Tax reform for the 21st century

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TAX REFORM FOR THE 21ST CENTURY

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I. Introduction

The 1980s were a decade of tax reform across OECD countries. The changes had many common themes. Top rates of personal income tax and rates of corporate income tax fell, but revenues were maintained by broadening the bases of these taxes. Seven countries introduced a value-added tax. Many countries that already had a VAT increased its rate. Social security contributions were increased in many countries. These changes are explored in the first part of this report, which looks at trends in the total tax burden, changes in the structure of tax systems and specific reforms to personal and corporate income taxes, social security contributions and VAT.

But the magnitude of past tax changes does not mean interest in tax reform has come to an end. First, many of the tax reforms failed fully to achieve their objectives: tax systems continue to distort economic decisions, they remain complex and the tax burden continues to rise. Secondly, some tax reforms may have had undesirable side effects, for example, on the distribution of income or the tax burden on labour. Thirdly, the agenda for tax reform has expanded to include issues such as environmental taxes, the communications revolution and commercial growth of the Internet and the relationships between taxation, investment, economic growth and jobs. And the G7, OECD and European Union are committed to addressing international tax issues, especially the extent of harmful tax competition. These issues are covered in the second part of the report, while the final part concludes.

II. Motives for tax reform

There was a number of economic and political driving forces behind tax reforms in the 1980s and early 1990s.

First, the range of economic changes usually summed up in the term 'globalisation'. As capital has become more internationally mobile, countries find it more difficult to sustain high tax rates, particularly if multinationals are important to their economy. Globalisation also favours taxes where the location of the tax base is readily identifiable — such as consumption or labour income — over bases which are difficult to pin down, such as profits. But the effect of capital mobility has often been overstated: as shown below, there is no evidence of globalisation affecting overall levels of taxation.

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The falling cost of information technology, especially compared with the expense of tax inspectors, accountants and lawyers, means that it is cheaper to collect taxes on easily-identifiable transactions, such as labour income and consumption, compared with capital income.

Governments also began to recognise that expensive tax breaks had become entrenched and had outlived their original purpose or, at worst, were counter-productive. A more neutral tax system would reduce the economic distortions from collecting taxes and so lead to a more efficient economy. But interest groups, of course, continued to lobby for tax breaks for economically or socially desirable things such as research and development or 'the family'.

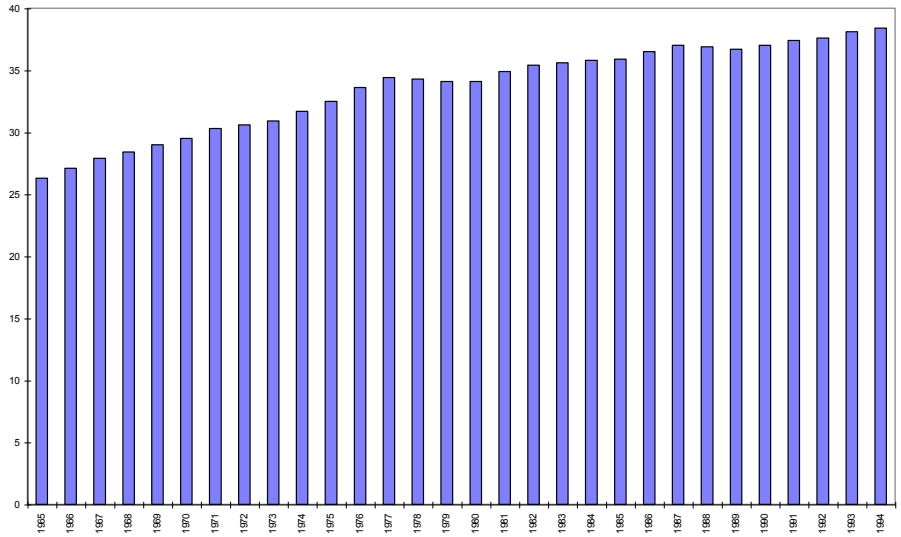
Partly as a result of such tax breaks, but also because of necessarily ever more sophisticated anti-avoidance activity, tax systems continued to become more complex. 'Taxpayers' rights' movements and pressure for simplification were common. In some cases, an important political motive was to reverse the redistributive policy followed in the past.

Finally, a number of governments were elected on promises to cut the tax burden and to 'roll back the frontiers of the state', that is to reduce the size of the public sector. But in these countries and others, a growing public sector and a desire to reduce budget deficits meant more tax revenues were needed, and the discussion of tax reform begins with this issue.

III. A growing tax burden

Despite efforts to halt or reverse the long-term increase in taxes in many countries, the total tax burden across the OECD has continued to rise: rose from 34 per cent of GDP in 1980 to 37 per cent in 1990 and to 38½ per cent in 1994. The tax burden fell between 1980 and 1994 only in Luxembourg, Norway and the United Kingdom. It rose in every other OECD country. But the rate of increase in the 1980s and early 1990s was only half that of the 1970s, as can be seen in Figure 1.

Figure 1. **Taxes as a percentage of GDP in OECD countries, 1965-94**



Source: OECD Revenue Statistics

Although trends may have been similar, significant differences remain in total tax revenues between countries behind the average in Figure 1. Table 1 shows that Belgium, Denmark, Finland, Italy, the Netherlands and Norway take over 45 per cent of GDP in taxes, compared with less than 30 per cent in Australia, Japan and the United States. The main reason for the difference in tax burdens is, of course, the difference in the size of the public sector. This is shown by the second column in Table 1: total government spending.

