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**THE TAX SYSTEM IN JAPAN: A NEED FOR COMPREHENSIVE REFORM**

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by  
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## ABSTRACT/RÉSUMÉ

The Japanese tax system applies relatively low marginal tax rates on most economic activities which, in combination with moderate tax elasticities of the bases, indicate that the overall distortion from the tax system (the excess burden) is probably modest compared with other OECD countries. Recent sizeable reductions in statutory marginal tax rates in both the personal and the corporate tax system have strengthened this feature. However, significant loopholes and non-neutralities are in place in key parts of the tax system, leading to potentially substantial efficiency losses once the tax-to-GDP ratio starts rising to accommodate the restoration of public finances as well as the expenditure needs related to the ageing population. There is thus an immediate need to start broadening the tax base in major parts of the system, including reducing the vast allowances and credits in the personal income tax system; incorporating bonuses in the base for social security contributions; increasing the effective taxation of pensions. Furthermore, the effective taxation of the self-employed could be strengthened by stepping up enforcement and by shifting the base for taxation from income to value added. Property taxes, in particular the inheritance tax, distort prices on property and land and should be made more neutral through base broadening and changes in the rate structure. Another main concern is the non-neutrality caused by differential treatment in the corporate tax system of different investment and financing sources, implying an excessive reliance on debt financing in the corporate sector. With respect to tax administration, this could benefit from the introduction of a taxpayer identification number system. Such a system is applied in most other OECD countries. Finally, local government finances would be stabilised by a shift in the base of local corporate taxation to a value added type tax.

*JEL code:*H2

*Keywords:* taxation, Japan.

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Le système fiscal japonais applique des taux marginaux d'imposition relativement faibles à la plupart des activités économiques, ce qui signifie que, compte tenu de l'élasticité modérée de la matière imposable, les distorsions engendrées par la fiscalité (pression fiscale excessive) sont sans doute globalement modestes par comparaison avec les autres pays de l'OCDE. La réduction importante récemment opérée dans les taux marginaux d'imposition légaux au titre de l'impôt sur le revenu des personnes physiques et de l'impôt sur les sociétés a renforcé cet aspect. Cependant, de sérieuses lacunes et distorsions subsistent dans certains domaines importants du système fiscal, ce qui pourrait entraîner des pertes d'efficacité non négligeables lorsque la pression fiscale recommencera à augmenter en proportion du PIB pour permettre le redressement des finances publiques et pour faire face aux besoins liés au vieillissement de la population. Il apparaît donc nécessaire de commencer sans retard à élargir l'assiette des impôts dans des domaines importants, et notamment de réduire les généreux abattements et crédits qui caractérisent le régime de l'impôt sur le revenu des personnes physiques, d'incorporer les primes dans l'assiette des cotisations de sécurité sociale et d'accroître l'imposition effective des pensions. En outre, l'imposition effective des travailleurs indépendants pourrait être renforcée par une meilleure application des dispositions en vigueur et par l'utilisation de la valeur ajoutée, et non le revenu, comme base d'imposition. Les impôts sur le patrimoine, notamment les droits de succession, introduisent des distorsions dans les prix des biens immobiliers et fonciers ; il y aurait donc lieu de les rendre plus neutres en élargissant leur assiette et en révisant la structure de leurs taux. Il faudrait aussi s'attaquer aux distorsions provoquées par le traitement différencié, dans le régime de l'impôt sur les sociétés, de différentes sources d'investissement et de financement, entraînant un recours excessif au financement par l'emprunt dans le secteur des entreprises. Sur le plan de l'administration des impôts, l'instauration d'un numéro d'identification des contribuables serait sans doute utile. Ce type de système est appliqué dans la plupart des autres pays de l'OCDE. Enfin, le passage à un impôt de type taxe sur la valeur ajoutée comme base de la fiscalité locale permettrait de stabiliser la situation financière des collectivités territoriales.

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*Mots-clés :* imposition, Japon.

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## THE TAX SYSTEM IN JAPAN: A NEED FOR COMPREHENSIVE REFORM

Thomas Dalsgaard and Masaaki Kawagoe<sup>1</sup>

### I. Introduction

1. Unlike at the time of the expansion of the welfare system during the 1970s, Japan cannot expect to rely on high growth rates and favourable demographic developments to finance the projected substantial increase in social security costs in coming decades. Moreover, public debt can be used to smooth taxes over time only to a limited extent, and this room for manoeuvre has already largely been used up. Notwithstanding the ample scope for improving the efficiency of public expenditure, in particular in the areas of public works and administration, Japan thus faces a substantial public finance problem. Rather than being revenue-neutral, any change to the tax system must therefore aim at increasing revenues considerably. To obtain this at minimum costs in terms of distortions to economic activity and without being in conflict with distributional objectives will require improvements in both the efficiency and equity of the tax system.<sup>2</sup> The current fiscal situation of high deficits and increasing government debt adds to the need for fiscal consolidation, while the economic recession has made the starting point for reform more difficult. On the other hand, tax pressure (that is, the ratio of taxes to GDP) in Japan is lower than in most other OECD countries (Figure 1), and the severity of the fiscal situation is by itself promoting broad public acceptance of the need to increase taxes.

#### (Figure 1. Total tax revenues)

2. This paper first describes the major forces shaping tax policy in Japan, then outlines the main statutory and economic features of the tax system as it stands today. Several possibilities for strengthening the system are then discussed, and a number of options for reform are outlined in a concluding section.

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1. Thomas Dalsgaard and Masaaki Kawagoe are economists at the OECD. This paper was originally produced for the *OECD Economic Survey* of Japan published in November 1999 under the authority of the Economic and Development Review Committee. The authors are indebted to Rick Imai, Peter Jarrett, Paul Atkinson, Val Koromzay, Andrew Dean and Flip de Kam for comments and drafting suggestions and to the Japanese authorities for their assistance with obtaining the information and clarifications necessary to prepare the paper. The paper has also benefited from discussions with numerous Japanese experts outside the government, including Professor Hiromitsu Ishi, Professor Toshiaki Tachibanaki and Professor Eiji Tajika. Special thanks go to Chantal Nicq and Brooke Malkin for technical assistance and to Anne Eggimann for secretarial assistance.
  2. Vertical equity refers to taxation according to ability to pay (higher incomes pay more). Horizontal equity is achieved when individuals with the same economic capacity (measured *e.g.* by income) are taxed to the same degree.

## II. Considerations influencing tax policy

### *The costs of ageing require significant tax hikes over the next decade*

3. Dependency ratios<sup>3</sup> in Japan are projected to increase much more rapidly than in any other major country between now and 2025 (Table 1). Besides the implied increase in pension and health care spending, the question is how and to what extent the ageing process is going to influence overall economic activity, notably through decreasing labour supply and household savings and the derived effects on investment and productivity.<sup>4</sup> Although calculations of future fiscal requirements are inherently imprecise and reliant on a number of simplifying assumptions, including the amount of spending cuts, it does not appear unrealistic to assume that Japan's tax-to-GDP ratio (including social security contributions) will have to increase substantially over the next ten years or so in order to ensure long-term fiscal sustainability, defined as stabilising the government debt-to-GDP ratio.<sup>5</sup> As the dependency ratios are projected to continue to rise after 2010 the requirements for tax and contribution increases are likely to be even higher in the very long run -- at least until 2025.

#### (Table 1. Dependency ratios)

4. A number of options are available for designing a sufficient increase in the tax burden as discussed below. One non-recommendable option would be to leave things basically as they are, in which case the risks of a spiralling government debt will increase over time. This would eventually lead to soaring rates of interest (as expectations of a monetary bail-out increase) and a collapse of private-sector confidence as expectations of higher inflation, higher taxes and/or lower public pensions start rising. There is thus little doubt that the economic costs associated with postponing fiscal consolidation will grow over time and eventually become prohibitive. The macroeconomic costs of raising taxes in a timely fashion will be much smaller although probably not insignificant (Box 1). This should also be seen in the light of suggestions put forward by for instance Tachibanaki (1997) that the public sector in general, and tax policy in particular, has had only a small influence on the overall performance of the Japanese economy since the Second World War.

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3. The elderly dependency ratio measures the number of retired people (here defined as those of 65 years of age and above) divided by the working-age population. The total dependency ratio measures the number of retired people plus the number of young people below working age (less than 20 years of age) divided by the population of working age.
  4. These issues have been dealt with intensively in previous OECD publications; see for instance OECD (1997), Leibfritz *et al.* (1995) and Roseveare *et al.* (1996). See also Yashiro *et al.* (1996) for a thorough analysis of Japan's situation.
  5. Chapter III of the 1999 *OECD Economic Survey* of Japan outlines various scenarios for the required increase in taxation.

**Box 1. Economic impact of major tax hikes**

The challenge of raising tax revenues as a percentage of GDP substantially over a relatively short time span (a decade or so) can be viewed in the light of the experiences of other OECD countries. Since 1960, a total of 19 episodes can be identified where OECD countries have raised taxes substantially<sup>1</sup> within a span of 9-12 years (Table 2). Half of these episodes largely took place in the 1960s in the Northern European countries, whereas the Southern European countries went through similar developments in the 1980s. The most recent episode was the tax increase in Greece during 1981-92. To what extent the increasing taxes as such have influenced overall economic performance is difficult to gauge, since cross-country empirical evidence concerning the relationship between taxation and aggregate growth, investment and employment is not always conclusive, and results are generally not robust to changes in underlying assumptions. Some studies find that higher taxes hamper growth via crowding-out of private activity and increased distortions to investment (including in human capital and R&D), savings and work incentives, while others find growth effects to be close to zero.<sup>2</sup> The economic impact of taxation also depends on how taxes are raised (the structure of taxation) and how the revenues are spent. As shown in Table 2, however, countries have generally under-performed in terms of key macroeconomic variables during tax-raising episodes. Average annual growth of GDP has been 0.7 percentage point lower than average OECD growth (with only 3 episodes out of 19 experiencing higher growth rates than the OECD average), and annual private investment growth has been 1.5 percentage points lower on average. Employment creation has also lagged behind: total employment growth fell short of the OECD average in 2/3 of the episodes and private employment creation was even more sub-standard. The average change in the total employment ratio was thus 1.7 percentage points lower than the OECD average and that of private employment was 4 percentage points lower.

**(Table 2. Tax increasing episodes in OECD countries)**

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1. Defined here -- rather arbitrarily -- as an increase in the total tax to GDP ratio of at least 7.5 percentage points.
  2. For a recent survey see Leibfritz *et al.* (1997). This study suggests that, based on a simple cross-country regression analysis, an increase in the tax/GDP ratio of 10 percentage points could lower annual growth rates by around ½ percentage point. However, estimates of this kind are very sensitive to underlying assumptions, and both lower and higher growth effects are found in other studies. Many recent studies generally find long-run growth effects close to zero -- see for instance Mendoza *et al.* (1997), Hendricks (1999), Engen and Skinner (1996), Slemrod (1995), and Milesi-Feretti and Roubini (1998).

5. Japan has accumulated public social security assets to a greater extent than any of the other major economies,<sup>6</sup> but the public pension system, which is partially funded, needs to raise contribution rates in the future. To make matters worse, the assets held by the public pension system -- of which a significant part is invested in public infrastructure projects (through the Fiscal Investment and Loan Programme) -- are often of uncertain value, in part due to their lack of liquidity. Even under fairly optimistic assumptions on income growth, fertility rates and the rate of return on the pension system's assets, the government's

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6. Japan's social security funds held assets equivalent to 48 per cent of GDP in 1997 compared with around 10-15 per cent of GDP in the United States and even less in the other major OECD countries. See also OECD (1998).

official estimates suggest that total pension contributions would have to rise by almost half over the next two decades in order to support currently legislated benefits and restore balance in the pension system.<sup>7</sup>

6. From a revenue-raising perspective, the increase in social security contributions needed to ensure the solvency of the public pension system can be seen as one of several ways to fill the financing gap caused by the ageing population. Another solution would be for the government to provide a larger subsidy to the pension system and finance this by direct or indirect taxes.<sup>8</sup> More radical solutions for improving the financial situation of the pension system would include gradually switching to a defined contribution system in which the risks would be transferred from corporations to employees, or to move to a fully funded, actuarially fair defined benefit system (requiring, however, the transitional generation(s) to pay twice). A pertinent consideration is which instruments, including taxes, could bring about a more balanced burden across generations. According to several analyses, more recent generations are placed at a considerable disadvantage compared with their predecessors.<sup>9</sup>

***The starting point is difficult, and reform requires careful timing***

7. The timing and implementation of a revenue-enhancing reform is another difficult issue for tax policy. The weakness of economic growth has led to a sharp deterioration of government finances since 1990, a development which has been compounded by a series of fiscal packages entailing an accumulated net stimulus of some 8 per cent of GDP. The deficit has thus soared to an unprecedented level of nearly 8 per cent of GDP in 1999, and net government debt has increased almost exponentially since 1992 to reach its current level of around 40 per cent of GDP. This calls for corrective fiscal action to be taken sooner rather than later. Against this concern stand short-term considerations of stabilising domestic demand. As illustrated in Box 2, the effects on real GDP from increasing taxes varies somewhat across instruments, but economic activity is likely to be negatively affected over at least a five-year horizon after the implementation of higher taxes. Moreover, the causes of the recent economic crisis are widely believed not to be rooted in the tax system -- although a very light taxation of land holdings was partly responsible for the hike in land prices until 1990 and triggered the introduction of the so-called land value tax in 1992 (see below). These observations notwithstanding, reform of the tax system should be considered as one of the key elements to lay the foundation for renewed prosperity. This is not only because of the likely adverse impact on confidence of failing to map out concrete plans for ensuring fiscal sustainability, which must inevitably include tax reform, but also because of the risk that future taxation influences current economic activity and equity more than in the past, given the need to increase the overall tax burden substantially.

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7. Takayama (1996) shows how, under more pessimistic assumptions, the contribution rate to the earnings-related pension scheme would have to rise to as much as 40 per cent in 2025 from currently 17 per cent. An even more pessimistic projection is found in Tajika (1998). He projects a contribution rate of nearly 50 per cent in 2020 based on a doubling of the effective ratio of pension beneficiaries (including those who have contributed less than 25 years to the system and survivors) to contributors and keeping the current gross wage replacement ratio (which, however, is unlikely given the shift in indexation in the draft reform, see Chapter III of the 1999 *OECD Economic Survey* of Japan).

8. The 1999 draft pension reform schedules an increase in the central government subsidy to the basic pensions from one-third to one-half by 2004.

9. See for instance OECD (1997), Takayama (1996), and Kotlikoff and Leibfritz (1998).

### Box 2. Short-term economic impact of tax reform

In order to illustrate the short-run impact on the budget and the real economy from various tax increases, a simulation exercise has been carried out on the OECD's macroeconomic model, INTERLINK, for the three major regions (Table 3). In each of three cases (direct personal taxes, social security contributions and indirect taxes) taxes have been raised by 1 per cent of GDP relative to baseline assuming unchanged nominal exchange rates and real interest rates. In all three regions, real GDP and employment are negatively affected by the tax shocks in the short run as higher taxes depress real household disposable income and hence private consumption. Inflation subsequently starts to slow as the result of the weaker activity. To some extent this offsets the negative impact of the fall in household income on consumption and contributes to improving the international competitiveness of the economy and to increase its net exports (given the exchange rate assumption). In the case of a rise in social security contributions and indirect taxes, the deceleration in inflation is slower than for income tax increases, and hence it takes a longer time for the economies to recover. As a result, the improvement in the fiscal balance and the reduction of government debt are on average bigger when direct taxes are raised than when either social contributions or (to a lesser extent) indirect taxes are increased. The simulations suggest that real GDP will recover fairly slowly, with the impact for Japan being negative for five years for direct tax increases and nine years for rises in indirect taxes and social security contributions. The improvement of the budget and reduction of the debt are substantially larger in Japan than in the two other regions for all three cases, and the difference between indirect and direct tax increases on the budget is also smaller. This is mainly due to a different response to the tax shocks in wage/price formation: social contributions do not play as large a role in wage setting as in the United States and the major euro countries (as the incidence is to a larger extent on workers in Japan), and nominal rigidities in prices are also smaller. Of course these simulations are illustrative only, since they do not capture any structural effects from the different tax changes. It is remarkable, however, how much lower the costs of tax increases are in Japan than in Europe or the United States -- measured as the negative effect on real activity compared with the improvement in the government's financial position. Another outcome of the simulation (not shown in the table) is that tax increases in Japan have only small effects on activity in other regions: the short-term impact from a tax increase in Japan on real GDP in the United States and Europe is less than 10 per cent of the impact on Japan's own GDP. A 10 percentage point increase in Japan's tax-to-GDP ratio could thus reduce the level of real GDP in the United States and Europe by 0.3-0.6 per cent depending on the instrument used. Over the medium term the other regions could even benefit as their terms of trade improve.

#### (Table 3. Model simulations of tax changes)

Another consideration related to timing is that tax changes may have different real economic effects according to whether they are (perceived as) permanent or transitory. Moreover, the private sector may respond to tax changes as they are announced rather than at implementation. Watanabe *et al.* (1999) examined the response of consumer spending to tax changes over the 1975-98 period and found that the effects of permanent changes far exceeded those of transitory changes. They also found that the bulk of consumers' response came at the time of implementation of the tax change.

### *Devolution of fiscal autonomy is a high priority reform area*

8. Another important factor influencing tax policy is the intended delegation of fiscal autonomy to local governments and the way in which their expenditures are financed. In general, an efficient financial architecture relating national and local governments should ensure that local governments have adequate incentives for pursuing strict expenditure and tax discipline and that their revenues are not excessively volatile. Although there is room for improvement, Japan does not stand out as having particularly

inappropriate financing arrangements between the national and local governments.<sup>10</sup> However, with respect to the volatility of revenues, there is a problem of having prefectures relying excessively on one of the most volatile tax component of all, namely corporate income taxes.

### III. Main features of the tax system<sup>11</sup>

#### *Separate income taxation and narrow bases*

9. The current tax system has been shaped by a history of fairly drastic, although gradual, changes to the tax structure since World War II: from the *comprehensive income tax system* designed by Dr. Carl S. Shoup in the late 1940s<sup>12</sup>, to an approximation of an *expenditure tax system* (which practically exempted savings from taxation) and further on to today's system which can probably best be described as a hybrid of the two. Reforms over the past decade have not only aimed at improving efficiency and equity, but have to a large extent been reactions to cyclical developments and the fiscal challenges posed by the ageing of the population. The reform strategy has relied on achieving an appropriate mix of taxation of income, consumption and property. In some respects, the reforms have contributed to improving the tax system -- notably by introducing a value-added tax and reducing marginal tax rates for individuals and corporations. On the other hand, the base for personal income taxation has been substantially narrowed, and many of the tax changes in recent years have been temporary, thereby diluting their effectiveness both from a structural and demand-management perspective.

10. The personal income tax system identifies ten different kinds of income that are taxed at different effective rates. Japan generally applies marginal personal rates for top income earners close to the level found in the United States and somewhat below rates in Germany and France (Figure 2). Retirement and capital income are taxed separately from other types of personal income at lower rates.<sup>13</sup> A large range of allowances imply that the base for personal income taxation is narrow, and income brackets are also very wide. The corporate tax rate has recently been reduced from 50 to 41 per cent and has thus come down to a level not far from those of many other OECD countries. This has clearly made the corporate tax system more robust to potential base erosion. Japan applies a modified classical system for dividend payments, whereby tax is levied both at the corporate and personal levels and a partial dividend tax credit is given in the personal income tax. The VAT system has few exempted goods and services compared with many other OECD countries, but the base is eroded by a tax-exempted sales threshold of 30 million yen, far exceeding those of other OECD countries and possibly also by a so-called simplified regime for small firms.<sup>14</sup> The standard VAT rate of 5 per cent is the lowest in the OECD among nations with a VAT.

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10. The intra-governmental transfer system is described in more detail in Chapter III of the 1999 *OECD Economic Survey* of Japan.

11. Annex 1 gives a more detailed exposition of the key statutory features of the tax system.

12. In a comprehensive system all income is taxed according to the same schedule -- following the so-called Schantz-Haig-Simons principle.

13. The system thus bears some resemblance with the dual tax systems of the Nordic countries, where capital income (including corporate income) is taxed at a low flat rate and wage income is taxed in a separate progressive schedule. See Sørensen (1998).

14. The simplified regime allows firms with taxable sales below 200 million yen to be taxed at a certain percentage of their gross sales rather than their actual value added. The implied value added may to some extent underestimate the true base (*i.e.* the actual value added), see Ishi (1998), but the implied and taxed values were brought closer together following the adjustment of the implied values in 1997.

**(Figure 2. Highest all-in tax rates for top income earners)*****Taxes are high on capital and low on consumption***

11. Japan has traditionally levied high taxes on capital (primarily property and corporate income) and low taxes on consumption. This is reflected in the actual mix of tax revenues compared with other countries (Figure 3, Panel A). With the recent reductions in corporate taxes and given likely future increases in social security contributions and consumption taxation (see below), this pattern may change somewhat over the coming years. Personal income taxes have a small weight in the tax mix despite relatively high statutory rates (until the rate cut in 1999 to 50 per cent the top marginal rate stood at 65 per cent) -- the main explanation being wide brackets and generous allowances. The latter have even gained in importance over the past decade and have reached a level where some 15 to 20 per cent of all employment income earners do not pay income tax at all. Germany is the only country among the major seven that has a higher tax exempted threshold than Japan, but since social security contributions are also much higher, more revenues are raised from lower income groups in that country.

**(Figure 3. Tax mix in major OECD countries)**

12. A remarkable shift has taken place since 1980 in the Japanese tax structure with a sharp increase in the share of social security contributions and a similar reduction in corporate and individual income tax shares (Figure 3, Panel B). Japan is thus the country among the major seven that has seen the biggest change in its tax mix. The share of consumption taxes has not changed despite the introduction of the VAT in 1989 and the initial low share. The share of revenues from property taxes, including the inheritance tax, is not particularly small in Japan and has increased somewhat since 1980 thanks especially to soaring land prices during the "bubble" period.

**Box 3. Comparison of tax to GDP ratios**

Making international comparisons of the tax mix is inherently difficult due to differences in the composition of GDP; the relative role of tax and transfer systems in providing a given benefit to individuals or corporations; the use of regulatory instruments as opposed to taxes; the tax treatment of public transfers; and the way the self-employed are organised and how they are recorded in the tax accounts. Two features are potentially relevant when comparing Japan with other countries. One is the relatively low indirect tax burden in Japan. Since GDP, in contrast with national income, includes indirect taxes, Japan's tax-to-GDP ratio tends to be biased upwards compared with countries with higher indirect taxes (all else being equal). However, the impact is small since cross-country differences in tax levels are almost invariant to whether taxes are stated relative to national income or GDP.<sup>1</sup> The other feature is the organisation of the self-employed. The corporate tax share is biased upwards by the previously existing incentives for the self-employed to incorporate themselves, forming so-called "quasi-corporations", or (from 1974) to be taxed as corporations under the "deemed corporation" scheme. The favourable tax treatment of the self-employed was abolished as of 1993 to make the personal income tax system more equitable, but some compensation was given to the self-employed by raising their allowance. The impact on the corporate tax share from these arrangements compared with other countries where the self-employed are taxed as individuals is not entirely clear but is likely to be small. For instance, the income tax payments from the 3 million individual business income tax payers amounted to less than 1 trillion yen or 0.2 per cent of GDP in 1996 (National Tax Administration, 1997). Assuming the incorporated self-employed pay the same or even less taxes, their total tax bill should be smaller since they constitute only around 1 million corporations (Ishi, 1993).

1. See for instance Ministry of Finance (1999a).

13. Another way to compare tax mixes between countries is to look at effective tax rates, *i.e.* how much revenue is actually collected from various tax bases. The advantage of using actual tax payments as opposed to statutory rates is that they capture the overall effects from rates and tax reliefs as well as from compliance, which is not reflected in the statutory rates. Moreover, they provide a more accurate measure of the average tax burden on different bases than simple tax-to-GDP ratios. The problem is that the definition and measurement of tax bases corresponding to the different types of revenues are often severely flawed.<sup>15</sup> Another problem is how to interpret data for effective tax rates, since these measure neither distortions (marginal effects) nor the incidence of the tax, *i.e.* who finally bears the burden. Most of these *caveats* relate to measuring effective rates on capital and corporations, however, and it is generally found that the methodology is better suited to measuring effective tax rates on labour and consumption (Figure 4). Japan appears to apply fairly low rates on both these bases compared with other major countries. On the other hand, the ratio of corporate tax payments to GDP is higher in Japan than in any other OECD country, except for Luxembourg. Tajika and Yui (1997) also found evidence -- based on balance sheet information for the corporate sector -- that effective corporate tax rates in Japan have significantly exceeded those in the United States since the early 1980s.<sup>16</sup> By 1993, the last year covered by the study, the rate was 45 per cent in Japan against 35 per cent in the United States. However, the cuts in Japanese corporate tax rates in FY 1998 and FY 1999 are likely to have narrowed the gap in effective corporate rates significantly.

**(Figure 4. Average effective tax rates)**

***Overall incentives to work, save and invest are not heavily distorted***

14. The generous allowances in the personal income tax system -- in combination with the wide income tax brackets -- imply that average personal tax rates are generally low in Japan. Indeed, for an average production worker the average tax wedge has been fairly stable and lower than in the other major economies since 1980 (Figure 5, Panel A). This also applies when taking into account the effect from indirect taxes on the price level and thus the real disposable income of the employee (Figure 5, Panel B). The tax reductions of FY 1998 and FY 1999 have left average tax rates even lower. Taxpayers with an annual income below 12 million yen -- which is around 95 per cent of all personal taxpayers -- face average tax rates, including social security contributions, below 20 per cent (Ministry of Finance, 1999b). Marginal tax wedges, *i.e.* the difference between an increase in the cost to employers and the additional take home pay of the employee, are also low in Japan for most family and income circumstances (Figure 6).<sup>17</sup>

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15. Following Mendoza *et al.* (1994), a number of studies have tried to measure effective tax rates using aggregate revenue statistics and national accounts data to approximate the relevant tax bases. However, since aggregate data are not well suited for dealing with self-employment income, depreciation, interest, cross-border returns and the treatment of losses in the corporate sector, such measures can only give a rough indication of the level of effective taxation, and there is a non-negligible risk of these measures being severely misleading.

