable for reasons of international equity.

To conclude this section, while the normative tax policy prescriptions may be straightforward in a theoretical world of either pure residence taxation or pure source taxation, in the real world the situation is much more complex, for a number of reasons: most countries typically use a combination of the two principles, although the residence principle is becoming the standard; relating to this, most countries treat a given income source, for example, interest, differently, depending on whether the recipient is a resident or not; many countries (probably all) treat different sources of income, including different sources of capital income, differently for tax purposes (and this holds for capital income originating domestically as well as from abroad); most countries treat foreign-source income originating from different countries differently, depending on the nature of their treaty network; and many countries treat, for example, interest income differently, depending on whether it is received by an individual or a corporation. These complicating factors preclude simple and general conclusions with regard to the impact of taxation of income flows in a globalized economy.

IV. CONCLUSIONS

Despite the caveats just mentioned, this note has shown that, generally, there may be large inefficiencies and inequities associated with the issuance by governments of tax-exempt bonds. Consequently, governments should use market-based allocation mechanisms and avoid granting of exemptions to spark investor interest in government debt instruments.

However, domestic as well as international tax evasion and avoidance and tax competition between countries may well force governments to reduce capital income taxation, and have actually in many cases done so, which in turn may have led to suboptimal levels of taxation of capital income. Although the note has shown that there are divergent views on the seriousness of tax avoidance on international flows of capital income, including interest, the only efficient remedy seems to be increased international cooperation in harmonizing tax provisions, and in avoiding double taxation and improving administrative bilateral tax arrangements, in the OECD tradition.

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