



OECD Economics Department Working Papers No. 303

**Surveillance of Tax Policies:
A Synthesis of Findings in
Economic Surveys**

**Paul van den Noord,
Christopher Heady**

<https://dx.doi.org/10.1787/034063184564>

Unclassified

ECO/WKP(2001)29



Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

17-Jul-2001

English text only

ECONOMICS DEPARTMENT

ECO/WKP(2001)29
Unclassified

SURVEILLANCE OF TAX POLICIES: A SYNTHESIS OF FINDINGS IN ECONOMIC SURVEYS

ECONOMICS DEPARTMENT WORKING PAPERS, No. 303

by
Paul van den Noord and Chistopher Heady

Most Economics Department Working Papers beginning with No. 144 are now available through
OECD's Internet Web site at <http://www.oecd.org/eco/eco>.

JT00110920

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English text only

ABSTRACT/RÉSUMÉ

Taxation is inevitable in modern economies to finance public spending, which is aimed at meeting fundamental economic and social objectives. However, efficiency losses associated with taxation need to be taken into account when the cost and benefits of public expenditure to be funded are being assessed. The public perception of the fairness of tax systems, the practical enforceability of tax rules and the cost arising from compliance are other important considerations. Against this backdrop, the OECD has reviewed in the past two years the tax systems of a number of Member countries in its periodical *Economic Surveys*. The analysis and policy recommendations emerging from these reviews may provide some useful lessons for other OECD countries, and these are pulled together in this paper.

JEL classification: H2.

Keywords: taxation.

Dans les économies modernes, la fiscalité est inévitable pour financer la dépense publique, car elle vise des objectifs économiques et sociaux fondamentaux. Toutefois, il est nécessaire de prendre en compte les pertes d'efficacité liées à la fiscalité lorsqu'on évalue les coûts et avantages des dépenses publiques à financer. La perception par le public de l'équité des systèmes fiscaux, les difficultés pratiques rencontrées pour assurer le respect des réglementations fiscales et le coût de la discipline fiscale constituent d'autres aspects importants de la question. Dans ce contexte, l'OCDE a examiné, au cours des deux dernières années, dans ses *Études économiques* périodiques, les systèmes fiscaux d'un certain nombre de pays Membres. Les analyses et recommandations qui se dégagent de ces études, et qui pourraient être riches d'enseignements pour tous les pays de l'OCDE, sont rassemblées dans ce document.

Classification JEL : H2.

Mots-clés : fiscalité

Copyright: OECD 2001

**Applications for permission to reproduce or translate all, or part of, this material should be made to:
Head of Publications Service, OECD, 2 rue Andre-Pascal, 75775 PARIS CEDEX 16, France.**

TABLE OF CONTENTS

1. Introduction	4
2. Trends in taxation and the forces shaping them	7
2.1 The tax burden.....	7
2.2 The structure of taxation	11
2.3 The central-local allocation of revenue and tax-raising powers.....	11
3. General principles guiding tax policy	16
3.1 Efficiency considerations	16
3.2 Equity considerations and tradeoffs with efficiency	17
3.3 Enforceability and compliance.....	20
4. Areas and options for reform.....	21
4.1 Corporate income tax	22
4.2 Personal income and social security tax.....	26
4.3 Consumption tax	31
4.4 Property and wealth tax.....	33
4.5 Devolving expenditure and taxing power	35
4.6 Tax administration and enforcement.....	36
<i>Annex</i> Features of tax systems impinging on economic efficiency.....	39
Introduction	39
1. The impact of taxation on saving	39
1.1 The impact on aggregate saving.....	39
1.2 The impact on the composition of saving	40
1.3 The impact on international saving flows	46
2. The impact of taxation on business funding, organisation and location	47
2.1 The impact on corporate funding decisions	48
2.2 The impact on organising business	56
2.3 The impact on international investment flows and the financial structure of multinationals....	58
3. The impact of taxation on the labour market.....	58
3.1 The impact on labour demand.....	59
3.2 The impact on labour supply.....	63
4. The impact of taxation on product markets.....	71
4.1 The impact on consumption and production patterns	73
4.2 The impact on cross-border and digital consumption flows	75
4.3 The impact on economic behaviour in the pursuit of environmental policy goals.....	77
Bibliography.....	81

SURVEILLANCE OF TAX POLICIES: A SYNTHESIS OF FINDINGS IN ECONOMIC SURVEYS

Paul van den Noord and Christopher Heady¹

1. Introduction

1. In the past two years, the OECD has reviewed the tax systems of a number of Member countries -- twelve in total -- in *Economic Surveys*, using a common analytical framework. These are (in chronological order): Mexico, Switzerland, Japan, Poland, Spain, the Czech Republic, Norway, Korea, Greece, New Zealand, Iceland and Portugal.² In addition, prior to this series *ad hoc* tax reviews in the *Economic Surveys* of Canada (1997), Austria (1998), Sweden (1999), have been carried out. While the challenges facing tax policy in these countries are very diverse (Table 1), the policy recommendations -- some of which have been adopted since the *Surveys* were published -- and their underlying rationale may provide some useful lessons for other OECD countries.³ This paper pulls these together.

2. Obviously a considerable stock of information and analysis on tax policy was already available within the OECD, on which this paper has also been able to draw. For example, developments in tax policy are being reviewed as part of the ongoing structural surveillance in the *Economic Surveys*. Moreover, the Directorate for Financial, Fiscal and Enterprise Affairs has a major ongoing work programme covering nearly all areas of taxation, while the Directorate for Education, Employment and Labour and Social Affairs has published studies on taxation and employment as part of the *Jobs Strategy* exercise.

-
1. Economics Department and Directorate for Financial, Fiscal and Enterprise Affairs (DAFFE), respectively. This paper is based on documentation originally prepared for the semi-annual meeting of Working Party No. 1 of the OECD's Economic Policy Committee on 15 and 16 March 2001 and has benefited from comments received from Working Party No. 2 on Tax Policy Analysis and Tax Statistics of the Committee on Fiscal Affairs. A summary of this paper has been published in *OECD Economic Outlook 69*, Chapter V: "Challenges for tax policy in OECD countries", Paris, June 2001. However, the authors are writing in a personal capacity and it does not necessarily reflect the view of the Organisation or its Member countries. They are indebted to Thomas Liebig for his contribution, to Paul Atkinson and several other colleagues in the Economics Department and DAFFE for comments and drafting suggestions and to Anne Eggimann, Sarah Kennedy and Chantal Nicq for technical assistance.
 2. See the various issues of the OECD *Economic Surveys* (tax reviews in this series are forthcoming for the United States and Finland).
 3. To enhance the country coverage, an in-depth review of tax policies in EU countries of the analysis was prepared, (see Joumard, 2001). It focuses in particular on countries not listed above, and highlights a number of tax issues that are specific for the EU.

Table 1. **Synopsis of key challenges for tax policy in the countries reviewed**

Austria	Like in most other EU countries, expanding social commitments have resulted in rising charges on labour. Other challenges to deal with are the calls for tax harmonisation within the EU, in particular with regard to mobile capital income, and to strike a balance between concerns over international competitiveness and the achievement of environmental goals through green taxes.
Canada	With the government having regained control over the fiscal situation, it aims to use the opportunity of dealing with deficiencies in the tax system that have built up over time. Key challenges that need to be addressed are the increasing pressure on the tax system stemming from international competition resulting from trade liberalisation, especially with the United States. There must be benefits to harmonising the tax systems at the federal and provincial levels.
Czech Republic	While broadly similar to that in many OECD countries, several features of the Czech tax system reflect the difficulties that are inherent in moving from a centrally planned towards a market-based economy. Tax arrears are large and growing, and self-employed escape taxation to a considerable extent. VAT is in place, but has a much too narrow base. Social security is expensive and discourages employment.
Greece	In the 1990s Greece experienced the sharpest rise in the tax burden of all EU countries, due to the EMU-related fiscal consolidation. Meanwhile the tax system is outdated, very complex and opaque, with generous individual allowances, a plethora of preferential incentives for the business sector and a general lack of tax enforcement.
Iceland	The thrust of policy initiatives in recent years has been to prepare for participation in the European Economic Area and towards simplification of the tax system. But natural resource rents (fish, hydro and thermal energy) largely escape taxation and taxation of capital income is fraught with arbitration opportunities.
Japan	While the Japanese tax burden is among the lowest in the OECD area, reform is sorely needed in order to increase its revenue-raising capacity considerably. To obtain this at minimum costs, improvements in efficiency and equity of the tax system are needed. While the current cyclical position may not facilitate this, a widespread sense of urgency may prompt public acceptance of tax increases.
Korea	Korea's low tax burden reflects the relatively under-developed social safety net and a small public sector overall, but this is not out of line with other economies with comparable per capita GDP. Notwithstanding the low tax burden, however, the tax system is highly distorting, inequitable and unduly complex -- features that need to be addressed as public expenditure grows and tax bases become more mobile.
Mexico	Mexico has by far the lowest level of tax revenues in relation to GDP among the OECD countries. The limited capacity for raising revenues -- due to special regimes, exemptions and loop holes -- severely reduces the scope for public spending even where potential social returns are high, such as education, health, infrastructure and poverty alleviation.
New Zealand	After radical tax reform in the 1980s, New Zealand's tax system became one of the most broadly based, neutral and efficient in the OECD. Although over time it has suffered from erosion, it is still in a relatively healthy state. The main challenge is to respond accurately to increasing pressures from ageing and increasingly mobile tax basis.
Norway	A dual income tax system, taxing all capital income at a low flat rate and labour income at higher and progressive rates, ensures neutrality with respect to sources of capital income, but also prompts tax planning by self-employed and small business owners. Other incentive problems relate to the valuation of assets for tax purposes, funding of local governments, the separate tax regimes for shipping and energy extraction, and the exclusion of many service activities from VAT.

Table 1. **Key challenges for tax policy in the countries reviewed** (continued)

Poland	Poland has been able to avoid fiscal crisis typical for other transition economies thanks to a relatively effective tax system. The system, moreover, has made an important contribution to social cohesion by ensuring the funding of retirement pensions, and does not appear to have been harmful to business or to have deterred foreign investors. But it is harmful to employment and has become increasingly complex.
Portugal	The tax system still suffers from a number of legacies of the past, reflected in excessive complexity, pampering an efficient tax administration and contributing to loopholes. However, tax reform figures high on the political agenda, also with a view to addressing concerns raised by the increasing mobility of tax bases internationally.
Spain	Tax reforms in past decades have endowed Spain with a modern tax system, enabling it to fund growing public services. Meanwhile the government has been committed to decentralise spending and taxation and recent reforms have aimed at simplifying the system and enhancing incentives to work, save and invest. However, there is scope for further reform in all these areas.
Sweden	The tax burden is among the very highest in the OECD area, reflecting very generous social benefit programmes. However, the Swedish "cradle to grave" tax and benefit system has come under intense scrutiny in the 1990s. In particular, the system has been found to reduce work incentives and to discourage entrepreneurial activity and household saving.
Switzerland	The tax system has been shaped by a highly decentralised federal structure. This feature implies a reduced scope for local governments to provide services that are not valued by taxpayers. However, it proves difficult to endow the federal government with taxing power where that would appear to be more efficient. While tax policies attract mobile tax bases from abroad, Switzerland finds itself under continued pressure to provide more complete access to information to foreign tax authorities.

Source: OECD Economic Surveys, various issues.

3. The major trends in tax revenues, both in aggregate as by tax category and by level of government, and the key factors that have shaped these trends are discussed in Section 2. The main considerations that should influence the design and tax policy are then set out in Section 3. These include a number of well known criteria such as efficiency, horizontal and vertical equity and enforceability. Finally, based on the findings in the *Economic Surveys* and other supporting material, Section 4 presents an inventory of policy recommendations. A more elaborate assessment of the efficiency of tax systems in raising public revenues with minimal economic distortions, including an appraisal of the economic impact of taxation on saving, capital formation and business organisation, the labour market and product markets, is presented in the Annex.

2. Trends in taxation and the forces shaping them

2.1 *The tax burden*

4. The measurement of tax burdens is subject to controversy. The most commonly used gauge, the ratio of taxes to GDP, is only a rough indicator, for a variety of reasons:⁴

- Institutional set-ups differ across countries in ways that significantly affect the reported tax to GDP ratio without having much impact on the burdens imposed by taxation. For example, there are differences across countries, and over time, in the taxation of transfer income, the size of tax payments by the public sector itself and the mix of subsidies and tax expenditures (targeted exemptions, allowances and credits).⁵
- Some taxes may have a stronger impact on economic behaviour -- *i.e.* act more as a “burden” -- than others, and it is therefore useful to examine the breakdown of tax revenues by tax base. Different forms of taxation may also interact to result in pronounced differences in the marginal effective tax rates faced by particular groups, thus heavily affecting their economic choices. Such marginal tax rates have been calculated by the OECD and used to assess tax systems.⁶
- The tax burden needs to be assessed in a wider context, including the “burden” stemming from regulation that mandates the private sector to provide social protection or public goods and services in the government’s place.

Even so, bearing these caveats in mind, the ratio of tax revenues to GDP is useful as a “scaling factor”: to the extent tax systems matter for economic efficiency, their costs are likely to rise as economic decision makers’ exposure to taxation increases.

5. The evolution of tax revenue as a percentage of GDP in OECD countries since 1965 is reported in Table 2. The stylised facts are the following:

- There has been a persistent and largely unbroken upward trend in the ratio of tax to GDP since 1965 across most of the OECD area, though recent developments suggest the trend increase may be ending.
- Very few countries have consistently resisted this long-term trend. Only in the Netherlands are tax ratios currently below their 1975 level, and in only three other countries, *i.e.* Mexico, the United Kingdom and the United States, have tax receipts developed broadly in line with GDP over a long period.
- A few more, including Ireland, Japan, New Zealand and Sweden, have succeeded in reducing the tax ratio from peak levels of 1985 or 1990, but not by large amounts. Only rather recent data available for transition countries suggest that these countries are recording falling tax revenues relative to GDP as well, although this may reflect in part “erosion” of their tax bases while they are grappling with the transition process.

4. See OECD (2000a).

5. See for example Adema (2000).

6. See for example OECD (1991, 1994, 1999a and 1999b).

Table 2. Total tax revenue as percentage of GDP

	1965	1970	1975	1980	1985	1990	1995	1998	1999 ¹
Australia	22.4	22.9	26.6	27.4	29.1	29.3	29.4	29.9	..
Austria	33.9	34.9	37.7	39.5	41.6	40.2	41.5	44.4	44.3
Belgium	31.1	35.7	41.6	43.1	46.3	43.1	44.8	45.9	45.4
Canada	25.9	31.2	33.1	32.0	33.1	36.1	35.7	37.4	..
Czech Republic	..	..	..	..	..	..	40.1	38.3	37.5
Denmark	29.9	40.4	41.4	44.0	47.4	47.1	49.4	49.8	50.6
Finland	30.3	32.5	37.7	36.2	40.0	44.7	45.0	46.2	46.5
France	34.5	35.1	36.9	40.6	43.8	43.0	44.0	45.2	46.0
Germany ²	31.6	32.9	36.0	33.1	32.9	32.6	38.2	37.0	37.7
Greece ³	18.2	20.9	21.0	24.0	28.6	29.4	31.7	35.7	37.1
Hungary	..	..	..	..	..	..	42.4	38.7	37.0
Iceland	26.2	27.0	29.6	29.2	28.4	31.4	31.2	33.6	35.4
Ireland	24.9	29.9	30.2	31.5	35.1	33.6	33.1	32.3	31.9
Italy	25.5	26.1	26.2	30.3	34.4	38.9	41.2	42.7	43.0
Japan	18.3	19.7	20.9	25.4	27.6	30.9	28.4	28.4	27.7
Korea	..	..	15.2	17.7	16.9	19.1	20.5	21.1	23.8
Luxembourg	27.7	28.9	39.6	40.8	45.3	40.8	41.9	41.5	42.1
Mexico	..	..	..	16.2	17.0	17.3	16.6	16.0	16.5
Netherlands	32.8	37.1	43.0	43.4	42.4	42.8	42.0	41.0	40.3
New Zealand	24.7	27.4	31.1	33.0	33.6	38.1	37.6	35.2	..
Norway	29.6	34.9	39.9	42.7	43.3	41.8	41.5	43.6	41.8
Poland	..	..	..	..	..	..	39.9	37.9	..
Portugal	15.8	19.8	21.3	24.6	27.1	29.6	32.7	34.2	34.5
Spain	14.7	16.9	19.5	22.9	27.6	33.0	32.8	34.2	35.1
Sweden	35.0	39.8	43.4	47.1	48.3	53.7	47.6	52.0	52.1
Switzerland	19.6	22.5	27.9	28.9	30.6	30.9	33.5	35.1	35.1
Turkey	10.6	12.5	16.0	17.9	15.4	20.0	22.6	28.6	31.8
United Kingdom	30.4	37.0	35.4	35.4	37.7	36.0	35.2	37.2	36.6
United States	24.7	27.7	26.9	27.0	26.1	26.7	27.6	28.9	..
Total OECD									
Unweighted average	25.8	28.9	31.1	32.1	33.8	35.0	36.1	37.0	37.3
Weighted average ⁴	23.1	25.4	26.7	28.3	29.1	30.3	31.9	32.8	33.0
European Union									
Unweighted average	27.8	31.2	34.1	35.8	38.6	39.2	40.1	41.7	42.1
Weighted average ⁴	29.1	31.6	33.4	34.6	36.8	37.7	39.4	40.3	40.7

1. Figures for 1999 are estimates.

2. Unified Germany beginning in 1991.

3. Figures for 1998 and 1999 are based on a submission by the national authorities.

4. Using 1995 GDP at purchasing power parities as weights. In 1998 and 1999 the average is based on the latest year for which data are available.

Source : OECD Revenue Statistics, 1965-1999.

- Tax ratios in the European Union, averaging more than 40 per cent of GDP, generally exceed those elsewhere. Outside Europe, only Canada and New Zealand have tax ratios above 30 per cent of GDP.

6. Declining tax ratios are currently reported more widely across countries. This largely reflects public expenditure trends,⁷ although fiscal consolidation efforts during the 1990s have implied that the success a number of countries have had in reducing expenditure ratios has not yet been reflected in tax ratios that are actually falling. Moreover, a favourable cyclical position has buoyed the tax take as a percentage of GDP notwithstanding tax cuts implemented in a large number of countries.

7. The forces shaping these developments in recent years in the countries that have been the subject of tax chapters in *Economic Surveys* have been diverse:

- Greece, Portugal and Switzerland show increases in their tax burdens that are well above the OECD average increase. These countries all have tax ratios below the OECD average and could be seen as being involved in a process of convergence within Europe. One immediate reason for the increase in Switzerland has been an increase in public expenditure on health. For Greece and Portugal, it has been a matter of developing social policy systems and infrastructure more in line with those prevailing elsewhere in the European Union and, in recent years, the need to curb deficits to meet the criteria for joining European Monetary Union (EMU). As for the future, the funding of its second pillar pension scheme means that Switzerland is less exposed to the pressures of an ageing population on public expenditure and taxation. However, the country chapter on Greece suggests that there will be further pressure to increase the tax burden.
- Iceland, Korea, Poland and Spain experienced tax burden growth that was close to the OECD average, although Poland, like other transition countries, has reduced its burden in the past few years.⁸ The country chapters for Korea and Spain suggest that they will face substantial pressure to increase the tax burden over the next few years,⁹ but no similar expectation of increase is shown for the other countries in this group.
- The Czech Republic, Japan, Mexico and New Zealand have reduced their tax burdens since 1990, but for very different reasons and from varying starting positions. In Mexico, overall tax levels have fluctuated sharply to offset volatility of oil-related non-tax resources. The mild trend decline over the period here to some extent reflects a deliberate policy choice to lower VAT and import tariffs, but also difficulties of developing a tax base. Japan's tax reduction occurred in several steps from 1994 onwards, mostly in response to cyclical developments. In contrast, the reductions in the tax burden in New Zealand have been more consistent and reflect a definite policy choice. In this case, the choice made was to reduce the role of the state in the economy, as reflected in sharp declines in the public expenditure share in GDP. The country chapters see pressures on welfare expenditure to reverse these downward trends over the next few years. The Czech Republic has not achieved such a trend decline in the expenditure ratio, and budget deficits have probably reached unsustainable levels.

7. See Atkinson and Van den Noord (2001).

8. For Poland this is based on data contained in the *OECD Economic Survey*.

9. This is mainly due to growing social security entitlements, associated with ageing, but in Korea the prospect of re-unification with North Korea also poses significant fiscal challenges.

Table 3. Tax revenue of major taxes as a percentage of total tax revenue, 1998¹

Type of Tax	Personal income ²	Corporate income ²	Social security and other payroll	Property	Goods and services	of which: General consumption
Australia	43.3	15.2	6.6	9.5	25.5	8.5
Austria	22.5	4.8	40.3	1.3	27.9	18.7
Belgium	30.7	8.5	31.5	3.2	24.9	15.3
Canada	38.5	10.0	15.8	10.4	24.7	14.0
Czech Republic	13.6	9.7	44.1	1.5	31.0	17.1
Denmark	51.6	5.6	3.9	3.6	33.2	19.6
Finland	32.3	9.0	25.2	2.4	30.7	18.5
France	17.4	5.9	39.5	7.3	26.6	17.5
Germany	25.0	4.4	40.4	2.4	27.4	17.9
Greece (1997)	13.2	6.4	32.3	3.8	41.0	22.6
Hungary	16.8	5.6	36.2	1.6	39.0	23.5
Iceland	35.2	3.4	8.3	7.1	45.9	28.9
Ireland	30.9	10.7	13.8	5.2	38.7	22.2
Italy	25.0	7.0	29.5	4.8	27.4	14.2
Japan	18.8	13.3	38.4	10.5	18.8	8.9
Korea	20.1	12.2	11.4	11.4	40.5	16.5
Luxembourg	18.8	19.7	25.6	8.4	26.1	13.7
Mexico ³	29.5	..	18.0	..	51.3	19.4
Netherlands	15.2	10.6	39.9	4.9	27.7	16.9
New Zealand	41.8	10.9	0.9	5.7	36.0	26.0
Norway	27.3	9.7	23.3	2.4	37.2	21.3
Poland	22.0	7.5	33.1	3.0	34.4	20.8
Portugal	17.1	11.6	25.5	2.9	41.3	23.3
Spain	20.8	7.3	35.2	6.0	29.4	16.6
Sweden	35.0	5.7	33.5	3.7	21.6	13.6
Switzerland	31.8	6.0	35.7	8.3	18.2	10.0
Turkey	27.0	5.8	14.3	2.8	35.7	30.0
United Kingdom	27.5	11.0	17.6	10.7	32.6	18.1
United States	40.5	9.0	23.7	10.6	16.2	7.6
Total OECD						
Unweighted average	27.1	8.9	25.6	5.4	31.3	17.9
Weighted average ⁴	30.0	9.1	28.2	8.3	23.2	12.5
European Union						
Unweighted average	25.6	8.7	28.9	4.7	30.2	17.5
Weighted average ⁴	23.9	7.1	32.7	5.4	28.8	17.2

1. Rows do not add to 100 because some minor taxes are omitted and general consumption taxes (mainly VAT) are a sub-category of taxes on goods and services.

2. The breakdown of income tax into personal and corporate income tax is not comparable across countries; see footnote 8 in the text.

3. The figure for personal income tax in Mexico combines personal and corporate income tax.

4. Using 1995 GDP weights at purchasing power parities as weights. Mexico is not included in the OECD average.

Source: OECD Revenue Statistics, 1965-1999.

2.2 *The structure of taxation*

8. The distribution of tax revenue among major taxes for OECD countries in 1998 is reported in Table 3¹⁰ while Figure 1 provides a graphic comparison of tax structure among the largest OECD economies, *i.e.* the United States, Japan and the European Union. The OECD average shows that the vast bulk of tax revenue, *i.e.* over 80 per cent, comes from three main sources: income taxes, taxes on goods and services, and social security contributions (other payroll taxes are zero or very small in most countries). However, countries vary considerably in the relative importance of these three main revenue sources. Notably, Australia and New Zealand do not collect social security contributions. There are also substantial differences across countries in the share of taxes on property, which are generally lower in continental Europe than elsewhere. Overall, the European Union relies more on consumption taxes and social security contributions and less on personal income tax than the OECD average. In contrast, the United States collects a larger share in personal income tax and property tax but a smaller one in consumption taxes and social security. Japan is similar to the United States in its low share of consumption taxes but collects much less in personal income tax, offsetting this with higher levels of corporate tax and social security contributions.

9. As tax-to-GDP ratios have risen, the largest part of the increases has taken the form of higher social security contributions (Figure 2) reflecting the expansion of social insurance systems substantially financed by such contributions. Higher personal income taxes have also played a significant role, although most of the rise in these had taken place by 1975. Corporate income and wealth, possibly more constrained by the potential mobility of their bases than social security, and personal income taxes, have risen more modestly, as have taxes on goods and services.

2.3 *The central-local allocation of revenue and tax-raising powers*

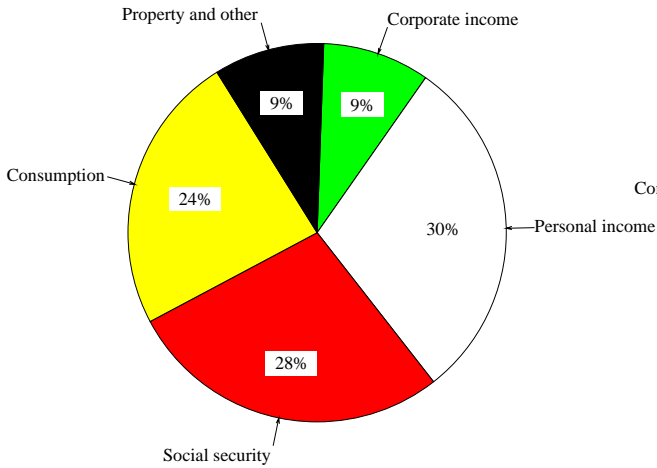
10. Countries differ in prevailing fiscal arrangements between the central and sub-central levels of government.¹¹ Where federal constitutions as distinct from unitary constitutions apply, substantial fiscal autonomy exists at the intermediate level.

10. A cautious interpretation of the numbers in this table is called for. The split between personal and corporate income tax, can be seriously misleading for two reasons. First, many OECD countries have some form of integration between corporate and personal income taxes, so that a portion of corporate taxes are refunded to the shareholders as a reduction in personal income tax. This is reflected in the statistics as a reduction in the revenue from personal income taxes, but it could be just as well regarded as a reduction in corporate tax revenue. Second, OECD countries vary in the extent to which businesses are incorporated. For example, German firms are much less likely to be incorporated than firms in the United States. This means that Germany reports a much lower share of tax revenue coming from corporate income tax, even though the taxes on business are higher.

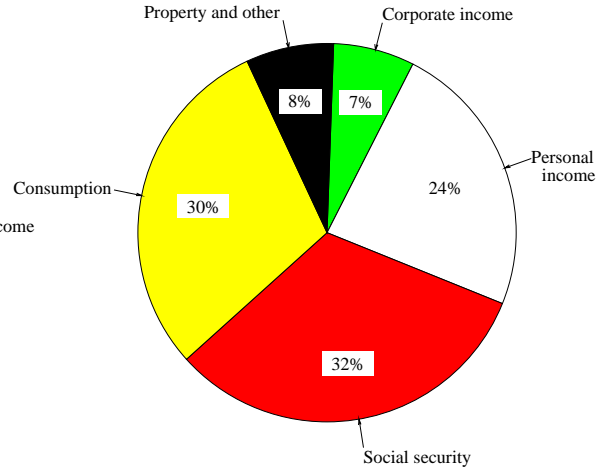
11. The economic analysis of these fiscal arrangements is generally referred to as the 'theory of fiscal federalism' even though it applies to both unitary and federal countries. Two classic works are: Oates (1972) and Bird (1986).