16. This measure of effective rates is based on income and tax data for individual corporations, thereby circumventing many of the *caveats* related to using aggregated data. For more details see Tajika and Yui (1993 and 1997).

17. Korea is the only OECD country with generally lower tax wedges than Japan.

**(Figure 5. Average tax wedge for a production worker)  
(Figure 6. Marginal tax wedges on labour income)**

15. The total labour market distortion caused by taxation is given by the combination of marginal tax rates and labour supply elasticities. Since empirical estimates generally tend to find low elasticities (Box 4), the tax-induced distortion to the Japanese labour market is probably low in most income segments. However, for certain groups, in particular second earners in households, implied marginal rates can be significant (due to phasing-out of dependent spouse deductions and phasing-in of social security contributions). Since the labour supply elasticity of this group also tends to be high, it cannot be ruled out that a substantial distortion exists with respect to the labour market participation decision of these persons. The problem of disincentives for secondary earners' labour market participation is not, however, unique to Japan but exists in many OECD countries.

**Box 4. Labour supply elasticities**

The total labour market distortion is given by the combination of tax wedges and elasticities of labour demand and supply.<sup>1</sup> These elasticities are shaped by a host of factors, including the wage-bargaining framework, labour market policies and the degree of competition in product markets. Most cross-country studies find that labour supply elasticities are low and often insignificant for primary earners, whereas they tend to gain in importance for secondary household earners, typically married women. This pattern also appears to exist in Japan, although evidence is scarce (see Tachibanaki, 1997). One composite measure of the interaction of labour supply and demand elasticities is the extent to which tax increases get shifted on to wages (and thus push up unemployment). Tyrväinen (1995) finds evidence that the extent of tax shifting in Japan is higher than in the United States, but lower than in Germany. Japan is thus in an intermediate position together with France and Italy. However, according to Alesina and Perotti (1997), unit labour costs are virtually unaffected by tax increases (direct tax plus social security contributions) in countries with low labour market centralisation, including Japan.

A particular problem is the labour market participation decision by dependent spouses. The phasing-out of the spousal allowances as well as the introduction of pension contributions when spouses earn more than 1.3 million yen annually creates high marginal tax rates for the household when the spouse enters the labour market or decides to increase working hours. The elasticity of Japanese married women with respect to own wages and family income is around 1.1 (much higher than what is normally found for primary earners) and -0.2, respectively. These elasticities are roughly similar in magnitude to estimates found for France and Germany, but higher than those found in the United States (Tachibanaki, 1997).

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1. An increase in after-tax wage income will have both a substitution effect, which raises labour supply, and an income effect, which lowers it. The relevant labour supply response for measuring distortions to economic decisions is the substitution effect (the so-called compensated labour supply elasticity), which indicates the impact of marginal taxes on the choice between labour supply (and thereby the consumption of goods) and leisure. The income effect, on the other hand, reflects the effects of average taxes on disposable income.

16. The overall low marginal tax rates also suggest that the return to investment in human capital is not unduly distorted by taxes in Japan. Another notable feature is that the progressivity of the tax schedule unfolds relatively smoothly compared with many other countries (Figure 6), implying a virtual absence of problems related to unemployment and poverty traps -- which are often caused by abrupt changes in tax rates along the income schedule. A final aspect related to marginal income tax rates is that Japan, despite its earnings test for elderly workers receiving pensions, is in no sense an outlier compared with other major countries with respect to the implicit taxation of elderly workers for staying another year on the labour market (Table 4). Overall, it seems safe to conclude that the tax system, unlike those in many other OECD countries, does not pose major obstacles to a high utilisation of labour force potential. This conclusion is underpinned by the fact that Japan has one of the highest labour market participation ratios in the OECD,

although this is due to a combination of a very high male participation and a female participation ratio closer to the OECD average. Participation rates of the elderly (55-64 years old) are also relatively high and hence so is the average effective retirement age.

**(Table 4. Average implicit tax rates on continued work due to old-age pension systems)**

*Non-neutralities in corporate finance, private savings and the land and property market*

17. Incentives to save and invest in physical capital also benefit from the low overall level of taxation. To what extent the tax burdens for corporations and individuals influence aggregate investment levels is a question of (a) how much taxation changes the cost of capital and (b) to what degree the cost of capital determines investment. According to Japanese evidence, neither of these two linkages is particularly strong, and hence there is no reason to believe that taxation as such has had a strong influence on the aggregate level of private investment in Japan.<sup>18</sup>

18. The tax system is neutral towards corporate financing decisions if a given pre-tax flow of corporate profits produces the same after-tax income in the hands of the ultimate investor, whether the return takes the form of interest payments, dividends or capital gains. This requires that the combined corporate and personal tax burden is equal across financing instruments. Most OECD tax systems favour debt finance since corporate interest payments -- as opposed to dividends -- are deductible from the corporate tax base and because effective tax rates on personal interest income are often low. This is also the case for Japan, where interest income is taxed at a final withholding rate of 20 per cent, capital gains generally at 26 per cent and dividends are taxed in a "mixed" fashion: large dividend payments are taxed as part of total personal income and smaller payments are taxed at withholding rates of 20 or 35 per cent depending on the size of the payments.<sup>19</sup> The overall marginal effective tax wedge<sup>20</sup> across corporate

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18. Tachibanaki (1997) surveys a large amount of empirical evidence for Japan on both issues. This evidence suggests that the corporate tax system, including preferences given to corporations in the form of tax-free reserves, accelerated depreciation and investment tax credits, accounts for only a modest part of aggregate changes in the user cost of capital. When taking into account the effects from the personal tax system, some studies find a fairly low tax wedge for Japan between the pre-tax return to investment and the post-tax return to the saver; however, this wedge increased significantly after the strengthening of dividend and interest taxation in the late 1980s. Moreover, most evidence points to capacity considerations, rather than the cost of capital, as the dominating influence on investment (i.e. output accelerator effects). These studies allow Tachibanaki to conclude that "a large number of studies, with a few exceptions, suggest that the effect of various tax policies on investment was very minor". The Economic Planning Agency (1998) likewise concludes that even a significant cut in corporate tax rates would imply only a small change in the cost of capital. These findings largely correspond to the bulk of evidence from other countries, some of which is surveyed in Leibfritz *et al.* (1997).

19. The tax credit system for dividends implies that dividends are taxed at a maximum rate of 40 per cent for incomes below 10 million yen.

20. The marginal effective tax wedge reflects the required pre-tax rate of return an investment has to earn in order to provide a personal investor with the same after-tax return as a bank deposit earning a pre-tax 5 per cent real rate of interest. The estimates shown in Table 5 are based on the King-Fullerton methodology -- see Gordon and Tchilinguirian (1998) and OECD (1991). The results should be interpreted with caution since for some investment and financing decisions the results generated may not adequately reflect incentives and the effects of taxation of these incentives. The marginal investor, for instance, may not be a fully complying individual (as assumed here) but rather a *de facto* tax-exempt entity. Other simplifying assumptions are also applied, including: perfect competition, a rudimentary treatment of financial

financing and investment instruments is relatively high as is the standard deviation, which is a rough measure of non-neutrality (Table 5).<sup>21</sup> Although these numbers should be interpreted with caution, they indicate that distortions to corporate financial decisions are at a level with those of France and Canada and considerably higher than in more neutral systems, such as those of the United Kingdom and Germany. In particular, the numbers suggest that debt financing in Japan enjoys an even bigger tax advantage over equity and retained earnings than what is the case in the other major countries. With respect to investment, buildings are taxed at relatively high marginal rates, which is mainly due to a long depreciation period (65 years against 39 years in the United States). The calculations do not take into account special depreciation measures in the countries shown, such as the two accelerated depreciation schemes in Japan (additional depreciation and increased initial depreciation).<sup>22</sup>

**(Table 5. Marginal effective tax wedges in manufacturing in major OECD countries)**

19. Since Japan, like many other OECD countries, taxes capital gains less heavily than dividends, corporations typically have an incentive to retain their earnings. This tendency is reinforced by the mixed taxation of dividends which encourages firms to limit their dividend payments to individual shareholders. This, in turn, could hamper the reallocation of funds from mature companies to their more innovative and fast growing counterparts, although it should be stressed that dividend payments between domestic corporations are tax exempted. The mixed taxation of dividends also implies inequities on the side of the investor, since: within the same fiscal year, an individual taxpayer may not pay the same tax rate on dividend income deriving from different companies (conflicting with neutrality); and two taxpayers receiving the same total amount of dividend income may not be taxed at the same rate (conflicting with horizontal equity).

20. Savings incentives are given through several channels in the tax system. *First*, personal capital income is taxed at relatively low effective rates. Even though dividends are taxed more heavily than interest income and capital gains owing to double taxation, the tax wedge on dividends is not excessively high compared with other major countries (Table 6). The low overall taxation of savings should, however, be viewed in light of the significant changes made over the past decade to increase taxation of personal capital income from virtually no taxation at all. *Second*, privileges are given to the savings of the elderly and to those of workers saving for housing, which are tax exempt up to certain amounts. *Third*, and more importantly, pension savings are given preferential treatment in basically three ways: contributions for the mandatory schemes are exempted as are contributions for individual voluntary pension plans and life insurance (up to a certain amount); accumulated earnings in pension funds are tax exempt;<sup>23</sup> and benefits are taxed very lightly, thanks to significant tax reliefs for pension payments, whether these are lump-sum or annuities (see Annex I for details). The tax treatment at each of the stages in pension savings (contributions, fund earnings and distribution of benefits) can be summarised as “near

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structures and the intermediation process, absence of uncertainty, perfect loss offsetting and capital irreversibility.

21. A totally neutral system would apply the same marginal rates across all types of financing and investment thereby leaving the standard deviation of tax wedges at zero. Tachibanaki (1997) also finds evidence of strong non-neutralities based on marginal effective tax rate analysis.
22. As explained below, however, these measures are fairly limited (amounting to around 0.1-0.2 per cent of GDP) and are likely to have only a very small effect on the cost of capital and aggregate investment in Japan. See also Tachibanaki (1997).
23. Until last year a 1 per cent tax was levied on the value of qualified plan assets. This tax has been abolished temporarily.

exempt”-exempt-“near exempt” (E\*EE\*) compared with taxed-lightly taxed-exempt (TT\*E) on ordinary savings, where E\* indicates near zero taxation and T\* low taxation of capital income.<sup>24</sup>

**(Table 6. Dimensions of capital taxation in selected OECD countries)**

21. Most other OECD countries also have tax-privileged arrangements for pension savings, although the amount of tax relief given varies considerably (Table 7). A few countries tax earnings as they accumulate (Australia, Denmark, Luxembourg, New Zealand and Sweden). Two countries which have recently reformed their taxation of pensions, Australia and New Zealand, have both moved toward less generous systems, at least partly with the aim of raising revenue, but also with the aim of improving the efficiency and equity of the tax system as a whole. New Zealand has taken the boldest steps, making all contributions taxable, taxing all fund income (with no allowance for inflation) and then leaving all pensions untaxed (TTE). This puts pension savings on the same basis as savings in an ordinary interest-bearing account.

**(Table 7. Tax treatment of pensions in major OECD countries)**

22. As for most other countries, there is no solid evidence for Japan that preferential treatment of savings, including pension savings, leads to higher aggregate levels of private savings, not to mention national savings (taking into account the loss of tax revenue from preferential regimes which, *inter alia*, lower public savings). Annex 2 explores the links between taxation and savings in more detail. One robust conclusion, however, is that tax incentives have an effect on the *composition* of savings -- in the case of Japan with a bias towards pension savings and housing as against investment in equities.

23. Property and inheritance taxes are other areas of significant tax-induced non-neutralities. The tax system increases the attractiveness of land as a long-term investment tool, thereby discouraging an efficient use of land. This distortion is most clearly observed in the case of farmland in urban areas. It is mainly caused by two factors. The first is under-assessment of land value at the time of inheritance. The ratio of the valuation price to market price<sup>25</sup> is subject to some debate but was believed to be around 50 to 60 per cent up to the end of the 1980s, the “bubble” period (Nishimura *et al.*, 1999), and has probably only increased slightly since. The second is postponement of inheritance tax payments by farmers: if their inheritors continue to use the land as farmland for more than 20 years, they are allowed, in effect, not to pay the inheritance tax. These measures strengthen landowners’ incentives to hold land and raise reservation prices accordingly (Box 5). Two important measures were taken in the 1992 land tax reform: it was decided to try to increase the land valuation for inheritance tax purposes to 80 per cent of the market price; and the requirements for postponement of inheritance tax payments by farmers were tightened.<sup>26</sup>

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24. Annex 2 gives a more detailed exposition of different ways of taxing savings.

25. There are four prices pertaining to a piece of land. The first is a market value observed in transactions. However, it is difficult to ascertain precisely what this is, because land is a heterogeneous commodity, each piece of land having its own features, and because liquidity in the market is low. The second is an official price (*koji chika*) announced by the National Land Agency once a year based on experts’ assessment. The third is a value for the purpose of levying inheritance tax. Finally, a value for imposing property tax is also available.

26. However, the area designated as “productive green land” (*seisan ryokuchi*), a requirement for deferred payment of inheritance tax, is still quite large -- about 40 per cent of total agricultural land located in urban areas.

Even if these measures and the falling land prices since 1990 have alleviated the seriousness of the distortion, the current tax system still supports high reservation prices.<sup>27</sup>

#### Box 5. Reservation price of landholders and the tax system

The effects of the tax system on landholders' incentives are shown in the following examples.<sup>1</sup> Note that only "marginal" choices available to a landowner with sizeable assets are considered here: in what form should he leave his "marginal" land worth 100 million yen to his descendants? Here it is assumed that the number of descendants is always one per generation, just to simplify the story.

##### Example 1:

Consider the choice between land and a financial asset, say a bank deposit, in the form of an inheritance. The first strategy is to keep the land until death, leaving it to the child tomorrow. The second is to sell the land today, thereby leaving a bank deposit of 100 million yen. The top panel of Table 8 shows to what extent under-assessment and high marginal tax rate increase the landowner's reservation price. As Case 2 shows, if the assessment is half the market price, as was in the "bubble" period, he is not willing to sell his land until the offer price is more than twice the market price unless he faces liquidity needs. More appropriate assessment (Case 1) and a lower tax rate (Case 3) are helpful in mitigating the problem.

##### Example 2:

The above problem could be worse in the case of a farmer in a metropolitan area. Consider his choices to leave his land to his child and further to his grandchild. Assuming that the first inheritance by the child and second one by the grandchild will take place 25 and 50 years later, respectively. Three strategies are available to him. First, keep the land as farmland for 50 years, thereby enabling his child not to pay inheritance tax. Second, leave the land to the descendants, but change its use. Third, sell it today and leave bank deposits to the descendants. Assume that rents from agricultural or other land use are negligible as is the acquisition price of land. The interest rate on the deposit and appreciation of land are assumed to be the same, *i.e.* the landowner is indifferent between the two in terms of the returns. Note that a part of the asset is assumed to be sold to pay inheritance taxes and that the payments are deductible from capital gains. After-tax asset values 50 years later and reservation prices are reported in the middle panel of Table 8. Comparing the three strategies, it is worth noting that agricultural use could provide a valuable tax shelter to long-term holding: the reservation price was pushed up to over 7 (Case 5). However, this could be also alleviated jointly by more appropriate assessment and a lower tax rate (Case 6).

##### Example 3:

The settings are the same as the previous example, except that a property tax and a city planning tax are introduced here. Case 8 may be close to the "bubble" period when the underassessment for the property tax is believed to have been about 70 per cent. An attempt to reduce it to 30 per cent should be helpful to solve the problem, but not so effective as in the case of inheritance tax.

#### (Table 8. Tax effects on landholders' reservation prices)

1. The examples below heavily depend on Kanemoto (1994).

27. Nishimura *et al.* (1999) estimates that the "tax shelter" value of farmland reached a peak in 1991 of nearly 3½ times the market price (implying a reservation price of 4½ times the market price). The tax shelter value has since dropped sharply due to falling land prices and the tax changes described in the main text, but was still estimated at some 130 per cent in 1997 (implying a reservation price for farmers of 2.3 times

24. Under-utilisation of land is facilitated by low effective rates of property and city planning taxes. Although the standard statutory rate of property tax is 1.4 per cent, the effective rate -- which takes into account under-valuation of the land and property -- is estimated to have ranged between 0.1 and 0.3 per cent over the past couple of decades with a movement towards the high end of the interval in recent years (Figure 7). As in the case of inheritance tax, it was decided to raise the land evaluation for property tax in the 1992 reform to 70 per cent of the market value. The capital gains tax is also likely to be responsible for under-utilisation of land through two channels. First, frequent changes in tax rates might discourage the disposal of land (Table 9) (Yamazaki and Idee, 1997). Second, the structure of the tax schedule encourages long-term holding since the rate comes down in steps as the holding period increases, leaving long-term gains taxed at only half the rate applied to short-term gains. However, fairly generous deductions<sup>28</sup> alleviate to some extent the adverse effect on transactions posed by the relatively high tax rates on short-term capital gains.

**(Figure 7. Effective property tax rates)**  
**(Table 9. Changes in capital gains tax rates for individuals)**

25. The tax-induced incentive to hold land implies, in combination with transaction costs of up to 2 per cent of the transaction value (Kanemoto, 1997), a low frequency of land and housing transactions.<sup>29</sup> The government has been promoting securitisation in order to stimulate the real estate market. For this purpose, the registration tax was reduced in 1998 and once again in 1999. Another factor contributing to low liquidity is the treatment of capital gains tax: the tax is imposed when a person sells a house and buys another even if no net gain is realised. This treatment is rather rare in OECD Member countries: only Hungary follows Japan in not allowing an exemption in these cases. A scheme for capital loss carry-over for real estate was established in 1998 to alleviate the problem and was expanded in 1999 to allow joint use with the tax credit on mortgage loans.

### *Tax effects on tenure choice are limited*

26. There are a number of favourable tax treatments for housing investment such as reduced property and real estate acquisition taxes if houses satisfy certain requirements. However, these tax privileges do not seem to have as large an impact on housing investment as the low interest rate loans provided by the Housing Loan Corporation; these have been 2 to 3 percentage points lower than market rates.<sup>30</sup> The tax system also treats owner-occupied houses more favourably than rental houses through various measures such as the exemption of imputed rents and the tax credit given for part of the outstanding amount of mortgage loans. On the other hand, rental housing enjoys other advantages such as the deductibility of

the market value). The tax shelter is much lower for non-farmers, i.e. some 20 per cent in 1997. Empirical evidence suggests that the tax shelter value is a significant cause of high residential prices.

28. For instance, there is a 30 million yen special deduction for the transfer of residential property.

29. Sales of second-hand houses amount to 100 000 to 150 000 units (owner-occupied houses only) per year in Japan, while the corresponding number (all types of houses) reaches about 4 million in the United States (Ministry of Construction, 1998a).

30. Iwata *et al.* (1987) estimated the effects of various measures on the cost of capital and found that the HLC loans reduced it by 0.6 to 0.7 percentage point, whereas the reduction of the property tax had a much smaller effect, around 0.1 percentage point.

interest payments and depreciation from income.<sup>31</sup> These measures seem to offset each other, resulting in small differences in the cost of capital between rental and owner-occupied housing (Iwata, 1997). However, wealthy people enjoy lower costs of capital of rental house construction, as the combination of the deductibility of interest payments and the tax shelter provided by the capital gains tax in the case of sales at later dates could save a further ¾ to 2 percentage points on the cost of capital.<sup>32</sup> Overall, tax effects on the tenure choice are limited compared with countries where interest payments on housing loans are deductible from income. Although the introduction of such a measure may reduce significantly the costs of capital of owner-occupied houses, the benefits would probably be concentrated mainly on wealthy households.<sup>33</sup> Equity considerations thus seem to explain the government's decision in 1999 to temporarily expand the existing tax credit scheme, rather than introducing deductibility of interest expenditure.

***Small distributional effects from taxes and transfer but pre-tax distribution is also even***

27. The salient egalitarian features in Japanese society are reflected in a relatively even income distribution both before and after taxes and transfers (Table 10).<sup>34</sup> Although the distribution in both pre- and post-tax terms has widened a bit since the early 1980s, it is still among the most equitable in the OECD, apart from the Nordic countries and the Netherlands. Since the pre-tax income distribution is already fairly compressed, the total amount of redistribution is relatively low: post-tax and transfer income is only 22 per cent more equally distributed than its pre-tax and transfer counterpart. This amount of redistribution is roughly the same as that of the United States, but lower than that of Germany and Italy (30-35 per cent). It is much below Sweden and other small European countries, where the redistributive impact of taxes and transfers lowers inequality by around half. The income measure used for calculating the Gini coefficients does not include fringe benefits. These tend to increase with income and hence raise inequality. More importantly, wealth is not included in the distributional measures presented here. The “bubble” economy years spurred a debate about this aspect of distribution (which also formed part of the decision to raise taxes on land holdings in 1992). For instance, one study found that adding estimated imputed rent from land to personal income would have raised measured inequality in pre-tax income by 16 per cent (based on 1990 numbers).<sup>35</sup> The fall in equity and land prices in recent years has presumably attenuated inequality in the distribution of wealth.

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31. Accelerated depreciation is also allowed for certain so-called “quality rental houses” (*yuryo chintai jutaku seido*).

32. Other tax factors could affect tenure choice as well. The inheritance tax treats rental houses more favourably than owner-occupied houses through lower asset evaluations, which are likely to be worth a decline in costs of capital by a few percentage points. Salary earners can also reduce tax liabilities by registering losses of running a rental business. These factors as well as the lower costs of capital of rental houses for wealthy households are believed to account for part of the construction boom of rental houses in metropolitan areas in the late 1980s. However, this tax advantage was reduced in 1992: the tax code was revised so that only losses incurred on buildings have since been included in the calculation of income.

33. Iwata (1997) estimated that the deductibility of interest and property tax payments from income would cut the costs of capital by 20-25 per cent and that households with an annual income of more than 15 million yen would enjoy the most sizeable benefits.

34. Here, income inequality is measured by the so-called Gini coefficient. The higher the coefficient, the less equal the income distribution. Income includes wage earnings, capital income and self-employment income.

35. See Tachibanaki (1997). The same study also found that treating all income, including imputed rent, under a comprehensive income tax system would increase the redistributive effect of taxes by 50 per cent.

**(Table 10. Redistribution through taxes and transfers)**

28. Looking at various measures of *statutory progressivity*<sup>36</sup> a somewhat mixed picture emerges. Measured by the distance between the average tax rate for an average production worker (APW) and the top statutory rate of 50 per cent, Japan has by far the most progressive system of the major economies (Figure 8, Panel A). This measure, however, does not take into account the distance between the APW and the point where the top rate sets in, which is particularly extended in Japan (where the top rate only starts to kick in at four times an APW). When measured at the margin, *i.e.* how much net income increases when gross labour costs rise by 1 per cent, progressivity in Japan appears to be relatively low (Figure 8, Panel B). This is primarily a reflection of the smoothly progressing marginal rates (see Figure 6). In short, the statutory system applies low progressivity to income earners making small incremental steps up the income ladder, but potentially a very high progressivity for individuals making big jumps on the earnings scale.<sup>37</sup>

**(Figure 8. Overall and marginal progressivity in major OECD countries)**

29. *Actual progressivity* encompasses the effects of differences in take-up rates of tax allowances and tax credits across different income groups. Tax statistics illustrate how the income tax system is progressing almost linearly, except for the top and bottom end of the income curve (Figure 9, Panel A).<sup>38</sup> The tax statistics do not, however, include the effects of tax planning -- the shifting of income into low taxed bases -- or outright evasion. These effects are to some extent captured by income and tax payments reported by households in survey data. Although not directly comparable with the tax statistics, these data seem to reveal a slightly lower progressivity in direct tax payments (Figure 9, Panel B). Including social security contributions and implicit VAT payments,<sup>39</sup> which are both near-proportional or slightly regressive, the progressivity of the total tax burden diminishes further.

**(Figure 9. Actual tax payments by income group)**

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36. The statutory progressivity is based on OECD's tax equations for an average production worker. A few limitations to measuring the progressiveness of the tax system based on these equations should be borne in mind. First, take-up rates for deductions and exemptions not included in the tax equations tend to increase with income (as does income in kind, *i.e.* fringe benefits, which are also not covered). Second, large groups of taxpayers do not pay social security contributions in many countries (the self-employed, retirees, benefit recipients).
37. However, persons with highly fluctuating incomes can apply an averaging provision which mitigates the progressivity.
38. This measures national income tax payments and employment income only. The reason why the low employment income group faces a relative high tax rate is that many individuals in this group have other sources of personal income. Unfortunately, the tax statistics encompass only the national income tax. However, since local income taxes are levied on the same base, the distributional profile is likely to be close to that of the national tax. Social security contributions are not included.
39. The implicit VAT payments are calculated as the VAT rate multiplied by total consumption expenditure after deduction of expenditure on housing rent, medical care and education.

*Tax expenditures are moderately sized*

30. Tax expenditures can be defined broadly in terms of departures from a “normal” tax structure. The precise definition differs somewhat among countries according to what is perceived as a “normal” structure. In Japan, the bulk of allowances, including the tax relief for retirement income, are defined as “normal” rather than “special”, and hence tax expenditures are rather limited. For FY 1999, the total revenue loss due to so-called special measures amounts to 2 trillion yen, or 0.4 per cent of GDP (Table 11). Most tax expenditures in the personal system arise from the tax credit for individuals’ acquisition of dwellings and the deduction of contributions to pension plans and life insurance companies. The *maruyu* allowances for small savings of the elderly, etc. are negligible. By far the most important tax expenditure in the corporate system is the accelerated depreciation schemes, including the scheme for information technology investment. Tax-free reserves for corporations constitute only a very small part of total tax expenditures. Since the tax-free reserves, the corporate tax credits and the special depreciation schemes together represent a revenue loss of less than 0.1 per cent of GDP the scope for broadening the corporate tax base is rather limited.