Table 1. **Taxes and government spending as a percentage of GDP, 1993**

	Total taxes	*Total spending*
Denmark	49.9	56.8
Sweden	49.9	72.5
Netherlands	48.0	55.3
Italy	47.8	56.9
Norway	45.7	50.9
Belgium	45.7	56.8
Finland	45.7	60.2
Luxembourg	44.6	
France	43.9	55.0
Austria	43.6	53.2
Greece	41.2	46.9
Germany	39.0	49.6
Ireland	36.3	42.8
Canada	35.7	49.4
New Zealand	35.6	
Spain	35.1	47.6
United Kingdom	33.6	43.6
Switzerland	33.2	
Portugal	31.4	45.0
Iceland	31.3	
United States	29.7	34.5
Japan	29.1	34.3
Australia	28.7	37.6
Turkey	23.5	

Source: *OECD Revenue Statistics* and *OECD Economies at a Glance: Structural Indicators*

IV. Changing tax structures

Changing the tax mix — usually involving a shift from the personal income tax to general consumption taxes, like VAT — was a theme of a number of tax reforms in the 1980s and 1990s. Switching to consumption taxes can increase the incentive to save by reducing the difference between pre- and post-tax returns on savings. Consumption taxes may be less easy to avoid and evade than income taxes.

It is also widely held that such a switch would improve work incentives, as net earnings are increased for a given level of gross pay. For example, *The Economist* has said: "the plan to extend VAT is good economics. Indirect taxes area more efficient way to raise revenue than direct taxes

because they do not weaken the incentive to work." But this is nonsense: direct taxes cut disposable incomes and so the amount of goods and services that can be bought for a given supply of labour. Indirect taxes reduce the real value of incomes, and so the amount of goods and services that can be bought for a given supply of labour. Neither or both might have an incentive effect, but this cannot be true for one and not the other.

There is also a number of concerns with general consumption taxes. They are usually less progressive than the personal income tax, imposing a larger tax burden on lower income taxpayers. Partly this is because higher income families tend to save more, and so will bear general consumption taxes in the future when the money is spent. But this is not picked up in income-distribution analyses. Many countries attempt to increase the progressivity of their general consumption tax by putting lower or zero rates on 'necessities': goods which form a disproportionately large part of the budgets of poor families. But this can generate economic inefficiency by distorting consumer choices between high- and low-taxed goods and services. General consumption taxes have faced significant political opposition in many countries: in Australia, Canada and Japan, there has been strong taxpayer resistance to the proposal or introduction of general consumption taxes. Introducing a general consumption tax imposes a significant one-off burden of administrative and compliance costs. It also has an immediate upward effect on inflation.[2] Table 2 shows that there has been a shift to general consumption taxes. During the 1960s and 1970s, that this was mainly at the expense of other taxes on goods and services (such as excise duties). More recently, there have been smaller falls in personal and corporate income taxes. In the 1980s, revenues a proportion of GDP rose 34 per cent for general consumption taxes and 26 per cent for social security. Personal income taxes' share of GDP fell by 6 per cent.

The countries that saw the biggest changes are Greece, New Zealand and Turkey when they introduced general consumption taxes. In the last two cases, this was accompanied by substantial cuts in personal income tax. For example, in New Zealand between 1985 and 1994, the goods-and-service tax's share of total revenues rose from 10 to 22 per cent, while the personal income tax fell from 60 to 45 per cent. In Japan, general consumption tax revenues have substituted for corporate income taxes, whose revenue share fell from 21 per cent in 1985 to 15 per cent in 1994. Canada saw a similar sharp decline in corporate tax revenues. Social security contributions rose there and in Finland and Japan. Spain has used general consumption taxes to reduce the role of social security contributions. Finally, the United Kingdom also increased the rate and extended the base of VAT significantly: between 1975 and 1994 its share rose from 9 to 20 per cent of revenues.

The averages given in Table 2, as with the total tax burden in Figure 1, disguise significant differences between countries in the structure of their tax systems. Table 3 shows countries that collect proportionally the most and the least under the four main heads of taxes: personal and corporate income, social security and general consumption. The OECD average figures are given for comparison. Countries that stand out in the Table include Australia, which has no social security contributions and low levels of consumption taxation, relying on corporate and personal income taxes. Again, New Zealand has no social security contributions, but high levels of general

[2] Other taxes will have the same effect in the long run. For example, an increase in corporate taxes would reduce companies' profits, and so pressure companies to raise prices.

consumption and personal income taxation. France and Germany, in contrast, have the highest social security contributions but collect little in personal and corporate income tax respectively.

Table 2. **Structure of taxation in OECD countries (per cent of total revenue)**

Type of tax	*1965*	*1970*	*1975*	*1980*	*1985*	*1990*	*1994*
Personal income	26	28	31	32	30	30	28
Corporate income	9	9	8	7	8	8	8
Social security	19	21	25	25	25	25	27
Property	8	7	6	5	5	5	5
General consumption	12	13	13	14	16	17	18
Other goods and services	24	22	17	17	16	15	14

Source: OECD Revenue Statistics

Table 3. **Structure of taxation in OECD countries (per cent of total revenue)**

Personal income		*Corporate income*		*Social security*		*General consumption*	
Denmark	52	Luxembourg	16	France	45	Iceland	32
Australia	41	Japan	15	Germany	39	Turkey	24
New Zealand	45	Australia	13	Netherlands	38	New Zealand	23
Average	29	Average	7	Average	26	Average	17
Portugal	20	Germany	4	Denmark	3	Switzerland	8
France	14	Austria	4	Australia	0	United States	8
Greece	9	Iceland	3	New Zealand	0	Japan	5

Source: OECD Revenue Statistics

V. Personal income tax: top rates cut

Governments have dealt with one aspect of the growing tax burden evidenced in Figure 1: the upward creep in top marginal rates of personal income tax. High rates, over 70 per cent in some cases, are distortionary, providing a disincentive to work and save and an incentive to use tax loopholes, reducing the tax take in practice. In 20 countries — the only exception being Turkey with a very low marginal rate to start with — top marginal rates have been cut recently, by an average of 12 percentage points (Table 4). But the vast majority of these cuts were in the late 1980s, and top rates have tended to remain stable in the 1990s. Previous cuts have been partially reversed in Canada, Iceland, Italy, Sweden and the United States.