Figure 1. Tax mix by source¹
Per cent share of total tax revenue, 1998

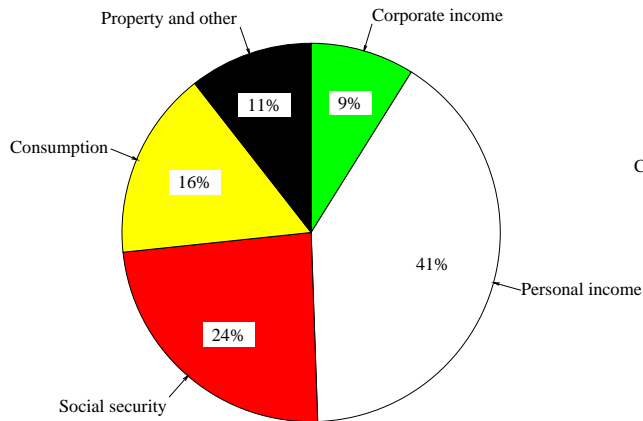
A. OECD²



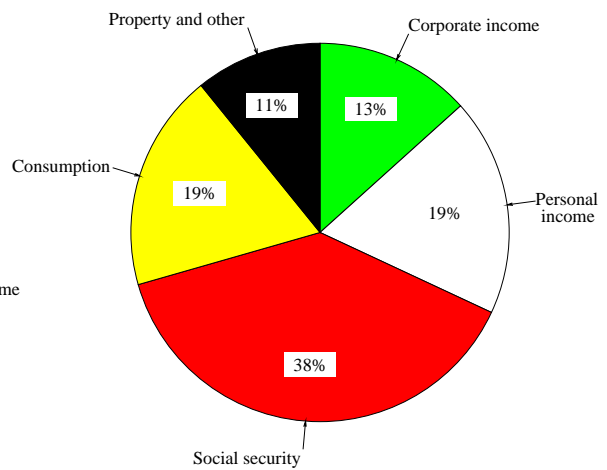
B. European Union²



C. United States



D. Japan

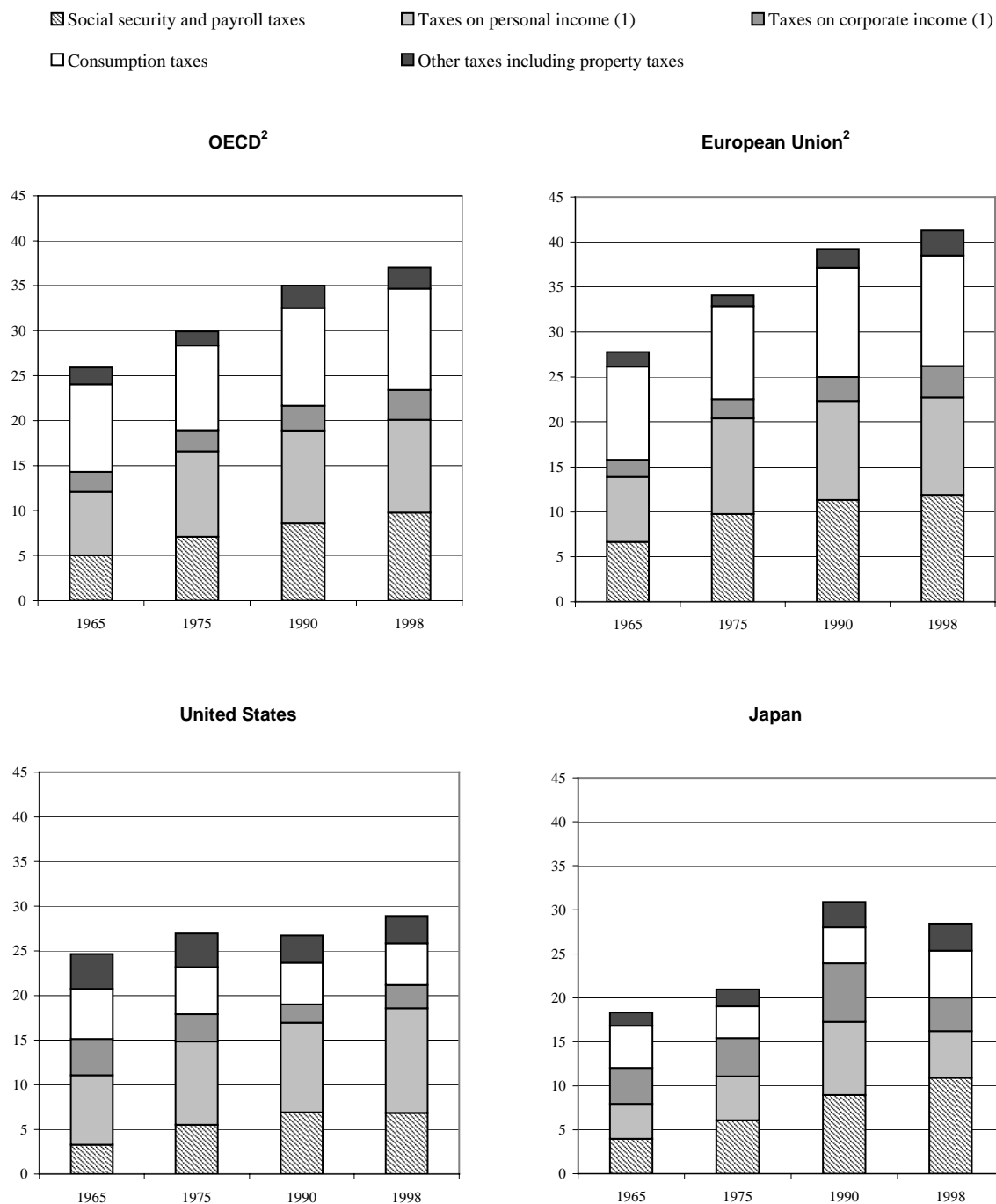


1. The breakdown of income tax into personal and corporate tax is not comparable across countries; see footnote 10 in the text.

2. Weighted average.

Source: OECD, Revenue Statistics, 1965-1999.

Figure 2. Evolution of the tax mix over time
Per cent of GDP



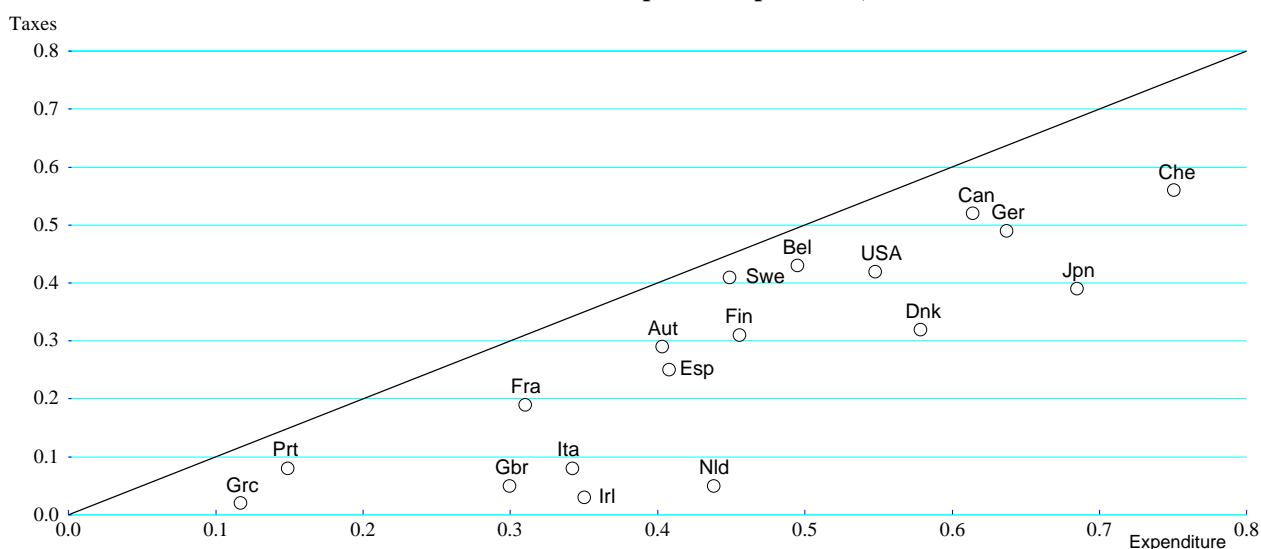
1. The breakdown of income tax into personal and corporate income tax is not comparable across countries; see footnote 10 in the text.

2. Unweighted average.

Source: OECD Revenue Statistics, 1965-1999.

11. In most countries, the tax revenues allocated to sub-central levels of government are insufficient to meet their expenditure commitments and the balance is made up by borrowing and/or grants from central government, as illustrated by Figure 3. An important exception occurs in Spain, where the Basque Country and the Navarra region have a special arrangement in which they collect most of the taxes and remit a payment to the central government for the services that it provides. A major factor in determining the gap between sub-central own revenues and expenditures is the share of sub-central taxes in total tax revenues. The share of different levels of government is reported for OECD countries in Table 4, where federal countries are listed separately from unitary countries. The combined share of sub-central governments in total tax revenues in 1998 shows a wide variation from 1 per cent in Greece and 2 per cent in Ireland to 45 per cent in Canada.

Figure 3. Tax receipts and expenditure by regional and local governments
Share in non transfer receipts and expenditure, 1997¹



Note: Receipts include direct and indirect taxes received by regional and local governments and are expressed as a share of taxes received by the general government (excluding social security). Expenditure correspond to total expenditure by regional and local governments expressed as a share of general government expenditure (excluding social security and capital transfers).

1. For Austria, Finland, Ireland, Netherlands, Sweden, Switzerland and United Kingdom: 1996. For Denmark, Greece, Italy and Portugal: 1995. Source: OECD, National Accounts (subject to revision with the adoption of new SNA for several countries), OECD Revenue Statistics, 1965-1999 and Comptes Nationaux 1997, Banque Nationale de Belgique, Bruxelles.

12. However, it is not only the share of tax revenue received by the sub-central levels of government that matters. The benefits of fiscal autonomy for sub-central governments depend on their ability to match local public provision to local needs and preferences. This, in turn, requires them to have a degree of discretion or control in adjusting their local tax revenue to the costs of the local public provision. A recent study¹² analysed information on fiscal autonomy from a selection of OECD countries. It found that, in most countries, the bulk of the revenue comes from taxes where the base and/or rate of the tax are controlled by the sub-central governments (SCGs). In several of the other countries, a large part of revenue comes from shared taxes over which SCGs have some control. However, among the survey countries, the Czech Republic, Mexico, Norway and Poland have systems where a substantial proportion of SCG tax revenue comes from sources over which SCGs have no formal control.

12. See OECD (1999f).

Table 4. **Attribution of tax revenues to sub-sectors of general government**
Percentage of total tax revenue

	Federal or central government			State or Länder government			Local government			Social security funds		
	1975	1985	1998	1975	1985	1998	1975	1985	1998	1975	1985	1998
Federal countries												
Australia	80.1	81.4	78.4	15.7	14.9	18.0	4.2	3.7	3.5	-	-	-
Austria	51.7	48.9	52.7	10.6	13.1	9.3	12.4	10.7	10.2	25.3	27.2	27.8
Belgium	64.3	62.6	36.7			23.3	4.8	5.1	4.9	30.9	32.2	35.1
Canada	47.6	41.2	41.0	32.5	36.0	36.3	9.9	9.3	8.9	10.0	13.5	13.7
Germany	33.9	31.9	29.4	22.6	22.2	22.0	9.1	9.0	8.0	34.4	36.9	40.6
Mexico		87.7	82.0		0.4			0.6			11.3	18.0
Switzerland	27.4	28.9	30.1	24.2	22.7	19.5	19.6	16.8	14.8	28.9	31.6	35.7
United States	45.4	42.1	45.1	19.5	20.2	19.2	14.7	12.6	12.0	20.5	25.2	23.7
Unweighted average	50.1	53.1	49.4	17.9	16.2	18.5	10.7	8.5	7.8	21.4	22.2	24.3
Unitary countries												
Czech Republic			43.9						11.9			44.1
Denmark	68.8	68.9	64.9				29.9	28.6	32.0	1.2	2.5	3.1
Finland	56.6	55.8	52.6				23.6	22.4	22.2	19.8	21.8	25.2
France	51.5	47.5	43.6				7.6	8.8	10.6	40.8	43.8	45.8
Greece ¹	67.1	63.1	68.8				3.4	1.3	1.1	29.5	35.6	30.1
Hungary			62.5						4.5			33.0
Iceland	81.3	81.4	77.1				18.7	18.6	22.9	-	-	-
Ireland	79.1	83.8	86.8				7.5	2.3	2.0	13.4	13.9	11.2
Italy	53.2	62.7	58.8				0.9	2.3	11.7	45.9	34.9	29.5
Japan	45.4	43.7	36.2				25.6	26.0	25.4	29.0	30.3	38.4
Korea	89.0		71.4				10.1		17.6	0.9		11.1
Luxembourg	64.3	67.0	68.1				6.6	6.6	6.3	29.1	26.4	25.6
Netherlands	59.8	52.6	56.5				1.2	2.4	3.0	39.0	44.9	40.5
New Zealand	92.3	93.5	94.2				7.7	6.5	5.8	-	-	-
Norway	50.6	59.7	59.4				22.4	17.7	18.3	27.0	22.7	22.2
Poland			58.8						9.0			32.3
Portugal	65.4	70.6	67.0				0.0	3.5	6.1	34.6	25.9	26.9
Spain	48.2	47.8	48.0				4.3	11.2	17.0	47.5	41.0	35.0
Sweden	51.3	54.1	58.1				29.2	30.4	30.8	19.5	15.6	11.1
Turkey		75.5	69.1					10.2	16.6		14.3	14.3
United Kingdom	71.1	71.1	78.2				11.2	10.6	3.9	17.7	18.3	17.9
Unweighted average	64.4	64.6	63.0				12.3	12.3	13.3	23.2	23.1	23.7

1. Figures for 1998 and 1999 are based on a submission by the national authorities.
Source: OECD Revenue Statistics, 1965-1999.

3. General principles guiding tax policy

13. Modern OECD economies have fundamental economic and social objectives that require public spending. This in turn must be financed through taxation. However, because taxation inevitably impinges on most aspects of economic activity, careful consideration must be given to its design -- in addition to its level and hence the level of related expenditure. Three features of taxation are especially important. *First*, so long as taxation affects incentives it may alter economic behaviour of consumers, producers or workers in ways that reduce economic efficiency. These effects should be taken into account when the costs and benefits of public expenditure to be funded are being assessed. *Second*, the distribution of taxation's impact across the population raises issues of equity, or fairness, which must be given substantial weight even if it entails costs in terms of economic efficiency. *Third*, the practical enforceability of tax rules and the costs arising from compliance are important considerations, the more so since these are both affected by, and have implications for, the efficiency and public perceptions of the fairness of tax systems. As elaborated in more detail below, the key challenge for tax policy is to strike the best possible balance among these issues.

3.1 Efficiency considerations

14. Tax design is shaped by the need to raise revenues and by considerations of efficiency, equity and enforceability. If the only concern were to minimise efficiency losses associated with taxation, taxes generally should be designed so as to leave economic behaviour unaffected. Specifically, taxes should be lump sums or relate to tax bases that cannot be influenced by taxpayers, such as natural resources and undeveloped land. While such a tax system would avoid distortions in economic behaviour, it would be highly unlikely to yield sufficient revenues to fund socially useful expenditure without producing substantial inequity. A more useful guideline is that the tax system should be as neutral a possible, *i.e.* minimise discrimination in favour of or against any particular economic choices. In practice, this points to building tax systems substantially around broad income and expenditure bases and minimising differences in tax rates that can be applied. As a rule of thumb, in the absence of compelling considerations to the contrary (see below), improvements in efficiency can be achieved by: (i) broadening tax bases by eliminating exemptions and special regimes; (ii) flattening rate structures; and (iii) integrating or aligning different tax rate structures to avoid arbitrage opportunities.

15. However, neutrality need not be an overriding consideration; other factors that can usefully be taken into account are:

- Governments may find scope for leveraging the revenue-raising potential of tax systems by taxing some items more heavily than others. For example, under some circumstances it can be efficient to tax most heavily those items that are comparatively price-inelastic.¹³
- It may be desirable to use the tax system to enhance welfare by correcting market failure. This may involve taxing “bads”, such as alcohol, tobacco and polluting substances such as fossil fuels. Where demand for such goods is inelastic there may be revenue benefits which allow distorting taxes elsewhere to be lowered. While market failures could also justify tax reliefs for activities whose social return is high (*e.g.* R&D and training), the advantages need to be weighed against the need for higher distorting taxes elsewhere.

13. The principle known in the literature as “Ramsey’s rule” states that the efficiency loss or “excess burden” is minimised if the product of tax rates and price elasticities is equalised across all items.

- Allowing taxes to differ across local jurisdictions permits the supply of local public goods and services to be aligned with the particular, but differing, preferences and circumstances of their constituents -- although there are different views across countries as to which taxes could usefully be decentralised.
- Tax systems influence income distribution and may have a role to play in the pursuit of equity goals. The resulting loss in neutrality, *e.g.* due to progressive taxation, may involve efficiency losses but may also contribute to the perceived fairness of the system.
- The cost of compliance with the tax code needs to be kept low, requiring tax rules to be clear and avoid unnecessary complexity. While the neutrality principle is often consistent with simplicity, there are cases where departures from the neutrality principle enhance simplicity, for example by exempting income that is difficult to assess such as fringe benefits or imputed rentals.

3.2 *Equity considerations and tradeoffs with efficiency*

16. Equity is subjective but perceptions about it are important. It can be considered on two levels:
- *Horizontal equity* requires that people in a similar economic position should pay the same amount of tax.
 - *Vertical equity* requires that people on higher incomes should pay a higher proportion of their income in tax.

3.2.1 *Horizontal equity*

17. Horizontal equity has a range of interpretations since the “similar economic position” can be ambiguous. For example, some tax systems consider the number of children that people have, or their marital status, as a relevant difference for tax purposes while others do not, for example where married people file separate tax returns akin to single persons. Furthermore, attitudes change over time: countries may change their income tax rules, for example because they no longer regard differences in interest payments on house loans as a justification for differences in tax payments from people with similar incomes. Nevertheless, some aspects of tax systems would appear to be clearly inequitable: favouring certain occupations or inconsistent enforcement which results in widely different tax burdens on people with similar incomes and otherwise similar circumstances.

18. Greater neutrality in tax systems is usually consistent with better horizontal equity. Hence in most cases it should not imply any conflict between efficiency and fairness. For example, taxing all forms of saving at the same rate both limits economic distortions and is consistent with horizontal equity. Similarly, moves towards uniformity in the tax treatment of different forms of corporate finance and different types of investment projects, and to the sales taxes applied to different consumption goods, would appear to be horizontally equitable. However, ambiguities remain. For example, the large number of income tax allowances available in most countries, while clearly non-neutral, can be seen by some as promoting horizontal equity by taking account of the detailed financial circumstances of households. But others may perceive them as a source of horizontal inequity because they produce differences in taxes paid between households on the basis of differences that reflect deliberate choices, as regards family

circumstances for example, and are therefore irrelevant.¹⁴ Similarly, taxing income from saving at low flat rates, as has become common in many OECD countries, may be considered as lacking horizontal equity. While this may be true in a “static” sense, it may also be seen as promoting horizontal equity in a “dynamic sense”, *i.e.* reducing discrimination between different lifetime profiles of saving and consumption.

3.2.2 *Vertical equity*

19. Vertical equity raises many similar issues, although it may be easier in practice to assess vertical equity than horizontal equity. This is in part because comparisons can be made between people on different incomes who qualify for the same set of tax allowances (for example, because they have the same marital status and the same number of children). Nevertheless, issues such as which is the relevant definition of income to be considered (should it be comprehensive income or just taxable income? What sort of allowances should be made for different types of expenses?) affect how one judges the vertical equity, or progressiveness, of a tax system. Common to most countries is that reduced rates and exemptions on capital income and non or low taxation of fringe benefits limit the effective progressiveness assessed on broad concepts of income. Moreover, in most countries the progressivity of the personal income tax is reduced in effective terms due to tax allowances and deductions at the top marginal rate (especially for owner-occupied housing) which in many tax systems are more beneficial (in terms of the implicit tax subsidy) to more affluent tax payers. Thus, an income tax which is progressive in statutory terms can turn out to be less progressive in effective terms.

20. Indicators of statutory vertical equity can be constructed by comparing the proportion of income paid in tax by people at different income levels (Table 5). The relevant tax concept for this purpose is a composite of the income tax and the employee and employer social security contributions.¹⁵ The calculation suggests that income taxes are progressive in all countries, albeit to widely varying degrees. Meanwhile, employee social security contributions are either neutral or regressive, particularly at higher income levels, which may reflect floors and ceilings in employee contribution levels and the fact that these contributions are normally deductible against personal income tax.¹⁶ These floors and ceilings can reflect floors and ceilings in the social security benefits that employees may eventually receive, in line with the insurance principle, and therefore in theory should not be considered as affecting tax progressivity. In practice, however, in most countries the link between the amount of contributions and the amount of benefit received is not directly proportional, so individual employees may perceive the contributions as an ordinary income tax. Strikingly, the combined effects of income tax and social security contributions turn

-
14. Aside from the choice of rate structures, horizontal equity considerations may affect the choice of tax bases, although there is some ambivalence in this regard as well. For example, countries which attempt to use comprehensive income (including, for example, fringe benefits or capital gains) as the predominant tax base are satisfying those who regard comprehensive income as the relevant income concept for judging the horizontal equity of tax systems. However, they are not satisfying those who regard consumption as a better indicator of lifetime welfare than current income, and so regard taxing consumption as more horizontally equitable.
15. In order to separate issues of vertical equity from those of horizontal equity, Table 5 looks at the case of one particular type of household: a single average production worker with no children.
16. However, reduced progressivity of social security contributions does not necessarily imply a lack of income redistribution, which depends also (if not primarily) upon the allocation of social security benefits across income groups.

Table 5. **Statutory income tax progressivity around the income level of the average production worker¹**

Single workers, 1998

	Low-wage progressivity ²			High-wage progressivity ²		
	Income Tax	Employee contributions	Total ³	Income Tax	Employee contributions	Total ³
Australia	7.0	0.0	7.1	6.3	0.0	6.5
Austria	6.3	0.0	7.9	3.9	0.0	5.0
Belgium	9.6	1.0	13.4	5.2	0.1	6.8
Canada	5.7	0.2	6.5	5.1	-1.0	2.8
Czech Republic	2.1	0.0	2.5	1.8	0.0	2.1
Denmark	6.4	-1.0	5.9	6.6	-0.4	7.0
Finland	8.1	0.2	9.3	5.4	0.1	6.3
France	5.1	0.0	15.8	3.0	-0.8	1.9
Germany	7.1	0.0	9.7	5.1	-1.2	4.4
Greece	1.4	0.0	1.6	2.7	0.0	3.3
Hungary	8.8	0.0	10.2	5.2	0.0	6.1
Iceland	10.2	-0.1	10.1	8.5	-0.1	8.5
Ireland	6.3	3.2	14.3	7.6	0.3	8.6
Italy	5.1	0.0	5.8	3.1	0.0	3.6
Japan	2.2	0.0	2.3	2.9	-0.8	1.5
Korea	1.3	0.0	1.4	1.3	0.0	1.4
Luxembourg	6.4	0.0	7.5	5.9	0.0	7.0
Mexico	6.2	0.2	5.5	4.2	0.4	5.0
Netherlands	0.8	4.9	7.6	9.4	-6.2	0.8
New Zealand	1.2	0.0	1.2	3.2	0.0	3.2
Norway	4.3	0.0	4.8	5.5	0.0	6.2
Poland	1.9	0.0	1.9	0.8	0.0	0.8
Portugal	4.2	0.0	4.8	3.7	0.0	4.3
Spain	6.0	0.0	6.4	2.6	-0.1	2.5
Sweden	2.6	0.0	2.9	7.3	-0.9	6.6
Switzerland	3.4	0.0	3.9	3.0	0.0	3.5
Turkey	4.5	-4.9	-6.8	3.3	-1.9	-1.5
United Kingdom	3.8	0.8	5.2	1.6	-0.4	1.2
United States	2.5	0.0	2.8	4.0	0.0	4.4

1. Higher numbers indicate higher progressivity; negative numbers point to regressive taxes.

2. "Low-wage" progressivity involves a comparison of the tax burden of a worker who earns the average production worker's wage (apw) with one that earns 67 per cent of the apw, while "high-wage" progressivity compares the tax burden of a worker at 167 per cent of the apw with a worker at the apw. The method used can be illustrated by reference to the formula used in calculating the first column: if t_{67} is the tax rate for the lower paid worker and t_{100} is the tax rate for the average worker, "low-wage" progressivity = $((1 - t_{67}) / (1 - t_{100}) - 1) \times 100$. High-wage progressivity is calculated in a similar manner, but has been rescaled to reflect the larger wage difference involved.

3. The total columns include the effect of employer contributions, and so do not simply represent the sum of the income tax and employee contributions.

Source: OECD, *Taxing Wages*, 1999.

out to be most progressive in the Nordic countries, at least at the upper end of the income distribution, where pre-tax income distributions are already extremely narrow. Noteworthy also is that Belgium and Ireland portray pronounced progressive tax structures across a wide range of earnings levels whereas France stands out by relatively strong progressiveness at below-average earning levels. However, as noted, some care is needed in interpreting such calculations as they only take account of standard deductions, exemptions and tax credits.

21. While the tax code in most countries is moderately geared towards income redistribution, there is concern that redistributive goals could be achieved at a lower dead-weight loss¹⁷ by providing targeted cash or in-kind support instead of a plethora of deductions and allowances for which broad groups of taxpayers qualify. A drawback of targeting benefits, however, is that it can discourage work efforts. There is, therefore, a trade-off between the disincentive effects stemming from progressive taxation and those associated with targeting. On the other hand, the terms of this trade-off can be improved by partially targeting support on the basis of non-income characteristics of households, such as the number of children. A similar reasoning holds for sales and value-added taxation, which often apply different rates in the pursuit of redistributive goals that could be achieved by direct transfers. In this case, the same redistributive effect can be achieved at a lower dead-weight loss by using transfers that are entirely based on non-income characteristics.

3.2.3 *Trade-offs between equity and efficiency*

22. Governments are often faced with trade-offs between equity and efficiency goals of tax policy. There is an abundance of examples of conflicts between equity and efficiency inherent in the taxation of income-generating activity. Specifically, the choice of progressive tax rate structures reduces vertical inequality -- at least in statutory terms (see above) -- but increases inefficiency by reducing incentives to utilise labour and capital resources and may prompt avoidance and evasion. Indeed, this conflict between equity and efficiency lies at the heart of many differences between OECD countries in their choices of tax rate. Evidently, this does not mean that there is no scope to improve both the equity and efficiency of existing income tax systems. Poorly-designed income taxes can distort economic behaviour without doing much to redistribute income, no matter what the level of taxation is. In such cases reform may not involve any trade-off between equity and efficiency at all.

3.3 *Enforceability and compliance*

23. A tax that is generally seen as unfair or arbitrary in its incidence can generate reluctance among taxpayers to comply. Neutrality is important not only for its favourable efficiency and horizontal equity effects, but also because it usually helps tax rules to be clear and simple to understand,¹⁸ reducing both the administrative and compliance costs of taxation. Neutrality also reduces the incentives and possibilities for taxpayers to rearrange their financial affairs to minimise tax payments, and limits the lobbying and litigation that surrounds borderline decisions on how to classify particular types of income or goods for tax purposes.

17. By dead-weight loss is meant the receipt of a benefit by people for whom the benefit was not primarily intended and therefore for them represents a windfall gain.

18. In some cases, such as the taxation of comprehensive income, including *inter alia* imputed incomes and fringe benefits, horizontal equity may require complex laws.

24. Evidently, the relationship between equity and neutrality on the one hand and enforceability on the other goes in both directions. It is only by firm and equitable enforcement that a theoretically desirable tax system can be both equitable and neutral in effective terms. This consideration adds another dimension to the care that needs to be taken in interpreting the figures on statutory income tax progressivity in Table 5. Not only does it only take account of standard deductions, but it also disregards evasion of income taxation. This calls for an efficient system of tax administration and enforcement. Importantly, voluntary compliance can be encouraged by providing a better service to taxpayers, particularly the vast majority who wish to pay the correct amount of tax. At the same time, there must be effective enforcement procedures combined with penalties that apply to those who try to escape their tax obligations.

25. Meanwhile tax systems need to cope with increasingly mobile tax bases internationally. Recent advances in communication technologies, ongoing developments in complex, innovative financial instruments, and the expansion of tax havens and preferential “niche” regimes designed to attract mobile capital, particularly financial capital, are creating horizontal inequities between taxpayers and producing a misallocation of capital. Governments may find themselves competing for these mobile activities, but this is different from the sort of tax competition over generally applied tax rates that has been the subject of the economics literature. This literature shows that tax competition can be beneficial, both by restricting tendencies towards excessive government spending and by providing individuals with a choice between locations according to their desired level of public provision. However, this reasoning does not hold for tax competition that is non-transparent or discriminatory, or where it facilitates illegal tax abuses that enable companies or individuals to reduce their tax liability without actually moving their residence away from a jurisdiction with high public provision. In many cases, tax havens do not attract much real activity; they simply provide a place to shelter the proceeds of real activity that takes place elsewhere.

26. In addition to the difficulties met in taxing income from capital, the increasing mobility of skilled labour is making part of the earned (wage) income tax base more elusive as well. Similarly, the growth of business to consumer e-commerce currently permits consumers to cross-border shop for digitised products in a virtually tax-free environment. While still in its infancy, available indicators suggest this form and other forms of electronic commerce are likely to develop quickly.¹⁹

4. Areas and options for reform

27. To varying extents across countries there is scope for improving the performance of tax systems in OECD countries in several respects, which can be grouped under the following four broad categories:

- *First, the distortions in economic behaviour stemming from taxation may be reduced.* This would need to involve the reduction of tax disadvantages to employment, especially in several European countries. In particular, although recent reforms have been going in this direction, further efforts are needed to reduce the high tax wedges affecting low-income earners as well as those workers that are at the upper end of the income distribution -- preferably combined with further broadening of tax bases to avoid an increase in marginal tax rates of middle income earners' revenue. Such changes would be instrumental in raising the chances of lower-skill workers finding gainful employment while reducing tax planning and avoidance activities of the higher skilled that go against objectives of both economic efficiency and equity. The neutrality of tax systems with regard to the choice of investment funding, business organisation and location are other priorities for reform, with a view to reducing the, potentially costly, distortions in these areas. Strengthening the neutrality of taxation across savings vehicles would be complementary to this approach. The tax regimes

19. See OECD (2000c).

facing the self-employed are in need of streamlining to remove incentives for the shifting of smaller business activities either into the unofficial economy or into the corporate sector in areas where this is not necessarily the optimal organisation form of business.

- *Second, taxes that aim to correct market failures could be made more efficient.* For example, improvement in the effectiveness of environment taxation should also be on the policy agenda.
- *Third, the fairness of tax systems could be improved.* Tax systems in OECD countries have been designed to raise revenues to fund public expenditures, taking account of economic efficiency objectives and a desire to redistribute income and wealth to those most in need. In order to ensure that the thrust of the tax system does not go against income-distribution goals, it needs to be equitable in a vertical sense, *i.e.* ensure that the most affluent pay a higher proportion of their income in tax. In practice this is not always achieved, because more affluent individuals are typically in a better position to take advantage of avoidance and evasion opportunities. Importantly, equity is not only an end in itself but may also serve to bolster the acceptance and legitimacy of tax systems and facilitates their enforcement.
- *Fourth, the effectiveness and efficiency of tax collection, enforcement and administration needs to be improved.* Such reform would preserve, and in some cases enhance, the revenue-raising capacity of tax systems. A key feature of these efforts must be improved co-operation between tax authorities in different countries, including effective exchange of information.

28. These considerations have given rise to a series of policy recommendations in the *Economic Surveys* that impinge on the tax codes for corporate income, personal income, social security, consumption and property and wealth taxes, as well as the vertical assignment of taxing power and the tax administration. A discussion of these recommendations is provided below. However, the thrust of these recommendations and their underlying rationale may provide some useful lessons for all OECD Member countries.

4.1 Corporate income tax

4.1.1 Easing non-neutralities of funding modes of corporate investment

29. The differential tax treatment of various forms of corporate funding may distort the composition of financing vehicles for corporate investment. The potential distortion stems from different tax wedges being driven between the pre-tax rates of return at the corporate level and the after tax rates of return for the final investor. A longstanding issue is that double taxation of distributed profits, first at the corporate level and subsequently at the shareholders' level, can produce a high combined tax rate on equity. With interest on debt deductible against the corporate tax this can create an incentive to finance investment through debt (bank credit and the issuance of bonds) rather than the issuance of shares.²⁰ This may make companies more prone to insolvency and discriminate against small companies and start-ups, which have reduced access and less favourable terms on debt financing and thus depend more on equity. This points to the desirability of removing the bias against equity financing. One way that this has been done is by

20. Retained earnings are another possible source of finance, but are often in limited supply for new and fast-growing companies. They are usually treated more favourably than new equity financing given that capital gains on shares are often not fully taxed at the individual level beyond a certain holding period.

granting a tax credit to dividend recipients corresponding to the corporate tax on distributed profits (Box 1). This is known as the imputation system (applied in Australia, Finland, France, Mexico, New Zealand and Norway), as opposed to the so-called classical system without such credits. Moreover, several countries apply partial imputation credits, corresponding to some fixed share of imputed corporate profits, notably Canada, Denmark, Ireland, Italy, Korea, Portugal, Spain, Turkey and the United Kingdom. However, the concerns caused by the classical system have eased over time because a major source of debt bias -- inflation -- has been practically removed. Moreover, in many countries reductions in corporate tax rates have reduced the “tax value” of interest deductions.²¹ At the same time, double taxation relief is often provided indirectly, by adopting low flat tax rates on personal dividend income. Many countries tax dividends at a lower (flat) rate under the personal income tax code (Austria, Belgium, the Czech Republic, Denmark, Hungary, Iceland, Italy, Japan, Korea, Poland and Sweden), while, Germany has recently introduced a “half rate” system whereby only half the dividends received from German corporations enter the personal income tax base. One country, Greece, exempts dividends from personal income tax all together.