**(Table 11. Revenue losses due to special tax measures, FY 1999)**

**IV. Scope for strengthening the system: increasing revenues, efficiency and equity**

31. The basic issue for Japan is how to maintain the overall low distortions resulting from the tax system while at the same time increasing revenues sufficiently to meet future spending and deficit-reduction needs. This requires improvements in both efficiency and equity, first and foremost by broadening tax bases. While not an easy task, given the different political and economic interests involved, there appears to be broad public and political acceptance of the need to raise revenues in order to maintain the basic public welfare benefits. The timing and instruments are still debated, and successful tax reform is likely to involve a broad range of measures so as to spread the burden of higher taxes widely across different groups of society. The reform process should be facilitated by the ample scope for base broadening that already exists within the current system -- in particular in the personal income tax system. A political consensus seems to be emerging that increasing VAT revenues should finance the brunt of the costs related to ageing, but no concrete steps have been taken since the VAT rate increase in 1997. Moreover, the scope for administrative improvement would be exploited more easily if Japan were to introduce a taxpayer identification number (TIN) system in line with the practice in most other OECD countries.<sup>40</sup> This issue is currently high on the agenda and is gaining increasing political support. These and other potential areas for strengthening the tax system are discussed in more detail below.

*Base broadening is required if tax wedges are to be kept low*

32. The rate and bracket structure of the personal income tax system implies that economic incentives are less distorted in Japan than in most other OECD countries. However, the same does not hold true for horizontal equity, the sense of fairness among taxpayers and the revenue-raising capacity of the system (*i.e.* how much more revenue is raised by a 1 percentage point increase in rates) due to generous allowances and tax credits. There is thus a substantial revenue potential in broadening the base for personal

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40. Japan is one of only five OECD countries not applying a taxpayer identification number system, the others being Switzerland, Germany, Austria, and the United Kingdom.

taxes, which, *inter alia*, could be used to finance a fairly large share of the incremental ageing costs or lowering income tax rates further if the public finance gap is filled by other means. A significant broadening of the personal income tax base would reduce the risk of having tax wedges -- and hence economic distortions -- rising excessively as the need for more revenue materialises. In the case of the ordinary and special allowances for dependent spouses, a substantial reduction could also help mitigate the adverse incentives for labour market participation faced by this group. However, broadening the tax base is a highly sensitive issue, given the vested interests involved, and so far the government has not been successful in broadening the base or even reversing the trend of ever-increasing allowances.

33. The impact of personal income tax reliefs on revenues and progressivity can be illustrated by comparing the actual tax paid by different income categories with the tax that would have had to be paid under a comprehensive income tax system (where all allowances, deductions and credits are abolished and personal capital income<sup>41</sup> is taxed at the ordinary progressive income tax schedule). Figure 10 shows the difference, considering the national income tax only and assuming unchanged behaviour of the taxpayers. Several interesting patterns emerge. First, the comprehensive tax rate exceeds the actual by 8 to 18 percentage points, dependent on the income group. Second, whereas low-income earners receive a significant relief of their average tax payment through the various allowances, the very high-income earners (with incomes above 20 to 30 million yen) receive a relief of similar relative magnitude through the separate taxation of capital and retirement income. Those in between are relatively less favoured by the tax reliefs. Third, the tax credits for dividends and foreign taxes as well as the exemption of interest income of the elderly are of very limited importance in reducing total tax payments.

**(Figure 10. Comprehensive versus actual tax rates by income group)**

34. The various tax reliefs imply a somewhat lower progressivity of the tax system, especially at the high end of the income scale, whereas progressivity for incomes between 10 and 30 million yen is barely affected. The total revenue loss stemming from the tax reliefs defined in Figure 10 amounts to around 30 trillion yen or 6 per cent of GDP, of which some 5 per cent of GDP is due to tax allowances (1996 figures). If local personal income taxes, which are levied on almost the same income base as national taxes, were also made "comprehensive", an additional 2 to 3 per cent of GDP could be added to tax revenues.<sup>42</sup> Since allowances have increased significantly since 1996, it is not unrealistic to assume that the tax reliefs, even excluding the separate taxation of personal capital income, could amount to somewhere near 10 per cent of GDP. It is, of course, important to bear in mind that an elimination of tax reliefs would change taxpayers' behaviour and thus offset some of the revenue gains. In particular, higher taxation of capital income could lead to more evasion and avoidance among high-income earners. Elimination of the employment income deduction and basic allowance would discourage labour market participation at the lower end of the income scale, whereas an abolition or reduction of the deductions for dependent spouses could stimulate labour supply. Finally, the figure makes the important point that allowances are a costly mechanism of redistributing income, since high-income groups benefit significantly from the reliefs. In fact, as the tax value of deductions increases with the tax rate, higher-income groups receive a larger tax relief per yen worth of deduction. It follows that any objective for the distribution of net disposable income could in principle be met at a much lower cost through targeted (means-tested) transfers or tax credits to low-income groups, while reducing general deductions substantially. The *caveat* is then that targeting normally implies high effective marginal tax rates for persons leaving the targeted group. This problem can

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41. This includes interest income, dividends and realised capital gains but excludes unrealised capital gains and imputed rents.

42. In 1996, national personal income tax revenues amounted to 19 trillion yen and local inhabitants tax revenues to around one-half of this amount.

be mitigated by gradually phasing-out the transfer or credit as income increases, but it is normally hard to circumvent completely, especially where the pre-tax income distribution is compressed and budgetary costs therefore considerable.

35. Any reduction in the allowances of the personal income tax system would be difficult to carry out without strengthening the effective taxation of the self-employed. The self-employed (persons earning personal business income) are allowed to split their incomes by paying salaries both to other members of their families and to themselves, resulting in a lower tax burden (Ishi, 1998). Also adding to the sense of unfairness among wage earners is the possibility for the self-employed to deduct some of their private consumption as necessary business expenses. From a revenue-raising point of view, the largest problem is not the direct loss of revenue incurred by taxing the self-employed at low effective rates, but the indirect loss due to allowances made to wage earners to compensate for horizontal inequities (Box 6). One option could be to move from an income tax base to a broader and less easily manipulated base for the self-employed, for instance value added.<sup>43</sup> A less radical option is to strengthen surveillance and enforcement of tax payments by the self-employed, so that at least they are not able to “get away” with evasion so easily. It should be emphasised that the problem of effectively taxing the self-employed at the same rate as wage earners is inherently difficult and thus contributes to perceived inequities in almost all OECD countries. Furthermore, the problem in Japan has been somewhat reduced since the 1960s for the simple reason that the share of the self-employed in total employment has declined sharply and is now close to the average of the other major economies.

#### Box 6. Inefficiency of tax reliefs

Japan's different tax allowances are based on policy objectives of encouraging home ownership, stimulating family formation, etc. The employment income deduction was introduced to improve horizontal equity between wage earners and the self-employed, who are allowed to deduct so-called “necessary” expenses, including expenses for clothing, etc. Likewise, the deduction and special deduction for dependent spouses have been instituted to narrow the gap between wage earners and the self-employed with respect to their opportunities for income splitting: whereas the latter are able to shift a part of their income to family members, employees do not have this option. A reason for introducing the special deduction for spouses was also the so-called “part-timer question”: spouses were given incentives not to earn incomes above a certain threshold in order for the household not to lose the entire regular spouse deduction. However, instead of remedying this “kink” in the married woman's labour supply curve by gradually phasing out the existing allowance, an additional allowance (the special allowance for spouses) was introduced (in 1987).

Even though allowances and deductions may be for legitimate social and political purposes, it is often questionable whether these objectives are achieved in the most efficient way (if at all), and these objectives should also be seen against the social cost of higher tax rates. The gradual increase in personal allowances and deductions not only makes the base smaller, thereby necessitating -- all else being equal -- higher rates and thus more distortions; it also contributes to a more complex system and reduces equity. Widening of the tax brackets is a better way of alleviating tax burdens at certain points of the income scale, since it retains horizontal equity and also mitigates the problems of bracket creep and bunching of income in short time spans (which in particular tend to put people with a long education at a relative disadvantage, since they risk paying higher marginal taxes than people with the same lifetime income earned over a longer time span).

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43. A similar approach has recently been adopted for local corporate taxes in Italy as discussed in Box 11 below.

36. The potential for base broadening is also found elsewhere. Social security contributions are levied primarily on ordinary salaries, whereas bonuses and retirement lump-sum payments have traditionally been (almost) exempted.<sup>44</sup> This has serious consequences for the base, since these payments constitute a considerable part of total remuneration of employees in Japan.<sup>45</sup> The exemptions imply that social security rates have to be raised unduly to restore actuarial balance in the social security system and that employees with the same income may be treated differently depending on the ratio of bonus to ordinary salaries. Even though benefits are also based on ordinary salaries it would be preferable to treat all wage income in a similar fashion for social security purposes (Horioka, 1999). Another exemption is that of dependent spouses who do not contribute to the pension system but are eligible to the basic flat-rate benefit and survivors benefits. This causes a redistribution from single workers and double-income couples to couples with a dependent spouse. Moreover, it gives an incentive for dependent spouses not to participate in the labour market, since they would have to contribute once their earnings exceed a certain (low) level.

37. The VAT base could be moderately broadened by a substantial lowering of the tax-exempt threshold, whereas an elimination of the simplified regime would probably only add marginally to the base.<sup>46</sup> Even though administrative simplicity calls for some minimum threshold of sales to be taxed, there seems to be no economic or administrative justification for extending the tax exemption as far as is the case in Japan. Furthermore, detrimental effects on equity and compliance are likely to increase in proportion to any increase in the VAT rate. On the other hand, the potential for base broadening should not be exaggerated: total sales by exempt enterprises are estimated by the Ministry of Finance to be less than 3 per cent of total taxable sales. In addition, since tax-exempt enterprises cannot deduct VAT paid on purchases, the overall revenue loss is probably rather limited. The absence of invoicing may make the system less robust to evasion. However, the single tax rate and the requirements to keep trade documents (receipts, business invoices, delivery statements, etc.) to be allowed to deduct purchases imply that enforcement is probably not much hampered compared with invoice systems. The question of invoicing would become even more trivial if access to the tax exempt and simplified regimes were tightened.

38. Another potential area for base broadening is environmental taxes. As with most OECD countries Japan levies excises on a number of energy products, mainly unleaded petrol, diesel and electricity consumption, as well as on motor vehicle registration. In 1995 the total revenues from these taxes amounted to less than 2 per cent of GDP (or 6 per cent of total taxes), which is higher than in the United States but lower than in most other OECD countries. A greater reliance on environmental taxes could serve several purposes since Japan both needs more tax revenue and is faced with major problems of fulfilling its Kyoto commitments on reducing greenhouse gas emissions.<sup>47</sup> The extent to which environmental taxes can raise revenues should not be overestimated, however, in part because the idea of such taxes is to reduce emissions and hence revenues. Even in countries with higher environmental taxes, like the Nordic countries, the share of revenue from these taxes to total tax revenue does not exceed 10 per cent.

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44. A contribution on bonuses was introduced in 1996, but it is far below the contribution rate on ordinary salary.

45. It is not unusual for bonuses to amount to as much as 30-40 per cent of ordinary salaries.

46. The simplified regime was changed in 1997 so as to bring the taxable implied value added in line with the true values, and the sales threshold was lowered from 400 million yen to 200 million yen. Furthermore, based on the authorities' information, the amount of taxable sales by businesses in the simplified regime is estimated at less than 6 per cent of total taxable sales (in 1998). It would thus appear that the scope for base broadening through an elimination of the simplified regime is rather limited.

47. See Chapter V of the 1999 *OECD Economic Survey of Japan*.

***The VAT rate should be increased while income tax rates may be lowered further***

39. Even if bases are broadened there would probably still exist a financing gap -- especially if the revenues from base broadening in the personal tax system are used for lowering income tax rates in the personal and corporate system. A simple, efficient and fairly equitable way to close any remaining gap would be to raise the VAT rate. The VAT has several advantages from a taxation viewpoint. It is neutral *vis-à-vis* savings decisions and is relatively difficult to avoid or evade for all groups, thus meeting the criteria of horizontal equity better than income taxes (as long as it is broadly based as is the case in Japan).<sup>48</sup> Moreover, raising the VAT will be one way of ensuring higher effective taxation of the elderly, thereby contributing to a fair sharing of the tax burden across generations.<sup>49</sup> However, it would not be advisable to try and earmark additional VAT revenues for the costs related to ageing (Box 7).

**Box 7. Earmarking of VAT revenues for social security**

There has been some discussion in Japan of whether increases in VAT revenues should be earmarked for future public pension obligations. Politically it may be easier to make the electorate swallow VAT increases if these are referred to as "earmarked" for specific contingent public expenditure. However, earmarking is normally not the most efficient way to manage government finances. Even though earmarking in principle allows a closer link between those who pay the tax and those who benefit, there are several disadvantages. First, it reduces the flexibility of policy makers to adjust spending policies as expenditure needs change over time. Second, if revenues are more buoyant than the expenditure for which they are targeted, it is difficult to avoid extending the programme beyond its original objectives. Revenues from a specific tax should thus be spent in areas where the returns to society are highest, including on reducing other, more distortive taxes. In particular, setting up a government fund for the additional VAT revenue would not be recommended. It is a much better option to use any additional revenues to bring down government debt, since a large gross government debt makes the budget more vulnerable to interest and exchange rate shocks and since the returns to government assets are often lower than payments on liabilities. Besides potential problems of governance and moral hazard linked to government funds, there are also costs related to managing the assets in such a fund, just as it adds more complexity and less transparency to the overall management of the government's net financial position. Finally, the accumulation of earmarked revenues risks blurring perceptions of what agents are entitled to receive in terms of pensions and other benefits, *i.e.* the question of ownership can become non-trivial.

40. Japan's VAT system has so far worked well compared with those of many other OECD countries. The effective VAT rate is fairly close to the standard rate, indicating that revenue losses due to the high tax threshold, the simplified regime and non-compliance are lower than those experienced in many other countries (Table 12). If this level of effectiveness can be sustained under increased VAT rates, the revenue potential would be high: about ½ percentage point of GDP additional revenue is raised per 1 percentage point increase in the VAT rate.

**(Table 12. Effectiveness of value added taxes)**


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48. Japan, being an island, also largely escapes the border-trade problems facing other VAT countries.

49. Whether a VAT increase is the best way to achieve more intergenerational equity is debated among economists. For instance, a reduction of personal allowances would strike elderly workers particularly hard as their average income and hence marginal tax rates are higher than other groups. Higher effective taxation of pension benefits would of course also improve intergenerational equity.

41. Evidently, an increase in the value added tax could give rise to legitimate distributional concerns, since the immediate effect is to tax households with low savings rates -- typically lower income households -- at the highest effective rates. Over a longer time horizon, however, VAT is in effect a proportional tax on lifetime income or intergenerational income. Based on survey data for worker households it is possible to get a grasp of which income groups are facing the highest burden from VAT payments. As expected, the highest-income households pay a lower percentage of their disposable income in VAT (Figure 11), but the difference among income levels is not very significant: VAT amounts to around 3.4 per cent of the lowest income deciles' disposable income and 2.8 per cent of that of the highest income decile. When correcting for household size, the difference between income deciles is virtually eliminated, since higher income households are also the largest.

**(Figure 11. VAT payments based on household surveys)**

***Tax treatment of savings -- in particular pension savings -- should be more equitable***

42. Equity considerations may call for personal capital income to be taxed more in line with other forms of income -- for instance by taxing such income at the ordinary progressive personal income tax schedule in a comprehensive system.<sup>50</sup> As shown in Figure 10 above, the bulk of the tax subsidy implied by separate taxation of capital income -- which roughly amounts to some 0.7 per cent of GDP -- is appropriated by very high-income earners. However, concerns over efficiency and compliance may call for a continuation of the current separate tax regime since these bases are particularly sensitive to tax changes, and even more so as international markets become increasingly open. The effective taxation of capital gains is difficult to enforce, but a taxpayer identification number system could help to alleviate evasion in this area. A further development of the separate system to a pure "dual" income system could help to improve neutrality across savings instruments, in particular by aligning tax rates on capital income from all sources, including corporate income and capital income of the self-employed.<sup>51</sup>

43. A number of issues relate specifically to the taxation of pension savings. When pension contributions are exempted from taxation there is a strong case for taxing benefits, and *vice versa*. By far the most important tax on employees' pensions in the OECD is that on benefits. Two issues are relevant here, the appropriate treatment of lump-sum payments and whether pension income more generally should receive preferential treatment compared with wage income. In several countries, including Japan, Australia, Ireland and the United Kingdom, lump-sum payments are taxed more leniently than annuities. For some countries, like Japan, this is an accepted part of the tax system and relates to the long-standing practice of making lump-sum payments to employees at the point of retirement. This lump-sum payment has traditionally been one of the main means of providing income security after retirement, together with public pensions and individual savings. However, since lump-sum payments and pension income from occupational schemes are in fact substitutes for each other, there is no *a priori* reason to give one option tax preference over the other. Taxation of lump sums requires some adjustment, however, in order to avoid

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50. This would require interest expenditure to be deductible and the tax credit for acquisition of dwellings to be eliminated.

51. Sweden, for instance, imposes a uniform rate of capital taxation of 30 per cent. This applies not only to income from interest, dividends and capital gains, but also -- symmetrically -- to capital expenses, of which interest payments are the most important. The counterpart of the interest deductibility is a property tax levied on the market value of owner-occupied housing (another option would be to include imputed rent in capital income). The corporate tax rate is basically similar to the capital income rate as is the imputed capital income component of the self-employed and that of active owners of closely held companies.

a marginal rate well in excess of the recipient's expected average marginal rate during retirement. One possibility is to apply an averaging provision (as is already the case for timber income and fluctuating and extraordinary income).

44. Since Japan is among the countries taxing pension savings least heavily, it would appear appropriate -- not only due to the horizontal inequity this causes, but also given the financing needs and the generational imbalances -- to investigate the possibilities of higher taxation in this area. However, although the relative income position of retirees in Japan is better than in many other OECD countries (Table 13), indicating that their ability to pay taxes is not particularly low, higher effective taxation of pension benefits is a politically delicate matter and should be designed carefully with other policies to take into account any adverse effect on income distribution and potential poverty problems among retirees. The recent proposal to index public pension benefits to prices rather than net wages would have the same effect as higher taxes on benefits. Changes in taxation should, in any case, only be implemented gradually over a fairly long time horizon in order to avoid abrupt changes in individuals' standards of living. A point of departure could be to reduce the deductions for retirement and annuity income.

**(Table 13. Relative disposable income by age of the household head)**

45. Taxing the earnings of private pension funds as they accumulate would not help alleviate intergenerational imbalances, since the cost would be borne primarily by the younger generations, but it could contribute to improving neutrality across savings instruments.<sup>52</sup> If such a change were made, it would be vital to maintain or even enhance the compulsory elements of the retirement income system so as to avoid the moral hazard problem of people not providing adequately for their retirement in order to obtain social assistance benefits. Another problem is that many of the private pension trusts are severely under-funded. A tax on these funds would either place a higher burden on corporations or require the defined benefits of the occupational schemes to be adjusted accordingly. A pertinent issue is also the specific design of the earnings tax. Only real earnings should be taxed for long-term savings commitments of this type so as to preserve the real value of the savings.<sup>53</sup> For Japan, however, the most straightforward option would be to reinstate the tax on the assets of tax-qualified plans, which is suspended for FY 1999 and FY 2000, and extend this tax to other pension funds as well. The revenue potential of taxing pension savings as they accumulate is likely to be moderate, probably below 1 per cent of GDP on an annual basis,<sup>54</sup> and the contribution to closing the gap in government finances would therefore be modest.

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52. As a side effect, this would also imply a levelling of the playing field for financial intermediaries, where pension funds and life insurance companies hold market shares that other, and possibly more efficient, intermediaries would otherwise have held.

53. This is the case for instance in Denmark, where a so-called "real interest tax" was introduced on (new) pension savings in 1982. Australia, on the other hand, taxes full nominal fund incomes, but only the real part of capital gains. This, of course, gives a strong bias in favour of assets providing capital gains rather than regular income, thereby distorting pension fund behaviour, with the bias increasing with the rate of inflation.

54. This can be illustrated by a simple calculation: assets in the occupational pension funds amount to around 13 per cent of GDP and those in private pension funds, life insurance companies and other institutional investors amount to some 80 per cent of GDP, a total of nearly 100 per cent of GDP. An asset tax of 1 per cent (as the temporarily abolished tax on tax-qualified plans) would then initially yield revenues of around 1 per cent of GDP. Assuming a real return of 3.5 per cent, a 20 per cent tax on earnings would initially yield around 0.7 per cent of GDP. These calculations do not take into account any change in behaviour or

*Corporate restructuring in the short and long term could be promoted more strongly*

46. The recent reductions in the marginal corporate tax rate have to some extent mitigated the non-neutrality across financing and investment instruments and have brought Japan more into line with some of the other large economies. A lowering of corporate taxes tends to decrease the marginal effective tax rates on new equity and retained earnings while increasing the rate on debt.<sup>55</sup> However, even though tax considerations are only one of the determinants of corporations' financial structure, the tax system still gives firms a relatively strong incentive to rely on debt financing (see Table 5). This has adverse consequences both on a microeconomic level (how to ensure sufficient risk capital to new ventures and a level playing field between small and large enterprises) and on a macroeconomic level: business cycles tend to be amplified, since corporations are more vulnerable to cyclical downturns and shifts in banks' lending standards, not to mention outright credit crunches. One indication of this exposure is a high debt/equity ratio in the non-financial corporate sector compared with most other OECD countries.

47. It is difficult to quantify the extent to which distortions to corporate financing have led to an inefficient allocation of capital and hence lower growth. Although the effect should not be exaggerated (see Tachibanaki, 1997), it could nevertheless be an objective for the longer term to analyse options for a tax system in which the incentives for corporate finance are more neutral. Several options are available, including: aligning personal taxation of various types of capital income, limiting interest-rate deductions at the corporate level, lowering corporate taxes further and/or moving towards an imputation system (Box 8).

48. Policies for encouraging restructuring in the corporate sector in the short run are also appropriate since a significant amount of capital and land is currently locked into unproductive use for a variety of reasons, including taxation. The government has already taken measures to promote restructuring. The period for which firms are allowed to carry forward losses has already been extended as of July 1999 -- from 5 to 7 years<sup>56</sup> -- although only up to and including FY 2002. Judging whether further extension of the loss carry-forward period should be considered requires more analysis of its impact on corporate restructuring as well as on the book-keeping and tax review period which, according to the basic tax policy orientation of the authorities, should match that of the loss carry-forward period. Another instrument for promoting corporate restructuring would be the implementation of a fully consolidated tax treatment for holding companies. The Japanese government is considering the introduction of such a scheme. Both measures will imply budgetary costs, but these should be weighed against the need for revitalising the corporate sector. The government has also moved to increase the support given to new ventures through the tax system because of the importance of reversing the declining trend in enterprise creation. This will give at least some impetus to medium-term growth prospects, although at the cost of some loss of neutrality.

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second-round effects on consumption and income tax revenues (as future disposable income and consumption would be lower).

55. The Secretariat's calculations suggest that lowering the corporate tax rate by 9 percentage points (for an inflation rate close to zero) has reduced the standard deviation across instruments (i.e. the measure of non-neutrality) by 25 per cent and the overall marginal tax wedge by 20 per cent. This is not out of line with Tachibanaki (1997), who finds that for every 10 percentage point reduction in the corporate tax rate, the overall marginal effective tax rate is reduced by around 2.5 percentage points (at zero inflation). The offset is due to lower tax values of depreciation and interest deductions.

56. Other OECD countries apply loss carry-forward periods ranging from five years (France, Italy, Greece, Denmark, and Turkey) to infinity; see Table A3 in Annex 1.

### Box 8. Imputation versus a classical system

Under a full imputation system dividend income would only be taxed once since the shareholder receives a tax credit for the corporate tax payment. However, even though such a system would be more neutral with respect to financing decisions (debt versus equity), it is not a panacea. First, the double taxation of dividends does not necessarily affect overall corporate investment, depending on whether the marginal investment is financed out of debt, retained earnings or new equity. Only in the last case is the level of investment distorted by the taxation of dividends. Second, corporate income taxes may be partly or fully shifted.<sup>1</sup> Third, the investor may be *de facto* exempted from dividend income tax. Fourth, there are severe practical problems related to changing the corporate tax system to a full imputation system, not least with respect to international tax agreements (see for instance Messere, 1993). There is no conclusive evidence among the OECD countries as to which systems lead to better economic performance (if they affect economic performance at all), and there has been no clear tendency to move in one or the other direction. The issue of imputation is thus not confined to the interaction between corporate and personal tax rates but should be considered in a more general framework. In any case, it is probably safe to conclude that double taxation is not a major problem for large, internationally oriented companies, since these firms have access to many different financing sources. However, for small firms relying on domestic capital markets the double taxation of dividends can be a potentially serious problem.

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1. Who eventually pays the corporate tax bill is an open question: employees, consumers, shareholders or all owners of capital. Furuta (1965, 1970) found in a classic study for Japan a significant degree of tax shifting into higher prices. This conclusion has not been unchallenged, however, and is probably less valid today anyway since markets are becoming increasingly open.

