Pension reform – advance funded old age provision: Personal income tax and social security contribution systems

Edward Whitehouse
London, January 2002

Correct citation:
Whitehouse, Edward 2002: Pension reform – advance funded old-age provision: Personal income tax and social security contribution systems. Bertelsmann Stiftung Vorsorgestudien 10. Avaiable for download at: www.vorsorgestudien.de

Bertelsmann Stiftung Vorsorgestudien 10

* The author is Director of Axia Economics and joint manager of the World Bank's Pension Reform Primer programme.

Correspondence: Axia Economics, 38 Concanon Road, London SW2 5TA United Kingdom; telephone +44 (0) 20 72 74 30 25; e-mail edward.whitehouse@axiaecon.com; web: http://www.axiaecon.com.

This paper was prepared for the Bertelsmann Foundation's project 'Pension reform – advanced funded old age provision', January 2002.

Abstract

This paper looks at the personal income tax and social security contribution systems of seven OECD countries. The first part sets out the methodology. The main results are in the second part. These look at the tax position of standard family types of both working age and pensionable age in the seven countries. The countries' personal income tax and social security contribution systems are described in the final sections.

Methodology

The results focus on two groups of people: employees of working age and older people drawing public pensions.

Earnings and income levels

In each case, annual incomes are set at given fractions of the average gross wage earnings of adult, full-time production workers in the manufacturing sector.[1] This means that earnings data are derived from a minority of employees in each country. An obvious drawback of is that the earnings of an average production worker will be at different positions in the overall income distribution in different countries. However, it has, in practice, proved difficult to obtain a broader measure that is consistent between countries. (Sources and methodology for the countries are given in OECD, 2001*a*, Section III.B.) The resulting measures of earnings are shown in Table 1 in both national currency and in United States dollars. Earnings have been translated into dollars using OECD purchasing power parities, which calculate the cost of a common basket of goods in each country. Market exchange rates, of course, fluctuate wildly, and can generate very misleading results.

Table 1. **Earnings of the average production worker, 1999**

	Earnings of average production worker	
	National currency	US$ at PPP

[1] The sample covers manual workers and shop-floor based supervisors. Non-manual workers are excluded except in the Netherlands. Incomes generally exclude the value of fringe benefits, such as provision of food, housing or clothing by the employer free of charge or below market price.

Australia	39 800	30 600
Canada	34 700	29 600
Netherlands	59 500	29 200
Sweden	220 600	22 700
Switzerland	60 200	30 900
United Kingdom	17 800	26 500
United States	30 000	30 000

Note: all values rounded to the nearest 100 for clarity
Source: OECD (2001*a*)

Coverage

The results cover personal income tax and employee and employer social security contributions payable on wage earnings and pension income.[2] For people of working age, it is assumed that the whole of income comes from earnings. Thus, the calculations exclude fringe benefits and capital income (such as dividends and interest).[3]

For pensioners, it is assumed that the whole of income derives from the public pension. In some countries, the maximum public (and/or mandatory private) pension income lies below the highest income level covered in the calculations, equivalent to average economy-wide earnings. In such cases, we have assumed that additional income is fully taxable.[4]

The calculations of after-tax income also include family benefits paid by general government as universal cash transfers (to working-age families). Income tax due on capital income and non-wage labour income, some direct taxes (such as net wealth tax and corporate income tax) and all indirect taxes are not covered. However, all central-, state- and local-government personal income taxes are included.

[2] The OECD is currently revising its treatment of Church taxes — levied in Sweden and Switzerland among the countries considered here — to put it on a consistent footing. Currently, these are included in the calculations for Switzerland but not in Sweden.

[3] At these income levels, such income is generally insignificant. The main exception is the United States, where over 60 per cent of working-age people with earnings around those of the average production worker have income from these sources, which accounts, on average, for five per cent of their incomes.

[4] In most cases, private pension income is fully taxable. However, Canada offers a small tax credit for private pension income. Also, the state income tax in Detroit, Michigan, which we model here, exempts some private pension income. The calculations do not cover these concessions.

Social security contributions

Compulsory social security contributions paid to general government are treated as a tax (see OECD, 2001*c* for a more detailed discussion of the definition of a 'tax'). Social security contributions can give rise to a benefit entitlement, which can also be related to the amount of contributions made. Nevertheless, even in these cases, at least some of the contribution is in effect a tax, because the net present value of benefits received does not equal the value of contributions made.[5] Payroll taxes, levied on the employer as a fixed amount per employee or as a percentage of the total wage bill, are also covered. These are included in the calculations of 'tax wedges' (see below) in Australia, Canada and Sweden.