30. Tax designers in many countries have been moving towards the view that in a world with free cross-border capital flows, imputation credits are unlikely to be effective in reducing the bias towards debt financing of corporations (see Box 1). Indeed, if the pre-tax required rate of return for shareholders is determined in world capital markets and capital is flowing freely across borders, unilateral changes in personal income taxation are thought to be unlikely to change the demand for and supply of equity capital. Moreover, in the absence of a substantial network of accommodating bilateral tax treaties, imputation credits may discriminate against foreign companies and shareholders. As a result, some countries have chosen to maintain (or revert to) a classical system. Meanwhile, globalisation means that the international financial structure of companies is affected by the tax system through other channels. The widely applied granting of deferral of home country tax on income derived from business activity abroad, in support of the competitiveness of businesses operating in lower tax rate jurisdictions, encourages firms to hold profits offshore.²²

4.1.2 *Broadening the corporate tax base and providing uniform taxation*

31. In most countries the tax code contains special tax reliefs to favour certain activities and locations, such as accelerated depreciation allowances for investment in intangible assets (such as training) and tax reliefs for job creation, deprived areas or foreign direct investment. Typically these are intended to target market failure, or to contribute to social policy or equity objectives. But effective targeting is often undermined by arbitrage opportunities which erode the tax base and lead to unintended distortions in the allocation of resources. For example, special tax regimes designed to lower the taxes paid by certain companies alone (*i.e.* “ring-fencing”) can lead to a serious distortion of competition. Non-tax measures that lower the overall cost of doing business in a certain region, such as infrastructure development, or the provision of training facilities, are more transparent and may create more durable positive effects (see

21. One country, Italy, introduced a corporate tax rebate for investment financed through new equity or retained earnings.

22. This means, at least as far as “active” business income is concerned, countries are applying the principle of taxing resident companies on their world-wide income only when the income is actually repatriated.

Box 1. Classical *versus* integrated systems of dividend taxation

Distributed profits (*i.e.* dividends) are normally taxed both at the corporate and personal levels. This is often considered to imply an excessive tax burden on income from corporate activity due to “double taxation”. Double taxation gives rise to distortions in corporate finance decisions, with debt funding being favoured (as interest expenditure is deductible) over issuing new equity (as distributed profits are taxed both under the corporate and personal tax codes).

No OECD country allows dividends to be treated as deductible expenses by corporations. On the other hand, most countries have incorporated means of providing at least some double taxation relief in their personal tax systems. Several have done this by “integrating” their corporate and personal income tax systems, thus ensuring that all or part of corporate tax paid by companies is credited against the personal tax liability of their shareholders (so-called imputation credits). In contrast, others have maintained or reverted to a “classical” (*i.e.* non-integrated) system, but introduced at least partial double taxation relief by taxing dividends at a lower (flat) rate, which replaces the personal income tax.

The choice for taxing dividends (and corporate profits) at a reduced rate within a classical system rather than for imputation credits has been motivated by the following arguments:

- *First*, while integrated income taxation may enhance neutrality with respect to corporate funding options in a closed economy setting, imputation credits risk introducing distortions in cross-border investment flows. In particular, unless countries respect other countries’ imputation credits, which may in practice require a large network of bilateral tax treaties to be in place, they may discriminate against foreign shareholders of domestic corporations and against resident shareholders of foreign companies (by not granting them a tax credit for the underlying corporate tax paid).
- *Second*, imputation systems often grant a notional tax credit, *i.e.* reflecting the statutory rather than the actual taxes paid by the corporation. Ensuring that imputation leads neither to over-nor under-compensation might involve high administrative and compliance costs. Classical systems avoid these complications and are therefore seen as more transparent.
- *Third*, the introduction of the imputation credit would result in an increase in stock values. This produces a windfall gain for existing shareholders without necessarily reducing the cost of equity capital for the company.
- *Fourth*, eliminating double taxation through imputation credits is deemed to forego the opportunity to lower the nominal tax on profits while raising a given amount of revenue. As the nominal corporate income tax rate has an important signalling function, particularly for foreign investors, countries may be reluctant to introduce imputation credits.

These arguments have played some role in Germany when it decided to cut the corporate tax rate by 2001 from 45 to 25 per cent and abolish the imputation credits by 2002. Instead, the imputation credits will be replaced with a “half-rate” system whereby only half the dividends received from German corporations enters the personal income tax base. To avoid discrimination of shareholders investing in foreign equity, moreover, the half-rate system is being applied to dividends received from non-German equity issuers as from the start of 2001. Italy introduced a choice between the imputation credit and a reduced flat tax rate on dividends in 1997. It also introduced a corporate tax rebate for investment financed through new equity or retained earnings with a view to balancing the relative cost of debt and own-capital funding of new investment.¹

1. Known in the Italian tax code as the *Dit* or Dual income tax system; not to be confused with the Dual Income Tax discussed in Box 3 below.

Box 2). Where tax reliefs are used to complement these measures, they need to be designed very carefully. Special corporate tax provisions may be unavoidable in countries where the government is committed to capturing natural resource rents (*e.g.* Iceland and Norway). However, alternative methods of extracting these rents such as auctioning oil extraction rights are worth considering. If this is not feasible, tax authorities should guard against incentives for tax shifting, for example by adopting or tightening rules to counter artificial transfer pricing and “thin capitalisation” (*i.e.* excessive debt/equity ratios to maximise interest deductions in high-tax regimes). In contrast, special tax regimes designed to lower the taxes paid by companies on the basis of their type of activity and/or the residence of their owners represent a serious distortion of competition, in both domestic and international markets (for example, the shipping regimes in Greece and Norway). Countries are therefore recommended to phase out such regimes. In any event, for EU countries, such regimes could violate the State Aid Rules. In addition, OECD countries have agreed to redesign such regimes for mobile financial and other services if they are judged to be harmful.²³

Box 2. Special corporate tax regimes

Governments are often under pressure (from members of the business community) to use the corporate tax system to support specific industries or business, even if this may lead to more complexity and less transparency, equity and neutrality of taxation. For example, corporate tax codes in most countries include special allowances, exemptions and credits favouring investment in certain geographical locations. Such arrangements are usually presented as a way to correct perceived market failure stemming from, for example, remote geographical locations and information asymmetries leading to higher perceived risks, but tax incentives may not be the most effective way of addressing these presumed imperfections. Whereas for example locally targeted public infrastructure and human capital development lower the cost of doing business in regions, tax incentives are unlikely to have such durable effects. Moreover, since regional tax incentives normally apply uniformly across the region they carry a dead-weight loss, the more so since the greatest benefits accrue to the most profitable corporations.

A related set of issues arises from the use of special regimes to shelter the business income of multinational enterprises from corporate taxation in their country of residence. Some countries, including some of the reviewed countries (Korea, Norway, Switzerland and Greece), offer such tax sheltering. Such special regimes can erode tax bases in two ways. First, the failure of some countries to exchange information with the companies' countries of residence can help to conceal outright tax evasion. Second, the enterprises can obtain the advantages of tax deferral by keeping their profits in a zero or low-tax regime rather than bringing it to the standard regime of their country of residence. The opportunities for obtaining the benefits of deferral depend on the company's country of residence. For example, New Zealand does not allow tax deferral even on operational (active) business income, unless the income comes from a “grey list” of countries where the advantages of deferral are limited. However, many countries allow deferral on all active business income and some allow it on passive income as well. In addition to causing revenue losses, these practices distort investment choices between countries, notably countries that may be considered as “close substitutes” from the point of view of multinational companies, and generate horizontal inequity between companies that make use of the special regimes and those that do not.

23. In May 1998, the OECD published the Report on Harmful Tax Competition (OECD 1998). Luxembourg and Switzerland abstained from the adoption of the report in Council in April 1998. Following this, a Forum on Harmful Tax Practices was created. This set forth the guidelines for Dealing with Harmful Preferential Regimes in Member Countries, and adopted a series of Recommendations for combating harmful tax practices. On 26th June 2000, the Forum issued a list of 47 preferential tax regimes that are potentially harmful in the OECD area.

4.1.3 *Limiting “simplified regimes” and progressive rate structures*

32. In addition to special regimes and allowances, several countries maintain a progressive corporate tax rate structure or grant simplified tax filing to small business (Mexico, Canada, France, Japan, Korea, Netherlands, Portugal, Spain, Switzerland, the United Kingdom and the United States). These measures are designed to offset the disadvantages of new, or small, enterprises in financing their investment projects and the disproportionate costs stemming from administrative complexities, including tax compliance. There is also a case for favouring small corporate business to the extent it is prone to market failure, for example due to imperfections in patent systems penalising start-ups, high cost of compliance with regulations due to diseconomies of scale and reduced access of smaller firms to venture capital. A progressive rate structure of corporate taxation is motivated in some countries also by equity objectives, but will only be effective to the extent that there is a correlation between the size of corporations and the relative wealth position of their shareholders. Unfortunately, moreover, progressive or simplified corporate taxation may give rise to abuse with larger companies splitting up into smaller units for tax purposes, but strict anti-fragmentation rules can help to prevent this occurring.

4.2 *Personal income and social security tax*

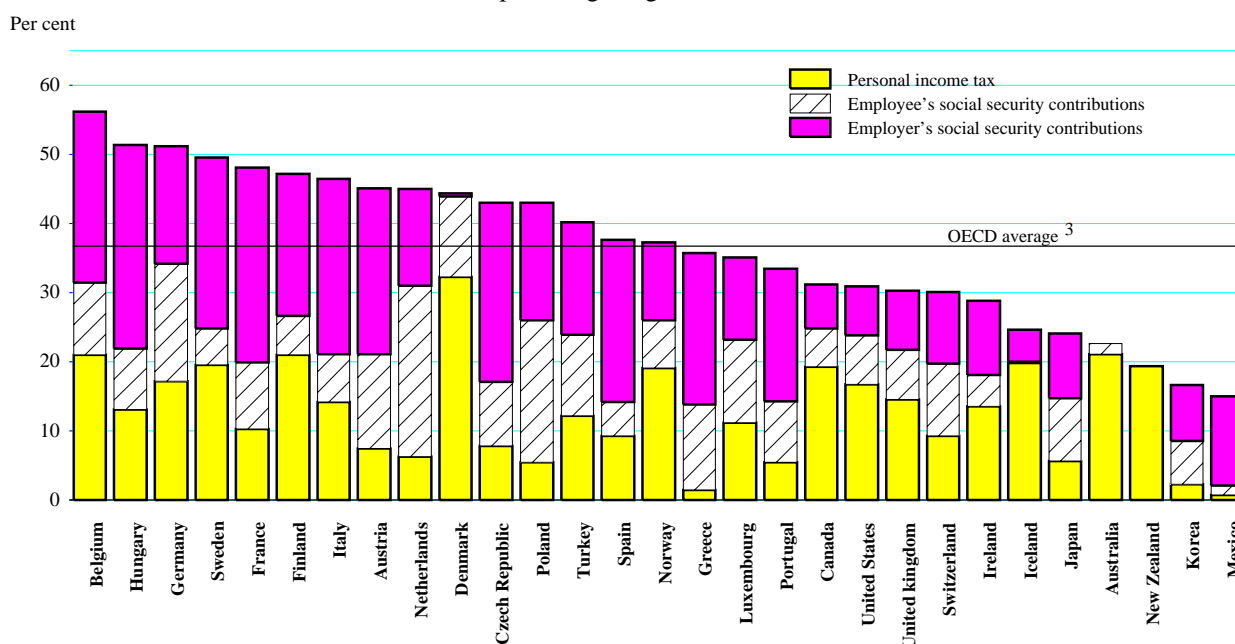
4.2.1 *Easing the tax burden on lower-paid labour*

33. As has been extensively analysed in the framework of the OECD *Jobs Strategy*, the heavy taxation of wage earnings which is typical for countries that maintain extensive social security systems, drives a large wedge between the real labour compensation as perceived by employers and real take-home pay per worker.²⁴ This phenomenon is particularly pronounced in several countries of the European Union (Figure 4).²⁵ To the extent that industrial relations, regulatory constraints or transfer schemes prevent the incidence of this wedge from being borne by the workers, firms will be induced to cut back their use of labour. This may take the form of substitution of (typically low-skill) labour with other production factors, downsizing of activity or relocation of activity to countries that offer lower wages for a given level of skills and competencies. At the same time, where tax and social security contributions are shifted back into wages they may generate disincentives to seek work or raise work effort -- *i.e.* if the substitution effect exceeds the income effect in the labour-leisure trade-off. If tax enforcement is weak, firms and workers may also drift into the “informal” economy. While, as noted, some countries in the European Union are particularly prone to such effects, there are indications that the transition countries such as the Czech Republic and Poland are confronted with this “tax penalty on employment” as well. Easing this problem by cutting the tax burden on labour, based on a careful assessment of the trade-off between the social returns on public expenditure and the social cost of labour taxation, would seem to be a top priority. Concerns about excessive labour costs prompted initiatives in several EU countries (Belgium, France, the Netherlands, Spain and the United Kingdom) to cut social security contributions at the bottom end of the pay scale (see for details Joumard, 2001). Such measures are generally seen to be effective in terms of creating job opportunities for low-skilled workers and may in fact enhance the vertical equity of the tax and social security system at a relatively small, if any, net fiscal cost.

24. See for example OECD (1999c).

25. The cross-country spread in tax wedges would be even larger when taking into account the taxation of consumption from wage earnings, with countries in the European Union featuring not only the highest labour taxes but also the highest consumption taxes.

Figure 4. Tax wedges on labour, 2000¹
As a percentage of gross labour costs²



1. For a single individual at the income level of the average production worker. Data for 2000 are based on estimated wage levels of the average production worker.

2. Gross wage plus employers' contributions.

3. Unweighted average.

Source: OECD, Taxing wages, 1999-2000.

34. A few countries, in addition, have introduced cash transfers to active workers whose (family) earnings are below a certain threshold. Finland, Ireland, Greece and recently France followed the examples of the United States, the United Kingdom, New Zealand and Canada. Such schemes aim to reduce the tax burden²⁶ at low levels of earnings in order to increase participation in work, in particular for people eligible for unemployment compensation or welfare benefits. This is considered to be effective in encouraging labour supply -- in particular if combined with a minimum wage at a reasonable level, as this limits the extent to which the incidence of the tax credit might be transferred from the worker to their employer. However, care must be taken in choosing the level of such a minimum wage in order to minimise its effects on labour market flexibility. A drawback is that incentives for additional work effort at income levels in the abatement range of the credit are reduced (the transfer is phased-out as earnings approach a statutory threshold). Such a tax credit can increase overall labour supply, however, if the number of people who are induced to start work is large enough in comparison with the number of workers whose earnings lie in the phase-out range. Careful design can help achieve this, but much depends on the shape of the earnings distribution (it is particularly difficult if large proportions of workers are earning incomes that are not far above the level of welfare benefits).²⁷

26. All such schemes reduce the average tax rate on low income workers, but there are differences in their effects on marginal tax rates (for an extra hour of work). The UK's Working Families Tax Credit increases the marginal tax rate by the gradual withdrawal of the credit. The US earned-income tax credit reduces the marginal tax rate for workers on very low incomes, as the credit increases with income, but increases the marginal tax rate for workers on slightly higher incomes, as the credit is withdrawn.

27. See for example Pearson and Scarpetta (2000); and other contributions in the same volume.

4.2.2 *Reducing statutory tax rates and raising the effective progressiveness of income taxation by broadening bases*

35. Progressive income taxation is aimed at enhancing the vertical equity of income tax systems, but also strengthens incentives for tax minimisation to the extent that high-income taxpayers are able to use deductions and allowances, including the purchase of pension annuities, housing or other tax-favoured assets.²⁸ Moreover, although not a large-scale problem yet, top income earners are prone to labour mobility *vis-à-vis* other countries where income taxation at the top end of the income distribution is lower. Maintaining high marginal tax rates under such conditions frustrates the efficiency of the tax system without gaining much in terms of equity. Governments should continue the ongoing efforts to reduce marginal tax rates at the top end while broadening the base by limiting special allowances. Dual income taxation, whereby capital expenditure associated with *e.g.* owner-occupied housing is deductible only against a low flat tax rate on capital income and not against the top marginal rate on labour income, goes some way in the direction of eliminating distortions stemming from progressive taxation since it reduces the “tax value” of such deductions (see Box 3 for a discussion of the dual income tax and Box 4 for an elaboration of the tax treatment of owner-occupied housing). On the other hand, dual income tax systems may not be the panacea to the extent they produce incentives for tax shifting from high-taxed labour income into low-taxed capital income, especially for small company owners. They also reduce vertical equity to the extent that recipients of capital income are wealthier than the rest of the population. Continuing the ongoing efforts to lower the top marginal tax rate on labour income is therefore suggested for countries with dual and comprehensive income tax systems alike, especially in countries where the pre-tax earnings distribution is already relatively narrow, and hence the rationale for income redistribution through the tax system is weak (*e.g.* the Nordic countries).

36. In contrast, countries where the redistributive thrust of income taxation is clearly insufficient or even perverse are Mexico and Korea. In Mexico the low levels and very skewed distribution of income gives rise to serious economic and social problems, including poverty, malnutrition and a poor health status in significant strands of the society. While the tax and benefit system is geared to addressing these problems to some extent, its performance is unsatisfactory. For example, the Mexican system includes non-wasteful tax credits for the poor to achieve income re-distribution, but its take-up rate is low due to the sizeable informal economy. These problems should ease as the economy catches up with OECD average standards of living in the longer run. However, several tax measures could be envisaged to facilitate progress, including an increase in taxation of immovable property, introducing taxation of fringe benefits and strengthening tax enforcement overall (see below), while also stepping up targeted social aid. The problems in Korea are of a somewhat different nature, with land development policies and rapid economic growth having contributed to a very skewed distribution of wealth. Since, moreover, generous allowances, tax credits and evasion opportunities undermine the statutory progressiveness of the tax system, this does little to correct this imbalance. The measures needed to improve the redistributive thrust of the Korean tax system, consistent also with efficiency and compliance objectives would in fact entail a wide-ranging redesign of the system. While less urgent as long as public expenditure and overall taxation levels are low, such a reform will rapidly gain priority once the effects of population ageing kick in.

28. Such a reduction in vertical equity is a standard complaint against the replacement of income taxes by expenditure taxes. However, it should be noted that the tax treatment of favoured assets observed in the country studies is frequently even more lenient than the treatment they would receive under a pure expenditure tax.

4.2.3 *Tightening the tax system vis-à-vis the self-employed*

37. The tax treatment of self-employed is often the Achilles heel of systems of income taxation. If taxation of self-employed is more severe than taxation of corporate business, incentives to incorporate may be strong. But in most reviewed countries the self-employed face low effective tax rates, as they have more scope for deductions and credits regarding expenses that qualify as necessary for carrying out their business, contribute relatively little to social security, or underreport income due to self-assessment and weak auditing. This raises concerns not only in terms of tax-revenue loss, but also produces horizontal inequities and jeopardises the efficiency of industrial organisation. Strengthening taxation of self-employment income is called for, especially in countries where tax compliance is a key problem, notably in Greece and Korea, or where social security contributions are settled as lump sums (Greece) or at reduced rates (Czech Republic). These countries might benefit from the recent experience in Italy, which introduced a system of assessing self-employment income through auditing based on benchmarking statistics.

38. A specific problem associated with the dual income tax systems operated in Norway and Sweden (see Box 3) is that self-employment income needs to be split into labour and capital components, each taxed at their own level. Since the statutory tax rate on labour income is high, incentives to convert labour

Box 3. Dual versus comprehensive income taxation

In the late 1980s and early 1990s, Denmark, Finland, Norway and Sweden introduced a Dual Income Tax (DIT). Under this system, all household capital income is taxed at a single proportional rate, close or equal to the corporate income tax rate, while labour income is subject to a progressive rate structure. In some cases the DIT uses imputation credits to remove double taxation of dividends at the corporate and personal levels (see Box 1) so as to ensure full neutrality across all sources of capital income. The DIT thus departs from a pure comprehensive income tax, under which a common progressive schedule is applied to household income from all sources.

The DIT aims to strike a balance between equity concerns and revenue needs on the one hand and efficiency and neutrality on the other. As capital income tends to be concentrated in the upper income brackets the DIT may be conflicting both with horizontal and vertical equity objectives. However, in a comprehensive income tax system, interest expenditure (*e.g.* stemming from mortgage loans) is normally deductible against the top marginal personal income tax rate, whereas this is deductible against the (low) capital income tax rate in a DIT. As a result, in effective terms the DIT may be as equitable as a comprehensive tax system.

The application of lower rates on capital as opposed to labour also contributes to efficiency, as capital is more mobile internationally, its supply more elastic and the real return more sensitive to inflation. In addition, a proportional rate reduces distortions with respect to the choice between present and deferred consumption inherent in comprehensive tax systems, in particular if taxation is heavy, and also promotes tax neutrality between different sources of capital income. The main efficiency drawback of the DIT is that it generates incentives to transform labour income into capital income (to which self-employed and small corporate businesses are most prone).

The Nordic countries seem to have fared relatively well with the DIT system. As small, open economies with a particular preference for redistribution and relatively large public sectors, they have been facing the challenge of raising revenue from a mobile source in an environment with relatively high marginal tax rates. Under these circumstances, the DIT has served as a pragmatic middle course between pure comprehensive income and consumption taxation, while lowering overall distortions in the tax system. Nevertheless, some Nordic DIT systems have been losing some of their neutrality properties in recent years. In particular, concerns over vertical equity have prompted a hike in effective tax rates on dividend income relative to other capital income in Norway, while imputation credits have been abolished in Sweden.

income into capital income (dividends) are strong. In some circumstances, this can provide an incentive for incorporation. The tax authorities in these countries have attempted to counteract these incentives by establishing a special regime of “closely-held corporate business”, with total business income split into labour and capital components according to a complex set of rules in order to capture labour income. However, loopholes prove difficult to close, the more so since pressure groups have successfully lobbied for exemptions. As noted above, countries maintaining a dual income tax system should limit the incentives to incorporate by diminishing the difference in statutory and effective tax rates on capital and labour income of self employed, especially at the upper end of the pay schedule. Moreover, they should reduce the possibilities for income shifting from labour to capital income, possibly following the example of Iceland.

**Box 4. Tax policies geared towards encouraging pension saving
and housing investment**

Favourable tax treatment of pension plans, both voluntary and mandatory, is widespread, with Australia, Denmark, Luxembourg, New Zealand and Sweden being notable exceptions. The main purpose of these provisions is to avoid “moral hazard” of workers, who may otherwise be tempted to consume too much of their earnings during working life and “free ride” on the social safety net once they retire. Moreover, countries with a severe ageing problem may find such tax privileges a useful way to smooth the transition from pay-as-you-go financing to pre-funding, by providing some offset for the “double burden” hitting current workers who are required to finance both current and future pension payments. However, these advantages need to be weighed carefully against the risks of poor targeting, as the tax relief may benefit groups who are not affected by moral hazard and whose prospective pension income, with reasonable saving, is well above the social safety net. Moreover, systems that provide tax breaks to pension vehicles often give particular providers a favoured status, something that the design of such systems should avoid.

Another area often favoured by tax systems is home ownership. According to the neutrality principle, the rental income stemming from home ownership should be imputed for tax purposes, while capital gains should be taxable and mortgage interest payments deductible. However, in most countries little or no rental income is imputed for tax purposes and/or capital gains of owner-occupiers are not taxed -- even if property taxes may offset this form of tax relief to some extent. Moreover, mortgage interest payments often result in tax deductions against the highest marginal income tax rate. This implies a more favourable treatment compared to the taxation of most forms of return on personal saving, which in several countries is taxed at low flat rates, and interest on consumer credit, which is usually not tax-advantaged. It also risks favouring higher income groups, who face a comparatively high marginal income tax rate and can afford the investment to qualify for the tax subsidy. Tax relief for house ownership may, finally, result in a bias against the development of commercial property and other business investment, where interest payments are normally deductible against the (typically lower) corporate tax rate.

There are only few options available to move away from such unfavourable features. Some countries have capped mortgage interest deductions or eliminated them altogether while removing imputed rental income from the personal tax base. While enhancing the simplicity of the tax code and facilitating tax compliance, this type of measure still involves an asymmetry between the taxation of net capital income from housing and other forms of capital income. An alternative approach -- more neutral but also more complex -- is to impute a rental value and tax both it and any capital gains (net of mortgage interest payments) together with other forms of personal capital income at a uniform flat rate, akin to the dual income tax system adopted by the Nordic countries. However, the experience in the Nordic countries has shown that the transition costs associated with the introduction of such a system, in terms of abrupt declines in house prices and associated solvency problems, may be high. Indeed, whatever change in tax regime is adopted for owner-occupiers, it would need to be phased in gradually.

4.2.4 *Enhancing the neutrality of capital income taxation*

39. Disparities in the taxation of personal income across savings vehicles act to distort savings patterns, for example by favouring private pension plans, housing or other forms of real and financial wealth formation (see Box 4). Among the countries that went furthest in eliminating non-neutralities of income taxation across savings instruments is New Zealand, although loopholes have remained due to the absence of a broad-based capital gains tax.²⁹ The Scandinavian countries reviewed, Sweden and Norway, also went far in eliminating distortions in this area, taxing all sources of capital income (including imputed rental income of owner-occupied housing) at a similar rate irrespective of the source of income or the income or other characteristics of the final investor. Nevertheless, households in all examined countries are encouraged to use their home or pension schemes (New Zealand excepted) as vehicles for long-term private savings. These features squeeze the amount of capital available for the financing of investment with higher risk-return profiles and often favour some financial intermediaries over others.

40. Moreover, capital gains tax rates in many countries decline with the holding period of stock, resulting in a 'lock-in' effect that hinders the reallocation of capital towards more productive uses. It is not always clear that these distortions are sufficiently justified by market failure considerations. A careful examination of the cost and benefits of these tax preferences should figure high on the agenda, in particular in Germany, Austria, the Czech Republic, Greece, Korea, Poland, Switzerland, while New Zealand is encouraged to introduce a broad-based capital gains tax.³⁰

41. In addition the pattern of saving flows between countries is distorted by the greater possibilities of tax evasion by using some forms of cross-border investment. This non-neutrality between domestic and foreign investment of savings should not exist where taxation is residence-based, but in practice this requires exchange of information between source countries and residence countries, as is already common among some OECD countries and as recently agreed in principle within the EU.

4.3 *Consumption tax*

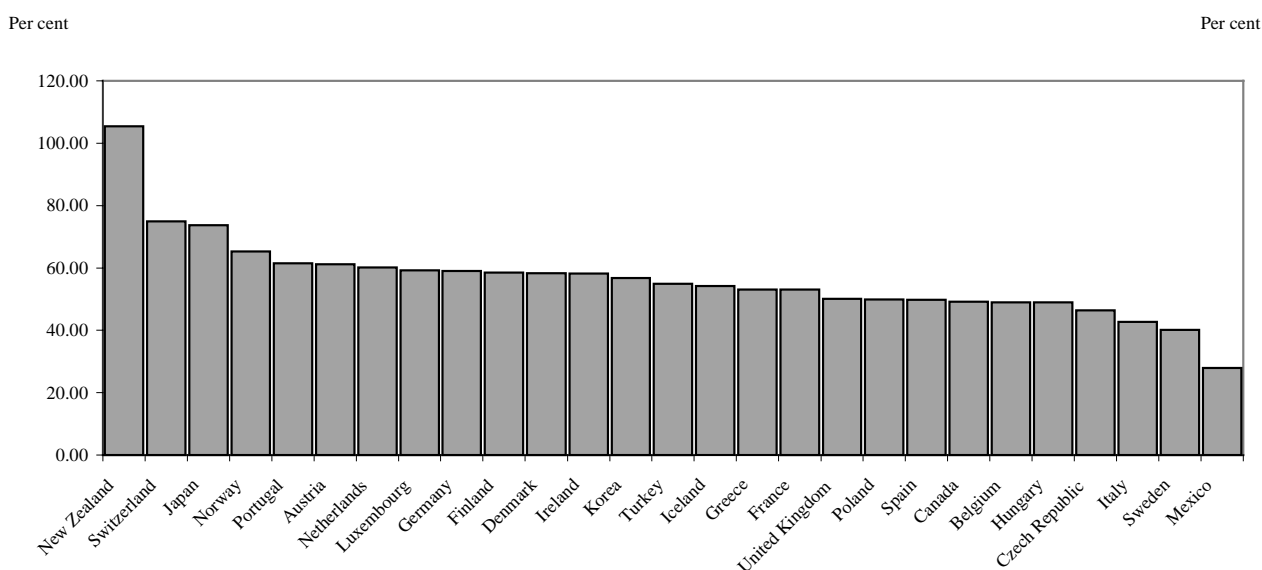
4.3.1 *Reducing deviations from standard VAT rates*

42. While all but one OECD country have introduced a value-added tax (VAT), rate differentiation and exemptions produce non-neutralities in most countries (New Zealand excepted). This is reflected *inter alia* in low effective VAT rates in comparison to the statutory standard rates (see Figure 5). Low or zero indirect tax rates and exemptions may be motivated by complex social and historical factors in addition to concerns over indirect taxation hitting disadvantaged groups heavily, but this may carry large dead-weight losses because consumption patterns of basic goods and services (to which lower rates mostly apply) differ little across a wide range of income levels. Targeted help, for example vouchers for basic staples, may avoid such losses occurring. VAT exemptions of small companies aim to facilitate compliance, but recent experience in some countries (*e.g.* Italy) has shown that requiring small (non-incorporated) companies to register for VAT may in fact prompt better overall compliance with the tax code. Rate differentiation may also be motivated by industrial policy objectives (*e.g.* to favour the tourism industry), hence representing a non-transparent indirect subsidy, or have simply emerged from *ad hoc* revenue-raising measures.