### *Land and property taxation -- distortions should be reduced to promote more efficient use of land*

49. The combination of a high and non-neutral taxation of estates, a low holding tax on property and the structure of capital gains taxes causes important distortions to land and property prices. To alleviate the detrimental effects on land use, the inheritance taxes on land, in particular farmland, should be aligned with the taxation of other assets, *i.e.* the base should be broadened. This could also pave the way for reducing marginal rates, which in turn would reduce price distortions further. The benefits of improved neutrality achieved by such a change -- more efficient land use, often in areas where land is in high demand, and more transactions -- would come at a "cost" of basically removing a significant tax shelter from a very small group of urban farmers. Raising the valuation of land and property for property tax purposes would also be desirable from a local government point of view (Box 9), but is much less important in terms of price distortions than improving the inheritance tax system (Nishimura *et al.*, 1999). Moreover, higher holding costs could encourage investment in projects yielding early cash flows, resulting in excessively small-scale developments (Kanemoto, 1997). Therefore, measures to increase property taxation should be accompanied by other incentives such as an increase in the maximum allowed coverage ratio of building capacity to lot size. The structure of capital gains taxation, which was established in the late 1980s to choke off short-term land speculation, also encourages long-term holding.<sup>57</sup> With speculation much reduced compared to the bubble period, consideration should be given to assess whether the current structure of capital gains taxation is sufficiently neutral over the holding period (*e.g.* to what extent the

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57. Although the extra corporate tax on short-term capital gains on land was eliminated in FY 1998, the tax rates for individual transactions still provide an incentive to long-term holding. Yamazaki and Idee (1997) examined the effects of capital gains taxes on the transfer of agricultural land to other uses and found lock-in effects only in rural prefectures.

special deduction -- see footnote 28 -- offset the impact of relatively higher rates on short-term gains).<sup>58</sup> Finally, transaction taxes have been reduced recently, but there may be some scope for further simplification. Overall, the taxation of land should be subject to a review so as to promote its appropriate use.

#### Box 9. Increasing the valuation for property taxation

The property tax should be regarded as the “price” of infrastructure provision by local governments. The low effective tax rate is believed to discourage local governments from attracting housing projects because they will not raise sufficient tax revenue to cover necessary infrastructure expenditures.<sup>1</sup> A remarkable feature of the 1992 reform was the introduction of a national land value tax. This could be regarded as a counter measure by the central government to local governments’ unwillingness to raise the effective rate of property tax (Kanemoto, 1994). That is, they were encouraged to raise the effective rates for fear that the tax base once “monopolised” by them might be used up by the central government. Although the national land value tax was suspended indefinitely in 1998, mainly in order to reduce the tax burden on companies, it served a useful purpose by successfully encouraging local governments to raise holding costs -- a tendency which has been reinforced by the current severe financial situation of local governments. In this sense, the triennial reassessment of land valuation for the calculation of property tax in year 2000 should move assessed values toward market values and thus constitute an important step in the right direction.

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1. Local governments often ask developers to bear a sizeable portion of the costs of infrastructure provision based on their guidelines for residential developments (*takuchi kaihatsu yoko*). See Asami (1994) and Ministry of Construction (1998b) for detailed discussions.

#### *Tax administration -- a taxpayers identification number should be introduced*

50. As in many other OECD countries Japan seems to face particular problems of taxing the self-employed, including farmers, on an equal footing with wage earners. As valid estimates of underreporting of income are inherently difficult to obtain -- in particular on an internationally comparable basis -- it is not possible to give any quantitative indication of whether Japan fares better or worse than other countries on this account. The horizontal inequity between these different groups is primarily due to the fact that taxes on wage earnings are withheld at the company level, whereas taxation of self-employed is based on self-assessment. Evidence for Japan indicates that the tax gap -- the difference between income reported to the tax authorities and actual income -- has generally been higher for self-employment income than for wage income, although the difference seems to have narrowed in recent years. Ishi (1993), for instance, finds that while the period up to around 1980 was characterised by large discrepancies, the tax gap for both agricultural and other self-employment income declined sharply throughout the 1980s and almost reached the level of wage income by the early 1990s.<sup>59</sup> This development is attributed partially to a

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58. It is debatable how effective the capital gains tax structure was in calming down speculation during the bubble years. Various capital gains taxes that are neutral to the timing of disposal have been proposed (for instance a tax on unrealised capital gains with a rate set equal to the interest rate) as well as higher rates the longer the holding period. An appropriate measure for Japan could also be to lower the rate for short-term holding and to raise it for long-term holding; such a policy has been adopted in the current boom around Dublin by the Irish government (OECD, 1999b).

59. This study is based on the difference between tax statistics (collected by the National Tax Administration) and national income statistics (estimated by EPA, based on monthly income statistics from the Ministry of

sharp increase in the share of farmers filing Blue Returns (Box 10), as well as the general decline of the agricultural sector to a very modest size (from 12.9 per cent of total employment in 1980 to 7.0 per cent in 1997) and the tendency for merging small-size farms into larger units with modernised business management. However, the share of self-employed taxpayers filing Blue Returns has not increased at all since 1980 (Table 14) and remains at a modest level of around 50 per cent (despite the tax incentives for filing Blue Returns and the continued restructuring of the agricultural sector). The Blue Return diffusion ratio for corporations, which is not immediately comparable to that of self-employed since corporations are required by the commercial code to keep detailed accounting records, appears to have stabilised at around 90 per cent.

**(Table 14. Blue Return diffusion ratios)**

**Box 10. Blue and white returns**

The self-assessment system is basically divided into two systems: white and blue returns. The blue return system was introduced around 1950 based on the recommendations of Dr. Shoup and is considered by the NTA as a fundamental requirement for efficient tax administration of self-assessed income. The main objective of the blue return is to encourage small and medium-sized businesses to keep a minimum set of accounting records. To promote the system, significant tax advantages are offered to corporations and individuals opting for the blue return: (a) taxpayers filing a blue return are not subject to reassessment as long as errors are not found in their accounting books; (b) they are allowed a special blue return deduction; (c) they are also allowed to deduct reasonable amounts for wages paid to family members working in the company; (d) finally, they are allowed to use special tax-free reserves (e.g. reserves for bad debts, losses due to price fluctuations, etc.), special depreciation rules as well as loss carry-forward and carry-back options. White return taxpayers are not granted these benefits, but are not obliged to keep books and records.

51. Even if the problem of underreporting has been mitigated in recent years and is likely to continue to decline as the agricultural sector shrinks, there seems to be scope for further improvements in administration and tax structures to enhance horizontal equity. On the administration side, introducing a taxpayer identification number system (TIN) would be warranted -- not only to facilitate monitoring of taxpayers; detect underreporting of income; enforce compliance and strengthen the perceived fairness of the system by wage earners -- but also to improve tax procedures more generally to the benefit of citizens having contact with the tax authorities. Japan is one of only five OECD countries not applying such an identification number, and the experiences of other countries suggest that a TIN is indeed an important and effective tool for the tax administration. A TIN would also pave the way for a more efficient taxation of capital income, not least capital gains.<sup>60</sup> Should Japan choose to move towards a comprehensive income

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Labour). A number of earlier studies find massive underreporting of agricultural and self-employment income, but no recent studies are available to support or reject the hypothesis of some convergence in the tax gaps since the early 1990s. Anecdotal evidence, based on the National Tax Administrations auditing results, suggest that the amount of non-declared income is around 25 per cent for both agricultural and self-employment income. Moreover, since auditing is targeted toward taxpayers with suspected high evasion ratios, the sample is biased towards finding high tax gaps.

60. Some attention in the public debate has been given to the possibility for holders of so-called discount bonds (*i.e.* zero-coupon bonds where the entire return comes in the form of capital gains) to evade taxation. Since the holders of these bonds are not registered, a loophole for evasion *via* discount bonds exists. The extent of this base erosion should not be exaggerated, however: by the end of 1998 the total outstanding stock of these bonds was only 14 trillion yen. Assuming (for the case of illustration) an average capital gain of 5 per

tax system, *i.e.* incorporating capital income into the ordinary income tax system, a TIN will also be indispensable to make the system work effectively. The prospect of implementation of a TIN appears to have improved recently, in part due to the introduction of a new pension numbering system and the proposed introduction of a resident numbering system by the Ministry of Home Affairs. It should be emphasised, though, that the TIN is not by itself a guarantee for improved administrative efficiency -- this depends on the information return system in which it is embedded.

***Local governments: autonomy should be increased and prefectures' tax base made more stable***

52. The municipalities' share of total local tax revenues amounts to 60 per cent, with almost all revenues coming from relatively stable bases such as individual income taxes and property tax (Table 15). Prefectures, on the other hand, are much more reliant on corporate income taxes. The revenue from the enterprise tax, which is their largest single revenue source, is highly sensitive to the business cycle. Current financial difficulties faced by prefectural governments, such as Tokyo, Osaka and Kanagawa, are partly due to a large fall in revenue from this source. Assuming that stabilisation policy is the proper responsibility of central government, local tax revenues should be based on more stable revenue sources. The government's Tax Council is currently considering how to change local corporate taxes, notably the enterprise tax, so as to select a broader and more stable base than corporate income. Such a step would also mitigate the inequity between loss- and profit-making firms, which encourages companies to look for ways to reduce their tax burden. According to tax statistics, approximately 60 per cent of corporations nation-wide report losses and hence do not pay any corporate income tax. This leaves 40 per cent of corporations to shoulder the total corporate income tax burden even though all companies enjoy the benefits of the same public services.<sup>61</sup>

**(Table 15. Local tax revenues)**

53. Several alternatives are available in choosing a more stable base for local corporate taxation, such as the capital stock, the wage sum or floor space. One particularly appealing option could be to tax value-added at the level of the firm (wage payments plus interest payments plus depreciation plus rents plus profits). First, such a tax would circumvent the problems of "cascading" (paying tax on taxes) inherent in other types of taxes based on sales. Second, it could be designed so as not to distort unduly the substitution between capital and labour inputs as could be the case for other options. Third, it would give reasonable assurance that the tax base would be growing in line with expenditure so that the need for frequent changes to the system would be reduced. Italy has recently introduced a tax of this type at the local level (Box 11). It could be argued that rather than creating a new corporate tax on firms' value added, it may be somewhat easier just to expand the already existing VAT and compensate the local governments accordingly through intergovernmental transfers.<sup>62</sup> Such a move, however, could limit local autonomy, even if this is not necessarily the case, and would also to some extent be in conflict with the idea of linking local taxes and benefits for corporations: the VAT payments by consumers may be distributed differently

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cent a year, of which none is declared, would amount to an annual tax revenue loss of less than 200 billion yen, or 0.05 per cent of GDP.

61. It could be argued that at least part of the costs of public services are already being paid through the fixed part of corporate inhabitants tax (see for instance the Tokyo Tax Accountants Association's view on the FY 1999 tax reform).
62. It should be noted that a shift in corporate taxation from an income-based tax to another (related) tax base could create problems for non-resident companies in their home countries if the new tax is not recognised by tax authorities in the home country as creditable against corporate tax liabilities there.

by prefecture than the distribution of enterprises receiving the services provided by local government. Furthermore, exporting companies do not pay VAT at all. A more serious concern of changing the base is how the incidence is distributed (for instance, taxing value added on the production side rather than on the consumption side) and how local governments' incentives are influenced in terms of competing to attract consumers, producers or wage earners by lowering tax rates. A closely related aspect is how to allocate tax revenues obtained from companies residing in more than one locality. In any case, changes in the base require careful consideration and should also be related to the way the intergovernmental transfer system works and local governments' scope for setting their own taxes (which is currently very limited).

#### **Box 11. Italy's new local corporate tax**

Since 1 January 1998, both resident and non-resident companies in Italy have been subject to a "regional tax on productive activities" (IRAP) on their Italian source income. For manufacturing companies, IRAP is imposed at a rate of 4.25 per cent on the net value of production, which is calculated by subtracting the cost of production from the value of production. Certain deductions are not allowed, however, such as labour costs and interest expenses. The IRAP is thus equal to a value added tax at the level of the firm, except that depreciation is not taxed. This generates a tax bias in favour of capital *vis-à-vis* labour. Different rates of IRAP apply to banking institutions and insurance companies, and special rules for calculating the base also apply to such institutions.

#### ***Strategies for the future***

54. Two broad options exist with respect to reforming the tax system so as to increase revenues, efficiency and equity. Basically, Japan can choose to move toward a comprehensive income tax system or a system of dual taxation of labour and capital income -- in both cases assuming a significant increase in value added taxes and social security contributions as well as reduced personal allowances. In practice, the comprehensive income approach would require marginal personal tax rates to be lower than the current 50 per cent in order not to deviate too much from capital taxation in other countries. Such a lowering of rates could be financed by a reduction of personal allowances. The distributive profile of such a shift is uncertain: on the one hand, higher-income groups would face lower marginal rates; on the other hand, these groups also benefit the most from the income tax allowances and the separate taxation of personal capital income. A comprehensive system would entail a higher degree of horizontal equity but would risk being more vulnerable to base erosion and would also require administrative changes. The dual system could maintain the current structure of personal income tax rates basically as it is, in combination with one flat rate being levied on all capital income, including on corporate income. It has the advantage of being more flexible in terms of adjusting capital taxation in response to changing circumstances, for instance increased tax base mobility. It can also basically be carried out within the current administrative framework. Another issue is how the burden of the ageing society and the existing government debt should be distributed between generations. Clearly, the younger generations would be better off with any increase in taxes that alleviates the burden they would otherwise face because of the increasing government debt. Both increased consumption taxes and reduced personal allowances, especially for retirees, would spread the burden more evenly across generations, while higher social security contributions and taxation of pension savings would be less balanced.

#### **V. Conclusion and recommendations**

55. The Japanese tax system applies relatively low marginal tax rates on most economic activities, which, in combination with moderate tax elasticities of the bases, indicates that the overall distortion from the tax system (the excess burden) is probably modest compared with other OECD countries. In particular,

it appears that neither the labour force potential, including human capital formation, nor aggregate savings and investment decisions are unduly hampered by taxation. Corporate taxation has previously been fairly heavy, giving rise to a high overall effective taxation of capital, but effective corporate rates have recently been reduced by 9 percentage points and are now in line with, or only slightly above, those of many other OECD countries. The VAT has been a success in terms of its effectiveness in raising revenue and in contributing to balancing revenues from different bases. However, the high tax-exempt threshold implies an unnecessary erosion of the base. A main concern is the non-neutrality caused by differential treatment of different corporate investment and financing sources, but an even more serious matter is the vast allowances and tax credits given in the personal tax system. These preferences dilute the tax base and thereby sacrifice revenue; complicate administration and increase overall compliance cost; distort incentives for some groups on the labour market; and cause horizontal inequities. Effective taxation of the self-employed could be strengthened by further stepping up enforcement or by shifting the base for taxation from income to value added. Property taxes, in particular the inheritance tax, distort prices of property and land and should be made more neutral through base broadening and perhaps also some reduction in rates. Tax administration would benefit from the introduction of a taxpayer identification number system. Local government finances would be improved by a shift in the base of local corporate taxation to a value added type tax.

56. Under current central projections it is not unrealistic to assume that Japan's tax-to-GDP ratio, including social security contributions, has to be increased by at least 3½ percentage points over the coming decade or so to finance the cost of ageing and stabilise government debt. Besides the rise in pension contributions scheduled by the draft 1999 pension reform as well as other social security contribution increases and spending cuts, additional revenues will have to be raised. This will have to come mainly from increased personal income and consumption taxes, assuming that taxation of corporations and property are already at, or close to, their limits. Increased environmental taxes could probably only contribute marginally to financing the gap. A rough calculation shows that substantially reducing the reliefs in the personal income tax system could give an additional revenue of some 5 per cent of GDP,<sup>63</sup> and that increasing the VAT rate by 10 percentage points and broadening the base would give approximately the same amount. How exactly the tax increase should be composed between social security contributions, income taxes and consumption taxes is an open question. However, two firm conclusions can be drawn from the preceding analysis. First, a significant part of the required revenue increase should come from increasing the VAT rate and base. Second, that the personal income tax base should be broadened significantly, which in turn requires another hard look at how to ensure more horizontal equity between wage earners and the self-employed. This would require a reversal of the recent trend of narrowing the base. Even though exemptions can serve economically and socially legitimate goals, the alternative to reduce the exemptions -- to raise rates -- would almost certainly be even more harmful to society, since distortions tend to rise disproportionately with rates. Box 12 summarises the total set of policy recommendations derived from the analysis.

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63. Eliminating all of the tax reliefs, but keeping the separate taxation of capital income, could yield an additional 7 per cent of GDP in national taxes and 3 per cent of GDP in local taxes. If one-third to one-half of the current reliefs are retained this would bring about a revenue increase of around 5-6 per cent of GDP.

**Box 12. Options for reform**

- *Tax reform* should cover a sufficiently broad range of measures (“package approach”) to make all groups contribute to the inevitable tax increases. Transparency, including pre-announcement of reform, is important in order to stabilise expectations. Gradual implementation of measures may also be warranted.
- *Tax bases should be broadened substantially.* In the personal income tax system allowances should be reduced, including those for dependent spouse and dependent children. Efforts to tax the self-employed should be strengthened. It is imperative for any reduction in allowances in the personal income tax system that the feeling of unfairness among wage earners is not increased, and this requires strict enforcement and/or a broader base for taxing the self-employed. The base broadening in the personal income tax system could be used to finance part of the costs of ageing. The base for social security contributions should be broadened to include bonuses and lump-sum retirement payments. The VAT base could be moderately broadened by reducing the tax-exempt threshold. The potential room for base erosion created by the simplified regime should continue to be monitored carefully. Japan should also consider ways to broaden the base by implementing environmentally related taxes.
- *Increasing the VAT rate gradually* over a number of years (to 12-15 per cent) should be one of the key financing mechanisms for the costs related to ageing. However, earmarking of the revenues should be avoided. Introduction of the invoice method may be considered but does not appear essential.
- *Taxation of pension savings* should be stepped up in effective terms, at a minimum perhaps by reducing the indexation of retirement and annuity income allowances. Considerations should be given to levying a tax on earnings of pension savings as they accumulate (reinstate tax on assets of pension funds or introduce tax on real earnings). The tax treatment of lump-sum pensions and annuities should be made equal.
- *Social security contributions* should be increased as projected in the draft 1999 pension reform, but additional ageing costs should be borne by other taxes, in particular VAT.
- *Corporate taxation* is not in need of substantial reform but could be enhanced with a view to improving neutrality across financing and investment instruments. Incentives for corporate restructuring should be strengthened by implementing a consolidated tax treatment of holding companies.
- *Tax administration* should step up the efforts to control evasion -- in particular among the self-employed. The introduction of a taxpayer identification number system would contribute to enhancing administrative efficiency.
- *Taxation of land and property* should focus on alleviating price distortions by aligning the inheritance tax treatment of land -- in particular for agricultural use -- with that of other assets. Re-examination of the inheritance tax rates should be considered as the base is broadened, and whether the current structure of capital gains taxation is neutral over holding periods should be carefully assessed. Further simplification of the transaction taxes should be considered. Overall, the taxation of land should be subject to a review so as to promote the appropriate use of land.
- *Local government taxes* -- in particular at the prefectural level -- should be made less volatile and more equitable among tax- and non-tax paying firms by broadening the local corporate base, for instance to a tax on corporate value added.

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Table 1. **Dependency ratios**

	United States	Japan	Germany	France	Italy	United Kingdom	Canada
<b>Elderly<sup>1</sup></b>							
2000 level	21	27	25	28	28	27	20
2000-2005 change	0	4	3	0	3	0	0
2000-2025 change	12	20	11	13	15	9	16
<b>Total<sup>2</sup></b>							
2000 level	69	60	59	70	59	69	63
2000-2005 change	-3	3	2	-2	1	-1	-2
2000-2025 change	10	21	8	10	11	8	15

1. Number of elderly (65+) as per cent of working age population (20-64 years of age).

2. Number of elderly (65+) plus number of young (20-) as per cent of working age population.

Source: United Nations, *World Population Prospects 1950-2050*, 1996 revision.

**Table 2. Tax increasing episodes in OECD countries**  
Percentage points

	Years	Increase in tax/GDP ratio	Real annual GDP growth compared with OECD average	Real annual growth in private investment compared with OECD average	Change in employment ratio compared with OECD average <sup>1</sup>	Change in private employment ratio compared with OECD average
Canada	1965-74	7.8	0.2	0.1	-1.3	-1.8
Belgium	1960-71	10.2	-0.6	-2.4	-4.9	-3.3 <sup>3</sup>
	1971-82	8.9	-0.3	-2.9	-4.2	-5.4
Denmark	1960-69	10.3	-1.1	-0.8	-7.6	-8.2 <sup>4</sup>
	1969-80	9.8	-1.4	-3.8	-2.0	-8.7
Finland	1966-76	10.2	-0.1	-1.0	-3.5	-5.3
	1980-91	10.0	-0.6	-2.6	2.2	-5.0
Greece	1981-92	9.4	-1.0	-2.9	2.9	-2.8
Ireland	1965-76	8.6	0.1	2.1	-3.8	-9.6
Italy	1979-88	10.0	-0.4	-1.5	0.9	-0.0
Luxembourg	1970-80	14.0	-1.0	..	-2.1	..
Netherlands	1960-72	9.8	-0.5	..	..	..
Norway	1960-72	8.7	-1.1	-2.9 <sup>5</sup>	-6.8	-5.9 <sup>5</sup>
Portugal	1979-91	9.5	0.3	0.5	12.1	4.5
Spain	1979-89	11.1	-0.1	0.4	-2.7	-5.0
Sweden	1965-76	12.6	-1.3	-1.9	3.5	-3.6
	1976-87	7.8	-1.1	-2.0	5.3	0.3
Switzerland	1967-77	9.5	-2.0	-4.4	-6.3 <sup>6</sup>	-6.7 <sup>6</sup>
United Kingdom	1973-82	7.7	-1.6	0.1	-13.2	-2.1
Average of above episodes		9.8	-0.7	-1.5	-1.7	-4.0

1. Employment ratio = total employment divided by working age population (15-64 years).

2. Private employment ratio = total minus government employment divided by working age population (15-64 years).

3. The period covered is 1962-71 instead of 1960-71 for the change in private employment.

4. The period covered is 1962-69 instead of 1960-69 for the change in private employment.

5. The period covered is 1962-72 instead of 1960-72 for the annual real growth in private investment and for the change in private employment.

6. The period covered is 1971-77 instead of 1967-77 for the change in total and private employment.

Source: OECD.

Table 3. **Model simulations of tax reform**  
Difference from baseline in per cent

	Euro area After			Japan After			United States After		
	1 year	5 years	10 years	1 year	5 years	10 years	1 year	5 years	10 years
<b>Household direct taxes</b>									
Real GDP	-0.7	-0.6	0.4	-0.5	-0.1	1.2	-0.6	-0.1	0.3
Government balance	0.8	1.3	2.5	0.9	1.5	3.2	0.9	1.1	1.5
Government debt	-0.4	-2.4	-7.5	-0.6	-4.4	-12.8	-0.4	-1.8	-4.8
<b>Employers' contributions to social security</b>									
Real GDP	-0.5	-1.6	-0.3	-0.8	-1.0	0.4	-0.6	-1.0	0.2
Government balance	0.4	-0.4	0.7	0.4	0.4	2.3	0.4	0.0	0.6
Government debt	-0.4	-1.2	0.7	-0.4	-2.1	-3.8	-0.5	0.0	-0.5
<b>Indirect taxes</b>									
Real GDP	-0.9	-1.1	-0.4	-0.9	-0.8	0.2	-0.9	-0.5	-0.4
Government balance	0.2	0.3	1.1	0.7	1.2	2.4	0.4	0.6	0.9
Government debt	-0.3	-1.4	-4.8	-0.5	-4.8	-11.4	-0.5	-1.1	-2.8

Note: All simulations have been run assuming unchanged real interest rates and fixed exchange rates. The shock is an *ex ante* rise in taxes or social contributions.

Source: OECD Interlink simulations.

Table 4. **Average implicit tax rates on continued work  
due to old-age pension systems**  
1995

	Postponing retirement from 55 to 64	Postponing retirement from 55 to 69
Australia	0	6
Austria	34	47
Belgium	23	33
Canada	6	11
Denmark	0	5
Finland	22	33
France	14	42
Germany	14	23
Ireland	14	17
Italy	79	79
<b>Japan</b>	28	26
Netherlands	13	14
New Zealand	9	15
Norway	15	22
Portugal	4	25
Sweden	18	22
Switzerland	0	10
United Kingdom	5	10
United States	12	17

Source: Blöndal and Scarpetta (1997).

Table 5. **Marginal effective tax wedges in manufacturing in major OECD countries<sup>1</sup>**  
 Excluding wealth taxes  
 Per cent, 1998<sup>2</sup>

	Sources of financing <sup>3</sup>			Physical assets <sup>4</sup>			Overall weighted average <sup>5</sup>	Standard deviation
	Retained earnings	New equity	Debt	Machinery	Building	Inventories		
United States	1.9	5.0	1.7	1.5	2.8	2.7	2.1	1.3
<b>Japan</b>	<b>3.5</b>	<b>5.6</b>	<b>0.3</b>	<b>1.4</b>	<b>4.1</b>	<b>3.4</b>	<b>2.6</b>	<b>1.9</b>
Germany	1.5	1.0	1.4	1.0	1.7	2.1	1.4	0.4
France	3.7	6.9	0.8	2.2	3.8	3.8	3.0	2.1
Italy	2.3	2.6	0.6	1.0	1.8	3.3	1.7	1.0
United Kingdom	2.2	2.8	1.8	1.7	2.1	3.1	2.2	0.6
Canada	4.3	5.0	1.3	2.2	4.1	4.8	3.3	1.5
G7 average <sup>6</sup>	2.8	4.1	1.1	1.6	2.9	3.3	2.3	1.3

1. These indicators show the degree to which the personal and corporate tax systems scale up (or down) the real pre-tax rate of return that must be earned on an investment, assuming that the household can earn a 5 per cent real rate of return on a demand deposit. Wealth taxes are excluded. See OECD (1991) for a discussion of this methodology.
  2. For Japan, the FY 1999 rules are applied.
  3. Calculated using the following weights: machinery 50 per cent, buildings 28 per cent, inventories 22 per cent.
  4. Calculated using the following weights: retained earnings 55 per cent, new equity 10 per cent, debt 35 per cent.
  5. The weighted average uses weights indicated in footnotes 2 and 3.
  6. Averages are simple averages across available countries.
- Source: OECD.