Family types

The results relate to 17 different illustrative family types:

- single people of working age, earning two-thirds of the average, average and one-and-two-thirds average earnings;
- lone parents of working age, earning two-thirds of the average, with one or two children;
- married couples of working age, with no children, with the principal earner on average earnings and the secondary earner on zero, one-third and two-thirds of average earnings;
- married couples of working age, with two children, with the principal earner on average earnings and the secondary earner on zero, one-third and two-thirds of average earnings;
- married couples of working age, with one child, with the principal earner on average earnings and the secondary earner on zero, one-third and two-thirds of average earnings;
- single people of pension age, with a pension income equivalent to one-third, two-thirds and average earnings.

---

5 Some countries levy compulsory contributions to private social-security institutions. In general, these are excluded from the calculations. Examples relevant here include the superannuation guarantee in Australia and mandatory occupational pensions in Switzerland. Data on the aggregate value of these contributions are presented in OECD (2001*c*) and Adema and Einerhand (1998), Adema (1999) and Adema *et al.* (1996).

These are summarised in Table 2. In cases of families with children, it is additionally assumed that the children are aged between five and twelve.[6]

Personal income tax

The results aim to take into account all 'standard' income-tax reliefs, as set out in the country descriptions. Standard tax reliefs are those that are unrelated to expenditures incurred by the taxpayer and are automatically available to all taxpayers satisfying the relevant eligibility rules. In contrast, 'non-standard' reliefs are wholly determined by reference to actual expenses incurred. They are neither fixed amounts nor fixed percentages of income. Examples of non-standard reliefs include those for interest on qualifying loans (*e.g.*, mortgages for the purchase of a house), private insurance premia, contributions to private pension schemes and charitable donations.[7]

The country descriptions distinguish a number of types of standard relief:

- Basic reliefs, which are typically fixed amounts or fixed percentages of income available to all potential taxpayers irrespective of family type;
- Reliefs that depend on their marital status;
- Reliefs related to the number and age of children;
- Standard reliefs for work-related expenses, which are usually a fixed amount or fixed percentage of earnings[8];
- Tax reliefs for social security contributions and other income taxes (for example, sub-central income taxes);
- Reliefs for taxpayers of pensionable age; and
- Reliefs for public pension incomes.[9]

Some of these reliefs vary with the age of the taxpayer or their dependants. As noted below, the calculations assume that children (where relevant) are

[6] Because in some cases benefit levels and tax reliefs vary with the age of children.

[7] OECD (2001*a*) provides a description of the main sources of non-standard relief and, where possible, estimates of their effect on tax burdens. OECD (1994*a*,*b*) and OECD (1982) offer more details, although the information therein is rather out of date.

[8] Where reliefs are solely related to actual expenditure incurred (and there is not even an option for taking a lump-sum reduction unrelated to spending), then these are non-standard reliefs as described above and so ar not included in the calculations.

[9] Note that the country descriptions also include reliefs for private pension incomes, although the tax calculations assume that pensioners' incomes are fully taxable. This is set out elsewhere in the paper.

aged between five and 12. Where reliefs for pensioners vary with age, it is assumed that the taxpayer is aged 65.

Personal income taxes levied by sub-central levels of government are covered, including:

- state income taxes in Canada (provinces and territories), Switzerland (cantons) and the United States; and
- local income taxes in Sweden, Switzerland (communes) and the United States.

The structure of these taxes is again set out in the country descriptions. Tax rates and/or the tax bases of sub-central government income taxes often vary within a country. In Canada and Sweden, it is possible to use the average tax rate between different areas, because the tax base does not differ. In Switzerland and the United States, this is not possible because of variation in the tax base. Here, a typical manufacturing area has been selected and the relevant tax system applied.[10]

Table 2. **Characteristics of illustrative taxpayers**

Age	*Marital status*	*Number of children*	*Earnings/income, % of earnings of average production worker*	
			Principal earner	*Secondary earner*
Working age	Single	0	67	—
Working age	Single	0	100	—
Working age	Single	0	167	—
Working age	Single	2	67	—
Working age	Single	1	67	—
Working age	Married	0	100	0
Working age	Married	0	100	33
Working age	Married	0	100	67
Working age	Married	2	100	0
Working age	Married	2	100	33
Working age	Married	2	100	67
Working age	Married	1	100	0
Working age	Married	1	100	33
Working age	Married	1	100	67
Pension age	Single	0	33	—
Pension age	Single	0	67	—
Pension age	Single	0	100	—

Universal cash transfers

The calculation of the take-home pay of employees of working age includes family benefits paid by general government as universal cash transfers in respect of dependent children. These payments often vary with the age of the child. Thus, the results assume that dependent children are aged between five and 12. Within this range, the most favourable provisions are taken.