29. But note that a general capital gains tax that does not exempt gains due to corporate retained profits will increase the non-neutrality of the corporate tax system.

30. Spain has reduced the required holding period in 2000 from two to one year, in line with the recommendation in the *Economic Survey*.

Figure 5. Effectiveness of value added taxes, 1998



Note: Effectiveness of VAT is measured as the effective VAT rate as a per cent of the standard statutory rate, where the effective rate is VAT revenues divided by the potential VAT base (i.e. consumption minus VAT). The effectiveness of the VAT reflects the broadness of the VAT base and the level of compliance. The VAT effectiveness for New Zealand exceeds 100 per cent due to differences between the actual VAT base and consumption as measured in the national accounts.

Source: OECD, *Revenue Statistics* (2000), OECD, *Consumption Tax Trends* (1999), and OECD calculations.

43. While most countries have these problems in common to some extent, several countries stand out. Notably in Korea many fees, charges and contributions are levied in a discretionary and non-transparent manner and excise taxes are complex. Moreover, major loopholes erode the VAT base and undermine neutrality, including the special regime for small businesses, the zero VAT for “indirect exporters” and for inputs into agriculture/fisheries as well as the exemption of agricultural products. A streamlining of the indirect tax structure in Korea should clearly receive priority. In Mexico and the transition countries, Poland and the Czech Republic, the dead-weight losses of VAT-rate differentiation appears to be particularly large, and lead to serious distortions in the resource allocation. In those countries zero or low rating should be either abolished or limited to a few basic goods, while moving towards targeted aid through in-kind benefits, cash transfers and vouchers.

4.3.2 Reducing tax-exempt thresholds

44. Turnover thresholds for VAT registration aim to reduce the compliance costs which would otherwise fall disproportionately on small businesses and discourage business stand-ups. However, two countries, Japan and Mexico, maintain a comparatively very high turnover threshold (around US\$200 000) below which companies are not required to register for VAT, which means that small suppliers remain outside the tax net. Widening the VAT tax base by lowering this threshold to include such smaller companies would seem essential for enhancing the legitimacy of the tax system, discouraging evasion by splitting up companies into smaller units and underreporting of sales and to improve the redistributive and allocative properties of the tax system. Bringing small companies effectively into the tax net this way would require that proper accounting systems for small companies are enforced and various tax registers be integrated, developments that would be desirable in any case.

4.3.3 *Ensuring neutrality in taxing electronic commerce*

45. Electronic commerce continues to grow rapidly, revolutionising many business models and increasing the opportunities for, and the volume of, international trade. This new way of doing business also presents certain challenges to established tax policy principles and to effective tax collection, particularly in terms of ensuring neutrality between electronic traders and more traditional businesses. It is important that taxation rules continue to apply fairly and consistently, and with predictable outcomes internationally, so as to safeguard neutrality and ensure fair competition. OECD countries are working, in partnership with the international business community and with many non-member economies, to implement the core principles set out in the Taxation Framework Conditions.³¹ These Framework Conditions have been internationally accepted as the foundation for debate on these issues. They point, in short, to the application of *existing* taxation principles and norms to e-commerce, albeit with some clarification and development of those norms in selected areas. Significant progress has already been made toward building the necessary international consensus to ensure that the Framework Conditions' principles can be applied appropriately, so providing e-commerce with a sound and certain fiscal environment in which to flourish.

4.3.4 *Improving the internalisation of external effects in tax rate structures*

46. The reviews for most countries indicate scope for better internalisation of external (notably environmental) effects in indirect taxes, which is one way to reflect such effects in market/price signals towards both consumers and producers (see Box 5). In order to encourage the development and application of environmentally-friendly technology and to be in line with the "polluter pays principle", green taxes should be related to the damage done to third parties and therefore levied in proportion to the content of environmentally harmful substances in inputs or outputs. The same objective could be pursued by auctioning tradeable permits. Most alternatives, such as a corporate tax subsidy targeted on the use of environment-friendly equipment or R&D, should not be considered as optimal solutions, because they would force companies to direct their abatement efforts into a certain (perhaps less promising) direction and would require raising other taxes that distort economic decisions. To the extent governments wish to provide financial compensation to business, this should be done in a form which does not distort the incentive balance, *i.e.* through a lump sum subsidy (such as through grand-fathering of past emission levels *via* tax credits or free permit allocations). Meanwhile, where governments levy taxes on the use or emission of harmful substances, countries might realise efficiency gains if they moved towards lessening exemptions that seek to protect the international competitiveness of heavy polluters.

4.4 *Property and wealth tax*

4.4.1 *Strengthening the taxation of real property*

47. Real property is a potentially important tax base with a high revenue-raising potential since it is among the least mobile of all potential tax bases. Moreover, real estate taxes are easy to administer, can easily be designed to be progressive and allow state, regional and local governments to build up their own tax base (see below). However, it is important that taxation of real property is neutral with respect to the different types of property, such as undeveloped land, farmland, urban land and structures. In most countries the assessment of real property, especially of owner-occupied housing, is lenient. In some countries proper assessment is virtually impossible as a land register is lacking (*e.g.* Greece and Poland) or

31 . See OECD (2001), Paris.

Box 5. Internalising external effects and protecting the environment

All OECD member countries levy excise taxes or charges on specific products and utilities, raising revenues in the range of 30 to 70 per cent of the total indirect tax take. Since a substantial share of the excises and charges is de facto levied on energy consumption, they have come to be seen as a means of internalising harmful external effects on the environment and to discourage economic activities that are at the root of these harmful effects. Since the early 1990s, moreover, several countries have introduced so-called green tax reforms, which have led to a restructuring of existing taxes and the introduction of new environmental taxes.

However, a key finding in the country surveys is that, overall, environmental tax rate structures are far from optimal from a point of view of inducing cost-effectiveness. In particular:

- Industrial use of energy is typically taxed at much lower rates than households' energy consumption, even if the potential for pollution abatement in industry may be substantial. For example, in most countries unleaded premium petrol is taxed at higher rates than diesel fuel. Similarly, industrial use of electricity and gas is usually taxed at much lower rates than household use.
- In most countries a preferential tax treatment is granted to heavy polluters (agriculture, energy-intensive manufacturing), while rate structures poorly reflect the pollution content of energy use or conversion. This is often done to protect the international competitiveness of the industries concerned, which is especially costly in cases where due to geographical conditions shifting the most polluting activities abroad may in fact be part of a cost-efficient solution.

Another feature of environmental tax policy is earmarking of certain tax revenues for environmental projects.¹ This is a source of efficiency losses. If there are worthwhile environmental projects, the source of finance should not be a motivating or constraining factor for realising them. Moreover, earmarking means that an opportunity to cut distorting taxes in other areas, notably those impinging on the labour market, would be missed. On the other hand, such opportunities may be smaller than hoped for, to the extent environmental taxes contribute to the tax wedge on labour. Since labour is a relatively immobile factor, and capital relatively mobile, notably in open economies, it is indeed likely that the ultimate tax incidence will be on labour. Green tax reforms, as a result, are not a panacea for resolving labour market problems.

1. The joint OECD/EU database on environmentally related taxes identifies the earmarking of 45 different taxes and 106 fees and charges in 21 countries.

out of date (*e.g.* Austria, France, Portugal and Spain). In Mexico, in particular, there would seem to be scope for raising the taxation of immovable property by introducing adequate valuation practices, not only to strengthen (local) governments' tax bases, but also to ease concerns over the equity of the tax system. In Korea, the taxation of land (*e.g.* including inheritance,³² property and transaction tax) favours farmland over land used for urban development which given the specific geographical conditions of this country leads to inefficient land use. A more wide-ranging reform of wealth and property taxation may yield substantial benefits, notably a shift from transaction taxes to property taxes to facilitate land development while allowing the government to capture rent from such development.

32. The country reviews have not generated any evidence on the advantages and disadvantages of a uniform inheritance tax.

4.4.2 *Re-considering net wealth taxes*

48. Taxation of net wealth is applied in a number of OECD Member countries (Finland, France, Germany, Iceland, Luxembourg, the Netherlands, Norway, Spain, Sweden and Switzerland), although several have been considering its abolition. Net wealth tax, which taxes financial and real assets of individuals or corporations after deduction of financial liabilities, is motivated *inter alia* by income redistribution objectives, but its redistribution properties are undermined by the tax planning of higher income groups because of the availability of tax shelters. In particular, net wealth tax generates incentives for taxpayers to inflate their liabilities, *i.e.* take out loans in order to invest in tax-favoured or underassessed assets such as real estate. An alternative to this tax is an increase in the taxation of real property, which would also remove the heavy cost of tax assessment. Some countries find that the information collected in the assessment of net wealth taxes provides a useful check on the accuracy of income tax returns, as a person's wealth accumulation can be compared with his/her income, but there may be other ways of collecting this information. All considered, countries using this tax could usefully reassess the merits of continuing to apply them.

4.5 *Devolving expenditure and taxing power*

49. Fiscal devolution may yield welfare gains, as local, rather than national, governments are best able to meet many local needs and preferences for many public services. Letting local needs for services be tested by the willingness of local residents to pay is often the most efficient way to determine the size and nature of publicly funded programs. To achieve this, local governments could be allowed to exercise more flexibility in modifying public provision levels at the margin according to local preferences, as long as this is matched by local taxes to reveal the cost to local tax payers -- among the reviewed countries, this is a strong feature of fiscal federalism in Switzerland. On the other hand, a risk associated with devolution is that local governments are unable to implement tax and spending policies with a view to serving national objectives. While recognising that the vertical assignment of taxing power in many countries is rooted in a Constitution and therefore difficult to change, considerations that may help to optimise benefits of devolution of taxation and minimising disadvantages include:

- Many specific forms of taxation are unsuitable for local use. In particular, local governments should minimise the use of: mobile tax bases, redistributive taxes, unevenly distributed tax bases, taxes subject to economies of scale and taxes subject to sharp cyclical fluctuations. Sub-central governments can most effectively use resident-based tax (such as property tax) and non-tax revenues (*i.e.* user fees) levied on economic units to let them pay for the benefits they receive from the local public services. For some countries with significant devolution of expenditure powers, this is insufficient and other tax bases are used, sometimes on a shared basis with the central government. To the extent tax bases are shared by various government layers in this way, the definition of the tax base, the rate structure and the administration should be co-ordinated in order to minimise compliance and collection costs.
- Equalisation transfers of nationally collected tax across local jurisdictions could be used to ensure that some minimum or standard level of public provision is achieved no matter how strong or weak the taxing capacity of the local jurisdiction. These can take either of two forms: the direct allocation of a share in nationally collected taxes on a formula basis or direct grants from higher levels of government. However, the equalisation rule should reflect an objective assessment of the strength of the local tax base, considering *e.g.* demographic and geographic features, rather than actual taxes collected. Meanwhile governments should guard against local governments pursuing restrictive land-development policies to boost land prices as a way to increase their financial resources (a concern in Spain).

4.6 *Tax administration and enforcement*

4.6.1 *Reducing compliance costs for the taxpayer*

50. The compliance costs of taxpayers are an element in the total “excess burden” of tax systems, and hence reducing it adds to economic efficiency and welfare. In addition, the lower costs of compliance are, the more inclined tax payers will be to comply and hence the stronger will be the capacity of tax systems to raise revenues and redistribute purchasing power to those most in need while strengthening the legitimacy of taxation. One measure that potentially carries high benefits in this regard is to simplify the tax code, by removing the plethora of special allowances and credits that is a feature of tax systems in several examined countries, especially in the transition economies, Greece, Korea and Portugal. Another measure that would complement a simpler tax code is to improve the relationship between tax administrations and taxpayers through the pursuit of a strategy based on reinforcing voluntary compliance by providing tailored assistance, advice and support to taxpayers. This orientation of future reform efforts should be particularly beneficial to countries that have been grappling with a lack of confidence of taxpayers in their tax officials, such as Mexico, Korea, Greece and the transition economies. Tax administrations in many countries are increasingly doing just this, harnessing new information technology to provide improved taxpayer services, such as the capacity to undertake a range of activities (tax filing; tax remittance; etc.) electronically (see for example the progress in *e.g.* Italy reported below). Another measure that is susceptible to reducing compliance costs is the reduction of overlaps between layers of government -- especially in countries where federal and local levels share certain tax bases but apply different tax structures and collection procedures (see above).

4.6.2 *Raising the efficiency of tax collection and administration*

51. The resources absorbed by tax administrations for the collection and filing of tax form yet another element of the cost of taxation. Importantly, raising the cost-effectiveness of tax administrations would free-up resources for more beneficial uses such as combating tax evasion. In some countries, notably the transition economies, Greece, Korea and Mexico, this should have special priority. Measures that could be envisaged to improve cost-effectiveness include the reduction of overlap between local and central government tax administrations with regard to collection and processing and the introduction or extension of modern information technology. Information technology can be used by tax administrations to process large quantities of information and increase the chance of identifying tax evasion. Recent progress in, for example, electronic filing of tax returns over the Internet has been rapid in several countries, and in some has had quite striking results both in terms of the number of taxpayers using this facility and the cost of collection and compliance.³³

52. Some challenges to the efficient and effective operation of consumption tax regimes are evident where those regimes operate cross-border. The vast majority of commercial international transactions are very readily dealt with under consumption tax systems (generally through the zero-rating of exports and the application of tax at import). But in some circumstances, maintaining the basic principle of taxation in the place of consumption can prove either problematic (as with mail order sales within the United States)

33. For example, in Italy 80 per cent of all tax returns were handled electronically in 2000 through the electronic filing and payment service of the tax administration to which banks, post offices and other intermediaries are connected. Recent and envisaged measures to simplify the tax system are also contributing to lower collection and compliance costs, especially for smaller companies, in some EU countries, notably Austria, Finland, France, Germany, Italy, Portugal and Spain.

or give rise to some complexities (as with elements of the VAT regime applicable with the European Union).

53. Within the United States, sales tax regimes (at the state level) tends to break down when dealing with inter-state transactions. This is because the taxing right of the state of the consumer is generally based on the requirement that the supplier have a physical presence (“nexus”) in that state. Suppliers may not have such presence. So, for example, mail order sales can very often escape local sales taxes because the out-of-state supplier has no legal obligation to charge such taxes, or account for them, in the state of the customer. Efforts to compensate for this deficiency, through the introduction of self-declaration use taxes, are rarely successful in securing the tax yield.

54. In a rather different context, the VAT regime for transactions within the European Union, in the absence of frontier-based fiscal controls since the completion of the Single Market in 1993, necessitates a set of specific rules for transactions between the member states. For the majority of commercial transactions between VAT-registered businesses these rules successfully maintain and achieve taxation in the place of consumption (albeit with some risk of fraud given that the goods are moving while not subject to VAT). But there are additional complications where special regimes are also necessary for mail order transactions involving private consumers. Here, businesses are required to register in the member state(s) of the consumer where the value of such sales exceeds certain thresholds. So, while functioning reasonably effectively overall, the EU’s internal VAT regime does have some complex features which in turn generate additional compliance costs to business.

4.6.3 *Combating illegal tax abuse more effectively*

55. The shifting of tax bases into the informal economy in some countries is widespread. Recovering these tax bases is essential, in particular for those countries where an extension of the underdeveloped public provision of essential goods and services (health, education) is important. Informal economies exist in all examined countries to some extent, but several countries appear to stand out in this respect:

- In Mexico the informal economy is very widespread, covering perhaps one-third to half of the working-age population, and is associated to a large extent with poverty and lack of formal administrative and economic infrastructure. Bringing the informal economy into the tax net is not expected to raise considerable revenues in the short run since the bulk of the workers affected would have earnings below the zero-income tax threshold or become liable to tax credits. However, it would be essential for the revenue-raising potential of the tax system as the economy catches up. Moreover, it would contribute to enhancing the redistributive thrust and legitimacy of the tax system to the extent that higher incomes surface and become subject to taxation.
- Poland inherited a large grey economy from the pre-transition episode of socialist planning and VAT exemptions granted to large sectors (*e.g.* agriculture and construction) complicates tax auditing. In addition, the compliance with the tax system is undermined by the high administrative burden imposed on taxpayers. A simplified tax filing status has been introduced for certain categories of taxpayers, but even these simplified rules remain too complex.
- In Greece, as well, tax collection is hampered by a large informal sector, with almost half of the work force in self employment, an inefficient tax administration, effective bank secrecy, lack of land register and little cross checking of tax files. Bringing the informal activities in the tax net receives high priority in view of the convergence process to prepare for

participation in the European Economic and Monetary Union, and tax collection developments have been encouraging recently. Further efforts should focus on making the tax system more transparent and solid -- *i.e.* changes should be less arbitrary and frequent and well communicated -- in order to encourage compliance, and a national land registry should be established with priority.

56. In most other countries certain categories of income, consumption and wealth to some extent escape the tax net as well. Aside from the above-mentioned countries, tax administrations in most countries grapple with difficulties in enforcing tax compliance of the self-employed, including Japan, Spain, Sweden and Norway. Worth mentioning are also the widespread tax sheltering through anonymous savings accounts in Austria (which may, however, be phased out), while in Switzerland tax compliance of resident deposit holders seems to be high even though banking records cannot be inspected owing to bank secrecy (except where there is evidence of criminal offence). The tax administration in Korea meets particularly large problems in tax collection, as audit coverage is low and declining, taxpayer services heavily rely on personal contact, the processing of tax returns is cumbersome and the collection of tax arrears is weak. In most of these countries progress could be achieved by introducing a tax identification number to prevent underreporting of income and a land register to allow a proper assessment of real estate, the abolition of lump-sum tax settlements for self-employed and assessment of their income based on proper accounting rules.

57. In addition to these internal measures to collect tax on domestic transactions, countries need to co-operate in combating cross-border tax abuses. These include failure of taxpayers to declare income from cross-border investment of savings, the use of tax havens and other preferential regimes by companies as a means of hiding their profits from their country of residence, and abuse of cross-border sales tax regimes. These problems are being addressed by the OECD and/or the EU, mainly on the basis of improving exchange of information between tax authorities. Such moves would reduce distortions, improve horizontal equity and, to the extent that these abuses mainly benefit people who are comparatively rich, increase vertical equity.

ANNEX

FEATURES OF TAX SYSTEMS IMPINGING ON ECONOMIC EFFICIENCY

Introduction

58. The main text reviews the practical policy recommendations that emerged from the process of surveillance of tax policies in the *Economic Surveys* during the past two years. While these recommendations are largely cast in terms of legal changes that should be made to specific elements of tax systems, they are motivated by concerns to improve the way that various parts of the system interact and impinge on economic performance. Behind these recommendations stand systematic, but sometimes less concrete, analyses of how tax systems as a whole affect saving, investment, labour markets and product markets. These are designed to identify the problem areas and motivate concrete reforms. This annex synthesises this analysis and brings together a substantial amount of information about tax systems in OECD countries derived from OECD data bases and the *Economic Survey* chapters on a comparative basis.

1. The impact of taxation on saving

59. The evidence for a significant impact of taxation on aggregate savings emerging from the country reviews is weak, but tax systems are clearly non-neutral with respect to specific forms of savings, and thus affect the composition of saving.³⁴ These therefore distort market signals with respect to the true comparative rates of return on each of these savings vehicles, and thus generate efficiency losses. Moreover, globalisation and the associated growth in international financial transactions, while creating new tax bases, pose a growing tax policy challenge as new possibilities for evasion and avoidance emerge.

1.1 *The impact on aggregate saving*

60. Saving is essential for raising economic performance in the medium and long run, as it is the final constraint on investment which, in turn, is key to raising productivity and economic growth. Some strands of the economics literature suggest that increased taxation and public spending may have been important contributing factors to the OECD area-wide trend decline in private savings.³⁵ Reasons why this may have occurred are that higher taxation reduced the incentives to save (by reducing the rate of return on saving or

34 . OECD (1994), Bernheim (1999) and Arthur Anderson (1999).

35 . Tanzi and Zee (2000) have recently derived some empirical evidence from a panel set covering 19 OECD countries over the period 1971-95. They estimated negative coefficients of the tax/GDP ratio to be particularly high for income taxes but much lower for consumption taxes, as is predicted by economic theory. It is also found that, when controlling for the impact of the overall tax revenue/GDP ratio on the household saving rate, the household saving rate remains negatively correlated with the income tax revenue/GDP ratio in a statistically significant way, but its correlation with the consumption tax revenue/GDP ratio becomes statistically insignificant.

providing public insurance against loss of income) and the income stream from which savings are generated (because it increased the tax wedge on wages and salaries).³⁶

61. However, the country reviews do not convey a strong impression that the effect of taxes on aggregate savings is quantitatively important. New Zealand is the only reviewed country that appears to have shaped its tax policy with a view to stimulating national saving in view of its large and persistent current account deficit. In particular it has provided a rationale for the introduction (in 1986) of VAT and maintaining a large share of VAT in the total tax mix. Such a shift in the tax mix towards consumption taxation has been advocated in the academic literature as a way to reduce the double taxation of savings.³⁷ It might be argued that for an open economy with access to world capital markets, like New Zealand, there is no particular reason for economic policy to be concerned with domestic saving levels since any lack of domestic savings can be covered by inflows of foreign savings. However, to the extent that foreign debt places a risk premium on such foreign savings inflows, a call for higher domestic savings may be justified. A shift towards consumption taxes has occurred in Japan as well with a view to stimulating national savings to prepare for population ageing, and further steps are necessary and envisaged in this regard. But the overall approach also in these countries remains eclectic, combining elements of consumption and income taxation into the tax system, which seems to be wise, also in view of the perceived income distribution effects stemming from a shift towards consumption taxation.³⁸

1.2 *The impact on the composition of saving*

62. Among the countries that went furthest in eliminating non-neutralities of income taxation across savings instruments are New Zealand and the Scandinavian countries that have been reviewed, Norway and Sweden. Norway and Sweden have moved in the early 1990s to a system that taxes all sources of capital income (including *e.g.* imputed rental income of owner-occupied housing) at a similar rate irrespective of the source of income or the income or other characteristics of the final investor. By contrast,

36. Moreover, income derived from savings is usually taxed in nominal rather than real terms, which can lead to very high effective tax rates on the real return.

37. Proponents of consumption taxation -- particularly in the United States -- have suggested abandoning the entire income tax system and replacing it by some form of "pure" consumption taxation, see *e.g.* Boskin (1996) and CBO (1997a). This could be an income tax with net savings allowances or an expenditure-based taxes such as VAT. Although no OECD country has opted for a radical switch towards "pure" consumption taxation, it has emerged in the academic literature as a benchmark for assessing the merits of consumption vis-à-vis income taxes. It has been advocated as a particularly promising route for countries that face strong growth in revenue needs in the future (Auerbach, 1997). The overall impression is, however, that a move towards "pure" consumption taxation, risks having disruptive transition effects while the effects on savings are expected to be relatively small and uncertain (Bradford, 1995). One reason often quoted is that income effects might outweigh the substitution effects stemming from a shift towards consumption taxation, and hence savings may actually decline (Engen/Gale, 1996 and Feldstein, 1995). Even though that outcome would reduce the excess burden of the tax system and thus generate welfare gains, it conflicts with the objective of raising national savings to cope better with macroeconomic constraints.

38. It is often argued that consumption taxation is not progressive, particularly with reference to indirect taxes, as these are flat rate. However, much of the discussion of the "fairness" or progressiveness of consumption taxes hinges on the time frame of analysis. In a lifetime perspective, consumption tax is broadly proportional to life-time income. Moreover, as Gentry and Hubbard (1997) have argued, a consumption tax exempts only the pure interest component of capital income (*i.e.* the opportunity cost of capital investment), but eventually does tax rents and the risk premium. As the latter tend to be skewed towards the top end of the income distribution, consumption taxation could be more progressive than generally assumed.

loopholes have remained in New Zealand due to the absence of a broad-based capital gains tax and non-taxation of imputed rents of owner-occupiers.³⁹

63. It has remained common in most OECD countries to use tax facilities to subsidise private pension plans (including life insurance). In fact, the favourable tax treatment of private pension savings represents one of the most important tax expenditures, regularly exceeding a full per cent of GDP (Adema, 1999). This has taken a variety of forms, most prominently the granting of tax allowances for private pension contributions and exempting returns on fund assets, while benefits are taxed (so-called EET tax treatment, with the initial saving Exempt, the return on assets Exempt and benefits Taxed; see Table A.1).⁴⁰ Importantly, this approach represents a more favourable treatment of pensions than of other kinds of saving, which are normally taxed when the saving is made (*i.e.* there is no deduction from personal income tax) and when a return is earned, whereas the liquidation of the investment remains untaxed (TTE tax treatment, or savings Taxed, the return Taxed and benefits Exempt).⁴¹ Moreover, among the countries that apply EET, taxation at retirement is often relatively light. Only a minority of countries (Australia, the Czech Republic, Luxembourg, New Zealand and Sweden) apply some variant of TTE treatment of pension saving akin to the treatment of savings deposits, although even some of these countries still subsidise private pension saving to some extent.⁴² Denmark is the only country to apply ETT (saving Exempt, the return Taxed and benefits Taxed), which is broadly equivalent to TTE treatment.

64. While in most countries both mandatory (including public) and voluntary retirement contributions are tax privileged, “incentives” induce desired behavioural changes only with respect to voluntary provision. Nonetheless, governments justify tax privileges even for forced pension savings in several ways. Pension savings to be paid out as annuities after retirement are illiquid and the return may be eroded by inflation. Therefore, higher after-tax rates of return may be required to compensate for these drawbacks. Furthermore, forcing people to participate in a private retirement savings program beyond the public system of social security contributions might be difficult to defend, unless this is tax-favoured or otherwise supported. Countries with an ageing problem who are moving away from a PAYG-system to pre-funding may find tax privileges an adequate compensation for the “double burden” hitting present workers, since these are required to finance both current and future pension payments.⁴³ However, the double burden of present generations could be justified as these generations have saved on raising children -- *i.e.* they preferred and benefited from lower fertility than previous generations (Sinn, 1999).⁴⁴

39. However, it should be noted that the application of taxes on capital gains of equities that are attributable to retained profits distorts corporate funding decisions (see below).

40. In some countries a range of schemes applies, *e.g.* in the United States, where there are three main forms with preferential tax treatment, and in the United Kingdom, where nine different tax-favoured retirement savings vehicles exist (Banks and Emmerson, 2000).

41. See Dilnot (1992), Arthur Andersen (1999) and Dalsgaard and Kawagoe (2000).

42. For instance, the pension tax regime in Australia imposes tax at all three stages (contributions; earnings; and benefits), but at relatively low effective rates. It hence offers some subsidisation of pension saving, but there is a significant reduction in the net value of benefits received compared with an EET treatment (Atkinson *et al.*, 1999).

43. In the United States and some other non-European OECD member countries, tax incentives for retirement savings are seen as a way to overcome a lack of national savings. However, empirical estimates on this are not conclusive. Some have found these tax-preferred vehicles to encourage aggregate savings, and others concluded that they induce merely a reallocation of existing savings across savings vehicles or a joint rise in saving and borrowing (see *e.g.* Bernheim, 1999).

44. However, there might still be a case for tax privileges on inter-generational equity grounds: Higher current PAYG contributions are a transfer from the current working population to the old, who also did not raise

Table A.1. Tax treatment of private pensions in OECD countries

	Contributions out of taxed income or exempt	Fund income tax or exempt	Pension benefits taxed or exempt	
			Annuities	Lump sum
Australia	T	T	T	T/E
Austria	P/C	E	P/T	..
Belgium	C	E	T	T
Canada	E	E	T	T
Czech Republic	T	E	T	T
Denmark	E	T	T	T
Finland	E	E	T	T
France	E	E	T	E
Germany	T/E	E	T	T/E
Hungary	D	E	E	E
Iceland	E	E	T	T
Ireland	E	E	T	T/E
Italy	E	E	T	T
Japan	E	E	T	T
Korea	T/E	T/E	E	E
Luxembourg	T/D	T	T	T/E
Mexico	E	E	T/E	T/E
Netherlands	E	E	T	T
New Zealand	T	T	E	E
Norway	E	E	T	T
Poland	E	E	T	..
Portugal	E/C	E	T	T
Spain	E	E	T	T
Sweden	E	T	T	..
Switzerland	E	E	T	T
Turkey	E	E	E	E
United Kingdom	T/E	E	T	E
United States	E	E	T	T

Note: Key to abbreviations

G = credit; D = Deductible; E = exempt; T = taxed; P = partial.

Source: OECD Tax Database.

65. The favourable treatment of long-term savings through private pension plans raises several issues of economic efficiency. By granting tax favours for private pension plans, governments pursue several social and economic objectives, but their effectiveness in this regard may be questioned. Most prominently, these favours aim to encourage long-term saving by households to ensure that households are less prone to moral hazard -- *i.e.* rely excessively on social assistance at old age. However, while the proneness to moral hazard may be reduced, tax favours for pensions are susceptible to substantial dead-weight losses since the

sufficient children, but did not have to save for their retirement. Therefore, it could be argued that the tax privileges compensate for the higher *current* PAYG contributions, for which the present working population is not responsible. Nevertheless, the line of arguing could be different once bequests are taken into account (see *e.g.* Miles and Eben, 2000).

group that will be affected is much larger than the target group.⁴⁵ There is also an undesirable effect on the income distribution since in most tax systems the “tax value” of the deductions or exemptions is largest for higher income groups.⁴⁶ In addition, tax incentives for pension saving tend to favour a particular set of financial intermediaries (pension insurance providers) relative to other providers, thus distorting competition and encouraging rent seeking. It also favours investment in low-risk assets (government bonds) which have a relatively large weight in the portfolio of such intermediaries (Table A.2), to the detriment of small (start-up) companies that depend on high-risk capital, including venture capital.

66. Households in all examined countries are encouraged by the tax system to use their home as vehicles for long-term private wealth formation. House-ownership produces notional rent income and may give rise to capital gains. Hence tax issues arise at three levels: the acquisition of the house (which is equivalent to a financial investment), the imputed rent and capital gains (equivalent to a return on investment) and the liquidation of the invested capital when the house is sold. The tax-neutrality criterion suggests that these components should be taxed in the same way as alternative investments, according to a TTE or ETT schedules. However, most countries apply a TEE tax schedule (acquisition cost is not deductible against the personal income tax and hence taxed, both imputed rental income (after deduction of mortgage interest payments) and capital gains are exempt and the liquidation of the house does not lead to taxation, see Table A.3). Indeed, by exempting the imputed rent and/or capital gains from taxation, a tax preference is allowed to such investment compared with financial investments (although transaction taxes and property taxes may provide a partial offset).⁴⁷ In fact, some countries even allow a tax deduction or credit for the acquisition of the house (*e.g.* Mexico, Poland and Spain). Meanwhile, countries that do tax imputed rent income (after deduction of mortgage interest payments) apply very favourable effective tax rates as rental values are generally under-assessed.