Table 6. Dimensions of capital taxation in selected OECD countries

A. Interest, profits, dividends, capital gains and wealth taxes							
	Highest tax rate on interest income	All-in corporate tax rate	Total dividend taxation <sup>1</sup>	Taxation of capital gains	Wealth tax		
					Rate	Threshold <sup>2</sup>	
<b>Japan</b>	<b>20*</b>	<b>41</b>	<b>71****</b>	<b>26<sup>3</sup></b>	<b>0</b>	<b>-</b>	
France	25	33	66***	26	0.5-1.5	103	
Germany	56	58 <sup>4</sup>	49***	0	0	-	
Norway	28*	28	28***	28	0.7-1.1	2	
Sweden	30*	28	50**	30	1.5	15	
United Kingdom	40	31	48	0-40	0	-	
United States	47*	35	68**	0-20	0	-	
B. Inheritance taxes							
	Spouses			Children			Valuation rules: fair market value unless otherwise noted
	Rate	Lower threshold <sup>2</sup>	Upper Threshold <sup>5</sup>	Rate	Lower threshold <sup>2</sup>	Upper Threshold <sup>5</sup>	
<b>Japan</b>	10-70	160 or half of the inheritance (whichever is higher)	2 000 <sup>9</sup>	10-70	60	2 000 <sup>9</sup>	Special valuation for small lands; residential (up to 200m <sup>2</sup> ) and business (up to 330m <sup>2</sup> )
France	5-40	7	256	5-40	7	256	n.a.
Germany	7-30	45	3 772	7-30	30	3 757	First 36 million yen of business property not assessed
Norway	0	-	-	8-20	2	7	n.a.
Sweden	10-30	5	15	10-30	1	11	Business capital 30 per cent of substance value
United Kingdom <sup>6</sup>	0	-	-	40 <sup>7</sup>	47	-	
United States <sup>8</sup>	18-50	82	475	18-50	82	475	Special- valuation for farms and closely-held businesses

Notes: Tax rates are in per cent and thresholds are in million yen. Exchange rates used are: 1 US\$ = 130.9 yen; 1 DM = 74.4 yen; 1 FF = 22.2 yen; 1 Nkr = 17.3 yen; 1 SKr = 16.5 yen; 1 £ = 216.7 yen (average of daily rates, 1998).

\* Tax deductibility of interest payments for housing mortgages. For Japan, there is a tax credit for interest payments on housing mortgages.

\*\* Denotes taxation of dividends both at corporate and investor level without partial credits at investor level.

\*\*\* Denotes full imputation at investor level for taxes paid at corporate level.

\*\*\*\* For one-payment dividends both at corporate and investor level with partial credits at investor level.

- Taxation at both corporate and investor level.
- When tax rates above 0 become effective.
- Until FY 2001 investors can opt to be taxed by 1.05 per cent of total proceeds instead.
- Retained profits.
- When the highest rate becomes effective.
- Inheritance tax is dropped upon transfers of i) interest in an unincorporated business; ii) controlling interest in a trading company and shares in unquoted trading companies. Other transfers of business may have a 50 per cent reduction of rates.
- Applying to property passing on death. The rate is halved for property transferred *inter vivos* into a discretionary settlement or a closely-controlled company.
- Federal tax schedule.
- Applicable to the legal share of inheritance of each inheritor.

Source: OECD; International Bureau of Fiscal Documentation (1998), *European Tax Handbook 1998*; United States Internal Revenue Service.

Table 7. Tax treatment of pensions in major OECD countries  
1998

	Contributions	Fund earnings	Benefits
United States	E/T (Employer contributions are not taxed. Employee contributions are taxed)	E	T* (50-85 per cent of benefits taxed as earned income. Lump sums are subject to an averaging provision. A small additional allowance is given to persons above age 65 and a small tax credit is given to elderly with very low income)
Japan	E* (A part of employee contributions for qualified pension schemes may not be deductible)	E	E* (The allowances for retirement and annuity income effectively exempt pensions, both lump sums and annuities, from income taxation)
Germany	E/T (Employer contributions are not taxed, except for contributions to direct insurance and pension funds. Employee contributions are exempt up to a certain limit)	E	T*/E* (Payments made out of relief funds and on the basis of direct pension commitments are taxed as ordinary income after an allowance of 40 per cent (up to a certain limit). Taxpayers older than 64 years and deriving income which is not considered income from prior employment are also granted an allowance of 40 per cent (up to a certain limit). In the case of annuity payments from pension funds and life insurance, only interest earned after pension payments have begun is subject to tax, while lump-sum payments are exempt)
France	E	E	T* (Liable to ordinary income tax but subject to a 10 per cent basic deduction and a 20 per cent "additional deduction" (up to certain limits) Life annuities are only partially subject to income tax with the taxed share ranging from 30 to 70 per cent dependent on the recipient's age)
Italy	E	E	T* (60 per cent of annuity benefits are taxed - however, for the complementary pension the base is 87.5 per cent of the annuity)
United Kingdom	E*/T* (All contributions to personal and occupational pension schemes are eligible for tax relief, subject to limits both on the level of contributions as a proportion of earnings and on the amount of earnings)	E	T*/E* (Pension income is taxed as employment income subject to an age allowance for persons above age 64. The allowance is reduced for higher-income individuals. At the time of the commencement of the pension, part of the pension can be converted to a tax free lump-sum payment. The income from a purchased life annuity is split between an income and capital element on an actuarial basis with only the income element being taxable)
Canada	E	E	T* (Old age security basic pension is taxed whereas the Guaranteed Income Supplement and Spouses Allowances are not. Tax credits are given elderly persons and to receivers of pensions. The current system will merge into a tax free Senior Benefit in 2001. The income from a purchased life annuity with no tax-assisted savings is split between an income and capital element with only the income element being taxable)

Note: T = taxed, T\* = taxed lightly, E = exempt, E\* = virtually exempt.

Source: OECD, Tax database; *The European Tax Handbook*, 1998; and national sources.

Table 8. Tax effects on landholders' reservation prices

	Assumptions		Strategy 1		Strategy 2		Strategy 3	
	Ratio of land evaluation to market value (%)	Tax rate (%)	After-tax asset value (yen million)	Reservation prices	After-tax asset value (yen million)	Reservation prices	After-tax asset value (yen million)	Reservation prices
<b>Example 1<sup>1</sup></b>	Inheritance tax							
Case 1	80	70	33	1.47	22	1		
Case 2	50	70	48	2.17	22	1		
Case 3	80	50	44	1.20	37	1		
<b>Example 2<sup>2</sup></b>	Inheritance tax							
Case 4	80	70	143	4.89	63	2.15	29	1
Case 5	50	70	211	7.22	137	4.69	29	1
Case 6	80	50	195	2.91	117	1.75	67	1
<b>Example 3<sup>3</sup></b>	Property tax <sup>4</sup>							
Case 7	0	1.7	143	4.89	63	2.15	29	1
Case 8	30	1.7	111	3.79	49	1.67	29	1
Case 9	70	1.7	78	2.69	35	1.18	29	1

- The calculations in example 1 are as follows: Strategy 1: the after-tax asset value (ATV) =  $100 \cdot (1 - ei \cdot ti) \cdot (1 - tc)$ ; Strategy 2:  $ATV = 100 \cdot (1 - ti) \cdot (1 - tc)$ , where  $ei$  = the ratio of land evaluation for inheritance tax to market value,  $ti$  = inheritance tax rate,  $tc$  = capital gains tax rate (26%). Therefore, the reservation price (RP) of strategy 1 is equal to  $(1 - ei \cdot ti) / (1 - ti)$ .
- The calculations in example 2 are as follows: Strategy 1:  $ATV = 100 \cdot (1 + r)^{50} \cdot (1 - ei \cdot ti) \cdot (1 - tc)$ ; Strategy 2:  $ATV = 100 \cdot (1 + r)^{50} \cdot (1 - ei \cdot ti)^2 \cdot (1 - tc)$ ; Strategy 3:  $ATV = 100 \cdot (1 + r)^{50} \cdot (1 - ti) \cdot (1 - tc)$ , where  $r$  = interest rate and appreciation rate of land (3%). Hence, RPs are calculated as follows: Strategy 1:  $RP = (1 - ei \cdot ti) / (1 - ti)^2$ ; Strategy 2:  $RP = (1 - ei \cdot ti)^2 / (1 - ti)^2$ .
- The calculations in example 3 are as follows: Strategy 1:  $ATV = 100 \cdot ((1 + r) \cdot (1 - ea \cdot ta))^{50} \cdot (1 - ei \cdot ti) \cdot (1 - tc)$ ; Strategy 2:  $ATV = 100 \cdot ((1 + r) \cdot (1 - ea \cdot ta))^{50} \cdot (1 - ei \cdot ti)^2 \cdot (1 - tc)$ ; Strategy 3:  $ATV = 100 \cdot ((1 + r) \cdot (1 - ea \cdot ta))^{50} \cdot (1 - ti) \cdot (1 - tc)$ , where  $ea$  = the ratio of land evaluation for fixed asset tax to market value,  $ta$  = sum of fixed asset tax rate and city planning tax rate. Hence, RPs are calculated as follows: Strategy 1:  $RP = (1 - ea \cdot ta)^{50} \cdot (1 - ei \cdot ti) / (1 - ti)^2$ , Strategy 2:  $RP = (1 - ea \cdot ta)^{50} \cdot (1 - ei \cdot ti)^2 / (1 - ti)^2$ . In example 3,  $ei$  and  $ti$  are set equal to 80 and 70 per cent, respectively.
- Including city planning tax.

Source: Kanemoto (1994) and OECD.

Table 9. **Changes in capital gains tax rates for individuals**

	1982-86	1987	1988	1989-91	1992-94	1995	1996	1997	1998	1999
<b>Tax on short-term holdings</b>										
Marginal tax rate (per cent) <sup>1</sup>										
Special treatment of holding for less than two years					65 <sup>2</sup>					
Ordinary treatment					52 <sup>3</sup>					
<b>Tax on long-term holdings</b>										
Eligibility of long-term holding		Over 10 years						Over 5 years		
Marginal tax rate (per cent) <sup>1</sup>										
Bracket: 0 to 20 million yen		26		26		39		32.5		26
20 to 40 million yen										
40 to 60 million yen										
60 to 80 million yen										
Over 80 million yen										
				Progressive rate <sup>4</sup>		32.5				
								39		32.5
										39

1. All tax rates shown here include local residents' tax.

2. The amount of tax payment is decided by the greater of: a) separate taxation by a 65 per cent rate or b) an additional payment in the case of comprehensive taxation times 1.2.

3. The amount of tax payment is decided by the greater of: a) separate taxation by a 52 per cent rate or b) an additional payment in the case of comprehensive taxation times 1.1.

4. Half of the gains are added to other incomes and taxed in a comprehensive way.

Source: Ministry of Finance.

Table 10. **Redistribution through taxes and transfers**  
Equivalence scale elasticity = 0.5

	Gini		
	Before taxes and transfers (1)	After taxes and transfers (2)	% changes due to taxes and transfers (2)/(1)-1
Australia, 1993/94	46.3	30.6	-33.9
% changes, 1975/76-1993/94	36.6	5.2	
Belgium, 1995	54.5	29.9	-48.4
% changes, 1983-95	-	2.3	
Canada, 1994	-	28.4	-
Denmark, 1994	42.0	21.7	-48.3
% changes, 1983-94	11.2	-4.9	
Finland, 1995	39.2	23.1	-41.0
% changes, 1986-95	11.4	9.1	
Germany, 1994	43.6	28.2	-35.3
% changes, 1984-94	1.2	6.4	
Italy, 1993	51.0	34.5	-32.4
% changes 1984-93	20.8	12.7	
Japan, 1994	34.0	26.5	-22.0
% changes, 1984-94	14.0	4.9	
Netherlands, 1994	42.1	25.3	-39.8
% changes 1977-94	14.2	11.8	
Sweden, 1995	48.7	23.0	-52.9
% changes, 1975-95	17.2	-1.0	
United States, 1995	45.5	34.4	-24.5
% changes, 1974-95	13.1	10.0	

Note: The Gini coefficient is a measure of income inequality; the lower the coefficient the more equally are incomes distributed.

Source: Oxley *et al.* (1997) and Burniaux *et al.* (1998).

Table 11. **Revenue losses due to special tax measures**  
FY 1999, yen billion

<b>Measures related to savings</b>	367
<i>of which:</i>	
Deduction of life casualty insurance premiums	285
Exemption of interest income on small deposits owned by elderly, etc. ( <i>maruyu</i> )	69
Others	13
<b>Measures related to investment</b>	1 707
<i>of which:</i>	
Tax credit for acquisition of dwellings for individuals	551
Special depreciation measures	349
Tax credit for incremental R&D	29
Tax free reserves for corporations ( <i>jumbikin</i> )	125
Others	653
<b>Total</b>	2 074

Source: Ministry of Finance.

Table 12. Effectiveness of value added taxes  
1997

	Value added Tax revenues in per cent of GDP	Standard rate <sup>1</sup> , per cent	Effective VAT rate <sup>2</sup> , per cent	Effective VAT rate in per cent of standard rate
		A	B	B/A
United States	n.a.	n.a.	n.a.	n.a.
<b>Japan<sup>3</sup></b>	<b>1.8</b>	<b>5.0</b>	<b>3.1</b>	<b>89</b>
Germany <sup>4</sup>	6.6	16.0	11.5	77
France	7.9	20.6	14.7	71
Italy <sup>5</sup>	5.7	20.0	9.8	52
United Kingdom	6.9	17.5	10.8	62
Canada <sup>6</sup>	2.5	7.0	4.3	61
Australia	n.a.	n.a.	n.a.	n.a.
Austria	8.2	20.0	15.3	76
Belgium	7.0	21.0	12.5	60
Czech Republic	7.1	22.0	12.6	57
Denmark	9.8	25.0	22.2	89
Finland	8.2	22.0	18.1	82
Greece	7.5	18.0	11.6	64
Hungary	7.9	25.0	14.4	58
Iceland	9.4	24.5	17.3	71
Ireland	7.7	21.0	17.4	83
Korea	4.3	10.0	8.5	85
Luxembourg	5.7	15.0	..	..
Mexico	3.1	15.0	4.7	32
Netherlands	7.0	17.5	13.2	75
New Zealand <sup>7</sup>	8.8	12.5	15.2	122
Norway	8.8	23.0	21.7	94
Poland	8.4	22.0	..	..
Portugal	7.9	17.0	14.4	84
Spain	5.8	16.0	9.9	62
Sweden	7.3	25.0	14.5	58
Switzerland	3.4	6.5	5.7	88
Turkey	6.5	15.0	9.9	66
OECD average <sup>8</sup>	6.7	17.7	12.5	73
G7 average <sup>8</sup>	5.3	14.4	9.0	69
EU average <sup>8</sup>	7.3	19.4	14.0	71
Dispersion OECD				
Range (maximum - minimum)	7.9	20.0	19.1	90
Standard deviation	2.1	5.7	5.0	18
Coefficient of variation	0.3	0.3	0.4	0.2

Note: n.a. = not applicable; .. = not available.

- As of 1 January 1998 (except for Germany).
- The effective VAT rate is VAT revenues divided by the base (*i.e.* consumption excluding VAT).
- Fiscal year basis (Q2/97-Q1/98). The standard VAT rate was raised from 3 to 5 per cent on 1 April 1997. However, the bulk of VAT payments in FY 1997 were based on the 3 per cent rate since the payments are lagged 2 months and are based on tax payments in previous periods (business operators with tax payments in the previous year exceeding 5 million yen pay VAT 4 times a year, others pay twice a year. Moreover, business operators can choose tax periods of 1 year or 3 months). It is assumed that the "effective standard VAT rate" was 3.5 per cent in FY 1997.
- The standard VAT rate was raised from 15 to 16 per cent on 1 April 1998.
- The standard VAT rate was raised from 19 to 20 per cent on 1 October 1997. It is assumed that all 1997 payments were based on the 19 per cent rate.
- Fiscal year basis (Q2/97-Q1/98).
- Fiscal year basis (Q3/97-Q2/98). The general sales tax at standard rate is levied on 60 per cent of the value of the supply for long-term stay in a commercial dwelling, which may partly explain why the effective VAT rate exceeds the standard rate.
- Simple average over available countries.

Source: OECD, *Revenue Statistics and Consumption Tax Trends*, and OECD calculations. See also Carey *et al.* (forthcoming).

Table 13. **Relative disposable income by age of the household head**  
Ratio in per cent and changes in percentage points

	Age of head of household			
	Young head	Prime-age head	Older working age head	Retirement age head
Australia, 1993/94	101.1	101.4	110.9	68.2
Changes 1975/76-1993/94	-4.4	1.4	1.3	-5.7
Canada, 1990	87.7	101.5	111.9	87.3
Changes 1985-90	-1.8	0.4	0.5	-0.4
Denmark, 1994	89.6	105.9	117.3	73.4
Changes 1983-94	-10.9	-1.5	10.7	4.7
Finland, 1995	80.3	106.8	114.5	78.1
Changes 1986-95	-7.6	0.3	6.4	1.1
Germany, 1994	78.5	100.9	113.0	89.3
Changes 1984-94	-1.9	-1.5	0.6	4.3
Italy, 1993	92.1	98.1	109.9	84.7
Changes 1984-93	-4.8	1.5	-2.7	2.9
Japan, 1994	75.9	94.2	120.7	93.1
Changes 1984-94	-6.0	-0.9	3.6	-0.8
Netherlands, 1994	85.2	100.8	114.0	87.5
Changes 1977-94	-5.9	5.0	-2.2	-8.9
Norway, 1995	78.0	107.3	117.3	73.7
Changes 1977-94	-11.5	0.6	4.6	4.0
Sweden, 1995	73.3	104.2	125.8	89.3
Changes 1975-95	-15.8	-5.3	12.2	16.5
United States, 1995	75.0	101.5	120.0	91.9
Changes 1974-95	-9.5	0.9	1.8	6.4

*Note:* Relative income by age head is the ratio of the relative household disposable income of the households concerned to the average for the entire population. Thus, for Japan, the relative average income for households with a retirement age head was 93 per cent of total average income in 1994. This ratio has decreased by 0.8 percentage points over the 1984-94 period.

*Source:* Oxley *et al.* (1997).

Table 14. Blue Return diffusion ratios<sup>1</sup>

	Number of Blue Return individuals (thousand)	Number of White Return individuals <sup>2</sup> (thousand)	Blue Return diffusion ratio for individuals <sup>3</sup> (per cent)	Number of Blue Return corporation (thousand)	Blue Return diffusion ratio for corporations <sup>3</sup>
1950	111	-	4	145	48
1955	519	-	32	347	68
1960	579	-	33	458	70
1965	794	-	33	653	75
1950	1 610	-	48	919	83
1975	2 421	-	53	1 305	88
1980	3 208	-	52	1 612	90
1985	3 812	-	51	1 834	90
1990	4 245	942 <sup>4</sup>	52	2 242	89
1995	4 548	1 058	50	2 501	93
1996	4 593	1 054	50	2 538	93
1997	4 609	1 046	51	2 582	92
1998	n.a.	1 013	n.a.	n.a.	n.a.

1. Under the Blue Return system, a corporation or an individual who conducts a business, may obtain the approval of the tax authorities to file a tax Return using a special form printed on Blue paper. These taxpayers are required to maintain books and keep continuous accounting records that meet prescribed standards. In Return, the taxpayer is entitled by law to a variety of tax benefits.
2. The 1984 tax reform introduced an obligatory bookkeeping system and related provisions for non-Blue Return taxpayers (White Return taxpayers), which imposes less stringent bookkeeping requirements on the taxpayers.
3. The diffusion ratio for individuals shows number of Blue Return taxpayers out of total business taxpayers with a tax liability. The ratio for corporations show the number of Blue Return corporations out of the total number of corporations. The diffusion ratio up to 1965 includes corporations in liquidation but excludes them from 1970 onward.
4. 1991.

Source: National Tax Administration (1997).

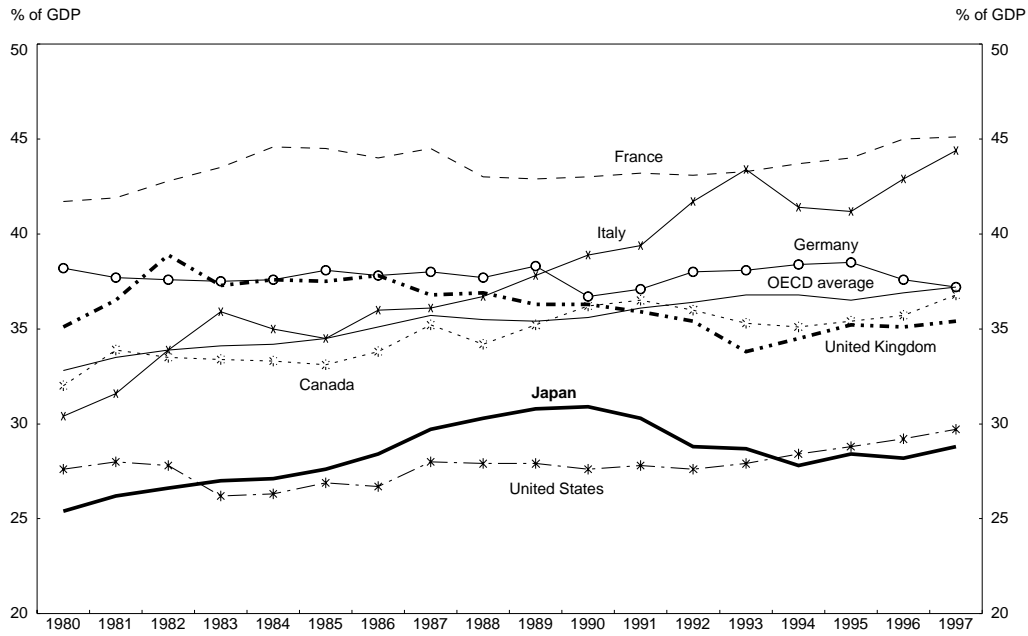
Table 15. **Local tax revenues**  
FY 1997, yen billion

	Prefecture tax	Municipal tax	Total of local taxes
Inhabitants tax	4 209	9 704	13 913
Individual income	2 808	7 172	9 980
Corporate income	954	2 532	3 486
Interest income	448	-	448
Enterprise tax	5 100	-	5 100
Individual	271	-	271
Corporate	4 829	-	4 829
Local consumption tax	807	-	807
Automobile tax	1 705	-	1 705
Light oil delivery tax	1 331	-	1 331
Real property acquisition tax	731	-	731
Property tax	8	8 822	8 830
City planning tax	-	1 326	1 326
Tobacco tax	248	799	1 047
Other taxes	809	557	1 366
<b>Total</b>	<b>14 948</b>	<b>21 208</b>	<b>36 156</b>

1. Sum of inhabitants tax (excluding per capita or per establishment payments) and enterprise tax.

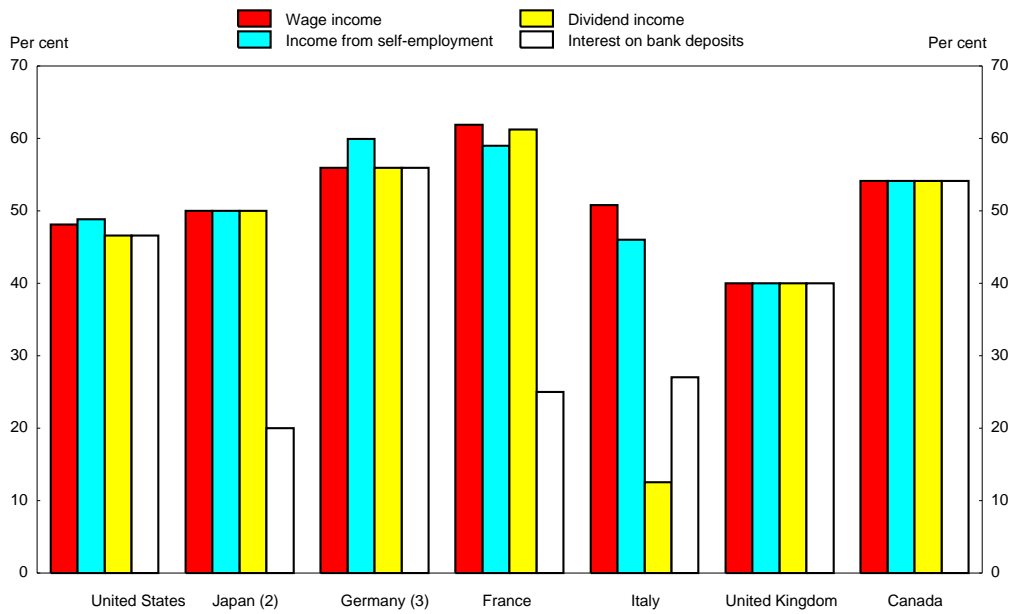
Source: Ministry of Home Affairs.