Table 4. **Top marginal rates of central government personal income tax**

	1986	*1990*	*1995*
Australia	57	47	47
Austria	62	50	50
Belgium	72	55	55
Canada	34	29	31.3
Denmark	45	40	34.5
Finland	51	43	39
France	65	57	56.8
Germany	56	53	53
Greece	63	50	40
Iceland	38.5	33	38.15
Ireland	58	53	48
Italy	62	50	51
Japan	70	50	50
Luxembourg	57	56	50
Netherlands	72	60	60
New Zealand	57	33	33
Norway	40	20	13.7
Portugal	61	40	40
Spain	66	56	56
Sweden	50	20	25
Switzerland	13	13	11.5
Turkey	50	50	55
United Kingdom	60	40	40
United States	50	28	39.6

Source: OECD Tax Database

Note: Canada, Finland, Iceland, Norway, Sweden, Switzerland and the United States also have personal income tax levied by sub-central government.

VI. Personal income tax: a broader base

While top rates of personal income tax have come down, revenues have not fallen anywhere near as sharply as the figures in Table 4 would suggest. In 1994, revenues were 10.7 per cent of GDP across the OECD, compared with 11.3 per cent in 1980. The reason is that many governments financed rate cuts by broadening the base of the tax.

Taxes on fringe benefits were increased in Australia, Finland, New Zealand and the United Kingdom and the deductibility of mortgage interest payments was limited in Finland, Ireland and the United Kingdom. The 1986 reform in the United States removed a range of deductions.

In addition to financing cuts in tax rates, this base broadening in many cases removed complex features of the tax system and reduced distortions to consumption, saving and work decisions. An important part of the assault on tax privileges is tax expenditure accounts. 14 OECD countries now produce these reports, which estimate revenues foregone from tax concessions. Australia, Belgium, Finland, France, Ireland, Italy, the Netherlands and Portugal all began producing tax expenditure accounts in the 1980s (OECD, 1996*d*).

Cuts in top rates of income tax were not wholly financed by broader income tax base, and in many countries the tax burden at lower levels of income rose. These distributional concerns are addressed in section XI below.

VII. A flatter income tax

As well as cutting top rates of income tax, many countries have reduced the number of income tax brackets. This is perhaps one of the only areas in which tax systems became simpler during the 1980s. Fewer marginal rates need not make the income tax less progressive (*i.e.* the proportion of income paid in tax increases with income). Most of the progressivity of the income tax derives from the fact that the first slice of income is free of tax, due to zero-rate bands, allowances or general tax credits. But fewer marginal rates do make taxes simpler, for example, when trying to deduct tax from different income sources. Table 5 shows that 16 countries cut the number of schedule rates in the late 1980s. The average number of rates fell from over 10 to below 6. But during the 1990s, while France, Greece, Ireland and Luxembourg have simplified their tax schedules, previous simplifications have been reversed in Canada, Denmark, Iceland, the United Kingdom and the United States. Tables 4 and 5 show that in the 1980s, and to a limited extent in the 1990s, the personal income tax became a flatter tax.

Table 5. **Number of positive rates in central government personal income tax schedule, 1986, 1990 and 1995**

	1986	*1990*	*1995*
Australia	5	4	4
Austria	10	5	5
Belgium	12	7	7
Canada	10	3	4
Denmark	3	3	4
Finland	11	6	6
France	12	12	6
Greece	18	9	3
Iceland	3	1	2
Ireland	3	3	2
Italy	9	7	7
Japan	15	5	5
Luxembourg	21	24	17
Netherlands	9	3	3
New Zealand	6	2	2
Norway	8	2	2
Spain	34	16	16
Sweden	10	1	1
Switzerland	6	6	13
Turkey	6	6	7
United Kingdom	6	2	3
United States	14	2	5

Source: OECD Tax Database

VIII. The rise of VAT

The main reason for the growth in general consumption tax revenues shown in Table 2 was the substitution of VAT for retail and wholesale sales taxes. Currently, Australia and the United States are the only OECD countries without a VAT-type tax. Greece, Spain and Portugal introduced VAT in the 1980s when they joined the European Union (this is a condition of membership). Canada, Iceland, Japan, New Zealand and Switzerland have also recently introduced a VAT. A second reason for the growth of general consumption taxes has been the tendency for rates of VAT to rise once the tax is introduced. The average rate of VAT when countries first introduced the tax is 12½ per cent; the average in 1996 is 17½ per cent. Table 6 charts the rise of VAT.

Table 6. **VAT in OECD countries**

	Year VAT introduced	*Initial standard rate*	*Current standard rate*
Austria	1973	16	20
Belgium	1971	18	21
Canada	1991	7	7
Denmark	1967	10	25
Finland	1969	11.1	22
France	1964	20	20.6
Germany	1968	10	15
Greece	1987	16	18
Iceland	1989	22	24.5
Ireland	1972	16.4	21
Italy	1973	12	19
Japan	1989	3	5
Luxembourg	1970	8	15
Mexico	1960	10	15
Netherlands	1969	12	17.5
New Zealand	1986	10	12.5
Norway	1970	20	23
Portugal	1986	16	17
Spain	1986	12	16
Sweden	1969	11.1	25
Switzerland	1995	6.5	6.5
Turkey	1985	10	15
United Kingdom	1973	10	17.5

Source: OECD Consumption Tax Trends

IX. Social security contributions

A second trend evident in Table 2 is the growth in social security contributions, so that by 1994 they nearly raised as much as the personal income tax. Indeed, in the majority of OECD countries (16), more was raised from social security than from the personal income tax. This shift probably reflects the growing pressures on social security expenditure from higher levels of unemployment, the ageing of the population and other social changes, such as an increase in the number of lone parents. These extra benefits must be financed, either through higher social security contribution rates or through broader financing of benefits.

In some countries, increases in the value of social security benefits also added to the pressure. For example, the value of unemployment benefits increased significantly relative to earnings during the 1980s in Finland, France, Greece, Norway and Portugal. Only in Belgium, New Zealand, the United Kingdom and the United States did benefit levels fall relative to earnings in the 1980s (OECD, 1994, chapter 8).