67. Tax favours for housing distort the allocation of resources towards owner-occupied housing at the expense of possibly more productive uses, and also have questionable distributional consequences. Comparing historical returns it is clear that pre-tax returns to housing investment are significantly lower than that on *e.g.* equity. However, when taking into account the tax advantages allowed to housing, the relative after-tax performance of housing against other saving instruments is more favourable. There are strong indications that such tax subsidies for housing are reflected in a higher level of house prices. Given that transaction costs (stamp duties, fees for real estate agents) are usually proportional to house prices, this tends to lock in large amounts of capital and reduce the geographical mobility of production factors (labour in particular). This is a pertinent finding for Spain, while lock-in effects are also prevalent in Japan. From an income-distribution perspective, the main drawback of such tax-driven lock-in effects is that it hits future generations twice: via higher house prices and via heavier taxation or lower public expenditure to fund the tax subsidy.

45. Moral hazard may not be an issue at all to the extent that investment in private pension schemes is mandatory. However, compulsory savings might be considered as if they were payroll taxes and could therefore lead to labour market distortions. If the resulting labour market distortions are substantial, some have argued it might even be optimal to remove mandatory pension savings and accept moral hazard (Homburg, 2000).

46. Except for dual income tax systems where deductions are against the flat rate for capital income which corresponds to the lowest tax bracket for personal income.

47. Exemption of capital gains on housing could be justified by horizontal equity and efficiency moves: it avoids an unfavourable tax treatment of geographical mobile taxpayers who are more often involved in housing transactions and as a result may realise these capital gains more frequently.

Table A.2. **Financial assets and portfolio of pension funds**

	Financial assets, per cent of GDP ¹	Portfolio, per cent of assets ²					Memorandum item:
		Equities	Bonds and loans	Property	Cash and deposits	Foreign assets ³	Stock market capitalisation, per cent of GDP ⁴
Australia	30.7	48	27	8	17	16	153
Austria	1.2	11	75	2	12	20	17
Belgium	4.1	36	47	7	10	35	43
Canada	43.3	38	49	3	7	9	88
Czech Republic	0.1	..	..	..	..	..	..
Denmark	16.9	22	65	9	4	7	51
Finland	..	5	73	12	10	..	59
France	..	14	39	7	40	5	45
Germany	2.9	11	75	11	3	6	36
Greece	11.9	..	..	..	..	..	24
Iceland	66.5	..	..	..	..	..	..
Ireland	..	55	35	6	4	37	26
Italy	2.9	9	26	23	6	5	63
Japan	..	27	61	2	3	7	..
Korea	1.8	..	..	..	..	..	..
Luxembourg	18.2	20	70	0	10	..	..
Netherlands	102.0	23	67	9	2	17	118
Norway	6.5	..	..	..	..	..	41
Portugal	10.1	10	72	3	15	..	..
Spain	2.0	4	82	1	13	5	50
Sweden	2.4	32	47	8	13	12	115
Switzerland	75.1	13	52	20	15	9	143
United Kingdom	77.5	80	11	6	3	30	147
United States	72.5	48	38	0	7	10	122

1. 1997 or latest year available.

2. 1994.

3. Foreign assets are included in the previous categories.

4. 1997.

Source: OECD (1998c) Institutional Investors Yearbook, World Bank.

Table A.3. Tax treatment of owner-occupied housing in OECD countries

	Acquisitions cost payable out of taxed income or deductible	Interest on loan for acquisition payable out of taxed income or deductible	Capital gain taxable or exempt	Imputed rental income taxable or exempt
Australia	T	T	E	E
Austria	PD	PD	E (if owner occupied for at least 2 years)	E
Belgium	D	D	E	T
Canada	T	T	E	E
Czech Republic	T	D	E (if owner occupied for at least 2 years)	E
Denmark	T	D	E (if owner occupied for at least 2 years)	T
Finland	T	D	E (if owner occupied for at least 2 years)	E
France	T	T	E	E
Germany	T	T	E (if owner occupied for at least 2 years)	E
Hungary	T	PD	T	E
Iceland	T	T	E (if owner occupied for at least 2 years)	E
Ireland	T	T	T	E
Italy	T	D	E	E
Japan	T	T	T	E
Korea	T	T	T/E	E
Luxembourg	T	D	T/E	T
Mexico	D	T	E	E
Netherlands	T	D	E	T
New Zealand	T	T	E	E
Norway	T	D	E	T
Poland	D	T	T/E	T
Portugal	PC	PC/C	E	E
Spain	PC	PC/C	E	E
Sweden	T	D	T	T
Switzerland	T	D	T/E	T
Turkey	T	T	E	T
United Kingdom	T	PD	E	E
United States	T	D	E (if owner occupied for at least 2 years; subject to a ceiling)	E

Note: Key to abbreviations:

D = deductible; PC = partial credit; PD = partially deductible; E = exempt; T = taxed; C = credit.

Source: OECD Tax Database.

68. Aside from income taxation, the taxation of real and financial wealth is at the root of serious distortions of savings in several countries. In Austria, the widespread use of anonymous savings accounts has been instrumental in keeping savings deposits outside the tax net and therefore rendered the enforcement of inheritance tax difficult. The envisaged phasing-out of the anonymous savings accounts should improve the situation in this regard. By contrast, the taxation of savings deposits under the wealth tax in Switzerland, Norway and Sweden is heavy compared with alternative savings vehicles such as real estate and shares. Indeed, in the Scandinavian countries the wealth tax works strongly against the neutrality gains achieved by the system of uniform capital-income taxation. An abolition of the wealth tax could be instrumental in removing this distortion. In Japan and Korea, the taxation of land (*e.g.* inheritance, property and transaction tax) favours farmland over land used for urban development which, given the specific geographical conditions of these countries, leads to inefficient land use. With land ownership concentrated in the hands of a few very wealthy landowners, property taxation in Korea has been a longstanding controversial issue. Prices have been pushed up by low controlled interest rates in the past and excessive regulations that limited the supply of land for development. While there are anti-speculation taxes in place -- transaction tax on real estate and a capital gains tax of 40 per cent if the real estate is held less than two years -- it is questionable whether this has curbed speculation and it may have further contributed to higher prices through lock-in effects. As noted, Korea needs a wide-ranging reform of wealth and property taxation. Such a reform should include a shift from transaction taxes to property taxes to facilitate land development while allowing the government to capture the rents from such development.

1.3 *The impact on international saving flows*

69. An important set of issues arises from taxation of income from savings invested in portfolio instruments abroad and cross-border flows of interest and dividend income.⁴⁸ The existing international tax system, developed through an expanding network of bilateral tax treaties, accords both source countries (where income is generated) and residence countries (where income is received) the right to tax investment income, with various mechanisms used to avoid double taxation.⁴⁹ Taxing rights for portfolio investment income, however, are largely balanced towards residence countries. For example, source country withholding tax on portfolio interest is capped at 10 per cent under the OECD model tax convention. This is intended to give countries the ability to collect tax on interest earned on foreign assets of resident investors at corporate and personal income tax rates, generally set in excess of source country withholding tax rates.

70. A divergence in source country (withholding) and residence country (income) tax rates creates tax evasion incentives to shelter income from home country tax by having that income accrue to intermediaries subject to no or low taxation, or simply to not report the income to tax authorities. At the same time, investors may seek debt securities subject to no or low withholding tax at source to minimise the overall tax bill. Faced with these difficulties, governments have responded in a number of ways. One response, observed in a number of Nordic countries is to adopt a dual income approach.⁵⁰ The essential feature of a pure dual income tax system is to tax capital income at a relatively low flat rate, while taxing earned income (mainly, wages, salaries, transfers) under a progressive tax rate schedule. Several other countries have adopted separate capital income tax systems to move in this direction as well (*e.g.* France, Spain and Italy). Scheduling taxation of income from capital at a low flat rate recognises the incentive, and

48. OECD (1999d)

49. However, in the case of dividends bilateral treaties in most cases do not eliminate economic double taxation -- see section 2 below.

50. Denmark introduced a dual income tax system in 1987, followed by Sweden (1991), Norway (1992) and Finland (1993).

expanding scope, for tax evasion where such income is subject to tax at a relatively high rate, and the fact that taxpayer compliance may be enhanced and administrative costs reduced through adoption of a dual income tax system, rather than a system based on a comprehensive income tax concept.⁵¹

71. Growing concerns over international tax evasion have also motivated efforts for a co-ordinated response. In particular, the Council of the European Union (EU), in December 1997, adopted a tax package that included, among other components, a resolution on taxation of savings. The draft directive was originally based on the so-called “coexistence” model, which envisaged a 20 per cent withholding tax on cross-border interest payments to individual residents of another member state or, alternatively, the provision of information about such payments to the authorities of the member state in which the investor is resident. The withholding tax option, which waives tax where a beneficial owner can provide evidence that the income will be subject to tax in his/her home country, was favoured by many EU countries. Others, concerned with capital flight to non-EU financial centres and recognising potential efficiency benefits under a residence-based approach, preferred exchange of information as the mechanism to address the growing problem of taxing savings.

72. At the ECOFIN Council on 26-27 November 2000 agreement was reached on the substantial content of the directive. The principal feature of the directive is that all member states will be required to exchange information with each other, on interest payments to individuals, seven years after the directive enters into force. Until then (during the so-called “transition period”) member states other than, Austria, Belgium and Luxembourg will exchange information automatically on interest payments, without reciprocity reservations. During the transition period Austria, Belgium and Luxembourg will apply a non-final withholding tax at a 15 per cent rate for the first three years and 20 per cent for the remaining four years. However, member states operating a withholding tax are required to transfer 75 per cent of the revenue earned to the state in which the investor is resident. The Council will decide no later than 31 December 2002 on the adoption and implementation of the directive on the basis of assurances which are to be sought from key third countries (the United States, Switzerland, *etc.*) and dependent or associated territories of member states regarding the application of equivalent measures in those countries.

73. Although conditional on assurances from non-EU financial centres and on progress in implementing the *Code of Conduct* (see Joumard, 2001) element of the tax package, this is a major step forward. It is noteworthy, in this respect, that in January 2001 the United States published draft regulations extending the information reporting requirements for bank deposit interest paid to non-resident individual resident in other treaty countries.

2. The impact of taxation on business funding, organisation and location

74. Corporate tax reform measures in OECD countries throughout the mid- to late-1980s were geared largely towards broadening corporate tax bases and lowering statutory corporate income tax rates. The move away from special tax incentives for business investment, including accelerated or enhanced depreciation of capital costs, flat or incremental investment tax credits, and an array of special financing incentives, was often based on findings that the revenue and dead-weight costs linked to these incentives outweighed possible benefits from incremental investment encouraged by the tax relief. In a number of countries, broadening of the corporate tax base continues to shape current reform efforts. In Germany, for example, new rules to tighten depreciation allowances have been introduced, in part to raise revenues to

51 . However, this has generally not been the main motivation for moves from comprehensive to dual income taxation: the objective has mostly been to make investments in the home country more attractive to resident investors, and to reduce the practice of transforming dividends into interest payments that were traditionally taxed at lower rates in most OECD countries.

finance significant tax rate cuts. A review of tax changes introduced during the 1990s shows, in fact, ongoing interest in a number of countries in lowering statutory tax rates as a means of lowering marginal and average corporate tax burdens. However, progress remains uneven across OECD countries, which is reflected *inter alia* in the development of an extensive international industry, which uses aggressive tax planning to serve both final investors and companies minimising their tax bill.

2.1 *The impact on corporate funding decisions*

75. The tax system may be said to be neutral towards corporate financing and investment decisions if a given pre-tax flow of corporate profits produces the same after-tax income for final investors, whether the return takes the form of interest payments, dividends, or capital gains. Moreover, this condition should hold also across capital assets such as commercial real estate, equipment, inventories or intangible capital. The tax-neutrality criterion requires that the marginal effective tax rate (*i.e.* the combined marginal effective corporate and personal tax liability as a per cent of the capital invested) is the same across financing instruments of corporate investment. In practice no tax system in OECD member countries fully satisfies this neutrality criterion, but some countries are closer to meeting it than other countries. In most OECD countries the marginal effective tax rates vary substantially across financing vehicles, with a bias mostly in favour of debt financing (Table A.4; see Box A.1 for some methodological issues regarding the measurement of the marginal effective tax rates reported in this table). Double taxation of distributed profits, first at the corporate level and subsequently at the shareholders' level, can produce a very high combined tax rate on equity and discourage new equity funding. With interest on debt deductible against the corporate tax this would create an incentive to finance investment through debt (bank credit and the issuing of bonds) rather than new equity (the issuing of shares), thus making companies more prone to insolvency. Retained earnings also are treated more favourably than new equity financing in some countries due to lower rates of capital gains tax at the individual level including in some countries a zero rate if shares are held for more than a certain period (Austria, Belgium, Czech Republic, Germany, Greece, Mexico, Netherlands, New Zealand, Spain and Switzerland -- see Table A.5). The favourable treatment of retained earnings may lock in profits in the corporation, which may have undesirable effects on the flexibility of capital markets and corporate governance.

76. The wide variation in marginal effective tax rates reported in Table A.4 mirrors the different approaches that co-exist in the OECD area concerning the taxation of distributed profits. A minority of OECD countries applies a pure "classical" system (Luxembourg, the Netherlands, Switzerland and the United States; see Table A.5). According to this approach distributed profits are taxed twice, first at the level of the corporation, and subsequently when after-corporate-tax profits are paid as a dividend to the shareholders, at whatever (marginal) rate applies under the progressive personal income tax. By contrast, interest payments, while taxed as personal income at the level of the final investor, are deductible from the

Table A.4. **Marginal effective tax wedges in manufacturing¹**
In per cent, 1999

	Sources of financing ²			Standard deviation
	Retained earnings	New equity	Debt	
Australia	2.02	0.81	2.11	0.59
Austria	0.74	2.65	0.06	1.10
Belgium	1.36	2.54	-0.60	1.29
Canada	4.48	5.63	1.98	1.52
Denmark	1.89	2.43	2.49	0.27
Finland	2.20	0.85	0.85	0.64
France	3.58	7.72	0.67	2.89
Germany	0.89	2.53	1.28	0.70
Greece	0.92	0.92	-0.58	0.71
Iceland	1.82	2.28	-0.08	1.02
Ireland	1.52	4.12	0.69	1.46
Italy	1.27	1.27	0.39	0.41
Japan	3.30	5.50	-0.09	2.30
Korea	0.61	1.59	1.59	0.46
Luxembourg	3.57	2.37	1.62	0.80
Mexico	0.77	1.04	1.04	0.13
Netherlands	0.46	5.33	2.46	2.00
New Zealand	1.48	1.48	1.48	0.00
Norway	1.06	1.06	1.06	0.00
Portugal	1.13	2.50	-0.25	1.12
Spain	3.20	2.23	1.65	0.64
Sweden	2.07	2.83	0.77	0.85
Switzerland	0.38	3.49	1.81	1.27
United Kingdom	2.88	2.40	1.55	0.55
United States	1.66	4.79	1.42	1.54
OECD ³	2.02	4.03	1.09	1.23
EU ³	1.95	3.24	1.01	0.91

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, given that the household can earn a 4 per cent real rate of return on a demand deposit. Wealth taxes are excluded. See OECD (1991), *Taxing Profits in a Global Economy: Domestic and International Issues*, for discussion of this methodology. Calculations are based on top marginal tax rates for the personal income tax and a 2 per cent inflation rate.

2. The weighted average uses the following weights: machinery 50%, buildings 28%, inventories 22%.

3. Weighted average across available countries (weights based on 1995 GDP and PPPs).

Source: OECD Secretariat.

Box A.1. Measuring marginal effective tax rates on corporate investment

The marginal effective tax rates (METRs) on returns to investment, under alternative financing methods, reported in Table A.4 make use of a method developed by King and Fullerton (1984) and extended by the OECD (1991). The methodology assumes that final investors (shareholders and bond owners) are remunerated at a particular real after-tax rate of return. In order to ensure that this is achieved for each type of physical investment (machinery, buildings and inventories) and funding method (bonds, new equity and retained profits), a specific real pre-tax rate of return (or cost of capital) is required at the company level for each of these items. This cost of capital depends *inter alia* upon the tax treatment of various forms of capital income, the statutory depreciation schemes for the three different kinds of physical assets considered, and the economic depreciation rates. Subtracting the after-tax rate of return from the cost of capital results in the effective marginal tax wedges, which can be converted into METRs by expressing the wedges as a percentage of the cost of capital.

This method, while attractive for its simplicity, makes several rather bold assumptions, calling for vigilance when interpreting METRs. In particular:

- The pre- and after-tax rates of return are valid only for a marginal investor since infra-marginal returns or “economic rents” are ignored. This allows many of the complexities of the tax system that do not affect the marginal investor (*e.g.* regarding reserves and tax allowances) to be left aside.
- In any particular application, such as the calculations reported in Table A.4, a set of specific assumptions has to be made. In this case, the representative investor is assumed to be a resident person, taxed at the highest possible marginal income tax rate. In some countries, however, the typical investor may in fact be, for example, a tax-exempt institution, which would significantly alter the picture. These METRs also ignore the taxation of non-residents and resident investing in foreign assets. These calculations also take no account of special depreciation schemes or rules for carrying forward losses.
- In order to facilitate cross-country comparisons, several additional assumptions have been introduced in the METR calculations. Perhaps the most crucial and controversial ones are those of uniform inflation and real rate of return before personal tax across countries. Care is therefore needed in interpreting the results to compare METRs across countries in which these factors differ substantially.
- Finally, constant weights are used to combine the METRs for machinery, buildings and inventories into an average value for each source of finance. The METR for any particular investment project will differ from the values reported in Table A.4 to the extent that the importance of these various components of capital differ from these weights.

Table A.5. Tax treatment of dividends and capital gains on shares

1998, Resident taxpayers

	Type of corporate tax system ¹	Taxation of dividends	Taxation of capital gains (top personal rate of taxation; per cent) ²
Australia	Full imputation	Taxed as ordinary income with a 36 per cent dividend imputation credit which is creditable against ordinary income tax liability.	Rate: 48.5. Treated as ordinary income.
Austria	Classical	25 per cent withholding tax that can be final, at taxpayer's option.	Rate: 0. In general capital gains are not included in taxable income.
Belgium	Classical	15 per cent withholding tax that can be final, at taxpayer's option.	Rate: 0. Capital gains realised by individuals not engaged in a business activity are in principal not taxable.
Canada	Partial imputation	Dividends received from taxable Canadian corporations are "grossed-up" by a factor of one-quarter and included in income. A combined federal/provincial tax credit approximately equal to 22 per cent of the grossed-up amount is then provided.	Rate: 52. Only 75% of capital gains, net of capital losses, are included in income.
Czech Republic	Partial deduction of dividends paid	25 per cent final withholding tax.	Rate: 0. Gains from the disposal of securities held for 6 months are exempt from taxation.
Denmark	Partial credit	25 per cent final withholding tax.	Rate: 40. This rate applies to a taxable base arising from the disposal of shares exceeding Dkr 35000.
Finland	Full imputation	Taxed as ordinary income with 28 per cent creditable withholding tax.	Rate: 28. Income from capital is subject only to a national income tax levied at 28%.
France	Full imputation	Taxed as ordinary income with a 33.33 per cent withholding tax that is always creditable against ordinary income tax liability.	Rate: 26. In all cases, capital gains on securities are taxed at a flat rate of 26%. This comprises the basic rate of 16% plus social surcharges (CSG, CRDS, and Social Levy).
Germany	Split rate with full imputation	Taxed as ordinary gross income or as ordinary income with 48.47 creditable withholding tax.	Rate: 0. Capital gains realised through private transactions of resident individuals are generally not subject to income taxation.
Greece	---	---	Rate: 0. Gains derived from the sale of movable property (other than non-listed companies with limited shares and limited liability companies) are not taxed.
Hungary	Classical	20 or 35 per cent final withholding tax according to a formula involving a sliding scale.	Rate: 20. Capital gains on securities and on listed derivatives are taxed at a flat rate of 20%. In absence of documentation of acquisition price, 25% of the proceeds are taxed.
Iceland	Partial deduction of dividends paid	10 per cent final withholding tax.	Rate: 10. Gains from the sale of privately owned shares are generally included in taxable investment income and are taxed at a rate of 10%. Gains may be exempt up to a maximum of lkr 341 377 (lkr 682 754 for a couple) provided that the company has been approved by the Internal Revenue Directorate.

Table A.5. **Tax treatment of dividends and capital gains on shares** (continued)

1998, Resident taxpayers

	Type of corporate tax system ¹	Taxation of dividends	Taxation of capital gains (top personal rate of taxation; per cent) ²
Ireland	Partial imputation	Treated as ordinary income; with 21 per cent dividend imputation credit which is always creditable against ordinary income tax liability.	Rate: 40. The rate of capital gains taxed is 40%. For gains on the disposal of shares in unquoted trading companies held for at least 3 years is 26%.
Italy	Full or partial imputation	12.5 per cent final withholding tax or 10 per cent withholding tax, which is always creditable against ordinary income tax liability.	Rate: 12.5. Net capital gains on shares and other securities are subject to a substitute tax which replaces the individual income tax. For gains on non-substantial holdings, this rate is 12.5%.
Japan	Classical	Depending on amount of dividend paid by a single company: ordinary income with 20 creditable withholding tax; final withholding tax of 35 per cent; 20 per cent optional withholding tax.	For listed companies a central rate of 20% augmented by a local rate of 6% applies. Alternatively, if the sale of the asset is trusted to a securities company, a separate withholding tax applies. The central rate of 20% can be applied to 5% of proceeds.
Korea	Partial credit	Several treatments possible: ordinary income, exempt, final withholding tax of 20 per cent.	---
Luxembourg	Classical	Treated as ordinary income; 25 per cent creditable withholding tax.	Rate: 46.6. There is no separate capital gains taxed in Luxembourg, income from movable capital is part of the individuals aggregate income.
Mexico	Full imputation	Treated as ordinary income; 34 per cent dividend imputation credit which is always creditable against ordinary income tax liability.	Rate: 0. Gains on specified shares or other securities traded through an authorised stock exchange or similarly active market are tax exempt.
Netherlands	Classical	Treated as ordinary income; 25 per cent creditable withholding tax.	Rate: 0. In general capital gains are not included in taxable income.
New Zealand	Full imputation	Treated as ordinary income; 33 per cent dividend imputation credit which is always creditable against ordinary income tax liability.	Rate: 0. Capital gains are tax exempt.
Norway	Full imputation	Treated as ordinary income; 28 per cent creditable withholding tax.	Rate: 28. There is no separate capital gains tax, but capital gains are included in taxable income. With respect to the computation of gains on disposal of shares of resident company, special rules apply to avoid double taxation of company profits and gains to the shareholder.

Table A.5. Tax treatment of dividends and capital gains on shares (continued)

1998, Resident taxpayers

	Type of corporate tax system ¹	Taxation of dividends	Taxation of capital gains (top personal rate of taxation; per cent) ²
Poland	Classical	20 per cent final withholding tax.	Rate: 40. Capital gains are included in the taxable base as part of income from money investments, income from the sale of real estate, or business income.
Portugal	Partial credit	25 per cent withholding tax that can be final, at taxpayer's option.	Rate: 10. Net annual gains from the disposal of shares (category d of capital gains) is in principle subject to a tax at a final rate of 10% unless the transferor opts for its inclusion in his taxable income.
Spain	Partial deduction of dividends paid	Several treatments possible: treated as ordinary income, exempt, 28.57 per cent creditable withholding tax.	Rate: 56/0. Treated like ordinary income. For holding periods in excess of 2 years (for quoted shares), the net gain is reduced by 25% for each additional holding year.
Sweden	Classical	Taxed as capital income (30 per cent).	Rate: 30. In general, all capital gains realised by an individual are included in the category income from capital. Income from capital is taxed separately at a flat rate of 30% nationally, (no municipal taxes apply).
Switzerland	Classical	Treated as ordinary income; 35 per cent creditable withholding tax.	Rate: 0. Capital gains are exempt.
Turkey	Partial credit	Treated as ordinary income; 10 per cent (for publicly held corporations) or 20 per cent (other corporations) creditable withholding tax.	Rate: 55 (in 1997). Income from movable capital (stocks and other shares in incorporated bodies) is part of taxable income.
United Kingdom	Partial imputation	Taxed as ordinary gross income. There is a 20 per cent dividend imputation credit which is creditable against ordinary income tax liability.	Rate: 40. Capital gains of an individual are aggregated with his income and are taxed at income tax rates.
United States	Classical	Taxed as ordinary gross income.	Typical rate: 25. Assets must be held for more than one year, otherwise gains are taxed as ordinary income.

1. Types of corporate tax systems: a *classical* system does not give shareholders credit for corporate taxes paid on dividend distributions; a *full imputation* system gives the shareholder a full tax credit for corporate taxes paid on a dividend distribution (i.e. it eliminates double taxation of dividends); *partial credit systems* retain some double taxation of dividends; *split rate systems* impose different corporate tax rates on retained earnings than on distributed earnings (which may also be given full or partial imputation).

2. These rates apply to capital gains that arise from the disposal of securities, excluding speculative (or short holding periods) transactions, disposal of substantial interest holdings, or to gains realised in the course of a regular business activity.

Source: Adapted from OECD Tax Data Base. Capital gains tax rates from national sources and from European Tax Handbook (1998).

corporate income tax base. Other countries (Austria, Belgium, Hungary, Italy,⁵² Japan, Poland and Sweden) also use a classical system but apply a lower flat tax rate on dividends -- which replaces the personal income tax -- to reduce the all-in tax burden on distributed corporate income. The remaining countries have introduced relief for double taxation by granting a tax credit against the liability for dividend tax, corresponding to a legally fixed share of the corporate tax paid by the companies that pay out the dividend (the so-called partial imputation system, applied in Canada, Denmark, Ireland, Italy, Korea, Portugal, Spain, Turkey and the United Kingdom). A number of countries have opted for full rather than partial imputation (Finland, France, Mexico, New Zealand and Norway), while some of these countries have recently moved away from this approach (see below). Greece, finally, has removed double taxation by simply exempting dividends for the personal income tax.⁵³

77. It is important to highlight that imputation relief is normally confined to residents investing in domestic corporations, unless there are special provisions included in bilateral tax treaties.⁵⁴ This may be seen as a source of non-neutrality, as it results in a different treatment of foreign investors investing in domestic corporations and domestic investors investing in foreign corporations. Aside from the international distortions of foreign direct investment, which will be discussed in some more detail below, this feature has encouraged tax-planning activities, such as dividend stripping.⁵⁵ A number of European countries, including Germany, France (draft legislation) and Sweden, have now abandoned imputation relief.⁵⁶ In part, these changes may be viewed as addressing the non-neutrality and tax-planning concerns expressed above. They may also be judged as preferable to extending imputation relief to non-resident shareholders that could entail too high a revenue loss, relative to general investment incentive benefits operating through a reduction in the cost of capital. At the same time, parallel restrictions on imputation relief provided to domestic shareholders serve to not discourage foreign investor participation, insofar as

-
52. Italy allows investors to choose between final withholding or partial imputation. It also grants a corporate tax rebate for investment financed through new equity or retained earnings to balance the relative cost of debt and own-capital funding of new investment.
53. Alternatively, (full or partial) relief from double taxation can also be granted through the corporate tax system, by applying a lower rate on distributed profits (so-called "split-rate" system, such as in Germany (until 2001), and Mexico). For a discussion see OECD (1991). The Czech Republic, Iceland and Spain apply a partial deduction system, instead, by which the distributing company may deduct from its corporate tax liability a fixed share of the withholding tax relating to the dividend.
54. For example, prior to 1999 the United Kingdom granted imputation tax credits in respect of corporate income tax to foreign portfolio and direct shareholders resident in countries with which it had signed a tax treaty providing for such treatment. In 1999, however, the government introduced rules reducing the imputation tax credit rate from 20 to 10 per cent. The reduction ensured that under the standard United Kingdom treaty article, foreign portfolio shareholders would no longer receive a tax credit repayment. Foreign direct investors entitled to half tax credit would receive a relatively small repayment, equivalent to less than 0.3 per cent of a dividend.
55. Dividend stripping relies upon two transactions between residents and non-residents. A non-resident who owns a participation in a domestic company sells it temporarily to a resident (before dividend distribution), who will profit from the imputation tax credit. After the distribution, the sale is reversed.
56. Germany has enacted legislation to take effect in 2001, replacing its split-rate imputation system with a partial (50 per cent) dividend inclusion system. The split-rate imputation system taxes retained earnings at 40 per cent and distributions at 30 per cent, with full imputation for the 30 per cent tax corporate-level tax provided to domestic shareholders. The new system introduces a single uniform corporate tax rate of 25 per cent and denies imputation credits, but under partial inclusion, taxes only half of distributed income. The partial inclusion applies to both domestic and foreign shareholders, with the statutory withholding tax rate falling from 25 to 20 per cent, with a possible further reduction under treaty arrangements. France is considering similar changes to its current imputation system.

domestic double taxation relief has the effect of lowering after-corporate (but pre-personal) tax rates of return.

78. Even if several countries have (partially) removed double taxation of dividends, there remains double taxation of retained profits. This form of double taxation occurs to the extent retained profits are reflected in capital gains and hence taxed again at the level of the final investor to the extent that capital taxes are a feature of the tax system. Only one country, Norway, has introduced relief for this form of double taxation by way of the so-called “opening value adjustment” method. According to this method, capital gains are taxed only to the extent the increase in market value of the company exceeds the increase in the stock of retained earnings. As an alternative, New Zealand has abolished the taxation of capital gains on shares altogether.⁵⁷ Both countries also maintain a full imputation system and moreover apply (practically) the same tax rate across all forms of capital income. Hence their respective tax systems are the most neutral ones from the point of view of corporate funding -- although Australia, Mexico, Denmark, Italy and Korea also have relatively neutral systems in this regard (but, as noted, at the risk of introducing non-neutralities *vis-à-vis* foreign direct and portfolio investment).