Figure 1. Total tax revenues (1)



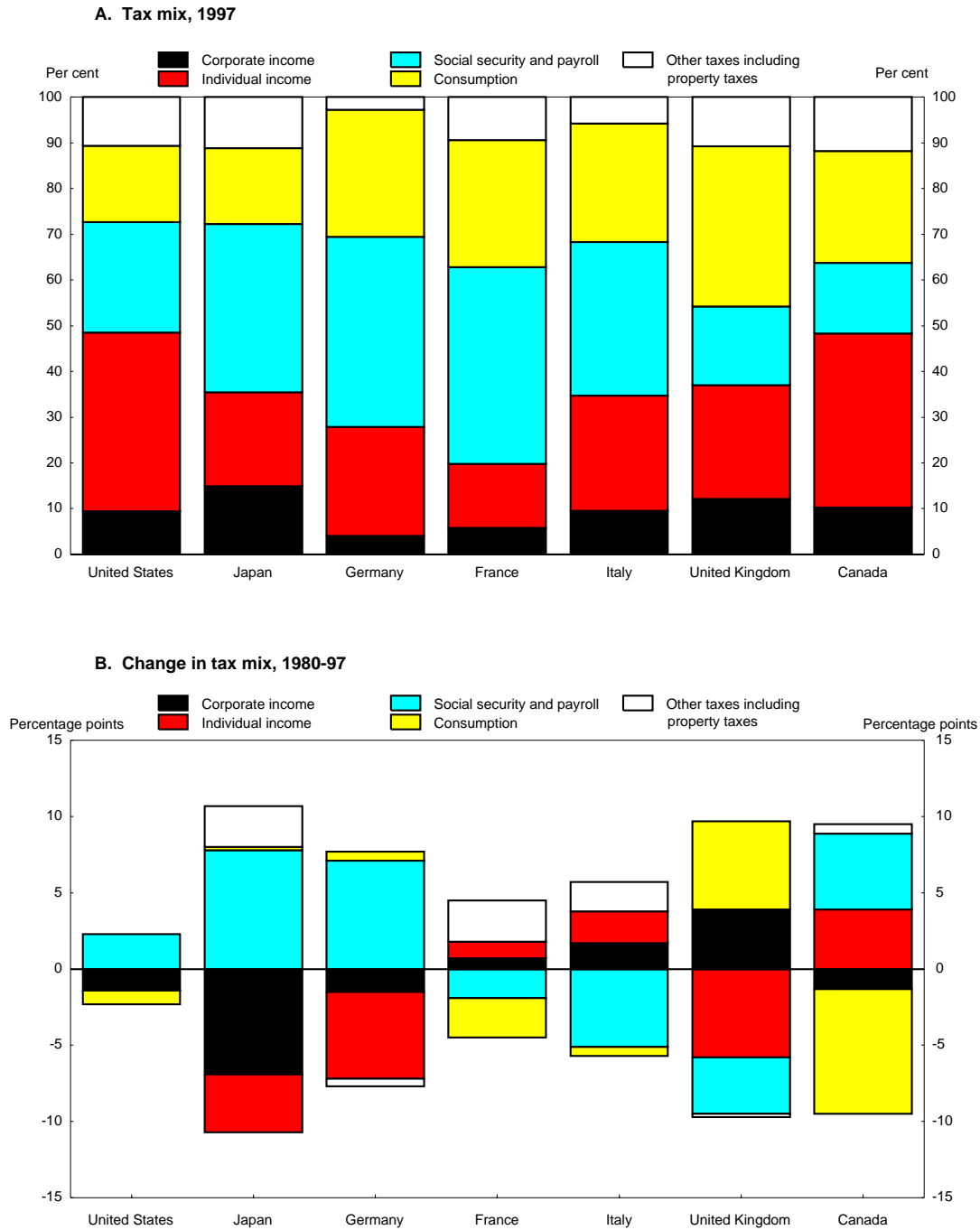
1. General government revenues, including social security contributions. Note that numbers may not be fully comparable across countries (see Box 3) and over time due to changes of national accounts from SNA68/ESA79 to SNA93/ESA95. See OECD, Revenue Statistics 1999 for more details. Source: OECD Revenue Statistics.

**Figure 2. Highest all-in tax rates for top income earners (1)**  
1998



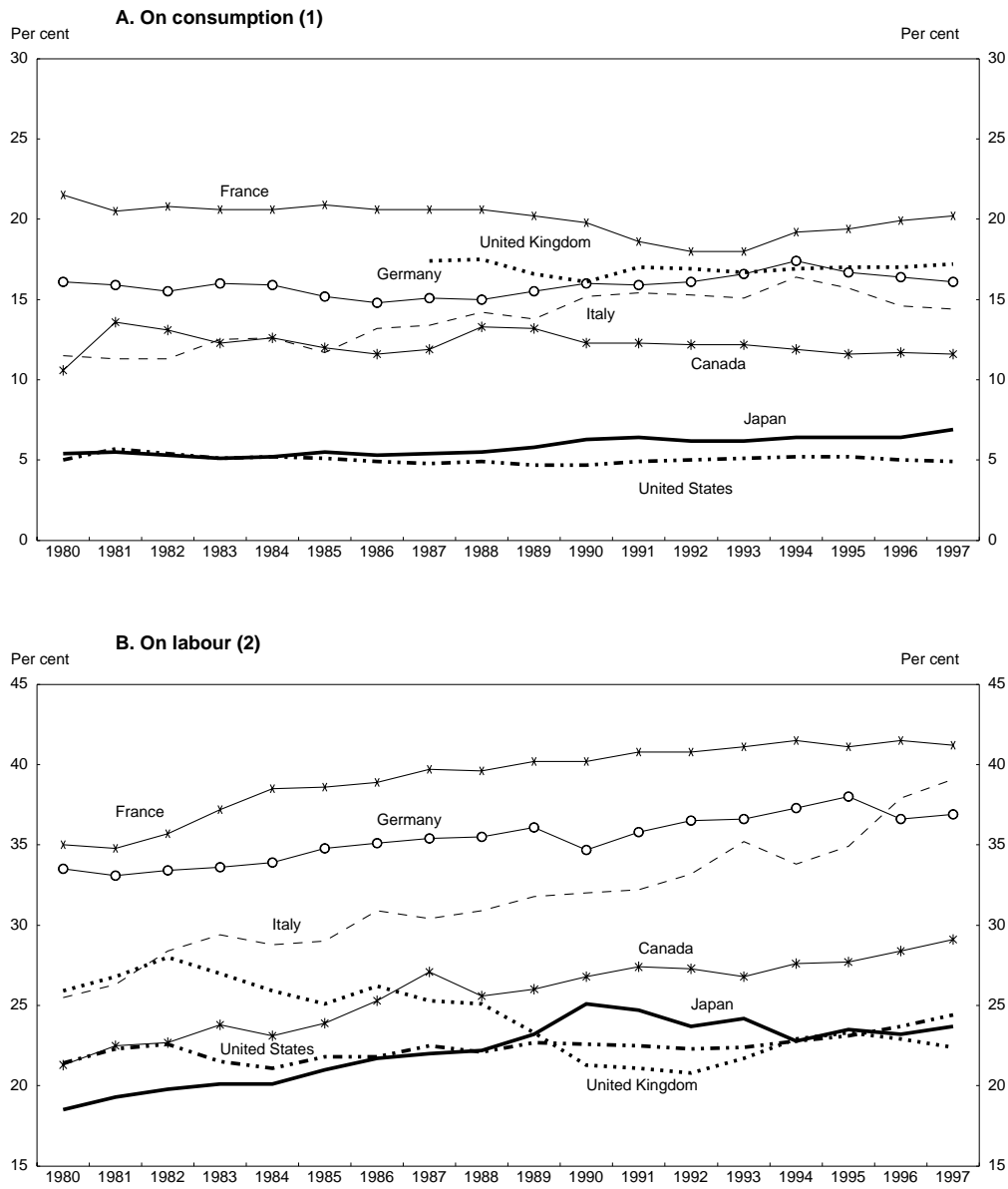
1. The all-in rates include central and sub-central government taxes as well as social security contributions where these are not capped.  
 2. Japanese data are for FY 1999. Tax on dividends depends on the size of payment. Tax credit not included.  
 3. Income from self-employment applies only to business income which is subject to the local business tax ('Gewerbsteuer').  
 Source: OECD Tax Database.

Figure 3. Tax mix in major OECD countries



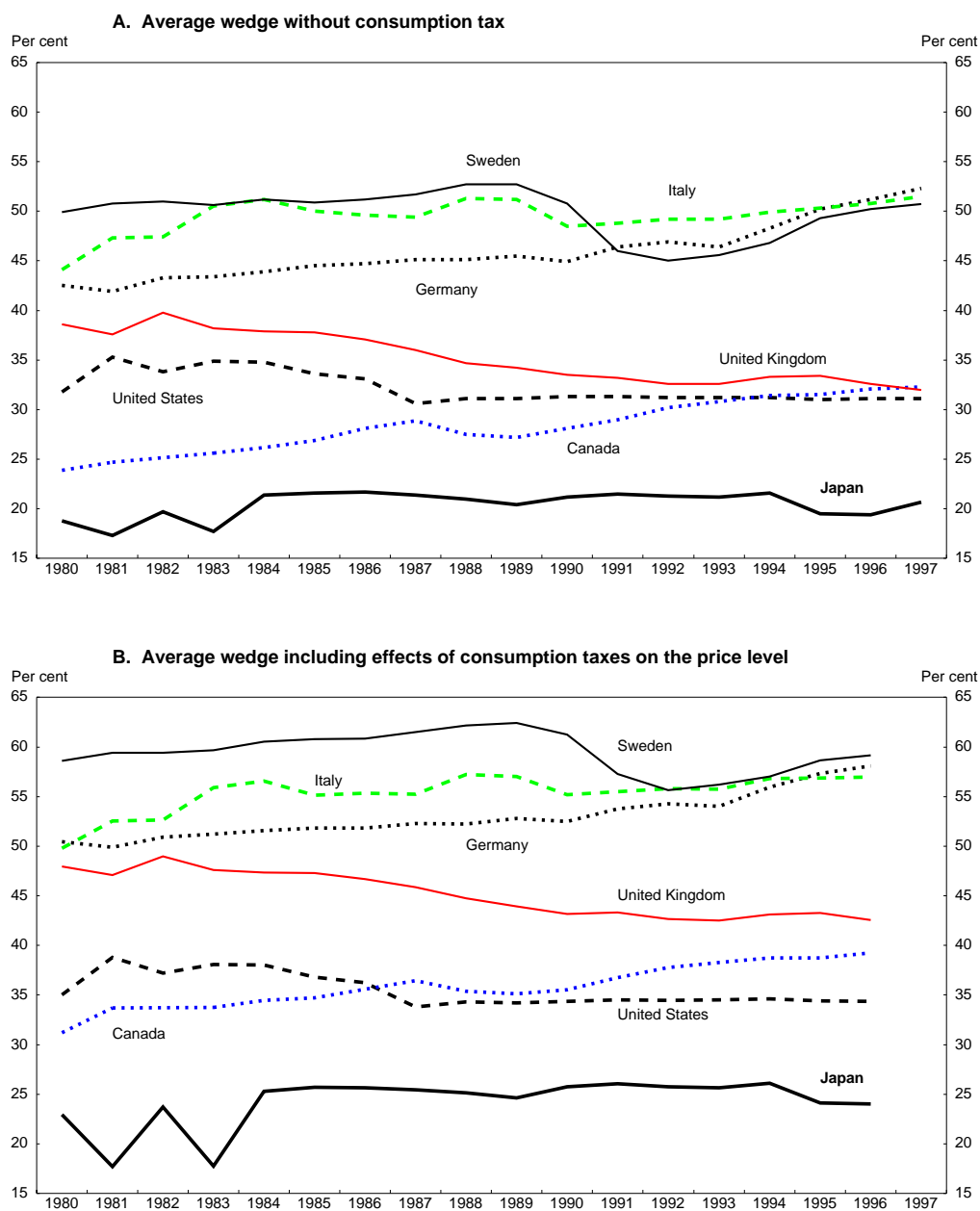
Source: OECD, Revenue Statistics.

Figure 4. Average effective tax rates



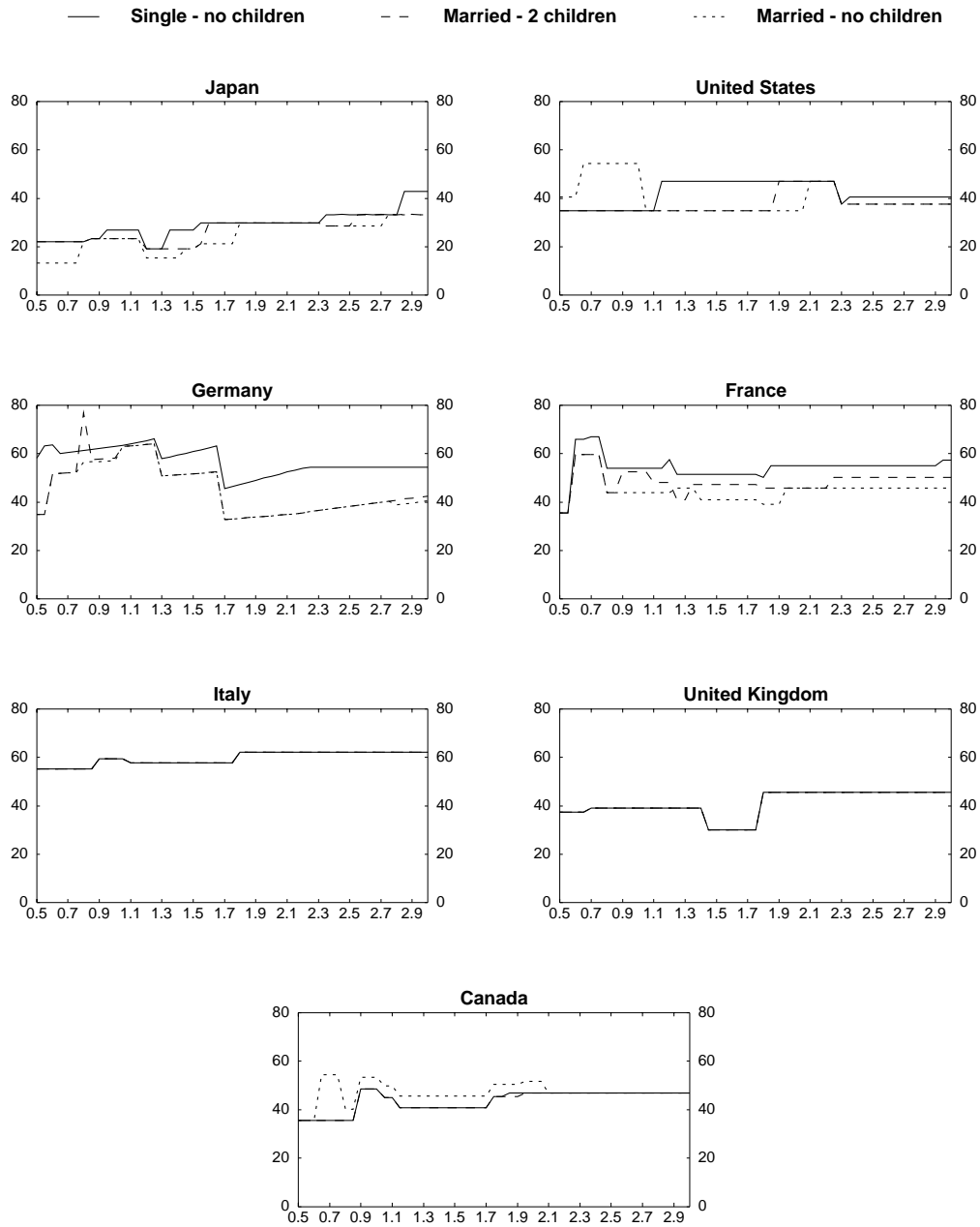
1. General taxes on goods and services plus excises, divided by private and government non-wage consumption excluding these taxes.  
 2. Individual income taxes paid on wages (including tax on self-employed labour income) plus payroll taxes and social security contributions, divided by wages and salaries (including imputed wages of self-employed), and including employer's contribution to social security and to private pension schemes.  
 Sources: OECD Revenue Statistics, OECD National Accounts, OECD Secretariat's calculations.

Figure 5. Average tax wedge for a production worker (1)



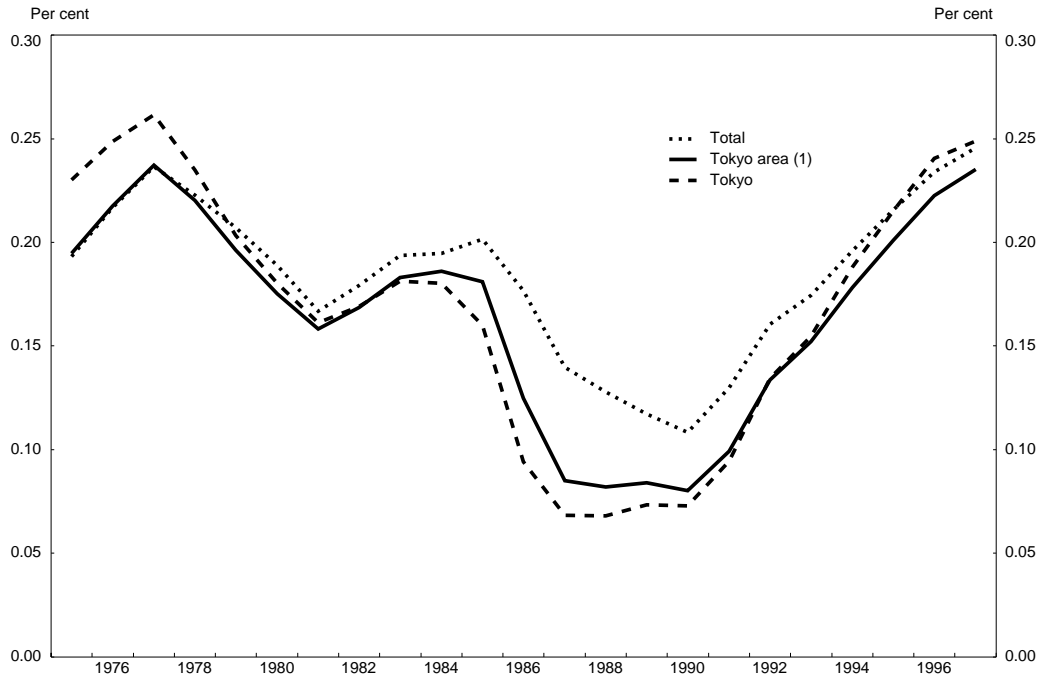
1. Employees' social security contributions and personal income taxes as a percentage of gross labour costs (incl. employers' social security contributions). At 100 per cent of an Average Production Worker (APW) income. Panel B takes into account price level effects of consumption taxes.  
Source: OECD, The Tax/Benefit Position of Employees.

**Figure 6. Marginal tax wedges on labour income (1)**  
 At multiples of average production worker earnings, 1997



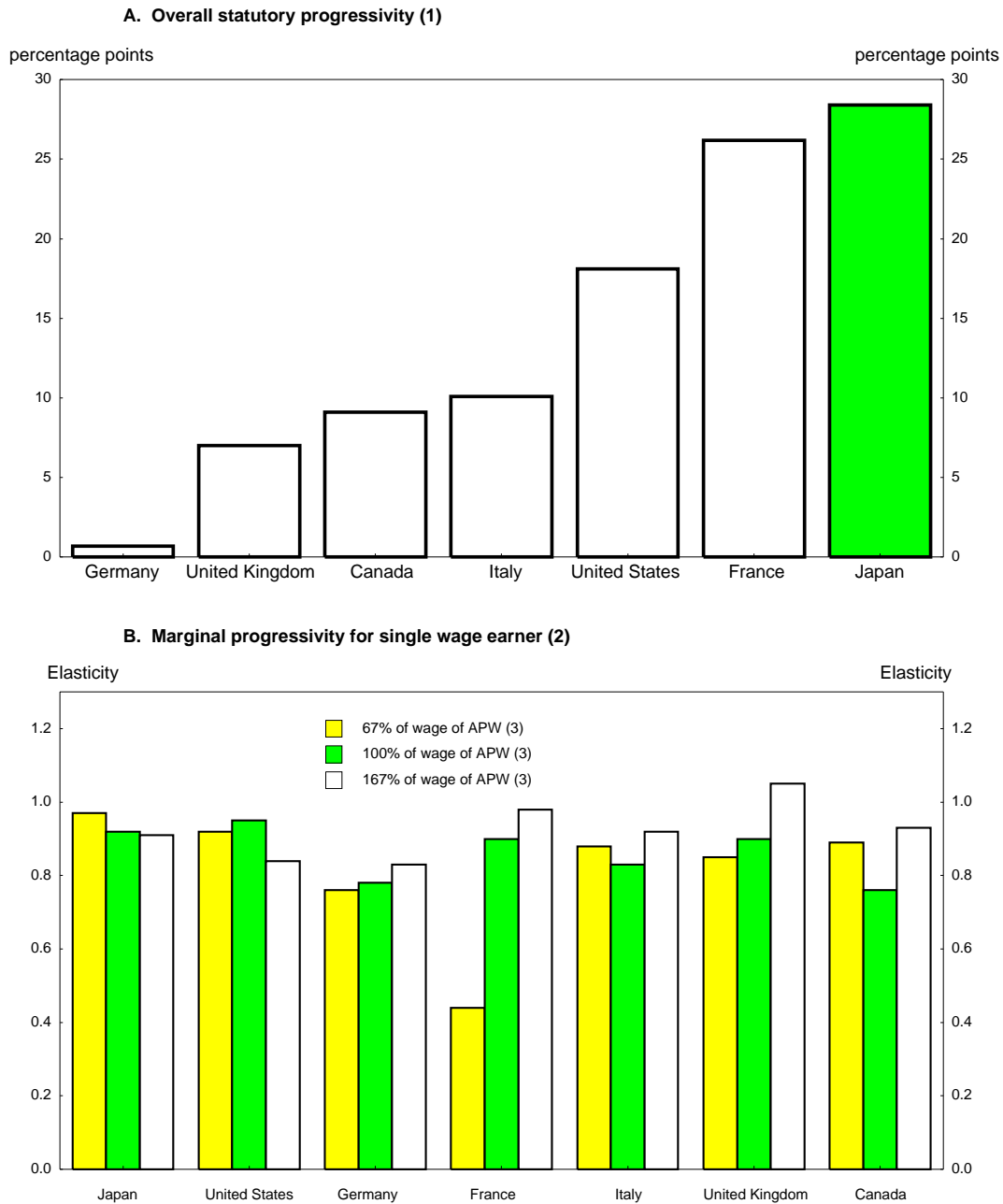
1. Marginal tax rate, covering employees' and employers' social security contributions and personal income tax, with respect to a change in gross labour costs, by family type and wage level, assuming spouse earns 0% of APW earnings. Source: OECD Tax equations.

**Figure 7. Effective property tax rates**  
Fiscal year



1. Tokyo area is Tokyo, Kanagawa, Chiba and Saitama prefectures.  
Source: Economic Planning Agency and OECD.

**Figure 8. Overall and marginal progressivity in major OECD countries**



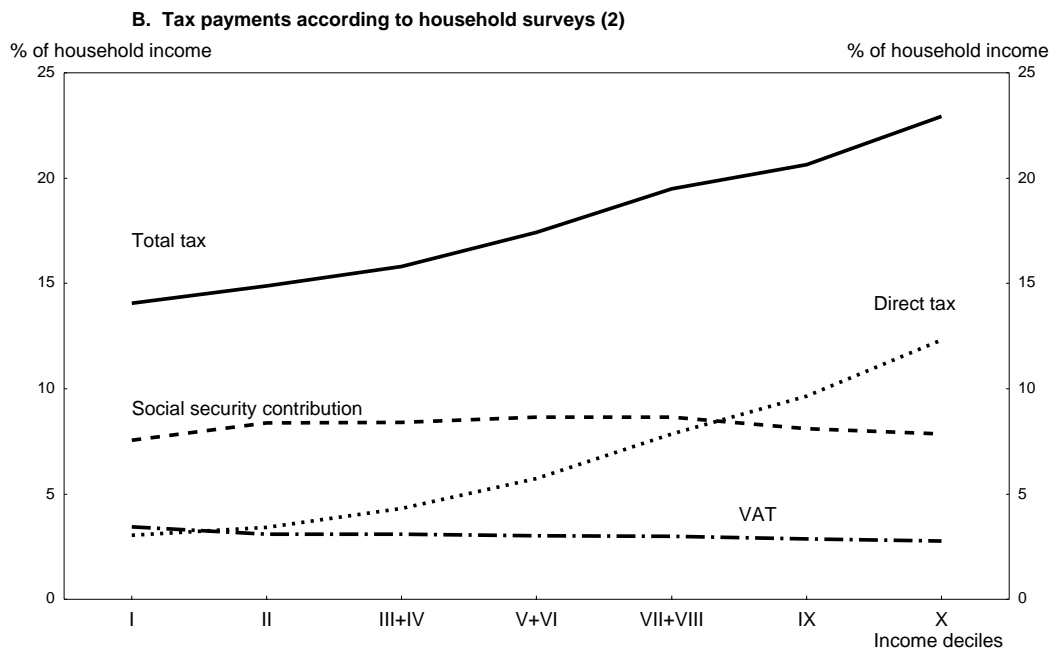
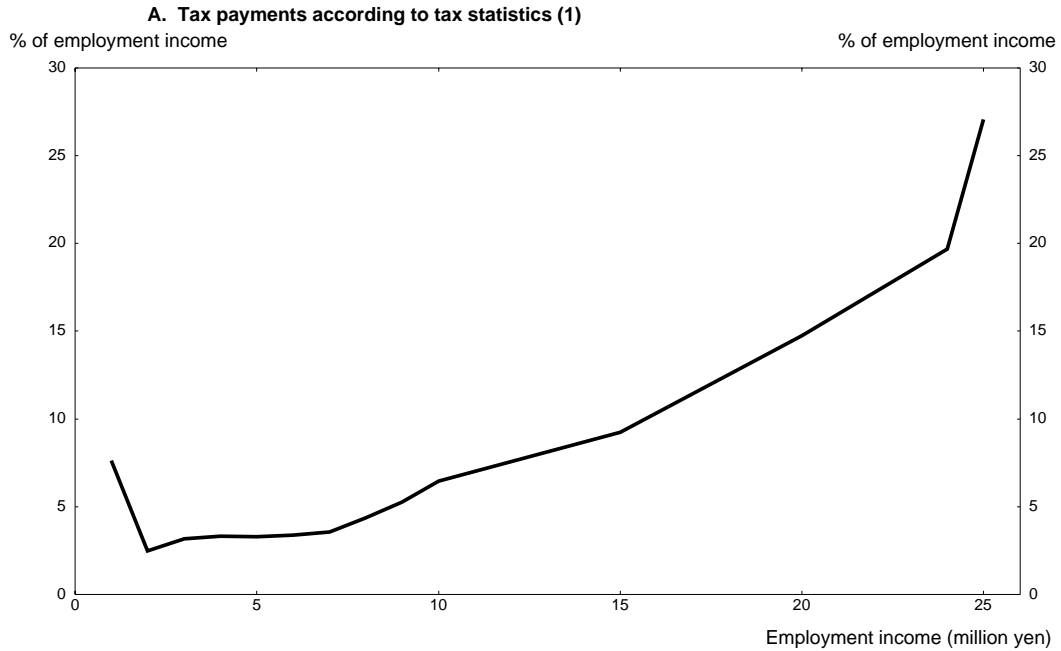
1. This measure of progressivity is based on the difference between the top rate paid and the average production worker's (APW) rate. The figures for the APW are for the year 1997, while the figures for the top bracket earner are for the year 1998 (1999 for Japan).