X. Corporate income tax

Trends in the corporate income tax have followed the personal income tax: the tax base has been broadened and rates reduced. Various incentive schemes have been limited or abolished in Australia, Austria, Finland, Germany, Iceland, Ireland, Portugal, Spain and the United States, including schemes for particular regions or sectors, investment credits and property-related tax-shelters. Depreciation for tax purposes has been brought more closely in line with economic depreciation (Table 8). Table 7 shows that the cuts in central government corporate income tax since the mid-1980s average around ten percentage points.

Table 7. **Basic rates of corporate income tax of central government, 1986-95**

	1986	1991	1995
Australia	49	39	33
Austria	30	30	34
Belgium	45	39	39
Canada	36	29	29
Denmark	50	38	34
Finland	33	23	25
France	45	34/42	33
Germany	56	50/36	45/30
Greece	49	46	35/40
Iceland	51	45	33
Ireland	50	43	40
Italy	36	36	36
Japan	43	38	38
Luxembourg	40	33	33
Netherlands	42	35	35
New Zealand	45	33	33
Norway	28	27	19
Portugal	42/47	36	36
Spain	35	35	35
Sweden	52	30	28
Switzerland	4-10	4-10	4-10
Turkey	46	49	25
United Kingdom	35	34	33
United States	46	34	35

Source: OECD (1991) and *OECD Tax Database*

Note: Austria, Canada, Finland, Germany, Italy, Japan, Norway, Portugal, Switzerland and the United States also have sub-central corporate taxes. Rates rounded to nearest percentage point. Many countries also have special rates for firms with fewer profits and for particular sectors. Where two rates are shown this indicates a 'split-rate' system, with separate rates for dividends and retained earnings.

Table 8 shows one aspect of base broadening in the corporate income tax. The Table shows the net present value of depreciation allowances for buildings and for plant and machinery. A figure of 100 per cent indicates the most generous treatment: all investment expenditure can be offset against tax liabilities immediately. In most cases, however, the investment must be offset over time, and so the net present value of the allowance (calculated at a 10 per cent discount rate) is less than 100 per cent.

The Table shows that Canada, Ireland, Italy, the United Kingdom and the United States cut their depreciation allowances in the 1980s and early 1990s. The overall average fell by around 10 percentage points for both types of investment.

Table 8. **Net present value of depreciation allowances, 1985-94 (per cent)**

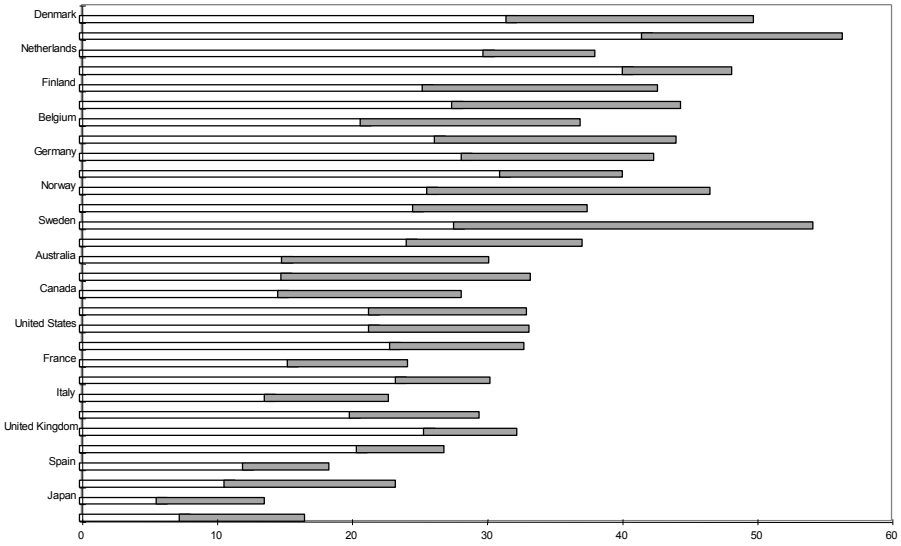
	Buildings				*Plant and machinery*			
	1980	*1985*	*1990*	*1994*	*1980*	*1985*	*1990*	*1994*
Australia	0	32	20	32	71	78	71	73
Canada	35	33	24	24	94	89	73	73
France	38	38	38	38	81	87	81	81
Germany	26	49	49	49	76	80	80	80
Ireland	100	100	73	32	100	100	74	71
Italy	67	67	38	38	84	84	76	76
Japan	29	30	30	30	70	70	70	70
Spain	46	49	45	54	73	76	72	70
United Kingdom	91	51	32	32	100	87	73	73
United States	43	56	26	21	87	87	78	78

Source: Chennells and Griffith (1997).

XI. Tax reform and the distribution of income

Figure 2 shows one reason for concern with the effect of tax reforms in the late 1980s and early 1990s. The white bars show the average tax rate (*i.e.* personal income tax and social security contributions as a percentage of earnings) at two-thirds of average earnings. The grey bars show the average tax rates at double average earnings. The difference between the grey and the white bars shows how progressive the tax system is. For each country, the upper bar shows the situation in 1978, the lower in 1992. In Canada, Denmark, the Netherlands and France, taxes have risen across the board, but have risen more steeply on those with lower earnings. In Norway and Sweden, taxes have fallen for all groups, but the falls for those on lower incomes are less than for higher earners. Finally, in Germany and the United States, the tax burden on those low down the earnings' distribution has risen, but fallen for higher earners. In these countries, individual direct taxes have become less progressive.

Figure 2. **Personal income tax and employees' social security contributions as a percentage of earnings, single persons earning 67 and 200 per cent of average, 1978 and 1992**



Source: The OECD Jobs Study: Taxation, Employment and Unemployment.

The result of these changes is that the distribution of *net* income is widening in a number of OECD countries. In the United Kingdom and the United States, the distribution of *before-tax* income has been widening, partly because of higher unemployment and ageing of the population and partly because of a wider gap between low and high earnings from employment. The change in the structure of taxation, with a greater part of the burden borne by those on low incomes means that the change in the *after-tax* distribution of income is even greater.