79. The challenge to protect their neutral taxation of capital income from distortions stemming from progressive income taxation was an additional motive for the Nordic countries to implement a dual income tax system in the early 1990s. As noted above, under a dual income tax system, all capital income is taxed at a separate proportional rate, while labour income remains subject to the progressive personal income tax rates. In order to minimise tax arbitrage, the capital income tax rate is (ideally) aligned with the corporate income tax rate.⁵⁸ By doing so, the system departs from the conventional global income tax, under which a common progressive schedule is applied to the sum of income from all sources. There are certain advantages to dual income tax systems. Lower and proportional rates for capital income could be defended on horizontal equity grounds, as part of the capital income may in fact serve to offset real capital losses due to inflation. Furthermore, labour taxation leaves (idle) human capital always untaxed, whereas financial capital and real estate are often subject to, respectively, wealth or property taxation (Nichen and Sørensen, 1997). Moreover, optimal tax theory suggests the application of lower rates on capital as opposed to labour, as it is more mobile and its supply more elastic. The uniform rate also mitigates the tax avoidance possibilities of progressive taxation and reduces incentives for tax planning (Cnossen, 1995). Finally, from a tax administration and compliance point of view, it is important to note, that the separate taxation of capital and labour income makes the tax system more easily adjustable to international developments in the taxation of capital income. However, the experience in the Nordic countries has shown that maintaining a dual income tax with a large public sector is challenging. If the statutory progressiveness of labour income tax is too steep, incentives for tax shifting threaten to undermine the system. In particular, the introduction of dual income taxation requires a careful trade-off between the efficiency gains stemming from neutral and low taxation of capital income and the efficiency losses associated with the opening-up of opportunities for arbitraging between labour and capital income by small entrepreneurs. Moreover, the political consensus underlying a dual income tax may be fragile due to equity concerns.⁵⁹

57. While this eliminates the problem of double taxation, the broader scope of the New Zealand exemption distorts the choice of investments to areas where other types of capital gains are likely to arise.

58. The Norwegian system is closest to the dual income tax ideal, followed by Finland. Sweden and Denmark only exhibit some of the features of a “pure” dual income tax. For an overview of this approach as well as for a comparison of the four systems, see Cnossen (1999).

59. Equity concerns seem to have been one of the reasons behind Denmark’s decision to move away from the dual income tax in 1994 (see Sørensen, 1998) and Norway’s recent decision to introduce a dividend tax, which clearly goes against the principles of the dual income tax and tax neutrality (see the 2001 *OECD Economic Survey of Norway*).

2.2 *The impact on organising business*

80. One important set of tax issues relates to the choice of the way of organising business. As noted, most tax systems in the OECD favour debt financing over alternative funding modes such as new equity and retained earnings at the company level. As a result, they favour large established companies over small companies and start-ups, which are susceptible to less favourable terms on debt financing and therefore have to rely on equity capital to a greater extent. Moreover, to the extent that tax rates applied to capital gains decline with the holding period of stock, it also penalises start-ups due to a reduced liquidity of stock markets. A number of striking country-specific features also stand out. For example in the Czech Republic and Korea the tax code fails to recognise holding companies (which are normally granted double taxation relief for vertical dividend transfers), thus promoting large horizontal corporate structures which are difficult to manage.

81. Some countries have attempted to gear the corporate tax system to support smaller businesses, notably through a progressive corporate tax rate structure or “simplified” tax regimes. There may be a case for favouring small corporate business to the extent it is prone to market failure, for example due to imperfections in patent systems penalising start-ups, high cost of compliance with regulations due to diseconomies of scale and reduced access of smaller firms to venture capital. Unfortunately, however, there is a risk that progressive corporate taxation gives rise to abuse, with large companies splitting their activities up in order to qualify for favourable treatment (Mexico). Moreover, simplified regimes that aim to facilitate tax compliance of small businesses also produce incentives for larger companies to abuse this facility through under-invoicing and under-reporting (Mexico and Korea). Hence while tax preferences for small firms may be motivated by a need to correct market failures they can introduce other distortions.

82. The reviews suggest that the tax treatment of the self-employed is often the Achilles heel of the system of income taxation. In tax systems where the self-employed face low effective tax rates as compared to dependent employees, incentives to be self-employed may be strong also in activity areas where this is not necessarily optimal. There may be various reasons for low effective tax rates for self-employed. It may be that they have more scope for deductions and credits regarding expenses that qualify as necessary for carrying out their business than dependent employees, as is reported for Austria. Another reason may be that self-employed pay less social security contributions in proportion to their labour income, as is the case in the Czech Republic and Portugal. Underreporting of income of the self-employed is also widespread due to self-assessment of taxable income and weak auditing by the authorities, notably in Korea, Portugal and Greece, or lump-sum settlements of income tax or social security contributions which are applied in, respectively, Spain and Greece. In Mexico, the self-employed escape taxation almost entirely, hence the tax incentives to operate as a private micro-business as opposed to dependent employment are extremely powerful.

83. Conversely, if taxation of self-employed income is more severe than taxation of corporate business income, incentives to incorporate may be strong. A specific problem associated with the dual income tax systems operated in Sweden and Norway is that self-employed and small business owners have strong incentives to incorporate and qualify as “passive” shareholders to avoid high taxation of labour income. The dual income tax requires self-employment income to be split into labour and capital components each taxed at a specific level. Since the statutory tax rate on labour income is high, incentives to incorporate and to convert labour income into capital income (dividends) are powerful, especially in Norway where there is full imputation relief for dividends. The tax authorities in these countries have attempted to counteract these incentives by establishing a special regime of “closely-held corporate business”, with total business income split into labour and capital components according to a complex set of rules in order capture labour income. However, loopholes prove difficult to close, the more so since pressure groups have successfully lobbied for exemptions. The efficiency of dual income tax systems

would benefit from limiting the incentives to incorporate by diminishing the difference in statutory and effective tax rates on capital and labour income, especially at the upper end of the pay schedule.

84. Corporate tax codes in many OECD countries contain a plethora of special allowances, exemptions and credits to favour certain geographic locations, which are also not captured by the marginal effective tax rates reported in Table A.4.⁶⁰ For example, in Poland the corporate tax regime offers exemptions in Special Economic Zones and the Czech Republic also offers a wide range of special arrangements, while in Spain tax-induced location shifts of companies to benefit from the favourable Basque special regime are reported. Japan and Korea maintain special depreciation allowances for investment in developing areas. In some countries of the European Union several of such special regimes exist as well.⁶¹ Some countries provide time-constrained exemptions from corporate tax, or so-called “tax holidays” (France, Poland). Such arrangements may be defended in some cases as a way to correct market failure.⁶² However, they often act to create arbitrage opportunities, eroding the tax base and distorting the allocation of resources. Support for investment in depressed areas could be justified on equity grounds, but tax incentives are generally not the most effective way of doing so, as they do not overcome initial location shortcomings.⁶³ Measures that lower the overall cost of doing business in a certain region, such as infrastructure development or the provision of training facilities, while comparable both in terms of net budget cost and in value for the individual firm, are more transparent and likely to create stronger positive externalities.

85. There are also special arrangements favouring specific industries still being operated in several countries. The corporate tax code favours capital intensive heavy industries in Korea and mining in Canada. In Greece and Norway the special, more generous, tax schemes for shipping companies generate incentives for tax shifting. In Norway the high marginal tax rate in the special regime for the offshore oil and gas sector (to capture natural resource rents) provides an incentive for companies to shift deductible interest expenditure into that regime. Special corporate tax regimes may be unavoidable in countries where the government is committed to capturing natural resource rents. However, tax authorities should guard against incentives for tax shifting, for example by adopting or enforcing “thin capitalisation” rules. In contrast, OECD countries are taking concerted steps to eliminate preferential tax regimes for certain mobile business activities (*e.g.* shipping) to reduce the opportunities for aggressive tax planning that they represent.

60. Although there is evidence that OECD Members countries are moving away from such tax incentives to regional grants, they remain sizeable. Meanwhile, the remaining tax incentives become increasingly tailor-made as investors bargain with national or regional investment promotion agencies (UNCTAD, 1998).

61. For example, concerning the *Mezzogiorno* (Italy), Northern Ireland (United Kingdom), designated enterprise zones (Denmark, until 1999), polar region (Finland, Norway), Shannon Airport Zone and Dublin Custom House Docks (Ireland), Basque Country, *Navarra*, *Ceuta* and *Melilla* (Spain), *Azores* and *Madeira* (Portugal).

62. Regional investment support may be warranted if information asymmetries lead to a higher perceived risk and, thereby, to higher required rates of return. Furthermore, proponents argue that by compensating for, *e.g.* higher transport costs, investment inducements might contribute to achieving the socio-political objective of fostering “competitive neutrality” among regions. They might therefore be considered as an appropriate supply-side measure for regional development, especially if the establishment of one industry is followed by others.

63. Most empirical studies available conclude that tax incentives have only a small, albeit statistically significant impact upon location behaviour (Papke, 1993 and Wasylenko, 1997).

2.3 *The impact on international investment flows and the financial structure of multinationals*

86. Notwithstanding the general trend towards lower corporate tax rates and broader bases, some narrowing can be observed over the past decade in a number of countries, including tax allowances granted in several EU countries for start-ups, SMEs, IC technology and R&D. The proliferation of ‘beggar thy neighbour’ policies in the area of business tax incentives led the Council of the European Union to implement a “Code of Conduct” to address this issue (see Joumard, 2001).

87. Of course, the code of conduct only applies to EU countries, and the country chapters reveal that several non-EU countries have policies to attract foreign direct investment. These are Korea, Poland and the Czech Republic. The example of the Czech Republic is of particular interest because the 1993 tax reform abolished tax holidays for foreign investors and only allowed limited activity-specific allowances and credits. However, this policy of reducing incentives was reversed in 1998 with the introduction of a new set of incentives. This suggests that the Czech government felt that it was losing foreign investment as a result of its earlier cutback in incentives. This contrasts with the widespread view among international tax specialists that tax incentives have very little effect on FDI, partly because tax is only one of a large number of considerations that influence business location decisions and partly because such tax incentives are often offset by increased taxation by the country of residence. However, the Czech experience is consistent with an emerging new view, that incentives will not motivate large changes in location but could influence the choice between countries that are close together and similar in many respects. Thus, the Czech Republic could be seen as participating in a very competitive market to attract FDI, consisting of the transitional economies of central and Eastern Europe.⁶⁴

88. Moreover, recent empirical work indicates that the financial structure of multinational firms is influenced by the tax regime of the host country alongside with that of the residence country, and confirms the central role played by the host country statutory corporate income tax rate in influencing chosen debt/equity ratios.⁶⁵ In particular, a high statutory corporate tax rate in the host country encourages borrowing in that country, tending to erode the corporate tax base. Similarly, empirical work examining transfer-pricing behavior shows the incentive to use non-arm’s length prices to artificially shift profits to relatively low-tax countries.⁶⁶ These issues can also arise to some extent within countries, especially federal ones or ones that have granted tax autonomy to certain regions.

3. **The impact of taxation on the labour market**

89. For several decades labour markets’ performance has been unsatisfactory in many countries in the OECD area, especially in countries of the European Union where the average structural unemployment rate rose from around 4 per cent in the 1970s to 7 to 8 per cent in the 1990s. Other salient features of labour market outcomes in past decades have been the lengthening average duration of joblessness, the concentration of unemployment among the young and the falling employment rate of older and low-skill workers. The factors explaining these trends have been extensively analysed in the framework of the OECD *Jobs Study*, which highlighted a number of features of taxation that impinge on labour market outcomes:

64. The likely impacts of alternative incentives are explored in OECD (2001a).

65. See for example, Hines and Hubbard (1990) and Grubert (1998).

66. See for example, Grubert and Mutti (1991) and Hines and Rice (1994).

- By boosting labour cost, heavier taxes on labour have adverse effects on structural unemployment, especially if labour cost increases persist for longer periods due to wages not responding promptly to lower labour demand.⁶⁷ Specifically for low-income earners offsetting reductions in their wages may not be feasible at all due to minimum wage rules. For them higher labour taxes almost unavoidably translate into lasting higher wage cost and reduced employment.
- The interaction between labour taxes and social benefits distorts work-leisure trade-offs, resulting in reduced labour supply. In particular it produces weak work incentives among older workers, but also among secondary workers and lone parents. Concerns over the efficacy of social expenditure have prompted many countries to target social safety nets on the truly needy and withdraw benefits as income increases. Such means testing, in combination with the tax system, weakens the incentives for job search and enhanced work effort further.

The *Jobs Study* therefore recommended that governments should “reform unemployment and related benefit systems -- and their interaction with taxation -- such that societies’ fundamental equity goals are achieved in ways that impinge far less on the efficient functioning of the labour markets”.⁶⁸

90. The analysis in the country reviews has focused on the tax-related incentive structures that discourage employment through the above channels in the countries concerned. For this purpose the surveys have relied on the statutory labour tax wedges, *i.e.* the gap between labour compensation and take-home pay generated by the tax system, for earnings levels considering specific points or intervals of the income distribution.⁶⁹ Statutory average tax wedges, together with information on the incidence of taxes on the worker’s take home pay, gauge the impact of taxation on the labour cost for the employer, and thus provide an indication of adverse labour demand impulses stemming from taxation. The analysis of average and marginal statutory tax wedges in combination with information on the interaction between tax and benefit systems, can be used to gauge the work incentives associated with work-leisure tradeoffs.

3.1 *The impact on labour demand*

91. As discussed in Part 2 of the main paper, raising public expenditure amid pressure to keep taxation of “mobile” tax bases low has resulted in a secular increase in the effective tax rates on labour income in many countries. This reflects a widening of the statutory labour tax wedges over a wide range of earnings levels, which may explain the decline in employment rates and rising structural unemployment rates in some countries. An international comparison of the most recent available statutory average tax wedges on labour in OECD countries is shown in Figure 4, with a breakdown into personal income tax, employers’ and employees’ social security contributions. As may be expected, the wedges are generally the highest in countries of the European Union (EU), where they average 43 per cent of the total labour compensation. However, the variation within the EU is wide, ranging from almost 60 per cent in Belgium and around 50 per cent in Germany and Sweden to well below 40 per cent in the examined countries Spain, Greece and Portugal and around 30 per cent in Ireland and the United Kingdom. As may be expected, the examined transition economies Czech Republic and Poland portray tax wedges akin to the EU countries

67. See for some recent evidence also Daveri and Tabellini (2000).

68. OECD (1997a).

69. OECD (1999a) and OECD (1999b). Statutory wedges do not necessarily coincide with the actual tax wedges that can be calculated from the Revenue Statistic or National Accounts which reflect also the impact of tax avoidance and evasion on the relevant tax base.

that are at the upper end of the range, and so does Hungary. The other examined countries all have comparatively small labour tax wedges (in ascending order Mexico, Korea, New Zealand, Japan, Iceland, Switzerland, the United States and Canada).

92. Importantly, the cross-country variation in labour tax wedges is largely explained by the variation in social security contributions, most prominently employers' contributions. This is a concern to the extent employers tend to bear most of the incidence of their contributions. The reason is that higher employee taxes initially reduce the after-tax wage, as gross wages may be slow to respond, while, in contrast, employer payroll taxes will raise the labour costs of firms immediately. Therefore employers' contributions are expected to have stronger adverse employment effects than other forms of labour taxation. Countries that rely mostly on employers' social security contributions -- including the countries reviewed Czech Republic, Spain, Greece, Portugal and Mexico -- seem to have little scope for exploiting this tax base to a larger extent, and a shift in the tax mix towards consumption taxes may prove beneficial. On the other hand, some labour taxes, including employers' contributions, are less tax-like than others to the extent their payment gives rise to benefit entitlements and therefore meet different degrees of workers resistance to cuts in take-home pay. In this regard it is interesting to note that the Poland review reports the credibility of future public pension entitlements to be key to the impact of taxation on labour market performance in the years ahead.

93. Rigidities in wage formation are instrumental in shifting the incidence of labour taxation on employers, and hence unemployment. The countries in the European Union are particular prone to such effects, including the examined countries Austria, Sweden and Spain, while there are indications that the transition countries Czech Republic and Poland are increasingly confronted with this "tax penalty on employment" as well. For example in Spain, workers' resistance to accept cuts in their take-home pay due to labour taxation is particularly strong, even though the Spanish average tax wedge is low by EU standards (but exceeding the OECD average). An explanation put forward in the review is that high severance payments give workers a strong bargaining power. In addition, wage bargaining rarely takes place at the company or local level and thus fails to internalise the impact of wage demands on individual firms and local jobs prospects.⁷⁰ The Spanish review mentions a low level of competition in sheltered sectors and a malfunctioning housing market as additional factors hampering labour mobility and wage adjustment. There is evidence that such labour and product market rigidities, combined with sectoral wage bargaining, contribute to high structural unemployment in several other EU countries as well (Journard, 2001). On the other hand, it is striking that Norway is reported to achieve a low level of structural unemployment despite the average labour tax wedge being similar to that of *e.g.* Spain, which may be attributable to the prevailing centralised wage bargaining structure.

94. Although the reviews do not provide numerical evidence on the impact of labour taxation on structural unemployment, it is possible to make a rough estimate based on available regression analysis (see Elmeskov *et al.*, 1998). Table A.6 shows the change in the labour tax wedge during the 1990s for countries that are characterised by, respectively, low, intermediate and high centralisation and co-ordination of wage bargaining. Intermediate-level wage co-ordination and bargaining is an exclusive feature of EU countries, notably Belgium, Finland, France, Portugal, Spain and Sweden. Several of these countries portray, moreover, very large labour tax wedges. Centralised wage bargaining occurs in other EU countries, where tax wedges are wide as well, and Norway. Other OECD countries typically combine low tax wedges with decentralised wage bargaining structures, which is least detrimental to labour demand. For each country the contribution of the change in the tax wedge to the change in structural unemployment has been calculated, taking into consideration the prevailing wage bargaining structure, which is also shown in the table. From the estimates can be inferred that:

70 . See Scarpetta (1996) and Elmeskov *et al.* (1998).

Table A.6. **Estimated change in structural unemployment due to changes in the labour tax wedge¹**

Per cent

	Change in tax wedge on labour income ²		Contribution from the change in the labour tax wedge to change in structural unemployment rate	
	1991-95	1995-99	1991-95	1995-99
Low centralisation/co-ordination of wage formation				
Australia	1.2	1.4	0.1	0.2
Canada	2.5	0.3	0.3	0.0
Japan	-2.0	-0.2	-0.2	0.0
New Zealand	0.7	-5.1	0.1	-0.6
United Kingdom	0.2	-2.4	0.0	-0.3
United States	0.3	0.1	0.0	0.0
Intermediate centralisation/co-ordination of wage formation				
Belgium	2.6	0.7	0.4	0.1
Finland	6.7	-3.1	1.0	-0.5
France	-2.5	-1.2	-0.4	-0.2
Portugal	-0.2	-0.3	0.0	0.0
Spain	2.0	-1.1	0.3	-0.2
Sweden	3.3	1.2	0.5	0.2
High centralisation/co-ordination of wage formation				
Austria	2.1	4.8	0.1	0.3
Denmark	-1.5	-0.9	-0.1	-0.1
Germany	3.8	1.7	0.2	0.1
Ireland	-2.9	-4.3	-0.2	-0.3
Italy	1.5	-3.0	0.1	-0.2
Netherlands	-1.7	-0.4	-0.1	0.0
Norway	-3.7	-0.2	-0.2	0.0
OECD	0.6	-0.6	0.1	-0.1
European Union	1.0	-0.6	0.1	-0.1

1. Based on Elmeskov *et al.* (1998).

2. For a single average production worker.

3. 1995-1998.

4. The number for the period 1995-2000 would be considerably lower due to a tax reform in 2000.

- In several EU countries with intermediate-level wage bargaining, notably Belgium, Finland, Spain and Sweden, the labour tax wedge widened in the first half of the 1990s with the increases in social security taxes associated with the recession at the beginning of the decade. The estimated effect on structural unemployment stemming from the wider tax wedge in these countries is of the order of ½ to 1 percentage-points. On the other hand, Japan, Denmark, Ireland, the Netherlands and Norway achieved a narrowing of the tax labour tax wedge in this period, which is estimated to have contributed to a reduction in the structural unemployment rate.

- Labour tax wedges have mostly stabilised or declined in the second half of the 1990s, with the exception of several EU countries, notably Belgium, Sweden, Austria and Germany. As a result Austria and Sweden are estimated to have seen their structural unemployment rate somewhat increase in the second half of the decade as a result of a wider tax wedge. By contrast, New Zealand and Finland have in this period made comparatively large inroads into their labour tax wedges, which is estimated to have had significant favourable effects on structural unemployment of the order of ½ percentage-point or more.

95. In most countries the statutory progressiveness of combined income and social security taxation is moderate or virtually absent for top earners in the majority of the examined countries. This is due, in most cases, to ceilings on social security contributions or tax-deductibility of social security contributions offsetting part of the statutory progressiveness of income taxation. The progressiveness of taxation across income levels matters for labour demand as well. Progressiveness may be detrimental for labour demand to the extent that earnings growth over time pushes more workers into higher income-tax brackets (bracket creep), which could in turn be shifted into higher wage claims. Some authors have suggested that union wage demands may in fact become more moderate, and hence more favourable towards unemployment, with greater income tax progressiveness, as it diminishes the take-home value of pay rises.⁷¹ However, the empirical support for this view is weak. A concern -- underscored in the reviews of Austria, Sweden and Spain -- is that greater reliance on social security contributions, which are usually flat-rated without a tax-free threshold, can make it particularly unprofitable for employers to hire workers on a part-time or temporary basis. In some countries (Austria, Spain) this problem is heightened by nominal floors in the social security system, with a fixed minimum amount of contributions levied irrespective of the number of hours worked or income earned (see Box A.2). Importantly, as there has been increased reliance on social

Box A.2. Social security contribution ceilings and floors

In many OECD countries, social security contributions are often levied only up to a certain maximum level of wages, earnings above this ceiling being exempt. Earnings below a particular threshold are often exempt as well, which is referred to as a floor (type A). Alternatively, floors can take the form of a “lump sum” minimum contribution (type B). The rationale behind ceilings and type B floors is the linkage of benefits and contributions since benefits are usually also subject to floors and ceilings. Type A floors are in fact tax allowances, and serve vertical equity.

There are several problems associated with floors and ceilings:

- Contributions with ceilings introduce a regressive element into the tax schedule and produce higher marginal tax rates below the ceiling (see *e.g.* Coronado *et al.*, 2000). In addition, ceilings and floors lead to kink points in the tax schedule, which might result in “bunching”, although empirical evidence suggests this phenomenon is rather weak (for the United States, see *e.g.* Saez, 1999).
- Moreover, contributions subject to ceilings or type B floors are non-neutral regarding part-time, seasonal employment, job sharing or shorter working hours. In the presence of ceilings and type B floors, the wage cost for a given amount of labour will increase with the number of employees but not with the number of hours worked per person. Type A floors have the opposite effect of encouraging the atypical forms of employment. If ceilings and floors are imposed relative to the hourly wage and not to total wages, they would be neutral regarding “atypical” labour (Euzéby, 1988).
- Finally, floors and ceilings increase the complexity of the tax system, particularly for those having multiple jobs or those that are changing their employment (see Hotz/Scholz, 2000).

71 . Tyrväinen (1995).

security contributions to finance the expanding social transfer systems, these mechanisms have become more rather than less pervasive. While this problem has prompted several countries -- notably Austria, Belgium, France, Greece, the Netherlands, Spain and the United Kingdom -- to implement cuts in social security contributions on low-paid or low-qualified workers in recent years, they may add to the complexity of the tax system and may entail dead-weight costs.

3.2 *The impact on labour supply*

96. The decision of an individual of working age to participate in the labour market occurs in two forms: whether to participate in the labour market at all and how many hours to work once working. Taxes may have important effects on both these decisions, and the effects may differ markedly for main or single earners in a family, secondary earners or lone parents. Moreover, the direction of these tax impacts is a priori ambiguous: the decline in after tax wage income associated with a widening in the tax wedge has an income effect, which raises labour supply, and a substitution effect which lowers labour supply. The labour supply response to taxation therefore hinges on the elasticity of labour supply with respect to real after tax wage. In a nutshell, the following basic profiles of workers' responses to income taxation emerge:

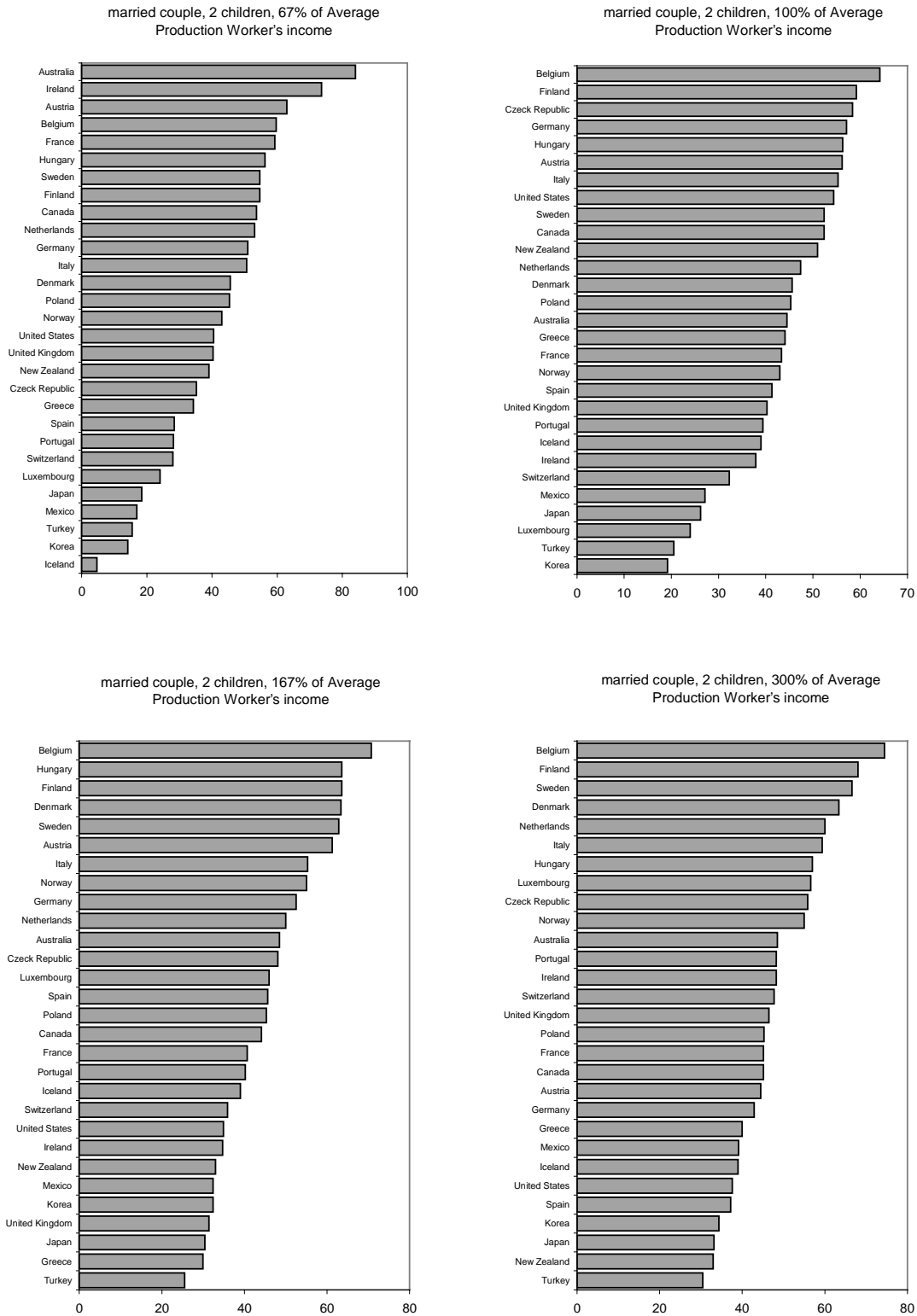
- *Single or primary earners* often have little choice about labour participation, hence normally work fulltime so that tax considerations should have little effect on their labour supply (though not so in quality since this depends on the return on human capital invested). In other words, while there may be an incentive for substitution between leisure and work it is typically offset by the income effect (except at high income levels where the substitution effect may outweigh the income effect). However, this would still imply a distortion to the extent the total utility derived from consumption and leisure declines.⁷² Moreover, this situation may change considerably as workers approach the age of retirement as there may be tax incentives to retire early.
- *Secondary earners* are likely to be particularly sensitive to the relative price between work and leisure, hence to taxation, both in their decision to work and in the number of hours worked, as they normally face a wider set of options. Importantly, in countries where the basis of taxation is the household unit, the marginal tax rate applying to the first unit earned by a secondary worker is equal to that of the last unit earned by the primary worker. In those countries, secondary earners' labour supply response to taxation crucially depends on their partner's earnings.⁷³ The response of secondary earners also depends on where they are on the labour supply curve. For those working few hours the substitution effect most probably outweighs the income effect whereas for (almost) full-time working secondary earners the reverse is more likely.

97. The distortions stemming from tax incentives on the number of hours of work supplied may be gauged by the marginal tax wedge, *i.e.* the gap between labour compensation and take home pay as a per cent of labour compensation for an additional hour of work. A key finding is that workers across a wide range of earnings levels face significantly higher marginal wedges in the EU and the transition economies than in other OECD countries, although the United Kingdom, Portugal and Greece are at the lower end of the range (Figure A.1). Particularly high marginal wedges are found in Belgium, Germany, Hungary,

72. It can be shown that the "excess burden" of taxation is independent of the income effect and just depends on the substitution or "compensated supply" effect.

73. Mothers, moreover, face high fixed costs connected with childcare upon entering the job market, which acts like an extra tax.

Figure A.1. Marginal statutory all-in tax rates on labour
1999



Source : OECD Tax Equations, 1999.

Finland, Ireland, Austria, Italy and France. By contrast, comparatively low marginal tax wedges are found in Mexico, Japan, New Zealand and Korea -- although the top marginal wedge in Japan is relatively high it kicks in only at extremely high earning levels (Table A.7). These cross-country differences would be even more pronounced if the marginal tax wedge included the taxation of (additional) consumption, given that consumption tax is also lower in the latter group of countries.