2. Increase in net income after a one percent increase in gross labour costs, 1997. Net income is gross earnings minus employees' social security contributions and personal income tax. In a proportional system the elasticity would equal 1. The more progressive the system, the lower the elasticity.

3. APW: Average production worker in manufacturing.

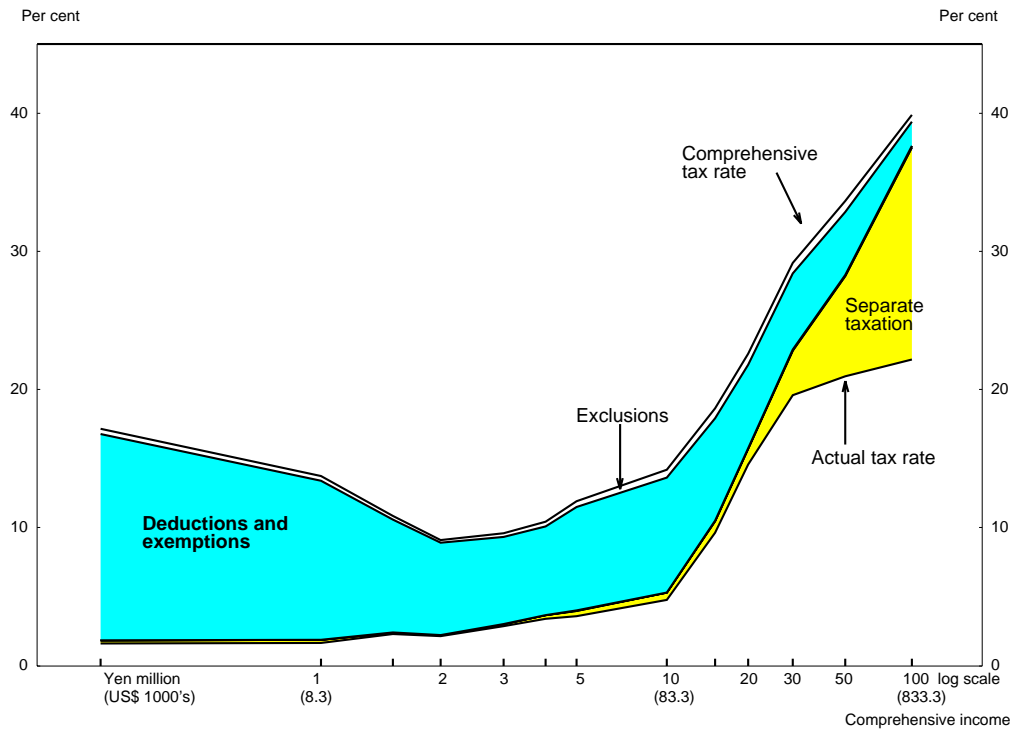
Source: OECD, The Tax Benefit Position of Employees and the OECD tax database.

**Figure 9. Actual tax payments by income group**  
1998



1. Actual tax payment per income group in per cent of employment income (national employment income tax only).  
2. Including local taxes.  
Source: Statistics Bureau, Management and Coordination Agency, Monthly Report on the Family Income and Expenditure Survey, December 1998 and National Tax Administration, Actual Condition of Private Sector Employment Income.

**Figure 10. Comprehensive versus actual tax rates by income group**  
Fiscal year 1996

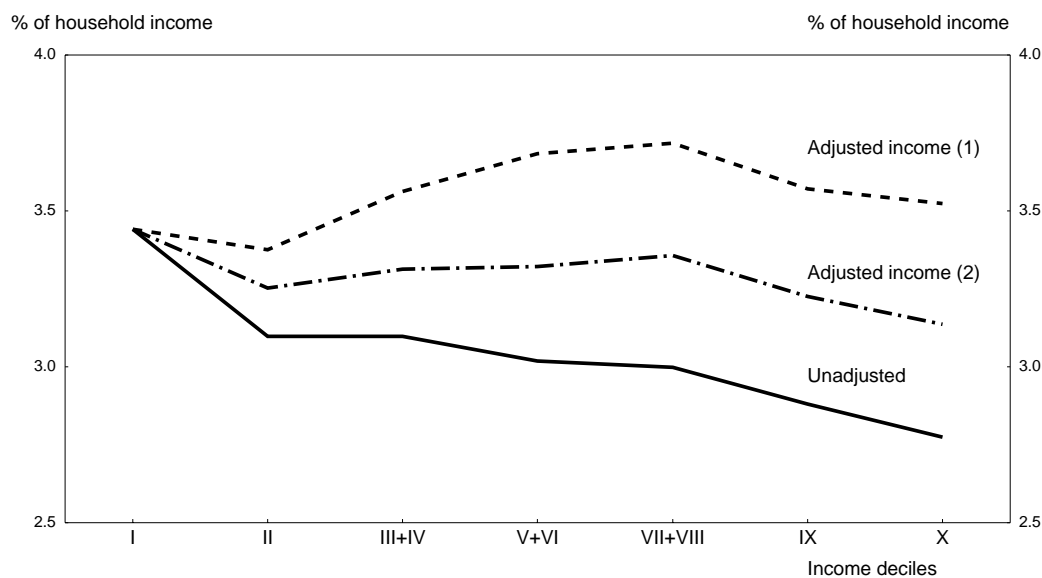


Note: Tax payments are for national income tax only. Comprehensive income is taxable income plus allowances and exemptions. It does not include unrealised capital gains, fringe benefits or imputed rents. The figure does not take estimated under-reporting of income into account.

Deductions and exemptions include around 20 kinds of ordinary reliefs encompassed in the income tax law, e.g. basic deduction, deduction for spouse and dependents, for medical expenses etc. Exclusions concern the part of interest income excluded from taxation (maruyu), special deductions for retirement, timber and occasional income etc. 'Separate taxation' measures the effect of not taxing income from interest, dividends, retirement and capital gains together with other personal income. Not shown in the figure is the effect of tax credits, i.e. credits for dividends, foreign taxes, incremental R&D expenditure and acquisition of dwellings. These credits have only a negligible effect on taxation. In 1996 they amounted to 0.11 per cent or less of comprehensive income for all income groups. With the expansion of housing tax credits introduced as of FY 1999 the effect has increased, but these credits are still only marginal to the total loss of tax revenues caused by tax relief.

Source: Hiromitsu Ishi, The Japanese Tax System, 3rd edition (forthcoming, Autumn 2000).

**Figure 11. VAT payments based on household surveys**  
1998



Note: Adjusted income takes into account differences in household size. Adjusted income(1) makes a simple correction for the number of individuals in the household, whereas adjusted income(2) corrects for households economies of scale by applying an equivalence factor of 0.5 (i.e. corrects for the square-root of the number of individuals in the household).

Source: Statistics Bureau, Management and Coordination Agency: Monthly report on the family income and expenditure survey, December 1998 and National Tax Administration, Actual Condition of Private Sector Employment Income.

*Annex 1*  
**STATUTORY FEATURES OF THE TAX SYSTEM AND KEY ELEMENTS  
 OF RECENT REFORMS**

**Main statutory features<sup>64</sup>**

1. The Japanese tax system is a “separate” or “schedular” system, in which different components of personal income are taxed at different effective rates. Retirement and capital incomes are separated from other types of personal income, mainly employment and business income,<sup>65</sup> and there is no integration between the personal and corporate income tax systems.<sup>66</sup> After a recent 15 percentage point cut in marginal tax rates, personal income is now taxed at progressive rates running from 10 to 50 per cent (including local taxes). This is in line with the rate structure of other major countries (Table A2), but Japan applies somewhat wider tax brackets, implying that the highest marginal rate kicks in at a relatively high income level, *i.e.* four times that of an average production worker (APW). Interest income is taxed at a final withholding rate of 20 per cent, capital gains are generally taxed at 26 per cent, and dividends are taxed in a “mixed” fashion: large dividend payments are taxed as a part of total personal income, while small dividend payments are taxed at a final withholding rate of 20 or 35 per cent, respectively.<sup>67</sup>

**(Table A2. Personal income taxation in major OECD countries)**

2. The marginal corporate tax rate was lowered from 50 to 41 per cent in FY 1998 and FY 1999 and has thus come down to a level not far from those of many other OECD countries (Table A3). Special investment incentives are given through the increased initial depreciation regime (and the less important accelerated depreciation regime) as well as investment tax credits for R&D. Corporations may generally carry back net operating losses one year to offset them against the previous’ years taxable income or may carry them forward for seven years (five years until 1999). The VAT is fairly broad in coverage -- there are few exemptions and no differentiated rates (Table A4) -- although the VAT-exempted threshold for sales is by far the highest among OECD countries. A so-called simplified regime applies to enterprises whose taxable sales do not exceed 200 million yen. It taxes an implied value added (which is calculated as a fixed percentage of gross sales) and is thus equivalent to a turnover tax on final sales with rates ranging from 1 to 2.5 per cent, depending on the industry. In contrast with other OECD countries, the Japanese VAT system is not based on invoices but on deduction of taxable purchases as registered in the corporate

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64. Table A1 summarises the key statutory features of the tax system.

65. Timber income is also taxed separately -- an issue which will not be pursued further here.

66. Japan applies basically a classical system in which dividends are taxed both at the corporate and individual level (although a dividend tax credit alleviates some of the burden of double taxation).

67. The tax credit system for dividends implies that dividends are taxed at a maximum rate of 40 per cent (for incomes below 10 million yen).

accounts. Taxation of land and property is carried out by numerous national and local taxes: five national and six local taxes are thus levied on acquiring, holding and transferring land.

**(Table A3. Corporate taxation in major OECD countries)**  
**(Table A4. Main features of VAT systems in major OECD countries)**

3. Tax policy in Japan is basically designed through two bodies, the government's Tax Council and the Tax Commission of the Liberal Democratic Party, the main coalition partner. There is an implicit division of labour between the two committees in which the Tax Commission is the *de facto* policy proposing body when it comes to short-term tax policy and specific changes. The Tax Council (or the Tax Advisory Committee) -- which reports directly to the Prime Minister's Office -- is more of a think-tank dealing with longer-term reform perspectives. It consists of 30 regular members and about the same number of supporting members, all of whom are appointed by the Prime Minister. Since these members represent a host of economic and political interests, in particular labour unions and business leaders, the Council has an important function in creating consensus about longer-term tax objectives. Both the Tax Council and LDP's Tax Commission are tightly connected with the Tax Bureau of the Ministry of Finance, and the Tax Council also works closely with the Ministry of Home Affairs since its remit also includes issues related to local government finances.

**Main elements of tax reform since 1988<sup>68</sup>**

4. The largest single tax change in the past decade was the introduction of a broadly based value-added tax -- initially levied at a rate of 3 per cent -- in the tax reform legislated in 1988 and implemented in April 1989. The reform also featured significant rate cuts in both corporate and personal income taxes, and a reduction in the progressivity of the personal tax system by reducing the number of tax brackets from 12 to 5 in the national income tax schedule and from 7 to 3 in the local inhabitants tax schedule. Personal allowances and deductions were also expanded quite substantially, thus narrowing the income tax base. On the other hand, the taxation of capital income was enhanced by new measures to tax dividends and capital gains. The elimination of the tax-free savings system (which was introduced one year earlier) also contributed to a more comprehensive taxation of income. The inheritance tax was reduced by a combination of rate cutting (the marginal rate was lowered from 75 per cent to the current level of 70 per cent) and base narrowing. The 1988 tax reform implied a net tax reduction of around 0.6 percentage point of GDP, which was interpreted by some commentators as the necessary political price for having the VAT approved by the Diet (see for instance Ishi, 1998). In the early 1990s, the focus shifted towards land taxation -- in light of the explosive increases in land prices during the bubble years -- and the land tax reform of 1992 increased taxation on land holding and on capital gains from the transfer of land. The treatment of agricultural land for inheritance tax and property tax purposes was also made less favourable.

5. An adjustment in 1994 further increased personal tax allowances and expanded the personal income tax brackets substantially -- basically to accommodate middle class dissatisfaction with perceived high personal tax burdens. Part of the tax cuts were temporary reliefs that were eliminated again in 1997. The 1994 reform also contained an increase in the VAT rate to 5 per cent (implemented in FY 1997) and a broadening of the VAT base with specific reference to the need for preparing for the costs related to the ageing society.

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68. See Ishi (1993 and 1998) for a thorough overview and discussion of tax changes since 1973. See also Ministry of Finance (1997) for more details on the individual tax reforms.

6. Significant tax changes were introduced in each of the fiscal years 1998 and 1999, with the main line being a continuation of rate reductions and narrowing of the personal income tax base. A variety of temporary tax reductions were also introduced (Table A5). The FY 1998 change contained total tax relief of some 2.4 per cent of GDP<sup>69</sup> of which around 1/3 was temporary income tax reductions. In particular, the temporary increase in personal allowances (from 3.6 million yen to almost 5 million yen for a one-earner family with two children) implied that the share of income tax exempted employees rose from 13 per cent to an estimate of 30 per cent. Other features of the FY 1998 change included a reduction of the top corporate rate from 50 per cent to 46 per cent while broadening the base somewhat by reducing the availability of tax-free reserves and tightening the depreciation rules as well as the valuation of securities. Transaction taxes for financial instruments were also reduced substantially and the land value added tax was suspended. Finally, capital gains taxes on transfer of land for corporations and individuals were lowered.

**(Table A5. Estimated effect on national tax revenues of tax changes  
in FY 1998 and 1999)**

7. The FY 1999 tax change was also expansionary, but expected revenue losses were somewhat smaller than the FY 1998 package (totalling some 1.1 per cent of GDP).<sup>70</sup> However, the beneficial economic effects may be more significant in the long run since the package includes a further considerable reduction in corporate rates (from 46 per cent to 41 per cent) as well as a drastic cut in the top personal rate: from 65 per cent to 50 per cent (including local taxes). The FY 1999 measures also contain a considerable extension of the tax credit for housing loans as well as a further reduction of financial transaction taxes (including an exemption of the 20 per cent withholding tax on interest payments for foreign corporations and non-resident individuals). The 1 per cent tax on assets in corporate pension plans is suspended for two years. Personal tax allowances for dependent children are increased on a permanent basis, but with the withdrawal of the temporary allowances in place for FY 1998 the tax-exempt threshold for employees is reduced by almost 25 per cent compared with FY 1998 (for a one-earner family with two children). Finally, the measures include a small reduction in personal capital gains tax on land as well as tax reductions for promoting investment in small and medium-sized enterprises and in information technology.

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69. National tax revenues only -- see Ministry of Finance (1998).

70. National tax revenues only -- see Ministry of Finance (1999a).

Table A1. Key statutory features of the Japanese tax system, 1999

**1. Personal income tax**

**Tax unit:** The individual

**Types of income:** The income tax law classifies individual taxable income into the following ten categories:

Interest, dividends, real estate, business, employment, retirement, timber, capital gains, occasional, miscellaneous. Income tax is paid on the basis of the individual's aggregate income, regardless of its category. However, retirement and timber income is taxed separately under the income tax law, while interest income is taxed separately under the special taxation measures law. Dividends and capital gains are, or may be, taxed separately as well.

**Withholding:** The tax system is in principle based on self-assessment, but withholding is widely used, including interest and dividend income, employment income and retirement income. An optional separate withholding tax on capital gains on listed securities (*i.e.* in reality a transaction tax of 1.05 per cent on the proceeds from sales) will be abolished as from FY 2001.

Tax rates	National	Prefectural	Municipalities	All-in marginal rate for top income earners
Income tax	10, 20, 30, 37 per cent of taxable income (4 brackets)	-	-	-
Inhabitants tax	-	2, 3 per cent of taxable income (2 brackets)  + 1 000 yen per cap	Standard rate of 3, 8, 10 per cent of taxable income (3 brackets)  + 2 000-3 000 yen per cap	
Total				50 per cent

**Allowances:**

A wide range of deductions and allowances apply, of which the main categories are:

- Deduction for employment income (a fixed amount ranging from 650 000 yen to 2 200 000 yen plus a gradually declining rate scale, starting at 40 per cent deduction from gross employment income below 1.8 million yen to a 5 per cent deduction from gross employment income exceeding 10 million yen).
- Deduction for life insurance premiums and personal pension plan premiums (max. 50 000 yen per year for each).
- Deduction for medical expenses (max. 2 million yen per year).
- Basic allowance (380 000 yen per year).
- Allowance for spouse (380 000 yen per year) and special allowance for spouse (max. 380 000 yen per year). The special allowance for spouse is gradually phased out as the employment income of the spouse exceeds 650 000 yen. The deduction is eliminated when the employment income of the spouse exceeds 1.4 million yen.
- Allowance for dependants, including children under 16 (480 000 yen per year for each dependent).
- Special allowance for dependent children between 16-22 (630 000 yen per year for each dependent).
- Other deductions (including special allowance for aged persons, handicapped persons, widows, widowers and working students).

These allowances apply to the national income tax, but a number of them also apply to the local inhabitants' tax (although at lower amounts).

**Tax credits:**

- The most important tax credit is the housing loan tax credit, which allows the taxpayer to deduct from his income tax liability a certain percentage (0.5-1.0 per cent) of the loan balance remaining on his dwelling of residence. The deduction period has been extended from 6 to 15 years (as of FY 1999) and the ceiling on the loan outstanding increased from 30 to 50 million yen as of January 1999. These extended measures will apply to newly resided houses in 1999 and 2000. A maximum amount of 5.9 million yen can be credited against taxes over the 15 year period, of which a maximum of 500 000 yen can be credited per year for the first 6 years. Other tax credits include those for dividends, for foreign tax payments and for incremental R&D expenditures.
- 20 per cent proportional tax reduction (max. 250 000 yen (national) and 40 000 yen (local) per year).

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

**Income taxed at preferential terms and taxed separately (main items):**

*Public annuity income:* Pensions and annuities paid by the social insurance system and qualified pensions (*i.e.* employer-financed pension schemes) are taxed at preferential terms as miscellaneous income. The preference is primarily given by the "public pension benefit deduction". For people above 65 a minimum of 1.4 million yen can be deducted. For public pensions between 2.6 and 4.6 million yen the deduction is 1 million yen plus 25 per cent of the pension benefit minus 1 million yen (*i.e.* the total deduction ranges from 1.4-1.9 million yen). For public pensions between 4.6 and 8.2 million yen the deduction is 1.9 million yen plus 15 per cent of the pension benefit minus 1 million yen exceeding 3.6 million yen (*i.e.* the total deduction ranges from 1.9-2.44 million yen). For public pensions above 8.2 million yen the deduction is 2.44 million yen plus 5 per cent of the pension benefit minus 1 million yen exceeding 7.2 million yen (*i.e.* the total deduction exceeds 2.44 million yen). Besides this deduction, the allowances mentioned above also apply to pensioners (notably including a 500 000 yen special allowance for persons above 65 and with incomes below 10 million yen). In practice, pension income is thus tax exempt or taxed very lightly for most people.

*Retirement income:* Retirement income is taxed separately. The tax base of retirement income is 50 per cent of retirement income after special retirement deductions. The amount of special retirement deduction is 400 000 yen per year of service on the labour market and -- for persons with more than 20 years of service -- a deduction of 8 million yen plus 700 000 yen per year in excess of 20. The minimum deductible amount is 800 000 yen. Lump sum retirement allowances paid by the social insurance system and qualified pensions are considered as retirement income.

*Interest income* is generally taxed at a final withholding rate of 20 per cent (15 per cent national, 5 per cent local). Non-resident individuals and foreign corporations are exempt from tax on interest income from government bills and bonds. For people above 65 years, and physically handicapped persons, etc., interest income from e.g. postal savings, government bonds and small deposits is exempt (up to a total principal of 3.5 million yen each). Likewise, no income tax is levied on interest from workers' property accumulation, housing and pension savings (up to a total principal of 5.5 million yen).

*Dividend income* is usually subject to a withholding tax of 20 per cent on distribution. When one-payment dividend from a single corporation (to an individual shareholder) is less than 50 000 yen (less than 100 000 yen, in the case where dividend payments are made once a year), taxpayers can opt to pay the withholding tax as final tax. When one-payment dividends from a single corporation are less than 250 000 yen (less than 500 000 yen, in the case where the payment is made once a year), taxpayers can opt for a final withholding tax at 35 per cent. For one-payment dividends from a single corporation above 250 000 yen (over 500 000 yen if one payment per year) dividend income is subject to comprehensive taxation, and the tax withheld on distribution is credited against personal income tax liability. When taxpayers opt for comprehensive taxation of dividend income, they are entitled to a tax credit of 10 per cent of the dividend (however, if total ordinary income, including dividends, exceeds 10 million yen, a 5 per cent tax credit applies to the dividend income corresponding to the amount in excess of 10 million yen).

*Capital gains* for listed stocks are taxed by either of the following options at the taxpayer's choice (for each transaction):

- (a) Separate tax return: realised gains are taxed at 26 per cent (including 6 per cent local inhabitants tax). Losses can be subtracted only from capital gains for sales of stocks;
- (b) Separate withholding tax: in the case sales are made through or to security firms, the taxpayer can opt for a withholding tax of 1.05 per cent of the total proceeds as final tax. This option will be abolished as from FY 2001.

Capital gains on non-listed stocks are taxed by option (a) above. Capital gains on bonds are not taxed.

*Fringe benefits*, including significant subsidies for employees' dwellings, recreational facilities, transportation, meals, clothing, etc., are not taxed.

**Self-employment:**

Taxable business income is calculated as gross receipts less "necessary" expenses for the year. Gross receipts are calculated on an accrual basis. Necessary expenses include taxes paid for land and property used for business but not those paid for income tax and inhabitants tax. They also include wages or salaries to family employees (max. 800 000 for spouse and 500 000 for others when certain conditions are met). The self-employed can opt to become so-called "blue return taxpayers". This means that they are committed to meeting certain accounting and book-keeping standards against obtaining some additional tax advantages (*e.g.* unlimited deductibility of wages/salaries for family employees, reserve for bad debt, reserve for retirement allowances, tax credit for incremental R&D expenditure, enhanced depreciation rules, enhanced loss carry-over rules, etc.) as well as a special deduction for filing the blue return.

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

2. Memorandum item: Social security contributions					
A. The pension system (outline of main features)					
	Coverage	Contribution	Tax treatment of contributions	Benefits	Tax treatment of benefits
<i>A1. Public pensions</i>					
Tier-1 (flat rate basic benefit) <i>Kokumin Nenkin</i>	All residents*	Flat amount of 13 300 yen per month (FY 1999) paid by non-employees	100 per cent deductible	Maximum of 67 017 yen per month (FY 1999 - fixed prices) for people aged 65.	Taxed as public annuity income
Tier-2 (earnings related benefit) <i>Kosei Nenkin</i>	Employees and their dependent spouses**	17.35 per cent of standard remuneration ( <i>i.e.</i> excl. bonuses) and 1 per cent of bonuses to cover both contributions to tier-1 and tier-2. Divided equally between employer and employee. Contributions are capped at monthly standard earnings of 590 000 yen	100 per cent deductible	Monthly benefit = [(0.75 per cent of average monthly standard remuneration) * (number of insured months)] (special rates apply to persons born before 1 April 1946)	Taxed as public annuity income
<i>A2. Occupational pension schemes</i>					
Tax qualified plan <i>Tekikaku Taishyoku Nenkin</i>	Employees	Not fixed – paid by employer. A special 1 per cent tax on fund assets is temporarily abolished	100 per cent deductible for employers. Max. 50 000 per year deductible for employees.	Defined benefit (annuity or lump-sum) on top of public pensions	Taxed as public annuity income or retirement income (after deducting contribution made by a recipient)
Contracted out plans (employees pension plans) <i>Kosei Nenkin Kikin</i>	Employees	Not fixed -- mainly paid by employer	100 per cent deductible for employers. Max. 50 000 per year deductible for employees	Integrated with public pensions. Annuity or lump sum	Taxed as public annuity income or retirement income
<i>A3. Individual pension savings</i> <i>Kokumin Nenkin Kikin</i>	All residents	Not fixed. Paid by individuals	Max. 50 000 yen per year is deductible. For non-employees and their spouses a special type of individual retirement pension account was set up in 1991, which allows a 100 per cent deductible contribution of 68 000 yen per month per person	Depending on individual savings	Taxed as public annuity income

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

	Employer contribution	Employee contribution
B. Sickness	4.1 per cent of standard remuneration plus 0.5 per cent of bonuses	4.1 per cent of standard remuneration plus 0.3 per cent of bonuses
C. Unemployment	0.75 per cent of total remuneration	0.4 per cent of total remuneration
D. Work injury	0.6-14.4 per cent of total remuneration (depending on industry risk)	None

\* The basic scheme -- *Kokumin-Nenkin* (KN) -- covers all residents between 20 and 60. The standard retirement age is 65 years, but pension may be claimed at any age between 60 and 70 subject to an actuarial reduction before 65 and an increase after 65. The pension benefit depends on the number of years where contributions have been paid.

\*\* The description here concerns private-sector employees and their spouses under the *Kosei-Nenkin-Hoken* (KNH) scheme. It covers 33 million private employees, or 85 per cent of total employees. Government employees, employees in the nationalised industries, private schoolteachers and employees, and employees of agriculture/forestry/fishing organisations are covered under special programmes (mutual aid associations). Dependent spouses are entitled to the flat-rate basic benefit even though they do not contribute to the pension system. Spouses with annual earnings exceeding 1.3 million yen lose their right to be treated as dependent spouses and are obliged to enrol in the basic system.