Table 9 shows how the distribution of the tax burden between different income groups varies in a number of OECD countries. The incomes of the population have been ranked from the lowest to the highest, and the population divide into fifths, or quintiles. The first column of the table shows the percentage of the total direct tax burden (including personal income tax and employees' social security contributions) paid by the poorest fifth of the population, the last column, the proportion paid by the richest fifth. In Australia and the United States, the poorest 60 per cent of the population pay around a quarter of total taxes, followed by Canada and the United Kingdom where this portion is around 28.5 per cent. The highest figures are in Ireland, Norway, the Netherlands and Sweden, where around 36 per cent of total taxes are paid by the poorest 60 per cent. These figures probably result from the differences in the pre-tax income distribution. In North America and the United Kingdom the distribution of pre-tax incomes is much broader than the relatively equal distributions of the Nordic countries. Thus, even if taxes were equally progressive in the two groups of countries, the percentage of taxes paid by poorer groups would be lower if the income distribution is wider.

Table 9. **Percentage of total taxes paid**

Income quintile:	1	2	3	4	5
Australia	0.7	7.6	16.3	24.2	51.2
Canada	3.6	8.8	16.2	24.8	46.5
Finland	4.9	11.2	17.1	23.9	42.9
Germany	5.5	10.4	17.0	23.4	43.7
Ireland	7.0	12.2	17.6	23.8	39.3
Netherlands	10.3	10.0	16.2	22.3	41.2
Norway	3.7	13.2	19.2	25.7	38.1
Sweden	6.3	12.5	17.7	23.3	40.1
United Kingdom	4.5	8.1	15.9	25.0	46.4
United States	3.8	6.9	13.9	22.6	52.7

Source: OECD (1995).

Note: Income quintiles ranked from poorest (1) to richest (5).

XII. Taxes and unemployment

The OECD Jobs Study concluded that the high level of unemployment is the unfortunate result of societies' failure to adapt to a world of rapid change and intensified global competition. Most people in industrialised countries have a clear, immediate financial incentive to work. But such incentives are lacking for a significant minority — particularly those with low potential earnings — and people will be reluctant to work if work does not pay. Tax and benefit systems cause three types of labour-market problems[3]

- The 'unemployment trap', where benefits are high compared with earnings. Cutting the benefits of the unemployed increases the reward to taking a job but the social costs of this solution may be unacceptable.
- The 'poverty trap': low-wage workers have little immediate financial incentive to increase hours worked; to work part-time or to invest in education and training to move up the wage ladder.
- Taxes on labour may increase its cost and so discourage employers from hiring and reduce employment.

Cutting taxes on labour is expensive, even when targeted on low-wage earners. Such cuts will require either a switch to taxes that are not ultimately borne by labour, cuts in public spending or redistributing the tax burden onto higher earners. One area where the tax system bears particularly on low-income earners is social security contributions. Ceilings to contributions mean that the marginal tax rate on high earners is zero, but positive on those with low earnings. Employers have an incentive to give overtime to existing workers, rather than employ other people. Table 10 shows ceilings relative to average earnings in those OECD countries that have them.

[3] See OECD (1997).

Table 10. **Structure of social security contributions, 1993**

	Ceilings (% average earnings)	
	Employee	Employer
Austria	146	146
Canada	105	105
France	131	131
Germany	169	169
Greece	212	212
Ireland	154	164
Luxembourg	245	245
Spain	219	219
Turkey	83	-
United Kingdom	154	-
United States	229	229

Source: OECD (1995*b*)

A second way of using the tax system to make work pay is the use of employment-conditional tax credits or benefits, in-work benefits for short. These increase the returns to working by paying a supplement only to those in work. By withdrawing the tax credit or benefit as earnings increase, the benefits are targeted on those with low earnings. Often the schemes are limited to families with children. Since benefit systems give these groups the largest payment out of work, they are further targeted on the groups for which work incentives might be a problem. Examples of such schemes in practice include family credit in the United Kingdom, the earned income tax credit in the United States and family income supplement in Ireland. Evidence from the United Kingdom and the United States suggests that these schemes can be effective in improving work incentives and encouraging people into employment. Denmark and Sweden have recently investigated the relevance of such as scheme to their labour market (Ministry of Finance, 1995 and Eriksson, 1997). Other countries might be expected to follow.

XIII. The scope for green tax reform

Scientific evidence emerged in the late 1980s of a range of environmental problems: holes in the ozone layer, global warming, health hazards from lead and particulates from motor fuels and damage from acid rain. There is a range of ways in which governments can intervene in response — government spending, taxation and regulation — to promote environmentally-friendly behaviour, as in other policy areas. But green taxes have a number of advantages over command-and-control methods. They provide an incentive to reduce pollution in the most efficient way. Moreover, the incentive is continuing, encouraging a flow of new ways of reducing pollution. Finally, unlike regulation, taxes raise revenues, which can be used to cut deficits, increase spending or reduce other taxes. But despite this theory, there have been few successful examples of green tax reform. Table 11 shows the revenues from environmental taxes in three countries that have made significant attempts to green their tax systems for 1994. Receipts amount to less than 1 per cent of the total in each case. Governments have instead resorted to other policy measures to achieve environmental goals than direct taxes on pollutants. In some cases they have differentiated existing taxes. For example, excise duties favour unleaded petrol in 19 countries and motor vehicle taxes have been differentiated to favour catalytic converters or fuel-efficient cars. Other countries have used command and control. Austria, for example, has simply banned leaded

petrol and CFCs are being phased out throughout the world. Other countries have used existing taxes such as motor fuel duties. Although these have an environmental impact, they are not pure environmental taxes since the tax base is not directly related to the environmental damage caused.

The only environmental tax with the potential to raise significant revenues would be a CO_2 tax. However, there are a number of obstacles to countries wishing to introduce the tax alone, such as the effect on competitiveness of domestic industry, and international consensus has not been forthcoming. In some countries that have introduced a CO_2 tax it has subsequently been reduced or abolished due to competitiveness concerns. It remains to be seen whether existing measures are sufficient to meet countries' obligations to stabilise CO_2 emissions or whether an international agreement to introduce a CO_2 tax will be necessary.