98. A measure of tax incentives with regard to the decision to participate in the labour market at all looks at the tax wedges including the impact of benefit withdrawals on after-tax earnings as persons accept a job (Figure A.2). This measure provides evidence that adverse work incentives stemming from taxation and benefit withdrawals, while dependent on the specific family situation, are again generally strongest in EU countries. In particular, Figure A.2, which assumes full-time earnings to correspond to the “average production worker wage” level, indicates that:

- In families where the principal earner is full-time employed, secondary earners moving from non-employment to part-time or full-time employment face wedges below 30 per cent in the United States, Japan, Korea, Spain, Portugal, Greece, Switzerland, Ireland, the United Kingdom and the transition economies.⁷⁴ However, in the other countries, most of which are in the EU, wedges are found for the most part to be in the range of 40 to 60 per cent, with Germany and Belgium being at the upper end of the range.
- If the principal earner is unemployed, the effective wedges for a secondary earner entering the labour market varies widely across OECD countries, but are again generally the highest in the EU. In cases where a secondary earner accepts a part-time job (40 per cent of normal working time), the spread is particularly large. It ranges from nil or almost nil in the United States, Japan and Korea to 118 per cent in Greece, with most observations for EU countries in the 30 to 70 per cent range.⁷⁵ The zero rate in the United States is explained by employment-conditional tax credits offsetting the loss of other means-tested allowances and benefits at the average earnings level, but the rate is generally positive for higher earnings levels. The other extreme observation for Greece reflects *inter alia* that unemployed principal earners lose part of their (tax-free) unemployment benefit once their partner accepts a job.
- A striking common feature of all the surveyed countries is the very high wedge facing unemployed workers with a non-employed spouse, although differences among countries are also very large. Assuming the unemployed principal earner accepts a full-time job, wedges are nowhere below 50 per cent, except in Poland and Mexico where most workers escape the income tax net, and between 70 to 90 per cent in most EU and the other transition countries. However, accepting a part-time (rather than full-time) job is a very costly decision, with wedges exceeding 100 per cent due to the loss of tax credits or benefits reserved for poor families, even in countries that otherwise display small distortions, such as the United States, Japan and Korea.

74. In France this METR is below 30 per cent only if the secondary earner accepts to work full-time but rises to 40 per cent when accepting a part-time job.

75. See OECD (1999b) for a fuller explanation of these results.

Table A.7. **Rate schedules of central government personal income tax**
*Single person, no dependants, January 1998*¹

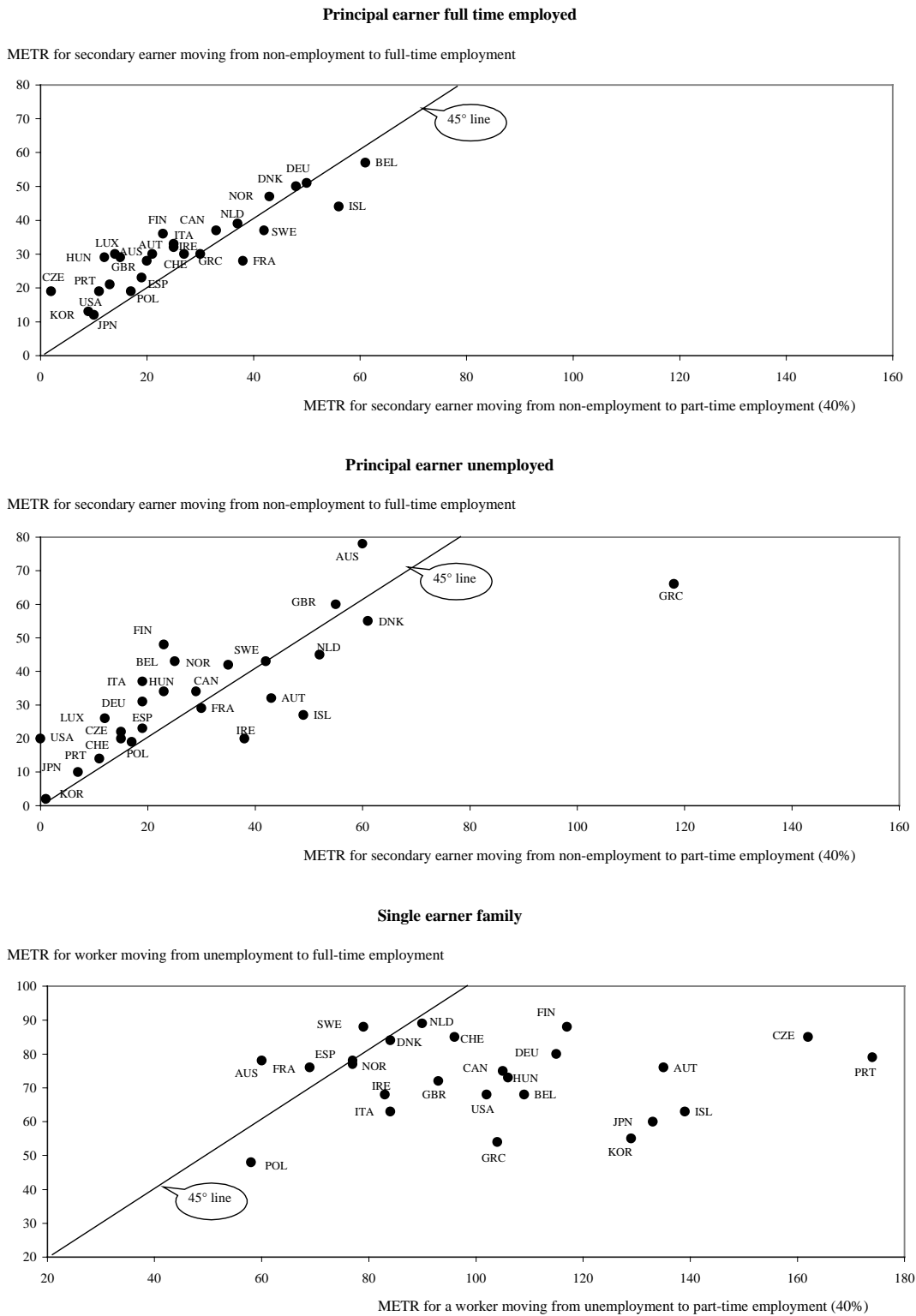
	Lowest standard rate	Number of tax brackets	Highest standard rate	Starting point (times APW wages) ²
Australia	20	4	47	1.4
Austria	10	5	50	2.3
Belgium	25.75	7	56.65	2.2
Canada	17.51	4 ³	31.3	1.8
Czech Republic	15	5	40	5.9
Denmark	8	3	29	1.1
Finland	6	6	38	2.2
France	10.5	6	54	2.2
Germany	formula	4	53	2.1
Greece	5	4	40	2.5
Hungary	20	6	42	1.7
Iceland	29.31	2	34.31	1.8
Ireland	26	2	48	0.7
Italy	19	5	46	3.5
Japan	10	5	50	7
Korea	10	4	30	5.5
Luxembourg	6	17	46	2.4
Mexico	3	8	35	7.5
Netherlands	8.85	3	60	1.9
New Zealand	15	3	33	1
Norway	18.8	3	32.5	1.1
Poland	19	3	40	4.7
Portugal	15	4	40	4.5
Spain	17	8	47.6	4.6
Sweden	25	1	25	1.1
Switzerland	0.77	10	11.5	10.4
Turkey	25	7	55	28.5
United Kingdom	20	3	40	1.8
United States	15	5	39.6	9.7

APW = average production worker.

1. Deductions or allowances related to specific income sources are not included.
2. Indicates salary level at which the highest income tax rate begins to apply; for example, in Australia, the highest starts at 1.4 times the APW wage.
3. Formally, the Canadian system has only three brackets, but beyond a certain threshold (which lies part way through the second bracket) a surtax is imposed.

Source: OECD.

Figure A.2. Marginal effective tax rates on household labour income



Note: The 45° line corresponds to a situation where there is neutrality between a person moving to part-time or full-time unemployment from a tax-benefit perspective. Observations below the 45° line point to an unfavorable treatment of part-time as compared to full-time work.

Source: OECD, Benefits and Work incentives Database.

99. In recent years several countries have attempted to reduce the effective tax wedges for people entering the labour market by granting employment-conditional tax credits, akin to the Earned-Income Tax Credit (EITC) that has been operated for several decades in the United States.⁷⁶ An example is the Working Families Tax Credit in the United Kingdom. France, Finland, Greece, Ireland and New Zealand have similar programmes. Employment-conditional tax credits, unlike targeted cuts in social security contributions, impinge on labour supply rather than on labour demand, although both types of measures aim to favour labour market participation of lower qualified workers. While employment-conditional tax credits have the advantage of distributing income to the most needy and strengthen the incentives for jobless people to take a job, even if low-paid, they may also induce those already in low-paid work to reduce their work effort. For example, the review for New Zealand reports that the abatement of credits and welfare benefits as earnings grow implies very high marginal wedges for lone parents in the abatement range (roughly between one-third and two-thirds of the average production worker's wage), up to around 100 per cent.⁷⁷ Nevertheless, employment-conditional tax credits are valued for their contribution towards encouraging workers who are active in the grey economy to surface in the official economy. Employment-conditional tax breaks are particularly powerful if the pre-tax income distribution is wide (*i.e.* sufficient low-paid jobs are available) and in combination with a binding minimum wage to ensure that take-home pay increases.⁷⁸ Under such conditions, moreover, employment-conditional tax breaks may be revenue-neutral (Audric *et al.* 2000).

100. It is clear that tax distortions at the lower end of the income distribution are not confined to labour/leisure substitution effects, but also involve substitution between the formal and informal sectors of the economy. Informal economies are reported to be large in Mexico, Greece, Spain, Portugal and Poland. In the former two countries this mainly reflects poor tax enforcement, but in the latter two countries incentives stemming from the tax code itself also play a significant role. In Spain, social security contribution floors in combination with labour market rigidities (notably high levels of protection and severance payments) underpin the extensive informal labour market for lower qualified work. While this phenomenon is particularly widespread in Spain it may to some extent be representative for other EU countries with relatively rigid labour markets. The obvious policy response is to reduce wedges on labour income at the lower end (*e.g.* by removing social security floors type B; see Box A.2) and to enhance tax enforcement. In Poland, in contrast, informal labour is concentrated in sectors where economic activity for statutory reasons largely remains outside the tax net (notably agriculture). Bringing such activity into the tax net and enforcing the tax law should be instrumental in closing this loophole.

101. As noted, contribution ceilings and tax deductibility of contributions in the social security system act to reduce progressiveness at the upper end of the earnings distribution, thus generating a further taxation bias in favour of highly qualified and at the detriment of low skill labour. It is indeed striking how little effective progression labour tax systems in OECD countries produce as a result. Tax privileges for in-kind compensation and other non-wage components of executives' earnings which are not included in

76. The earned income tax credit (EITC) in the United States is an in-work benefit scheme, which uses the tax system as a means of transferring income. It is designed as a non-wastable tax credit supplement to earnings, which increases along with earned income up to a maximum limit, depending on the number of children, and is subsequently phased out.

77. This is confirmed by empirical studies suggesting that, as a result of the EITC, labour supply increases only in terms of the number of people working, with overall hours worked remaining broadly unchanged; see Ochel (2000), Liebman (1998), OECD (1997), L'Horty (2000), Kramarz and Philippon (1999), Blundell (2000) and Bertola (2000). But, even if the number of hours worked does increase only slightly due to offsetting effects, there may still be positive externalities associated with raising the number of people working (Phelps, 2000).

78. Low qualified labour supply tends to be relatively wage-elastic, see for example Koskela and Schöb (2000), Assouline *et al.* (1997) and Pearson and Scarpetta (2000).

the statutory tax wedges presented here, further accentuate this bias.⁷⁹ Stock options usually receive a favourable tax treatment relative to the alternative of investing traditional labour compensation in stock to the extent that no capital gains tax is levied on the spread between the market value and the acquisition price of the stock (see Box A.3). Moreover, several countries apply favourable tax rates if the options are held for a specified number of years (Belgium, France, Germany, Netherlands, United Kingdom and United States) or for start-up companies (France). While these tax privileges may offset some of the efficiency drawbacks of highly progressive the tax systems, the minimum holding-period requirements tend to reduce the labour market mobility of workers receiving remuneration in the form of stock options.

Box A.3. Tax treatment of stock option programmes

The issuing of stock options gives executives and other employees the right to buy shares in their company at a pre-set price. The “life” of a stock option is marked by four events: the granting, the vesting (stock options are usually subject to a minimum holding period), the exercise (*i.e.* the purchase of shares) and the sale of the acquired shares. Stock option programmes raise important issues for income taxation, and various approaches co-exist.

Recently, some OECD countries (*e.g.* Belgium, Germany, Netherlands) have adopted taxation at *grant* or *vesting* (which share many broad features from a tax point of view). The tax base is either determined by comparison with options traded in the market or subject to special valuation schemes (which are generally more favourable to the taxpayer), but the predominant view is that only *tradable* options (*i.e.* those having current market value) should be taxed. Since the “true” economic value to the employee can only be determined at the end of the vesting period, the effective tax rate applied to stock options is uncertain: in the case of very high gains relative to the assessed value, the tax burden would be low, whereas even in the case of a non-exercised option taxes have been levied. Companies generally receive a corporate income tax allowance corresponding to the assessed personal income of the employee derived from the option to ensure the symmetric treatment relative to alternative forms of compensation (except if stock option gains are taxed as capital income).

However, most OECD countries tax upon *exercise*, with the difference between the exercised (strike) price of the acquired share and its fair market value being the tax base. As both the strike price and the fair market value of the acquired shares are known (at least in the case of quoted companies), taxation upon exercise has the advantage of simplicity. On the other hand, taxation upon exercise leads to a deferral of personal income taxation relative to a situation where the employee would buy the shares out of his taxed income. It therefore enables the employee to avoid capital gains tax which would have been due in the case of a “normal” investment in shares (Hall and Liebman, 2000). Taxation at *sale* of the acquired shares remains as a third possibility, with the difference of the strike price and the disposal value as a base, but this is rarely practised. However, it is evident that the capital gains on the shares once sold are subject to capital gains tax if that is a general feature of the tax system, whatever approach to taxing stock options is in place.

The gain arising from the option can be taxed either as labour or as capital income. Most countries tax stock options as labour income, since they are considered to be a form of (deferred) compensation. Therefore, some countries also levy social security contributions on stock option gains.

102. While these features may give rise to concerns over the limited income redistribution achieved through the tax system, it has the advantage of mitigating the incentives for tax avoidance and evasion of higher-income groups. Nevertheless, in a number of reviewed countries, notably Canada, Sweden and Norway, high progressivity at the upper end of the income distribution is reported to be a problem. In particular:

79. Stock options have become the single largest component of executive pay in the United States to a point where they may have measurable effects on increased volatility in tax revenues (Goolsbee, 1997 and 2000).

- In Canada, top income earners are prone to labour mobility *vis-à-vis* the United States, where income taxation is considerably lower at the top end of the income distribution. While cross-border labour mobility is a general feature of higher-qualified workers in most OECD countries, Canada is particularly sensitive in this respect given its geographical location and the limited linguistic or cultural barriers separating its labour market from that of the United States. Maintaining high tax progressiveness under such conditions frustrates the efficiency tax system without gaining much in terms of equity.
- Although most OECD countries tax labour and capital income at different final rates, the dual income tax systems adopted in Sweden and Norway go furthest in combining a relatively low taxation of capital income with high and strongly progressive taxation of labour income.⁸⁰ As a result, the incentives for human capital formation are weakened and top earners face strong incentives to move towards self-employment and eventually incorporate in order to be able to report a significant part of their earnings as lower-taxed capital income. It is therefore advisable for countries that maintain a dual income tax system to avoid excessive progressiveness of labour income tax and keep the gap between labour and capital taxation as small as possible.

In fact, high marginal tax wedges affecting the upper end of the earnings spectrum (of 50 per cent or higher) are found in several other EU countries as well, notably Italy, France, Germany, Belgium, Denmark and the Netherlands (Figure A.1). This points to incentives for tax planning and avoidance activities, with top earners attempting to reduce their tax bill by maximising tax deductions or by attempting to shift income into low-taxed jurisdictions or tax bases (dividend, capital gains, *etc.*). These disadvantages of high marginal tax rates explain why many OECD have substantially reduced their top rates of income tax in recent years.

103. Most countries, notably in the European Union, have implemented tax incentives for early retirement as a way to ease excess supply conditions on labour market. Table A.8 shows there are large differences in these rates between countries. Some general patterns emerge. Tax rates on continued work are generally highest in continental European countries (Denmark, Portugal and Switzerland are notable exceptions) and lowest in the Anglo-Saxon countries (Australia, Canada, Ireland, New Zealand, United Kingdom and the United States) and Korea. Japan occupies an “intermediate” position. These differences generally tend to be even more pronounced when account is taken of the possibility that workers retire early through unlimited unemployment benefits, disability of special early retirement programmes: in some continental European countries implicit tax rates on continued work quickly rise to well above 50 per cent.

104. The experience in some examined countries (Sweden, Norway) suggests that it is important to match the build-up of benefit entitlements, notably (credible) pension rights, with the payment of contributions into the social security system, according to the insurance principle. To the extent workers perceive social security contributions as an investment in pension annuities, the adverse impact of marginal wedges on labour market behaviour may be reduced. Indeed, as seems to be suggested by the Swedish and Norwegian experiences, making the “right” to benefit from the social transfer system (aside from minimum income support and in-kind transfers which are universally available) conditional on work history encourages labour market participation, including of secondary earners. This experience underpins the recommendation to governments of transition economies (in particular Poland) to ensure that public pension entitlements remain credible; otherwise the adverse impact of wide tax wedges for labour participation risks becoming stronger.

80 . Finland also applies a strict dual income tax system.

Table A.8. **Implicit tax rates on continued work embedded in benefits for elderly, 1995**

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

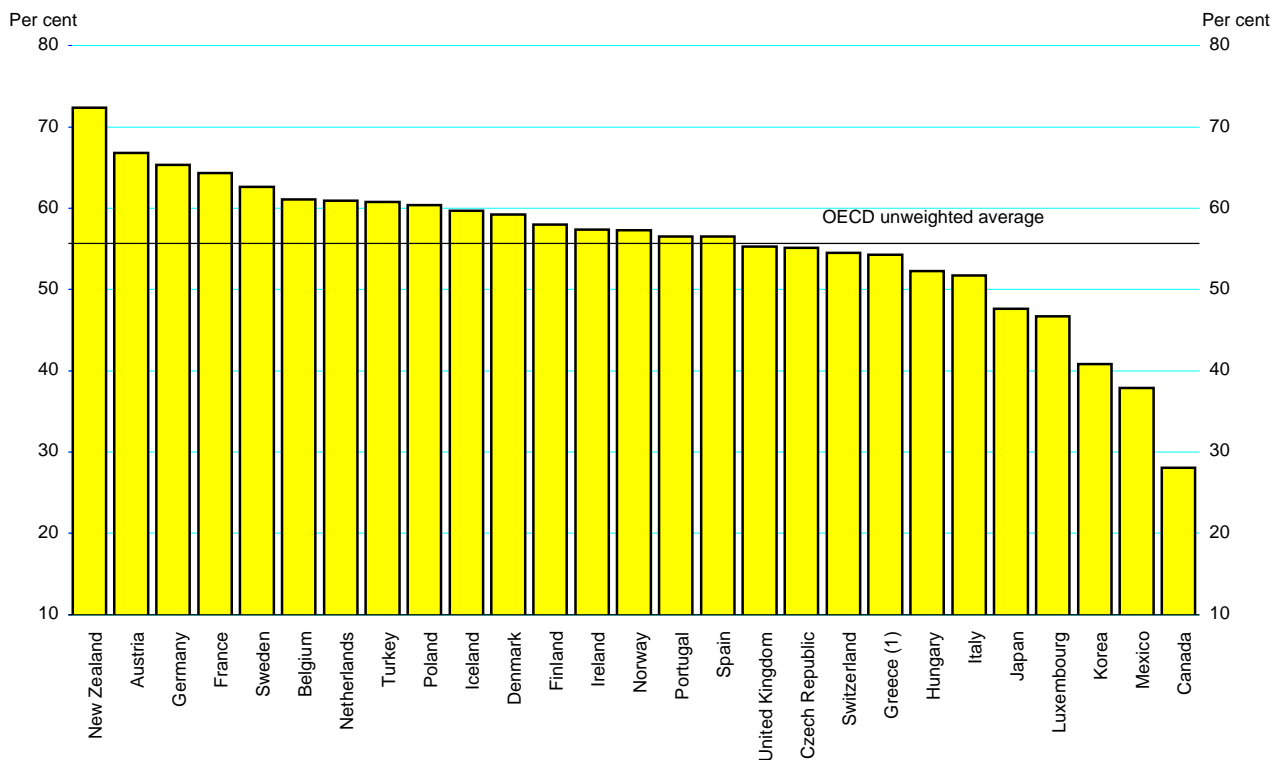
Source: Blondal and Scarpetta (1997).

4. The impact of taxation on product markets

105. Indirect taxes have several favourable features, most prominently their relative neutrality from the point of view of savings and investment decisions and that they are comparatively easy to administer. Moreover, value-added tax (VAT), by far the most important indirect tax in most countries (constituting over half the indirect tax take, see Figure A.3), has “self-policing” properties since many payers of the tax have an interest to register in order to be reimbursed for their own VAT payments. Nevertheless, indirect taxation may also produce non-neutralities in product markets. For example, turnover taxes, which have been abolished in Europe several decades ago, were faulted for applying discriminatory rates to goods and services that depend on various productive stages, due to so-called “cascading” of taxation. This led to very inefficient organisation of work by discouraging outsourcing. The VAT served to eliminate cascading by exempting the purchase of intermediate goods and services from the tax base. Moreover, by introducing the destination principle (by taxing imports but exempting exports) VAT and sales taxes avoid distortions in consumer choice between imported and home-produced goods and services that would otherwise stem from international differences in rate rates. On the other hand, indirect tax systems that mostly rely on sales taxes -- which are generally levied only on final consumption of tangible goods -- insert a wedge between the relative prices of goods and services in favour of the latter. The indirect tax system of the United States continues to rely on sales taxes that are levied at the state and local level, while the federal government

collects excises and tariffs.⁸¹ Meanwhile in Canada, additional efficiency in tax collection and lower compliance costs have been achieved by harmonising the retail sales taxes in some provinces with the federal VAT (*i.e.* a single VAT is collected with revenue distributed to both the provincial and federal governments).

Figure A.3. Share of value added tax in total indirect taxes in OECD countries
1998



1. 1997.

Source: OECD, Revenue Statistics, 1965-1999.

106. The country reviews highlight two other possible mechanisms through which indirect taxes produce distortions:

- Exemptions or taxation at lower or zero rates of certain goods and services, which are a widespread feature of indirect taxation systems, may distort choices among various consumption or production alternatives. However, it may be successful in relieving regressive effects of indirect taxation on the income distribution.
- Product-specific sales taxes, or excise taxes, may aim to enhance economic efficiency by internalising harmful external (*e.g.* environmental) or hazardous health effects and discouraging economic activities and consumption that carry such external effects. Others raise revenues by taxing goods that carry a low price elasticity heavily, in accordance with

81 . With the introduction of a General Sales Tax as of July 2000 in Australia, the United States is the only remaining OECD country not to apply a VAT.

Ramsey's rule.⁸² However, in many instances the tax structure is modified to protect certain industries so that neither of these objectives is achieved.

4.1 *The impact on consumption and production patterns*

107. While the majority of OECD countries have achieved efficiency gains by introducing VAT, rate differentiation and exemptions produce non-neutralities. Low indirect tax rates and exemptions are often motivated by concerns over indirect taxation hitting disadvantaged groups heavily or, in the case of exemptions from registration of small companies, to facilitate compliance. However, rate differentiation may also be motivated by industrial policy objectives, although this is not very effective as VAT is neutral between imports and domestic production (except in, for example, the international tourism industry), or may have simply emerged from ad hoc revenue-raising measures. While most countries have these features in common to some extent, several of the reviewed countries stand out. Notably in Korea many fees, charges and contributions are levied in a discretionary and non-transparent manner and excise taxes are complex. Moreover, major loopholes erode the VAT base and undermine neutrality, including the special regime for small businesses, the zero VAT for "indirect exporters" and for inputs into agriculture/fisheries as well as the exemption of agricultural products. A streamlining of the indirect tax structure in Korea should clearly receive priority.

108. A synthetic indicator of the neutrality of VAT rate structures across goods and services is the ratio between the average effective and the statutory standard rate of VAT (Figure 5). If this ratio is close to one, it points to a relatively neutral and efficient VAT system in the sense that rate differentiation and exemptions are not very pervasive and that base erosion is moderate. Conversely, if the ratio is closer to zero, the VAT system may be poorly performing in either or both ways. While this indicator should be interpreted with caution, it broadly confirms the above findings drawn from the country surveys.

- New Zealand has an almost perfectly neutral VAT system, owing to the single uniform tax rate of 12.5 per cent and the virtual absence of exemptions.⁸³ This has resulted in the highest effective tax rate relative to the standard statutory rate in the OECD area.
- At the other extreme, Mexico stands out by a very low ratio of effective over statutory standard VAT rates. This reflects the many loopholes and incentives for evasion associated with widespread exemptions and zero-rating of certain goods and services, while there is evidence of transactions being falsely attributed to zero rated tax bases. A serious non-neutrality stems from a high threshold below which sales are tax exempt -- the VAT-exempt threshold in Mexico is very high by OECD standards, broadly matched only by Japan (Table A.9.) -- which favours the set-up of micro-businesses which are particularly difficult to monitor.
- Most other countries have ratios of effective over statutory standard rates that are within some reasonable margin around the OECD average, but clearly below 100 per cent. With compliance being mostly satisfactory, this suggests that VAT systems are non-neutral, for a variety of reasons. As noted, in Japan the VAT (registration) threshold well exceeds those of other OECD countries, hence small business units (including farms) pay less VAT (since

82. Ramsey's rule states that the excess burden is minimised if the product of tax rates and price elasticities is equalised across all goods.

83. The uniform 10 per cent rate of the new General Sales Tax (GST) that has been implemented in Australia represents a move in the same direction, although the exemption of basic food diminishes the simplification gains and leaves scope for tax avoidance schemes.

their intermediate consumption and investment are not exempted). Korea maintains a “special regime” for small businesses largely to the same effect and, as indicated, extends zero-rating of exports to “indirect exporters” (industries that provide inputs into exporting industries). In the European Union and Norway, where standard VAT rates are around four times higher than in Japan (which has a standard rate of only 5 per cent), the proliferation of reduced rates and exemptions also acts to lower VAT neutrality.

Table A.9. Turnover thresholds for VAT exemption

	Domestic currency	1998 US PPP
Austria	AUD 300 000	22 023
Belgium	BF 225 000 excluding VAT	5 954
Canada	CAD 30 000	25 659
Denmark	DKK 20 000	2 332
Finland	FIM 50 000	8 161
France	FRF 100 000 excluding VAT	14 917
Germany	DEM 32 500	16 202
Greece	GRD 1 800 000	7 451
Iceland	ISK 200 600	2 404
Ireland	IEP 40 000	57 552
Italy	ITL 5 000 000	2 987
Japan	JPY 30 000 000	182 935
Korea	KRW 24 000 000	35 886
Luxembourg	LUF 400 000	9 633
Mexico	MXP 1 000 000	198 037
Netherlands	Nex tax payable up to NLG 4 150	2 026
New Zealand	NZD 30 000	20 250
Norway	NOK 30 000	3 265
Portugal	PTE 3 000 000	15 986
Spain	Individual retailers	..
Sweden	..	..
Switzerland	CHF 75 000	37 707
Turkey	Varies with activity	..
United Kingdom	GBP 50 000	75 757

Note: These thresholds are for "common cases". Various deviations and special cases exist in several countries, cf. OECD, Consumption Tax Trends, 1999.

109. Several countries extensively use the VAT system as a vehicle for income redistribution, most prominently Mexico (see above) and the transition economies, Poland and the Czech Republic, at the expense of serious distortions in the resource allocation and dead-weight losses. In Poland, a harmonisation of the VAT with EU rules to prepare for accession started to come into effect in 2000. However, bringing the agricultural sector -- which accounts for 27 per cent of employment but only 4 per cent of GDP -- into the VAT net to comply with EU accession requirements, remains on the agenda. In the Czech Republic a reduced VAT rate is applied to an exceptionally wide range of “socially sensitive” items, including heating

and telecommunications, which is also in violation of EU regulations.⁸⁴ In addition Korea exempts both inputs and sales of agriculture and fisheries while Norway exempts long-distance public transportation to favour remote (mostly rural) areas.⁸⁵ There is evidence to suggest that countries that extensively use VAT rate differentiation for income redistribution purposes are prone to large dead-weight losses, as consumption patterns are similar across a wide range of income levels. Under such circumstances efficiency gains could be reaped by cutting down zero or low rating to a few basic staples, while moving towards targeted aid through direct cash payments, in-kind benefits and vouchers.

4.2 *The impact on cross-border and digital consumption flows*

110. VAT and sales taxes give rise to distortions where tax rates are not uniform across a country. Sales taxes in the United States are levied by individual states and are usually collected by requiring retailers in the state to collect the sales tax from their customers at the time of purchase. However, if a mail-order company does not have a business presence in the same state as the consumer, this approach does not work. Theoretically, in some states, the consumer is liable to pay the sales tax but this is virtually impossible to enforce and mail-order sales in the United States are seen as effectively free of sales tax, and hence the tax system favours this mode of retail trade over other modes.

111. This problem does not normally arise in sales between countries because of the basic principle that exported goods, having been relieved of VAT on dispatch, are then subject to VAT when they are imported into the country of receipt. This function is often, though by no means exclusively, frontier-based. Indeed, in 1993, the EU, having abolished internal border controls for fiscal purposes, had to develop a system whereby this principle could continue to apply but without frontier-based formalities. It has done so through the adoption of a system whereby intra-EU sales between businesses registered for VAT continue to be zero-rated on 'dispatch' with the receipt business accounting for VAT on 'acquisition' (under the rules applicable in the recipient Member state). This system is corroborated through an EU-wide VAT registration numbers verification system, and enhanced co-operation between the tax administrations. The EU system also has some special regimes which apply to certain intra-EU transactions (for example, to "distance selling", *i.e.* mail order sales to private consumers). Such special regimes introduce a degree of additional complexity, and can create additional compliance burdens for the businesses concerned. In some instances, therefore, the three-part regime in the EU is complex and generates additional compliance costs for business. In addition, there are concerns about the possibilities for fraud because sales to foreign businesses are crossing frontiers without having tax paid. This undermines the self-enforcing mechanism of VAT. However, closer examination of this point shows that this risk is not as great as might be thought. Businesses that are registered for VAT have no incentive to avoid declaration of their 'imports', because any VAT that they pay will be refunded. Indeed, they have an incentive to declare, because they need to put the cost of the inputs into their accounts so that their profits (and hence their corporation tax liability) are not overstated. This means that the possibility of fraud only arises from the diversion of goods intended for VAT-registered businesses to private consumers or businesses that are not registered for VAT. This could happen either as a result of fraud on the part of the exporter or on the part of the purchaser (who could pretend to be VAT registered). Clearly, the possibilities of such fraud depend very much on the nature of the product being traded. It is more likely to fall into the hands of consumers the nearer it is to being a final product.