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

3. Corporate taxes				
Tax rates	National	Prefectural	Municipal	All-in typical marginal rate
Income tax	30 per cent; 22 per cent reduced rate is applied to a part of income (up to 8 million yen) of small business*			-
Corporate enterprise tax	-	Progressive scale with a top rate of 9.6 per cent of taxable income. The corporate enterprise tax is deductible from the national corporate tax base in the following year. A reduced rate of 5 per cent is levied on a part of income (up to 4 million yen) and a reduced rate of 7.3 per cent is levied on a part of income (from 4 million yen up to 8 million)*. Prefectures may raise the tax rate by up to 1.1 times the standard rate	-	-
Inhabitants tax	-	Standard rate: 5 per cent is levied on national income tax (may be raised to a maximum of 6 per cent). + lump sum amount according to size of capital and reserves, max. 0.8 million yen	Standard rate: 12.3 per cent is levied on national income tax (may be raised to a maximum of 14.7 per cent). + lump sum amount according to size of capital, reserves and number of employees, max. 3 million yen.	-  40.87 per cent [30*(1+0.05+0.123)+9.6]/[1.096] Low rate of 29.34 per cent (up to 4 million yen) for small business* [22*(1+0.05+0.123)+5]/[1.05]

\* For corporations with a capital of less than 100 million yen. The reduced rate also applies to co-operative associations, special medical corporations and profit-making activities of corporations in public interest.

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

**Selected features of the tax base:**

*Capital gains* of corporations are subject to taxation in full as they are realised. These capital gains are taxed at the same rate as operating profits.

*Dividends* from other corporations are generally excluded from taxable income, but if the recipient corporation owns less than 25 per cent of the domestic corporation distributing the dividends, the 20 per cent of net dividend income is included in gross income.

*Inventories* may be valued at cost or market value, whichever is lower, by using any of eight cost methods of valuation (actual cost, LIFO, FIFO, etc.) or two cost or market -- whichever the lower -- method.

*Standard depreciation* is calculated by the straight line method or the declining balance method.

**Special tax measures for corporations:**

*Special depreciation measures* are broadly grouped into two categories, i.e. increased initial depreciation (which is the more important of the two) and additional depreciation. The increased initial depreciation allows, in addition to the ordinary depreciation, one time special deduction of a portion of the acquisition cost of an asset in the first period in which the asset is used. The additional depreciation allows, in addition to ordinary depreciation, the deduction of a certain percentage of the ordinary depreciation allowance for a specified number of consecutive accounting periods.

*Tax free reserves.* These are categorised in two groups: one (*Hikiatekin*) which is consistent with generally accepted accounting principles and another (*Junbikin*) which may not be duly justified by these principles, but which serves other specific policy objectives. The *Hikiatekin* reserves include reserves for bad debts, retirement allowances, etc. The *Junbikin* reserves include among others reserves for certain investment losses and for prevention of pollution and disasters. The tax-free reserves provide a tax deferral but not an exemption.

*Preferential tax terms* (allowances, credits, etc.) are also given to promote policy objectives such as energy conservation, pollution control, promotion of small to medium-sized business and promotion of R&D.

*The blue return system* also applies to corporations (see under self-employment). For corporations filing blue returns, net operating losses may be offset against the previous years' taxable income or may carry the losses forward for 5 years.

Finally, it should be noted, that *expenditures for entertainment*, which provide some of the fringe benefits for employees and business executives, are generally not deductible from corporate income.

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

**4. Consumption taxes****Value added tax (VAT)**

A tax rate of 5 per cent (of which 1 percentage point is classified as a local tax) is levied on domestic transactions and imported goods. Non-taxable transactions include land transfer or lease, housing lease, interest on loans and insurance premiums, medical care, education, welfare services, etc. Exports are also exempted from taxation.

In contrast with other OECD countries, the Japanese VAT system is not based on invoices but on deduction of taxable purchases as registered in the corporate accounts and proven by business invoices. Taxable purchases include those made from small businesses exempt from VAT. In principle the entire amount of consumption tax paid on purchases related to taxable sales is deductible. In order to limit the deduction (and thus the VAT tax credit) accorded to purchases related to non-taxable sales, the amount deductible must be calculated by the so-called itemised method or the proportional method if non-taxable sales exceed 5 per cent of total sales. The itemised method divides taxable purchases into those related to taxable sales, those related to other sales and those related to both, and then calculates the deduction as the sum of (1) taxes attributable to taxable sales and (2) taxes attributable to both taxed and non-taxed sales multiplied by the proportion of taxable sales to total sales. The proportional method calculates the tax credit by multiplying the amount of tax paid on taxable purchases by the percentage of taxable sales to total sales.

A simplified VAT regime exists for small business, whose taxable sales are below 200 million yen in the two previous years. In this regime, the taxpayer can choose to pay VAT on taxable sales minus an imputed rate of taxable purchases, where the imputed rate of taxable purchases to final taxable sales are:

- \* class 1 enterprises (wholesalers): 90 per cent
- \* class 2 enterprises (retailers): 80 per cent
- \* class 3 enterprises (manufactures, agriculture, etc.): 70 per cent
- \* class 4 enterprises (restaurants): 60 per cent
- \* class 5 enterprises (services): 50 per cent

Small enterprises with taxable sales less than 30 million yen in the two previous years are exempted from VAT (and cannot claim VAT credits).

Other consumption taxes	National	Local
	Liquor tax, tobacco tax, gasoline tax, aviation fuel tax, liquefied petroleum gas tax, petroleum tax, motor vehicle tax, custom duties, tonnage duty, local road tax, special tonnage due tax, promotion of power resources development tax	Prefectural tobacco tax, municipal tobacco tax, light oil delivery tax, automobile acquisition tax, special local consumption tax, golf course utilisation tax, bathing tax.

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

5. Taxation of property and land		
	National tax	Local taxes
Property tax	-	Municipal tax (though prefectures also levy this tax on certain depreciable assets). The value of land, buildings and depreciable assets are taxed at a standard rate of 1.4 per cent or up to a maximum of 2.1 per cent. The tax base is in principle "a fair market price" which is re-evaluated every 3 years (in the case of land and buildings). Tax exemption thresholds are: Land: 300 000 yen Buildings: 200 000 yen Depreciable assets: 1 500 000 yen
City planning tax	-	Municipal tax. The value of land and buildings within the specified urban or city area are taxed at a maximum rate of 0.3 per cent. The tax base and exemptions are the same as for the property tax
Special landholding tax	-	Municipal tax, consisting of a tax on holding of land and a tax on acquisition of land. The rates are similar to the property tax and the real property acquisition tax rates, respectively, and these two taxes are credited against the special landholding tax
Business office tax	-	Municipal tax levied on construction or extension of business floor space (owners of buildings: 6 000 yen per m <sup>2</sup> ) and on business activity (600 yen per m <sup>2</sup> and 0.25 per cent of wage sum)
Land developments tax	-	Municipal tax levied on housing land developers. The tax rate is stipulated by local ordinance and the revenues are earmarked for construction of roads, waterways, parks, etc.
Real property acquisition tax	-	Prefectural tax. A tax rate of 4 per cent (3 per cent for residences) of the appraised value applies to the acquisition of land or houses. The base is subject to substantial deductions, some of which are temporary**
Registration and licence tax and stamp tax on immovable property	The registration and licence tax is levied on the value of property acquired by a rate ranging from 0.1-5.0 per cent depending on whether the registration is for a sale, a gift, a bequest, etc. Stamp tax (200 yen-600 000 yen depending on document) is also payable at the time of making taxable documents (e.g. contracts)**	

Table A1. Key statutory features of the Japanese tax system, 1999 (continued)

	National tax	Local taxes
Inheritance tax	<p>The value of the inheritance (after deductions) in the hand of each heir is taxed at a progressive scale from 10-70 per cent:</p> <p>10 per cent (less than 8 million yen)  15 per cent (8-16 million yen)  20 per cent (16-30 million yen)  25 per cent (30-50 million yen)  30 per cent (50-100 million yen)  40 per cent (100-200 million yen)  50 per cent (200-400 million yen)  60 per cent (400 million-2 billion yen)  70 per cent (over 2 billion yen)</p> <p>A standard deduction of 50 million yen plus 10 million yen per heir is deducted from the total value of the inheritance. Furthermore, tax credits are given to e.g. spouse (160 million yen or inheritance tax corresponding to the legal share of spouse, whichever the higher), minors and handicapped. Agricultural land outside designated cities is exempted so long as it continues to be used for agriculture for at least 20 years. Gift taxes are likewise taxed progressively on a scale from 10-70 per cent</p>	
Capital gains taxes on transfer of land	<p>Personal taxes</p> <p>Holding period less than 5 years: taxation equals the maximum of (a) 40 per cent of capital gains or (b) 110 per cent of difference between the total income tax amount including and excluding capital gains.</p> <p>Holding period more than 5 years: capital gains are taxed at 26 per cent (of which 20 per cent is national tax and 6 per cent is a local tax). Besides a standard deduction of 1 million yen, significantly higher deductions are given for transfer of residential property, land for development projects, land for rationalisation of agricultural land, etc. Moreover, lower rates apply to transfer of land for development of high-quality residential projects (below a certain threshold) and for transfer of residential property held for more than 10 years</p>	<p>Corporate taxes</p> <p>Holding period less than 2 years: capital gains are taxed at normal corporate rate.</p> <p>Holding period 2-5 years: capital gains are taxed at normal corporate rate + 10 percentage points (addition of 10 percentage points temporarily suspended).</p> <p>Holding period more than 5 years: capital gains are taxed at normal corporate rate + 5 percentage points (addition of 5 percentage points temporarily suspended).</p> <p>Special deductions include transfer of land for development projects, land for rationalisation of agricultural land, etc.</p> <p>When transfer of land generates "business income" as defined in the individual tax code, similar additional taxes are imposed on individual business operators (self-employed)</p>

\* The implicit target is a land valuation for property taxation of 70 per cent of the official valuation price. The target for inheritance tax purposes is 80 per cent of the official land valuation (Ishi, 1998). The actual valuation rates for tax purposes have fluctuated between 30 and 40 per cent of the official valuation price.

\*\* The combined effective transaction tax rate on property caused by the (national) registration tax and the (prefectural) real property acquisition tax is 2.6 per cent of the market value (since only part of the applied value is being taxed).

Note: The national land value tax, which was introduced by the land tax reform in 1992, has been suspended as of FY1998.

Sources: Ernst & Young (1999), *World wide corporate tax guide*.  
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Table A2. **Personal income taxation in major OECD countries**  
1998<sup>1</sup>

	United States	Japan	Germany	France	Italy <sup>6</sup>	United Kingdom	Canada <sup>6</sup>
Taxes raised by central government							
Range of statutory rates (per cent)	15-39.6	10-37	25.9-53.0	10.5-54	18.1-45.5	20-40	17.5-31.3
Number of tax schedules <sup>2</sup>	5	4	3	6	7	3	4
Tax threshold <sup>3</sup> (yen million)	2.8	3.8	4.5	3.6	-	1.2	-
Rates of sub-national taxes (per cent)	0-11.6	5-13	-	-	-	-	0-22.8
Marginal tax rate for top income earners <sup>4</sup> (per cent)	48.1	50	55.9	61.6	50.8	40	54.1
Highest rate starts at (proportion of APW-income <sup>5</sup> )	9.7	4.2	2.2	2.2	3.5	1.8	1.8

1. For Japan, 1999-figures are used.
  2. Excluding zero band or basic allowance.
  3. For an employee with spouse and two children (in Japan, one child is between 16 and 22 years of age, and in the United States one child is below 16). Exchange rates used are: 1 dollar = 130.9 yen; 1 pound = 216.7 yen; 1 deutschmark = 74.4 yen; 1 franc = 22.2 yen (average of daily rates, 1998).
  4. Wage income.
  5. APW = average production worker in manufacturing.
  6. These countries apply tax credits that are not immediately comparable to the allowances shown for the other countries.
- Source: Ministry of Finance (1999a); OECD Tax Data Base, 1998.

Table A3. **Corporate taxation in major OECD countries**  
1998<sup>1</sup>

	Central Government basic rate (per cent)	Top marginal rate <sup>2</sup> (per cent)	Dividends wedge <sup>3</sup> (per cent)	Special rates (incl. small profits rate) (per cent)	Loss provision <sup>4</sup> (years)
United States	35.0	39.5	67.7	15.0	20 CF, 2 CB
<b>Japan</b>	<b>30.0</b>	<b>40.9</b>	<b>70.5</b>	<b>29.3</b>	<b>7 CF, 1 CB</b>
Germany <sup>5</sup>	47.5/30	58.2	49.3	44.31/23.74	U CF, 2 CB
France	33.3	41.7	66.0	19.0	5 CF, 3 CB
Italy	37.0	37.0	44.9		5 CF, no CB
United Kingdom	31.0	31.0	48.3	21.0	U CF, 1 CB
Canada	29.1	46.1	73.6	13.12/22.12	7 CF, 3 CB

1. For Japan, 1999 figures are used.

2. Including local taxation and surcharges.

3. Difference between the pre-tax profit earned by the distributing company and the net dividend received by the shareholder.

4. CF = Carry forward; CB = Carry back; U = Unlimited.

5. These rates apply to retained profits only.

Source: OECD, Tax Data Base, 1998; *The European Tax Handbook, 1998*. Ernst and Young, *The 1999 World Corporate Tax Guide*.

Table A4. Main features of VAT systems in major OECD countries  
1998

Country	Year VAT introduced	Initial standard rates	Current standard VAT rates <sup>1</sup>	Tax exempt threshold Sales for small traders (in dollar)	Departures from standard exemptions <sup>3</sup>		Coverage of lower rates	
					Exemptions other than "standard exemptions"	Taxation of "standard exemptions"	Zero rate <sup>4</sup>	Lower rates
<b>Japan</b>	1989	3	5	269 060	Social welfare services	Letting of commercial buildings, postal services, non-commercial activities of non-profit making organisations, cultural services, supply of buildings	-	-
<b>Germany</b>	1968	10	16	21 352	-	-	-	Books, food, newspapers, certain cultural events, charitable work if not exempt, transport (only applies to passenger transport by ship and to local public passenger transport). Rate = 7 per cent.
<b>France</b>	1964	20	20.6	14 000	-	-	-	Medicine, handicap equipment, books, hotels, entertainment, author's rights, museums, transport, accommodation, agriculture, catering, newspapers and water. Rates = 2.1-5.5 per cent.
<b>Italy</b>	1973	12	20	2 821	Municipal passenger transport, burials	Supply and letting of commercial land and buildings (standard rate)	Scrap iron	Food, medicine, medical products/services for the handicapped, telecommunications, accommodation, books, newspapers, magazines, gas, domestic heating oil, urban wastes, depuration facilities, renewable energy, works of art, cultural events and transport. Rates = 4-10 per cent.

Table A4. Main features of VAT systems in major OECD countries (continued)  
1998

Country	Year VAT introduced	Initial standard rates	Current standard VAT rates <sup>1</sup>	Tax exempt threshold Sales for small traders (in dollar)	Departures from standard exemptions <sup>3</sup>		Coverage of lower rates	
					Exemptions other than "standard exemptions"	Taxation of "standard exemptions"	Zero rate <sup>4</sup>	Lower rates
<b>United Kingdom</b>	1973	10	17.5	75 441	Burials and cremations, sports competitions, certain luxury hospital care	The freehold sales of new commercial buildings are standard rated for three years from completion date. Furthermore there is an "option to tax" for other supplies of commercial buildings which would ordinarily be exempt from VAT. Gaming machines and certain gambling in licensed clubs	Certain services and goods supplied to charities, children's clothing, food, passenger transport, books, newspapers, domestic sewage and water, prescribed drugs, medicine, certain aids for disabled, new housing, residential and some charity buildings, alterations to listed buildings	Fuel and power for domestic and charity use (5 per cent), certain energy saving materials supplied together with fitting services to recipient of "Passport benefits". Rates = 2.5-5 per cent.
<b>Canada<sup>3</sup></b>	1991	7	7/15	22 760	Child care, legal aid, ferry, road and bridge tolls, standard municipal services	Lotteries and gambling, supply and leasing of commercial land and buildings, domestic postal services	Medicine, basic groceries, exports, certain financial services (usually to non-residents), certain agricultural and fishing products, medical devices, international travel and transportation services, international organisations and officials, precious metals, (sales of 25 cents or less made through mechanical coin-operated devices)	

1. As of 1 January 1998. For Germany, this rate is applied as of 1 April 1998; for the United Kingdom, the standard rate is applied to a reduced value on imports of certain works of art, antiques and collectors items, resulting in an effective rate of 2.5 per cent. For Canada, 15 per cent Harmonised Sales Tax (HST) applies in those provinces that have harmonised their provincial retail sales tax with the federal GST (the 15 per cent HST is composed of a provincial component of 8 per cent and a federal component of 7 per cent).

2. Exchange rates as of January 1997.

3. Standard exemptions are the following: Postal services, transport of sick/injured persons; hospital and medical care; human blood, tissues and organs; dental care; charitable work; education; non-commercial activities of non-profit making organisations; insurance and reinsurance; letting of immovable property; financial services; betting, lotteries and gambling; supply of land and buildings; certain fund-raising events.

4. All countries apply zero rates to exports.

Source: OECD, *Consumption Tax Trends* (1999).

Table A5. **Estimated effect on national tax revenue of tax changes**  
FY 1998 and 1999<sup>1</sup>, trillion yen

	FY 1998	FY 1999
<b>Temporary tax changes</b>		
Personal income tax reduction	-4.2	..
Corporate tax reductions		
Investment in plant and equipment	..	- 0.3
Suspension of special corporation tax	..	- 0.2
<b>Permanent tax changes</b>		
Personal taxes		
Increase of personal allowances	-0.7	-0.3
Reduction of top rates	..	-0.3
Proportional tax reduction	..	-2.7
Corporate taxes		
Reduction of rates	-13.8 <sup>2</sup>	-1.7
Broadening the base	+11.2 <sup>2</sup>	..
Housing and land		
Suspension of land value tax	-1.3	..
Tax credit for housing loans	..	-1.2
Others	-0.3	-0.1
Financial markets		
Reduction of securities transactions tax	-1.9	-0.2
Reduction of Bourse tax	-0.2	-0.0
Other	+0.1	-0.2
Total full year effect	-11.1	-7.3
<i>Memorandum item</i>		
Total fiscal year effect	-11.8	-5.6
In per cent of GDP	-2.4	-1.1

1. Full year effect except for temporary measures (fiscal year effect). "-" indicates a revenue loss, "+" a revenue gain.
2. Assuming 1.75 per cent average annual growth in real GDP over 1998-2003. At 3.5 per cent average growth the numbers would be -14.4 and +12.3, respectively.

Source: Ministry of Finance (1999a) and (1998).

*Annex 2*  
**TAXATION AND PRIVATE SAVINGS**

1. The main economic argument for giving tax privileges to savings is that disincentives to save otherwise embodied in an income tax system (as opposed to an expenditure tax) are thereby reduced. Theoretically and empirically, however, the effects of lower effective taxes on personal savings are ambiguous: the substitution effect will spur savings as returns to savings increase, whereas the income effect could go in either direction, depending on whether or not the household sector is a net creditor. Taxes may also affect private savings indirectly by transferring income between households with different consumption-savings patterns, by substituting public for private savings, and as a result of the interaction between household and company savings. Each of these mechanisms is potentially important to the level of private savings in OECD countries: there has been a significant increase in the overall tax burden, and a major shift in the net tax burden (taxes less transfers) from the older to the younger generations; pension schemes are mainly tax- or contribution-financed and often sheltered from taxation; and company savings tend to be an important part of total private savings (corporate savings averaged 20-30 per cent of total private savings in Japan, the United States, France and Canada during 1980-94).

57. Empirical evidence on the elasticity of private savings to changes in after-tax returns generally gives mixed and not very robust results, at least when applied to single countries. Bosworth (1993) finds positive and significant elasticities for only two out of 13 OECD countries. Masson *et al.* (1995) find that, based on a panel (cross country) estimate of 21 OECD countries, an increase in the real after-tax interest rate of between 4 and 6 percentage points would raise private savings by 1 percentage point of GDP. A recent study by Tanzi and Zee (1998) incorporates panel data for most industrial countries over several decades and finds a significant negative effect of tax levels on household savings, with income taxes appearing to have a far stronger effect than consumption taxes. Tachibanaki (1997) surveys a range of studies for Japan and concludes that although estimation procedures and data bases differ considerably among these studies, they typically find very small or statistically insignificant effects of changes in the after-tax interest rate on the level of private savings.<sup>71</sup> Nearly all the studies thus support the classic study by Komiya (1966), which concluded that there was no evidence of a strong effect on private savings levels from the preferential tax treatment of interest and dividend income. Several studies have been concerned with the effect of the 1988 tax reform which abolished the general tax exemption of savings and introduced a 20 per cent withholding tax on interest payments. Hayashi *et al.* (1989) suggested that the abolition of tax-free savings accounts would cause a drop in the steady state savings rate by only a few percentage points, and that introducing tax deductibility of mortgage interest payments would barely affect the aggregate savings rate.

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71. In measuring savings behaviour there is a peculiar data problem for Japan, namely the so-called "extended household". Elderly people living in their children's households are usually counted as dependants of the younger household, and their savings are not reported in savings data, whereas the savings of independent elderly people are reported.

2. One particular area of interest is the tax privileges provided to pension savings in almost all OECD countries (Box A1).<sup>72</sup> From an economic perspective the question arises as to why incentives are required to encourage individuals to save more for retirement than they would otherwise do. The main argument is based on moral hazard: given the existence of public pension schemes, people may choose not to save “enough” for retirement so as to be able to receive social assistance. Indeed, if governments can encourage more people to save for their retirement and also encourage those already saving to save more, expenditure on means-tested benefits for the retired will fall. However, the resulting effect on government budgets depends on the balance between the future reduction in government expenditure and the revenue loss incurred by giving tax subsidies to savings by those who will not receive means-tested benefits anyway. There is considerable debate among economists about whether tax-favoured pension schemes increase private net savings or largely encourage households to switch the form in which they save. A massive amount of empirical research has been carried out on the extent to which tax-sheltered retirement savings schemes (like the Individual Retirement Accounts (IRAs) and the 401(k)s in the United States) have raised private and national savings.<sup>73</sup> However, there is no consensus as to whether these tax-sheltered pension savings schemes contribute to higher private savings and even less so with respect to national savings.

3. Besides personal savings, private-sector savings also include corporate savings. In principle, total private savings may be unresponsive to policies that induce corporations to save less, for instance a reduction in the dividends tax or an increase in the capital gains tax. Since the households own corporations, sophisticated shareholders should be able to “see through the corporate veil” and realise that corporations are saving less on their behalf, and hence increase personal savings by an offsetting amount in order to re-establish his or her optimal life-cycle allocation between current and future consumption. In practice, however, the offset is not complete, since households may be liquidity constrained, short-sighted, etc. Poterba (1987) found for the United States that household savings would decline by 75 cents if the corporate savings increased by \$1, *i.e.* a 75 per cent offset. Bosworth (1993) found an offset coefficient close to unity for the United States, Germany, France, Canada, Belgium and Finland, while an offset coefficient of one was rejected for Japan, Sweden and the United Kingdom. Leibfritz *et al.* (1997) estimated an average offset coefficient of 60 per cent for a panel of five large OECD countries, including Japan.

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72. See also Table 7 of the main text.

73. Leibfritz *et al.* (1997) and Bernheim (1999) survey the literature.

### Box A1. Tax treatment of private pensions

Three main transactions constitute most private pension schemes:

- contributions to the scheme, from employers or employees;
- income derived from the investment of contributions;
- payment of retirement benefits from the accumulated fund.

There are examples within the OECD of regimes that tax pensions at almost every combination of these points. The table below illustrates four possible tax regimes in a very simplistic manner, assuming a single income tax rate of 25 per cent and a rate of return on investment of 10 per cent, and considering a single contribution derived from earned income of 100, five years before retirement.

#### Alternative tax regimes

	A (EET)	B (TEE)	C (TTE)	D (ETT)
Contributions	100	100	100	100
Tax	-	25	25	-
Fund income	100	75	75	100
Net income over 5 years	61.05	45.79	32.67	43.56
Fund at retirement	161.05	120.79	107.67	143.56
Tax on withdrawal	40.26	-	-	35.89
Benefit withdrawn	120.79	120.79	107.67	107.67

Note: Inflation is assumed to be zero.

A. *Tax-free contributions and fund income, taxed benefits (EET)*. This regime is the most commonplace way of taxing pension savings in OECD countries. Pension contributions are deductible from taxable income, allowing the whole of the 100 of earnings into the pension fund. The investment income of the fund is not axed, but benefits are taxed in full on withdrawal. This type of tax treatment can be referred to as EET, for exempt, exempt, taxed. It confers a post-tax rate of return on saving equal to the pre-tax rate of return. An individual earning 100 can choose either to spend now, paying 25 of tax and consuming goods worth 75, or to save now and consume goods worth 120.79 in five years [120.79 is simply 75 multiplied by  $(1.1)^5$ ].

B. *Taxed contributions, tax-free fund income and benefits (TEE)*. This regime does not allow deduction of contributions, thus reducing the initial size of the fund from 100 to 75. Investment income is free of tax, as in regime A. No tax is due on withdrawal of retirement benefits. This type of tax treatment can be referred to as TEE, for taxed, exempt, exempt. Like regime A, it preserves the equality of pre- and post-tax rates of return.

C. *Taxed contributions taxed fund income, tax-free benefits (TTE)*. This regime is basically that applied to interest-bearing short-term saving in most OECD countries. Its acronym is TTE, for taxed, taxed, exempt: contributions are not tax-deductible, investment income is taxed in full, and there is no tax on withdrawal of benefits. Unlike regimes A and B, this tax treatment brings the post-tax rate of return below the pre-tax rate of return. Here the post-tax rate of return is 7.5 per cent [ $107.67 = 75 \times (1.075)^5$ ].

D. *Tax-free contributions, taxed fund income, taxed benefits (ETT)*. This type of regime produces the same outcome as regime C, and therefore the same post-tax rate of return. Its acronym is ETT, for exempt, taxed, taxed: taxation of benefits and exemption of contributions are substituted for taxation of contributions and exemption of benefits.

Regimes of type A and B are examples of an expenditure tax approach, while regimes C and D correspond to a comprehensive income tax approach. Other combinations of taxing and relieving at each of the three points are possible, and indeed exist. In the OECD countries there are no regimes less favourable than C, but many more favourable than A or B.

Source: Adapted from Dilnot (1992).

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