Table 11. **Revenues from environmental taxes**

	Revenues (per cent of total, 1994)
Denmark	
CFC	0.001
CO_2	0.658
Nickel-cadmium batteries	0.002
Disposable tableware	0.011
Insecticide	0.002
Waste	0.119
Total	0.809
Netherlands	
Air pollution	0.430
Water pollution	0.007
Total	0.437
Norway	
CO_2	0.714

XIV. Tax distortions and household saving

Household savings raise a number of policy concerns. First, that the pool of savings is too small, and that higher levels of savings would boost investment and long-term rates of economic growth. But the OECD (1994*b*) study concluded that 'there is no clear evidence that the level of taxation ... does generally affect the level of household saving'. Even if tax incentives could be used to encourage *household* saving, there is no reason to expect *national* saving to increase. The tax revenue the government loses from the incentive cuts public savings and may more than offset the increase in household saving.

A second concern is the allocation of savings. In every country, different savings vehicles are taxed differently. The result is that individuals choose savings instruments not on economic grounds, like the expected return and risk, but opt for the most fiscally-privileged route.

The fundamental difficulty is the definition of income. There are two benchmarks in theory. An expenditure tax aims to tax consumption in a particular period. In theory this could be achieved with a universal VAT, but in practice, such a tax would be highly regressive and difficult to levy on some goods and services so there will always be a role for an income tax. With respect

to savings expenditure-tax treatment can be achieved in two ways. First, contributions into the savings account and the investment returns earned could be exempted from tax, with tax imposed when savings are withdrawn. Second, contributions could be made out of after-tax income, but investment returns and withdrawal of savings exempt. The second benchmark is the comprehensive income tax, which taxes both consumption and savings. This can be implemented by taxing both contributions and investment returns or both investment returns and withdrawal of savings. With regard to saving, the expenditure tax is neutral: consumption today and tomorrow is taxed at the same rate, whereas the comprehensive income tax discriminates against future consumption by taxing it more than current spending.

Figure 3 compares the actual tax treatment of four illustrative savings vehicles — a pension, housing (bought without a loan), direct purchase of equities and bank deposits. The figure shows marginal effective tax rates (METRs) on savings. As noted previously, the expenditure tax treats savings neutrally, so the METR of an expenditure tax is zero. The comprehensive income tax taxes savings as if they were current consumption. The METR is therefore the statutory marginal rate. Figure 3 is computed for an individual paying the highest marginal tax rate.

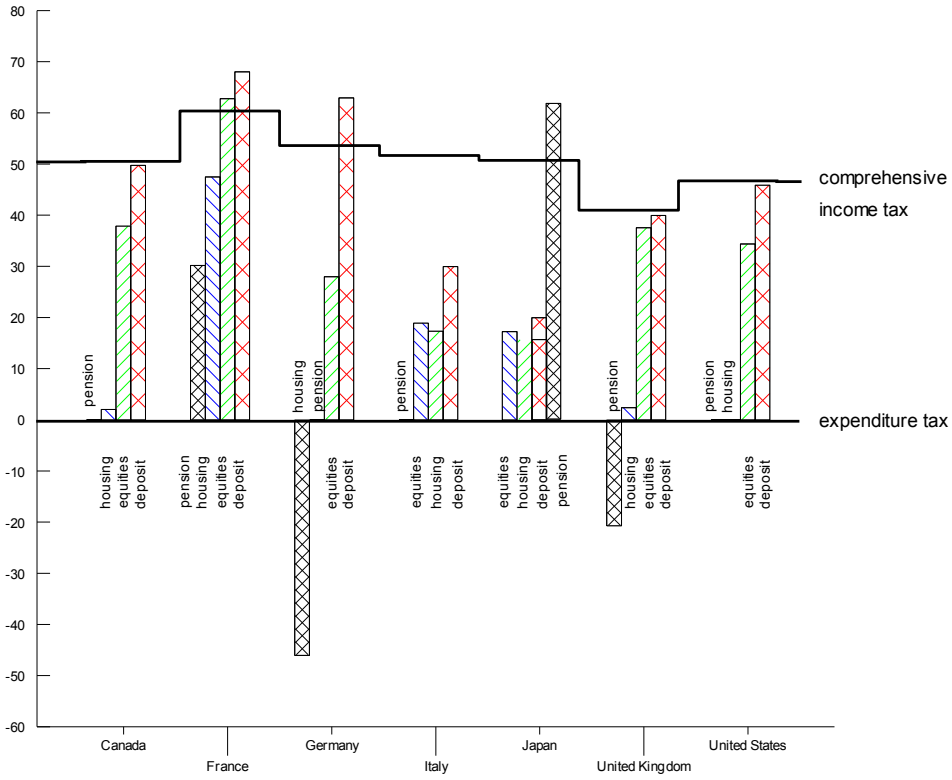
Comparing different instruments, in four countries — Canada, France, the United Kingdom and the United States — pensions have the most generous tax treatment, followed by housing and then equity purchase, with bank deposits being the least tax-privileged. In Germany, while pensions have an expenditure tax treatment, housing receives a very large tax subsidy, but again, equities and bank deposits have a much less generous tax treatment. In Japan, pensions are taxed heavily, while equity investments have the most generous treatment.

Comparing the tax treatment with the two benchmarks, there are a number of examples of expenditure tax treatments: pensions in Canada, Germany, Italy and housing and pensions in the United States. Bank deposits are taxed on a comprehensive income tax basis in Canada, the United Kingdom and the United States.[4] But in some cases, the tax treatment lies even outside the range of the two benchmarks. For example housing in Germany and pensions in the United Kingdom are tax subsidised. Deposits in Germany and France are taxed at a higher rate than the comprehensive income tax.