84. Just adjusting the VAT rate on heating would generate enough extra revenue to allow the standard rate to be reduced for 22 to 19 per cent. The situation in Hungary is largely similar in this respect.

85. The airline industry has moreover the possibility to avoid (non-reimbursable) VAT on fuels by combining domestic with international flights.

112. Overall, therefore, while the current EU system has appreciable drawbacks, so do the possible alternatives and this explains the lack of progress in moving towards a final system. The drawbacks of alternative systems would be reduced if VAT rates were harmonised between countries, but there are considerable political objections to this approach. With progress towards harmonisation of VAT rates being slow, distortions arising from “cross-border shopping” will thus also be a growing issue. Interestingly, countries that participate in the single market via the European Economic Area agreement seem to be already affected. For example, Norway is reported in the review to be prone to significant cross border shopping for food in neighbouring Sweden, which, like other EU member countries, applies reduced VAT rates for food products.

113. Meanwhile electronic commerce is growing rapidly and increasing the opportunities for, and the volume of, international trade. This different way of doing business poses challenges to traditional methods of tax collection both in terms of ensuring fair competition between electronic traders and more traditional businesses, and in terms of effective tax administration.⁸⁶ In considering commodity taxation, it is important to distinguish between commodities that are ordered electronically but delivered in a traditional way (whether to business or private consumers) and commodities that are delivered electronically (particularly to private consumers). The first category poses no substantive additional commodity tax issues (save for those posed by mail order sales to private consumers), even though there will be an increase in the quantity of goods crossing frontiers, and traditional customs based procedures for tax collection will need to be further streamlined to ensure that they can cope with this increased volume. It is the second category, products that are delivered electronically, that poses a real challenge. How can the delivery of such products be detected, and so be taxed?

114. Given the broad consensus internationally that such electronic deliveries should not be regarded as a supply of goods, they do not fall liable to customs duties and the only tax issue is the collection of VAT (or its equivalent) in the country of consumption. In a VAT system, the electronic delivery of commodities to VAT-registered businesses does not cause a problem. As with the current intra-EU system of transactions between VAT-registered businesses, the purchasing firm has no incentive not to declare the purchase.⁸⁷ Thus, the problems arise in connection with supplies to consumers and businesses that are not registered for VAT, a comparatively small part of the market. Under a traditional VAT model, the supplier should fulfil the VAT obligations in relation to such sales (*i.e.* to register with the tax authority, and to remit the VAT charged to customers). Such an approach becomes less tenable in the electronic environment when, for example, suppliers are non-resident (*i.e.* outside the jurisdiction of the consumer) and there is little or no incentive for those suppliers to undertake the VAT-related functions. Effective tax collection on these transactions (to ensure neutrality of treatment with domestic suppliers, and to safeguard the revenue at stake) begs some difficult questions, for example, about identification of suppliers, about the obligations that might bear upon them, and about the verification of the jurisdiction of consumers (since this is crucial to their being charged the correct tax rate).⁸⁸

86. OECD countries are working, in partnership with the international business community and with non-member economies, to implement the core principles set out in the Taxation Framework Conditions (OECD, 2001*b*). These point, in short, to the application of existing taxation principles and norms to e-commerce, albeit with some clarification and development of those norms in selected areas. For consumption taxes, they point towards the goal of applying the principle of taxation in the place of consumption.

87. The emerging conclusion from the OECD’s current work on this issue is that a self-assessment (or so-called ‘reverse charge’) mechanism can be applied to the cross-border consumption of such services.

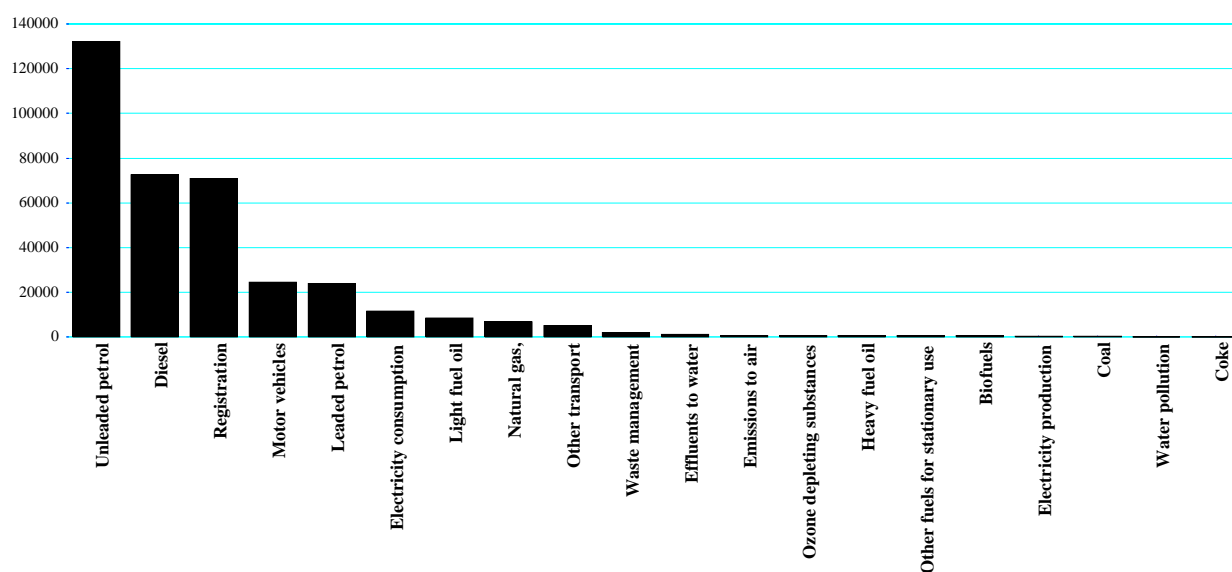
88. In the medium term, technology-facilitated systems offer the potential to support the tax calculation and remittal functions. In the interim, where countries consider the distortion of competition or revenue loss sufficient to merit action, a registration-based approach to collection is probably the only practical

4.3 The impact on economic behaviour in the pursuit of environmental policy goals

115. All OECD member countries levy excise taxes or user charges on specific products and public services, raising revenues in the range of 30 to 70 per cent of the total indirect tax take. Excises and charges were originally mostly designed to raise revenues, which in many cases were either formally or informally earmarked for purposes such as maintenance of public infrastructure or subsidising welfare services. However, since a substantial share of the excises and charges is de facto levied on energy consumption, they have come to be seen as a means of internalising harmful external effects on the environment and to discourage economic activities that are at the root of these harmful effects. Since the early 1990s, several countries have introduced so-called green tax reforms, which have led to a restructuring of existing taxes and the introduction of new environmental taxes.

116. The GDP share of environmentally related taxes, nevertheless, still represent a rather small share of total tax revenues — 7 per cent on average in the OECD in 1997 (see Table A.10). Motor fuel and motor vehicle taxes, which, as noted, pre-date the wave of green tax reform and have been introduced for fiscal rather than environmental reasons, made for the bulk of these revenues (Figure A.4). Other taxes on energy represented about 7 per cent of total environmentally related taxes on average in the OECD, while more directly environmentally based taxes represented only about 1 per cent of the total.⁸⁹ These averages obviously conceal differences across countries, with some countries already making a rather large use of environmental taxes. Mineral oil in particular is heavily taxed in the EU although some countries have cut

Figure A.4. Revenues from environmental taxes by main environmental tax-bases - selected OECD countries ¹
million \$, 1995



Notes: Revenues from fees and charges are again not included. Registration refers to registration or use of motor vehicles, recurrent. Motor vehicles refers to motor vehicles, one-off import or sales taxes. Other transport refers to other energy products for transport purposes. Effluents to water & Emissions to air are measured or estimated. Water pollution refers to certain non-point sources of water pollution.

1. Selected OECD countries comprises Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Hungary, Iceland, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.
Source: OECD Database on environmentally related taxes.

alternative. A highly simplified registration system would go some way to minimising related compliance burdens, and securing voluntary compliance on the part of non-resident suppliers.

89. However, these numbers may understate the actual importance of environmental taxes to the extent these have been instrumental in removing their own base (e.g. taxes on nickel-cadmium batteries in Denmark).

Table A.10. Revenues from environmental taxes

	Share of environmentally related tax revenue in total tax revenue, per cent		Share of environmentally related tax revenue in GDP, per cent	
	1994	1998	1994	1998
Austria	4.5	5.1	1.9	2.3
Belgium	4.3	5.0	2.2	2.3
Canada	4.9	5.5	1.8	2.0
Czech republic	7.4	7.4	3.2	2.8
Denmark	8.0	10.1	4.1	5.0
Finland	5.8	7.3	2.7	3.4
France	5.5	4.7	2.3	2.1
Germany	6.4	5.9	2.5	2.2
Greece ¹	12.7	11.7	4.0	4.0
Hungary	6.6	8.2	2.3	3.2
Iceland ²	9.0	9.5	2.8	2.9
Ireland	9.1	9.4	3.3	3.0
Italy ¹	8.0	7.3	3.3	3.3
Japan	6.1	6.1	1.6	1.7
Korea	10.2	13.5	2.1	2.9
Luxembourg	8.0	6.9	3.6	2.8
Mexico ²	10.8	7.2	1.8	1.2
Netherlands	7.7	8.7	3.5	3.6
New Zealand	4.5	5.1	1.7	1.8
Norway	8.8	8.2	3.6	3.6
Poland	4.1	4.4	1.8	1.7
Portugal	11.6	10.9	3.8	3.7
Spain	6.6	6.5	2.3	2.2
Sweden	6.0	5.9	2.9	3.1
Switzerland	6.1	5.9	2.0	2.1
Turkey	6.8	10.6	1.5	3.0
United Kingdom	8.4	8.3	2.9	3.1
United States	3.8	3.2	1.1	0.9
Average ³	7.0	7.4	2.6	2.8
Standard deviation	2.2	2.5	0.8	0.9
Coefficient of variation	0.3	0.3	0.3	0.3

1. 1997 instead of 1998

2. 1995 instead of 1998

3. Simple average excluding Iceland and Mexico.

Source: OECD Data Base on environmentally related taxes; *OECD Revenue Statistics*.

fuel taxes recently in view of inflation and competitiveness risks and in response to the oil price hike. Within the European Union, Austria, Belgium and Spain are lagging the EU average. Among the transition economies, Poland and the Czech Republic portray low environmental taxes even if environmental pressures are strong. This is also true of Japan and Mexico.

117. There are several reasons why environmental taxes and other economic instruments such as trading systems may be preferred over “command and control” types of regulation.⁹⁰ First, by letting individual market agents decide upon how much and in which way to reduce pollution, they allow the agents with the lowest abatement costs to contribute the most to the total reduction in pollution, thereby minimising the overall cost of the policy (*i.e.* securing cost-effectiveness). This property is usually referred to as “static efficiency”. Second, in contrast with “command and control” regulation, which cannot be continuously adapted, economic instruments promote “dynamic efficiency” by providing permanent incentives for reducing emissions through technological improvement. Third, taxes and tradable permits (when sold or auctioned) provide revenues, which can be used to increase the overall efficiency, for example by reducing other taxes. Finally, as economic instruments work through the price system, they allow an effective integration between economic and environmental policies, (and avoid environmental policies simply curing the ills generated by sectoral policies).

118. Unfortunately, a key finding in the country surveys is that, overall, environmental tax rate structures are not only sub-optimal from a point of view of inducing cost-effectiveness but in some cases even perverse. In particular:

- Industrial use of energy is typically taxed at much lower rates than households’ energy consumption, even if the potential for pollution abatement in industry may be substantial. For example, in most countries unleaded premium petrol is taxed at higher rates than diesel fuel, notably in a host of EU countries, Japan, Korea, New Zealand and the transition economies, despite the heavy environmental burden associated with diesel combustion. Poland, moreover, has so far not implemented significant differentiation of excise taxes on unleaded and leaded petrol. Similarly, industrial use of electricity and gas is usually taxed at much lower rates than household use.⁹¹
- Within industry, in most countries a preferential tax treatment is granted to heavy polluters (agriculture, energy-intensive manufacturing), while rate structures poorly reflect the pollution content of energy use or conversion. This is often done to protect the international competitiveness of the industries concerned, which is especially costly in the case of local pollution problems where shifting the most polluting activities abroad may in fact be part of a cost-efficient solution.⁹² At the same time, while cross-border pollution calls for international co-ordination of environment related taxes, this has largely failed to date, with most green taxes being implemented unilaterally. A particular problem is associated with the coal sector in transition countries, where fees have been increased dramatically compared to the pre-transition regimes, but are still insufficient to induce investment in pollution abatement or alternative energy sources on a large scale.

90. OECD (1999e).

91. See O’Brien and Vourc’h (2001).

92. There are alternative methods of protecting industrial competitiveness, while providing some incentive to reduce pollution. It would be possible to apply the tax to imports of polluting products. It would also be possible to levy the tax in proportion to the consumption or emissions that are to be discouraged and to refund the revenues in proportion to sales or production.

119. One consideration when assessing the usefulness of environmental taxes is that these may be used to cut distorting taxes in other areas. However, such opportunities may be smaller than hoped for. Indeed, a shift in the tax mix towards environmental taxes away from labour taxation is not a sufficient condition for removing the “tax penalty” on employment. An additional important determinant is the tax incidence: if the burden of environmental taxes finally falls upon households through higher prices of consumer goods and services, the reduction in the labour tax wedge will be less effective and the employment effect reduced. Since labour is a relatively immobile factor of production, and capital relatively mobile, especially in open economies, this ultimate tax incidence on labour is likely to occur.⁹³

93. See OCDE (2001*c*).

BIBLIOGRAPHY

- ADEMA, W. (1999), "Net social expenditure", *Labour Market and Social Policy Occasional Papers*, No. 39, OECD, Paris.
- ADEMA, W. (2000), "Revisiting real social spending across countries: a brief note", *OECD Economic Studies*, No. 30, Paris.
- ARTHUR ANDERSEN (1999), *Taxation and Saving in New Zealand*, Report prepared for the Superannuation Task-force by Peter Goss and Alex Duncan, Wellington.
- ASSOULINE, M., M. FODMA, L. LEMIALE and P. ZAGAMÉ (1997), "L'impact macro-économique d'une baisse des cotisations sociales employeurs sur les bas salaires", *Travail et emploi*, Vol. 73.
- ATKINSON, M.E., J. CREEDY and D.M. KNOX (1999), "Some implications of changing the tax basis for pension funds", *Fiscal Studies*, Vol. 20, No. 2.
- ATKINSON, P. and P. VAN DEN NOORD (2001), "Managing public expenditure: some emerging policy issues and a framework for analysis", *OECD Economics Department Working Papers*, No. 285, Paris.
- AUDRIC, S., P. GIVORD and C. PROST (2000), "Estimation de l'impact sur l'emploi non qualifié des mesures de baisse de charges", *Revue économique*, No. 51 (3).
- AUERBACH, A.J. (1997), "The future of fundamental tax reform", *American Economic Review*, May.
- BANKS, J. and C. EMMERSON (2000), "Public and private pension spending: principles, practice and the need for reform", *Fiscal Studies*, No 21 (1).
- BERNHEIM, B.D. (1999), "Taxation and saving", *NBER Working Paper*, No. 7061.
- BIRD, R.M. (1986), *Federal Finance in Comparative Perspective*, Canadian Tax Foundation, Toronto.
- BLÖNDAL, S. and S. SCARPETTA (1997), "Early retirement in OECD countries: the role of social security systems", *OECD Economic Studies*, No. 29, 1997:11.
- BLUNDELL, R. (2000), "Work incentives and 'in-work' benefit reforms: a review" *Oxford Review of Economic Policy*, No. 16 (1).
- BOSKIN, M.J. (Ed.) (1996), *Frontiers of Tax Reform*, Hoover Institution Press.
- BRADBURY, B. (1999), "Tax theory and targeting: a survey", *SPRC Discussion Paper*, No. 100.

- BRADFORD, D.F. (1995), "Consumption Taxes: Some Fundamental Transition Issues", *NBER Working Paper*, No. 5290.
- CONGRESSIONAL BUDGET OFFICE (CBO) (1997), *Comparing Income and Consumption Tax Bases*, Congressional Budget Office, July.
- CNOSSEN, S. (1995), "Towards a new tax covenant", *De Economist*, No. 143 (3).
- CNOSSEN, S. (1999), "Taxing capital income in the Nordic countries: a model for the European Union?", *Finanzarchiv*, No. 56.
- CORONADO, J.L., D. FULLERTON and T. GLASS (2000), "The progressivity of social security", *NBER Working Paper*, No. 7520.
- DALSGAARD, T. and M. KAWAGOE (2000), "The tax system in Japan: a need for comprehensive reform", *OECD Economics Department Working Papers*, No. 231, Paris.
- DAVERI, F. AND G. TABELLINI (2000), "Unemployment and taxes", *Economic Policy*, April.
- DAVIES, J.B., J. ZENG and J. ZHANG (2000), "Consumption vs. income taxes when private human capital investments are imperfectly observable", *Journal of Public Economics*, No. 77.
- DILNOT, A. (1992), "Taxation and private pensions: costs and consequences", in OECD, *Private Pensions and Public Policy*, Social Policy Studies No. 9, Paris.
- EISSA, N. and J. LIEBMAN (1995), "Labor supply response to the earned income tax credit", *NBER Working Paper*, No. 5158.
- ELMESKOV, J., J. MARTIN AND S. SCARPETTA (1998), "Key lessons for labour market reforms: Evidence from OECD countries' experience", *Swedish Economic Policy Review*, No. 5.
- ENGEN, E.M. and W.G. GALE (1996), "The effects of fundamental tax reform on savings", in Aaron, H.J. and W.G. Gale, *Economic Effects of Fundamental Tax Reform*, Brookings.
- EUZÉBY, A. (1988), "Social security and part-time employment", *International Labour Review*, No. 127 (5).
- FELDSTEIN, M. (1995), "The effect of a consumption tax on the rate of interest", *NBER Working Paper*, No. 5397.
- FITOUSSI, J.P. (2000), "Payroll tax reductions for the low paid", *OECD Economic Studies*, No. 31, Paris.
- GENTRY, W.M. and R.G. HUBBARD (1997), "Distributional implications of introducing a broad-based consumption tax", in Poterba, J.B. (ed.), *Tax policy and the economy*, NBER and MIT press.
- GENTRY, W.M. and R.G. HUBBARD (1998), "Fundamental tax Reform and Corporate Financial Policy", *NBER Working Paper*, No. 6433.
- GOOLSBEE, A. (1997), "What happens when you tax the rich? Evidence from executive compensation", *NBER Working Paper*, No. 6333.

- GOOLSBEE, A. (2000), "Taxes, high-income executives, and the perils of revenue estimation in the new economy", *NBER Working Paper*, No. 7626.
- GRUBERT, H. (1998), "Taxes and the division of foreign operating income among royalties, interest, dividends and retained earnings", *Journal of Public Economics*, No. 68.
- GRUBERT, H. and J. MUTTI (1991), "Taxes, tariffs and transfer pricing in multinational corporate decision making enterprises", *Review of Economics and Statistics* 73, No. 2.
- GUIMBERT, S. and J-C. VALLAT (2000), *Quel avantage fiscal pour les stock options? Une perspective internationale*, Ministère des Finances, Paris, mimeo.
- HALL, B.J. and J.B. LIEBMAN (2000), "The taxation of executive compensation", *NBER Working Paper*, No. 7596.
- HINES, J.R. (1996), "Fundamental tax reform in an international setting", in Aaron, H.J. and W.G. Gale, *Economic Effects of Fundamental Tax Reform*, Brookings.
- HINES, J.R. and R.G. HUBBARD (1990), "Coming home to America: dividend repatriations by US multinationals", in Razin, A. and J. Slemrod (eds.), *Taxation in the global economy*, Chicago: University of Chicago Press.
- HINES, J.R. and E. RICE (1994), "Fiscal paradise: foreign tax havens and American business", *Quarterly Journal of Economics* 109, No. 1.
- HOMBURG, S. (2000), "Compulsory savings in the welfare state", *Journal of Public Economics*, No. 77.
- HOTZ, V.J. and J.K. SCHOLZ (2000), "Not perfect, but still pretty good: the EITC and other policies to support the US low-wage labour market", *OECD Economic Studies*, No. 31, Paris.
- JOUMARD, I. (2001), "Tax systems in European Union countries", *OECD Economics Department Working Papers* (forthcoming).
- KING, M.A. and D. FULLERTON (1984), "The taxation of income from capital: a comparative study of the United States, Sweden, and West Germany", University of Chicago Press.
- KOMMISSION ZUR REFORM DER UNTERNEHMENSBESTEUERUNG (1999), *Brühler Empfehlungen zur Reform der Unternehmensbesteuerung*, Bericht der Kommission zur Reform der Unternehmensbesteuerung, Bundesministerium der Finanzen, Bonn.
- KOSKELA, E. and R. SCHÖB (2000), "Optimal factor income taxation in the presence of unemployment, CESifo Working Paper Series, No. 279.
- KRAMARZ, F. and T. PHILIPPON (1999), "The impact of differential payroll tax subsidies on minimum wage employment".
- LIEBMAN, J.B. (1998), "The impact of the earned income tax credit on incentives and income distribution", *Tax Policy and the economy*, NBER.
- L'HORTY, Y. (2000), "Vertus et limites des allègements de charges sur les bas salaires", CSERC.
- LODIN, S.O. (1996), "The Swedish tax system and inverted imputation", *European Taxation*, August.

- LUPO, A. (2000), "Reliefs from economic double taxation on EU dividends: impact of the Baars and Verkooijen cases, *European Taxation*, July.
- MEYER, B.D. and D.T. ROSENBAUM (2000), "Making single mothers work: recent tax and welfare policy and its effects", *NBER Working Paper*, No. 7491.
- MILES, D. and A. EBEN (2000), "The reform of pension systems: winners and losers across generations in the United Kingdom and Germany", *Economica*, No. 67.
- NIELSEN, S.B. and P.B. SØRENSEN (1998), "On the optimality of the Nordic system of dual income taxation", *Journal of Public Economics*, No. 63.
- OATES, W.E. (1972), *Fiscal Federalism*, Harcourt Brace Jovanovich, New York.
- O'BRIEN, P. and A. VOUREC'H, "Encouraging environmentally sustainable growth: experience in OECD countries", *OECD Economics Department Working Papers*, No. 293, Paris.
- OCHEL, W. (2000), "Steuergutschriften und Transfers an Arbeitnehmer im Niedriglohnbereich - der angelsächsische Weg zu mehr Beschäftigung und weniger Armut", *Ifo Schnelldienst* 53 (21).
- OECD (1991), *Taxing profits in a global economy*, Paris.
- OECD (1994), *Taxation and household saving*, Paris.
- OECD (1998), *Report on harmful tax competition: an emerging global issue*, Paris.
- OECD (1997a), *Implementing the OECD jobs strategy: Member countries' experience*, Paris.
- OECD (1997b), *Implementing the OECD jobs strategy: making work pay*, Paris.
- OECD (1999a), *Taxing wages, 1998-1999*, Paris.
- OECD (1999b), *Benefit systems and work incentives*, 1999 edition, Paris.
- OECD (1999c), *Implementing the OECD jobs strategy: assessing performance and policy*, Paris.
- OECD (1999d), *Taxation of cross-border portfolio investment: mutual funds and possible tax distortions*, Paris.
- OECD (1999e), "Economic instruments for pollution control and natural resource management in OECD countries: a survey", (<http://www.oecd.org/env/docs/epocgeei9835.pdf>).
- OECD (1999f), "Taxing powers of state and local government", *OECD Tax Policy Studies*, No. 1, Paris.
- OECD (2000a), "Tax burdens; alternative measures", *OECD Tax Policy Studies*, No.2, Paris.
- OECD (2000b), *Reforms for an ageing society*, Paris.
- OECD (2000c), "E-commerce: impacts and policy challenges", Chapter VI, *OECD Economic Outlook* 67, Paris.

- OECD (2001a), *Corporate tax incentives for foreign direct investment*, OECD Tax Policy Studies, No. 3, Paris.
- OECD (2001b), *Taxation and electronic commerce – Implementing the Ottawa taxation framework conditions: a progress report by the Committee on Fiscal Affairs*, Paris.
- OECD (2001c), “Environmentally-related taxation in OECD countries” (forthcoming).
- PAPKE, L.E. (1993), “What do we know about enterprise zones?”, *NBER Working Paper*, No. 4251.
- PEARSON, M. and S. SCARPETTA (2000), “An overview: what do we know about policies to make work pay?”, *OECD Economic Studies*, No. 31, Paris.
- PHELPS, E.S. (2000), “The importance of inclusion and the power of job subsidies to increase it”, *OECD Economic Studies*, No. 31, Paris.
- POTERBA, J.M. and L.H. SUMMERS (1984), “The Economic Effects of Dividend Taxation”, *NBER Working Paper*, No. 1353.
- SAEZ, E. (1999), “Do taxpayers bunch at Kink points?”, *NBER Working Paper*, No. 7366.
- SCARPETTA, S. (1996), “Assessing the role of labour market policies and institutional settings on unemployment: a cross-country study”, *OECD Economic Studies*, No. 26, Paris.
- SINN, H.W. (1999), “Pension reform and demographic crisis: why a funded system is needed and why it is not needed”, *CESifo Working Paper*, No. 195.
- SØRENSEN, P.B. (1995), “Some old and new issues in the theory of corporate income taxation”, *Finanzarchiv*, No. 51 (4).
- SØRENSEN, P.B. (ed.) (1998), *Tax policy in the Nordic countries*, Macmillan.
- TYRVÄINEN, T. (1995), “Wage determination in the long run, real wage resistance and unemployment: multivariate analysis of cointegrating relations in ten OECD economies”, *Bank of Finland Discussion Papers*, December.
- UNCTAD (1993), “What do we know about enterprise zones?”, *NBER Working Paper*, No. 4251.
- UNCTAD (1996), *Incentives and foreign direct investment*.
- UNCTAD (1998), *World investment report 1998: trends and determinants*.
- WASYLENKO, M (1997), “Taxation and economic development: the state of the economic literature”, *New England Economic Review*, March/April.

ECONOMICS DEPARTMENT

WORKING PAPERS

302. *Reforming the tax system in Portugal*
(July 2001) Chiara Bronchi and José Gomes-Santos
301. *Tax Systems in European Union Countries*
(June 2001) Isabelle Joumard
300. *Encouraging Environmentally Sustainable Growth in Belgium*
(June 2001) Paul O'Brien, David Carey, Jens Høj, Andreas Woergoetter
299. *Encouraging Environmentally Sustainable Growth in Poland*
(June 2001) Grzegorz Peszko, Patrick Lenain
298. *Tracking the Euro*
(June 2001) Vincent Koen, Laurence Boone, Alain de Serres, Nicola Fuchs
297. *Firm Dynamics and Productivity Growth: A Review of Micro-evidence from OECD Countries*
(June 2001) Sanghoon Ahn
296. *How should Norway Respond to Ageing?*
(May 2001) Pablo Antolín and Wim Suyker
295. *How will Ageing Affect Finland?*
(May 2001) Pablo Antolín, Howard Oxley and Wim Suyker
294. *Sectoral Regulatory Reforms in Italy: Framework and Implications*
(May 2001) Alessandro Goglio
293. *Encouraging Environmentally Sustainable Growth: Experience in OECD Countries*
(May 2001) Paul O'Brien and Ann Vourc'h
292. *Increasing Simplicity, Neutrality and Sustainability: A Basis for Tax Reform in Iceland*
(May 2001) Richard Herd and Thorsteinn Thorgeirsson
291. *Options for Reforming the Tax System in Greece*
(April 2001) Chiara Bronchi
290. *Encouraging Environmentally Sustainable Growth in Canada*
(March 2001) Ann Vourc'h
289. *Encouraging Environmentally Sustainable Growth in Sweden*
(March 2001) Deborah Roseveare
288. *Public Spending in Mexico: How to Enhance its Effectiveness*
(March 2001) Bénédicte Larre and Marcos Bonturi
287. *Regulation in Services: OECD Patterns and Economic Implications*
(February 2001) Giuseppe Nicoletti
286. *A Small Global Forecasting Model*
(February 2001) David Rae and David Turner

285. *Managing Public Expenditure: Some Emerging Policy Issues and a Framework for Analysis*
(February 2001) Paul Atkinson and Paul van den Noord
284. *Trends in Immigration and Economic Consequences*
(February 2001) Jonathan Coppel, Jean-Christophe Dumont and Ignazio Visco
283. *Economic Growth: The Role of Policies and Institutions. Panel Data Evidence from OECD Countries*
(January 2001) Andrea Bassanini, Stefano Scarpetta and Philip Hemmings
282. *Does Human Capital Matter for Growth in OECD Countries? Evidence from Pooled Mean-Group Estimates*
(January 2001) Andrea Bassanini and Stefano Scarpetta
281. *The Tax System in New Zealand: An Appraisal and Options for Change*
(January 2001) Thomas Dalsgaard
280. *Contributions of Financial Systems to Growth in OECD Countries*
(January 2001) Michael Leahy, Sebastian Schich, Gert Wehinger, Florian Pelgrin and Thorsteinn Thorgeirsson
279. *House Prices and Economic Activity*
(January 2001) Nathalie Girouard and Sveinbjörn Blöndal
278. *Encouraging Environmentally Sustainable Growth in the United States*
(January 2001) Paul O'Brien
277. *Encouraging Environmentally Sustainable Growth in Denmark*
(January 2001) Paul O'Brien and Jens Høj
276. *Making Growth more Environmentally Sustainable in Germany*
(January 2001) Grant Kirkpatrick, Gernot Klepper and Robert Price
275. *Central Control of Regional Budgets : Theory with Applications to Russia*
(January 2001) John M. Litwack
274. *A Post-Mortem on Economic Outlook Projections*
(December 2000) Vassiliki Koutsogeorgopoulou
273. *Fixed Cost, Imperfect Competition and Bias in Technology Measurement: Japan and the United States*
(December 2000) Kiyohiko G. Nishimura and Masato Shirai
272. *Entry, Exit, and Aggregate Productivity Growth: Micro Evidence on Korean Manufacturing*
(December 2000) Chin-Hee Hahn
271. *The Tax System in Korea: More Fairness and Less Complexity Required*
(December 2000) Thomas Dalsgaard
270. *A Multi-Gas Assessment of the Kyoto Protocol*
(October 2000) Jean-Marc Burniaux
269. *The Changing Health System in France*
(October 2000) Yukata Imai, Stéphane Jacobzone and Patrick Lenain
268. *Inward Investment and Technical Progress in the UK Manufacturing Sector*
(October 2000) Florence Hubert and Nigel Pain