In all the countries shown, there are enormous differences between the tax treatment of different savings instruments. The effect is to divert savings into the most fiscally-privileged assets and away from those which attract a tax penalty. The net result is that the taxation of savings overall tends to move towards that of the most generously-treated savings. The risk is that by choosing savings vehicles because of tax rather than economic characteristics, the market is distorted and investment mis-allocated.

Figure 3. **Effective tax rates on savings, 1994**

[4] Although in each case the tax is levied on *nominal* returns whereas a pure comprehensive income tax would tax only *real* returns. If inflation were taken into account, then the effective tax rate would be higher than a comprehensive income tax.



Source: OECD (1994*b*)

Some countries have moved to reduce differences between the tax treatment of different savings instruments. Denmark, Finland, Norway and Sweden have implemented the most extensive reforms, moving their tax systems towards a flat-rate tax on capital income to varying extents. In Finland, for example, a separate flat tax of 25 per cent was introduced on capital income and tax-exempt savings deposits abolished. In Norway, interest, imputed income from owner-occupation, dividends *etc.* are taxed at a flat 28 per cent. In Portugal, the tax reform of 1989 introduced reliefs for retirement and housing savings accounts and stock option plans.

In other countries, specific savings incentive schemes have been introduced, often with the purpose of moving towards an expenditure tax. Examples of schemes exempting the interest on deposits up to a ceiling include the plan d'épargne populaire (PEP) and the Livret A accounts in France and tax-exempt special savings accounts (TESSAs) in the United Kingdom. Germany, the Netherlands and Spain use the simpler approach of exempting a fixed amount of interest income from all sources.

Various schemes offering limited tax deduction for investment in equities are available in Austria, Belgium, Canada, France, Germany, Iceland, Ireland, Luxembourg, Norway and the United Kingdom. Personal equity plans (PEPs) in the United Kingdom and plans d'épargne en actions (PEA) in France offer exemption from taxation of dividend income and capital gains.

Despite recent reforms, most countries still tax different savings instruments at wildly different rates. Expect further moves towards a neutral tax regime either through flat taxes on capital income or increased use of tax-exempt savings vehicles.

XV. Tax distortions and company investment

Reforms to corporate taxation have not eliminated the disincentive to firms to invest and the distortions to the way firms finance investment and the form investment takes. The standard way of examining the effects of taxes on investment is to look at 'marginal effective tax wedges'. The METW shows the difference between the rate of return before and after tax. A METW of 1.2 per cent implies that a return of 11.2 per cent is required before tax to achieve a target after-tax return of 10 per cent for the firm. Table 12 shows METWs for a range of countries and different financing arrangements and types of asset.

In every country, debt is the most tax efficient form of finance. For example, the required rate of return in Germany is nearly halved due to the deduction of nominal interest payments against the relatively high corporate tax rate. Retained earnings in every case raise the required return, because there is no relief like that for interest payments. In the United States the so-called 'classical' corporation tax gives no relief to shareholders against the taxes paid by the company. Retained earnings and new equity have the same tax wedge as a result. The Australian, Canadian, Japanese and Spanish systems have the same effect. In each of the other countries, there is some compensation to shareholders for company-level taxes. New equity is more generously treated than retained earnings. The compensation method is an 'imputation' system in France, Ireland, Italy and the United Kingdom, and a split-rate system in Germany, where dividend distributions and retained earnings are taxed at different rates.

Table 12 also shows the tax system tends to favour plant and machinery over buildings and buildings over inventories. The only exceptions in the Table are Spain (where buildings receive the most generous treatment) and the United States (where inventory investment is favoured relative to buildings.

Table 12. **Marginal effective tax wedge by financing and asset, 1994**

	Buildings	*Plant and machinery*	*Inventory*	*Retained earnings*	*New equity*	*Debt*	*Average*
Australia	2.4	1.0	4.3	4.2	4.2	-1.8	2.1
Canada	3.0	1.1	4.5	4.6	4.6	-1.8	2.4
France	1.2	-0.5	3.5	3.7	-4.0	-2.2	0.8
Germany	2.4	0.5	4.5	7.0	-3.1	-4.6	1.9
Ireland	0.4	0.1	0.9	1.0	0.2	-0.5	0.4
Italy	3.5	1.1	4.5	8.2	-4.3	-4.4	2.5
Japan	5.4	3.2	5.5	8.6	8.6	-3.5	4.4
Netherlands	1.8	0.4	2.3	4.0	-0.7	-2.5	1.2
Spain	1.2	1.4	4.7	4.3	4.3	-2.2	2.0
United Kingdom	2.0	0.6	3.9	4.2	0.5	-1.8	1.7
United States	4.4	0.9	3.8	5.4	5.4	-2.9	2.5
Average	2.5	0.9	3.9	5.0	1.4	-2.6	2.0

Source: Chennells and Griffith (1997). See also Griffith (1996).

Note: Marginal effective tax wedge is the difference between the post-tax and pre-tax real rates of return. Assuming a 10 per cent post-tax target return, an METW of 1.2 implies that the pre-tax return must be 11.2 per cent. Weights, from OECD (1991): buildings 28 per cent, plant and machinery 50 per cent, inventory 22 per cent; retained earnings 55 per cent, new equity 10 per cent, debt 35 per cent. Assumes economic depreciation of 3.6 per cent for buildings, 12.25 per cent for plant and zero for inventory and inflation of 3.5 per cent.

Finally, the last column averages over the different assets and forms of financing to show the overall incentive to invest. The weightings used reflect the OECD-wide average split between assets and finance. In each country there is a disincentive to invest, equivalent to adding 2 per cent to the cost of capital to firms. This varies, however, between 0.4 per cent in Ireland and 4.4 per cent in Japan.

Table 13 shows how the weighted average METW (the final column of Table 12) has varied over the 1980s and 1990s. In Australia and Germany the wedge has fallen from around 4½ per cent to around 2 per cent in both cases. The METW has also fallen significantly in France. In Ireland and the United Kingdom, the average wedge was negative in 1980 but is now positive in both cases. In other countries, even where substantial reforms have taken place, the wedge has not been affected.

The majority of the countries analysed in Table 13 have moved towards a more neutral system in the 1980s and early 1990s. In Australia, Canada, France, Germany, Ireland, the United Kingdom and the United States, the differences in the wedges between different sources of finance and types of investment have become smaller.

Table 13. **Overall marginal effective tax wedges, 1980-94**

	1980	*1985*	*1990*	*1994*
Australia	4.6	2.9	3.1	2.1
Canada	2.0	2.4	2.7	2.4
France	2.5	1.9	1.2	0.8
Germany	4.7	3.2	2.4	1.9
Ireland	-0.6	-0.2	0.2	0.4
Italy	0.1	0.5	1.8	2.5
Japan	4.2	4.6	4.4	4.4
Spain	1.8	1.8	2.1	2.0
United Kingdom	-0.5	1.1	1.7	1.7
United States	2.0	1.6	2.0	2.2
Average	2.1	2.0	2.2	2.0

Source: Chennells and Griffith (1997).
See notes to Table 12.

There have been numerous proposals for ways in which these tax-induced biases in investment can be ameliorated or even eliminated (see, for example, IFS Capital Taxes Group, 1992). Given the concern about the impact of investment on economic growth, it would be surprising if the next decade did not see reforms in this area.

XVI. Globalisation

Globalisation is not new, but the pace of integration of national economies has quickened. The development of regional trading blocs — such as the EU and NAFTA — the removal of restrictions on investment flows and improved communications technology have accentuated the trends. The implications for tax policy have been, and will continue to be enormous.

Globalisation has increased the geographical mobility of capital. The benefits to the world economy are clear: the international allocation of savings and capital are improved, improving firms' incentives to invest. This in turn enhances opportunities for labour, with increased productivity leading to higher output and wages. The tax base has become more mobile, and business decisions like investment and financing are therefore more sensitive to tax differentials between countries. This means that high tax rates on capital are no longer feasible, which is perhaps responsible for some of the cuts in corporate tax revenues shown in Table 2 and the falling company tax rates. Some countries have also seen erosion of the capital income tax base.

Economic integration could put pressure on other tax bases. Cross-border shopping puts pressure on differentials in excise and VAT rates. Denmark and Canada have been forced to cut alcohol and tobacco taxes in response. The European Union has imposed minimum excise duty and VAT rates to ameliorate this problem, but countries with particularly high rates will continue to have problems. The concern again here is that tax competition for cross-border shopping will result in lower tax rates, another example of an eroding tax base.

Perhaps the most important new development for tax policy is new communications technology. The Internet, in particular, is creating a global 'information superhighway' which will

revolutionise business more quickly than previous technical advances. As technological change weakens the links between economic activity and a particular location, traditional tax concepts, such as 'residency' and 'source' become difficult to apply. Fiscal residency is usually decided on criteria such as physical presence, incorporation and place of effective control. But management and control of services provided over the information superhighway are difficult to determine. Communications now allow distant groups of people to collaborate in new ways: for example, global securities dealing and scientific projects. Allocating the profits and losses of these activities to different countries is a problem for tax authorities. The Internet also allows entrepreneurs to extend the services they can offer abroad without the need to set up a physical presence in that country.

As the Internet becomes more commercialised, a parallel banking and payment system becomes a distinct possibility. A new system is needed to allow tax authorities to identify when and where taxable activities are carried out, including access, record-keeping and reporting requirements. Anonymity and encryption built into these systems need to balance consumers' requirements of confidentiality with the needs of tax administrations.

XVII. Conclusions

Tax systems have evolved continuously as a result of economic, social and political pressures ever since the introduction of something like the modern personal income tax in the 18th century. The main theme of the history of taxation is the continual search for sources of revenue with the inexorable growth of the public sector throughout the 20th century. Traditional sources of revenue, such as excises and the personal income tax, were complemented with new taxes, such as social security contributions and VAT. The growth of taxation has not been reversed in the 1980s and 1990s, despite efforts to 'roll back the frontiers of the state' in many countries. The rate of growth, however, has slowed.

Tax systems have evolved in response to a number of social, economic and political pressures. For example, in the 1970s and early 1980s one of the main issues was the operation of the tax system in an inflationary world. 'Fiscal drag' became a big problem: increases in nominal income increased the tax burden on individuals as inflation eroded the value of credits and allowances and pushed people into higher tax brackets. Automatic indexation of tax schedules was adopted in 15 OECD countries. Companies, too, faced higher taxes as illusory, inflationary increases in the nominal value of inventories were taxed. Capital gains taxes became punitive when nominal gains were taxed. Indexation procedures were introduced to deal with these problems. The outlook for inflation is now more benign, but other economic issues, such as growth and jobs, will continue to dominate the tax reform agenda.

This paper has shown that tax systems changed markedly in the 1980s and 1990s. Top rates of personal income tax and rates of corporate income tax fell, but the bases of these taxes were broadened. VAT spread to more countries and the rate of the tax tended to increase. Social security contributions continued to rise. The objectives of tax reforms varied, but tended to include economic efficiency, moving towards a more neutral system and reducing the highest marginal tax rates, simplification and transparency. Some reforms were designed to raise additional revenue.

The analysis of the reforms shows that there is much unfinished business. While the taxation of savings and investment has moved towards neutrality, significant distortions remain because of the tax treatment of different assets and different sources of business finance.

Moreover, tax reforms have had undesirable effects on the tax burden on labour and on the distribution of income.

A range of social, economic and political pressures will shape the future of tax reform. Ageing populations and changing demographic patterns, such as growing numbers of lone parents will affect government's revenue requirements. On the economic front, internationalisation will be an important force, with the growth of multinational and regional trading blocs, such as the EU and NAFTA, and the importance of the communications revolution. Governments' response will be greater use of international fora, such as the OECD and EU investigations of harmful tax competition. EU integration and the completion of the single currency project mean that Member states and the Commission are likely to return to the issue of tax harmonisation. Within countries, there may be demand for greater regional autonomy in taxation, for example, in Catalonia, Quebec and Scotland and the 'states' rights' movement in the United States.

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