The calculations do not cover universal or near-universal transfers made to pensioners. These are covered elsewhere in the project.[11]

Limitations

The simple approach of comparing the tax and benefit position of example families provides many useful insights on the effect of governments on their citizens. Nonetheless, the results here need to be considered alongside other data. For example, OECD (2001*c*) provides more comprehensive information on the aggregate tax burden in the economy — including, for example, indirect taxes, corporate income taxes, property taxes *etc.* — which are not covered here. Also, a complete analysis of the effect of government on the economy would need to take account of the effect of publicly provided goods and services, such as health and education.[12]

The results set out the formal incidence of taxes on employees and employers. The final, economic incidence of taxes may of course be rather different, because the tax burden may be shifted over time from employers onto employees and *vice versa* by adjustments to gross wages.

Calculations

The results for working age people are based directly on the OECD's tax equations. These computer algorithms, built in Microsoft Excel, calculate tax and benefit positions for family types specified by the user. They were developed by the OECD's Working Party on Tax Policy Analysis and Tax Statistics to extend the results of the annual report, now known as *Taxing Wages*, to a broader range of family types, beginning with the 1997 edition. The family types considered here differ from those presented in OECD (2001*a*). The tax equations have been checked by national delegates to the OECD Working Party and care has been taken to ensure their applicability to

10 While this means that the results are not representative of the country as a whole, otherwise the calculations would not be tractable.

11 Also, see Whitehouse (forthcoming) and OECD (forthcoming) for an analysis.

the family types considered here. Nonetheless, the results are the responsibility of the author alone and should not be attributed to the OECD or OECD Member governments.

For people of pension age, the tax equations have been adapted to include additional concessions granted to older people in personal income tax systems. These typically take the form of additional income-tax allowances or credits. Also, people of pension age generally pay no social security contributions or the latter are levied at a lower rate. More details on the methodology and the results for most of the countries covered here are contained in Keenay and Whitehouse (forthcoming).[13]

Results

The key results of the analysis are set out in Tables 3 to 9. The first three tables are measures of the average tax rate or the 'tax burden'. Table 3 focuses on the personal income tax alone. It shows the proportion of gross income payable in income tax for the seventeen different family types. In two cases — Australia and the United States — this turns negative for lone parents. This reflects the existence of non-wasteable tax credits.

Table 4 has a broader coverage. This table includes the effect of employee social security contributions and universal cash transfers. Again, the table shows the tax burden, that is the total amount of taxes and social security contributions (less transfer payments) as a proportion of gross income.

Table 5 moves to a broader concept still. Many countries rely heavily on employer social security contributions as a general-government revenue source. As noted above, at least some of the incidence of such taxes is probably shifted to workers in the form of lower wages.[14] This table therefore includes employer contributions. It shows the total direct tax burden on labour (personal income tax, employer and employee contributions less cash transfers) as a percentage of total gross labour cost to the employer (*i.e.*,

---

[12] See Disney and Whitehouse (2001), Steckmest (1996), Whiteford and Kennedy (1995) and Smeeding *et al.* (1995) on valuing such in-kind benefits.

[13] Keenay and Whitehouse (forthcoming) does not cover Australia and Switzerland. It is based on work carried out for the OECD's retirement-income inquiry: a detailed assessment of nine Member countries' retirement-income systems (OECD, 2001*b*). Further results are contained in Whitehouse (forthcoming).

gross earnings plus employer social security contributions). This measure is often called the total 'tax wedge'.

Tables 6 to 9 look at the *marginal* rather then the *average* tax rate. These show the amount of additional tax payable when earnings increase by one unit of the national currency.[15] This is a useful measure for considering the impact of taxation on decisions such as increasing hours of work or seeking promotion. The first two tables look at policies whose formal incidence is solely on the employee. The second set of tables examines the total tax wedge, including employer contributions. In each set, the first table looks at the marginal tax rate borne by the principal earner and the second, where relevant, at the secondary earner within the family.

---

[14] See OECD (1997) and the references therein for a discussion.

[15] Note that these calculations necessarily ignore rounding rules in personal income tax systems. Here, these are relevant in Sweden and Germany.

Table 3. **Income tax as a percentage of gross income by family type and income level, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	19.0	24.4	32.8	14.3	14.4	21.1	21.0	22.3	22.2	20.2	21.7	22.7	20.6	22.0	10.6	19.0	24.4
Canada	16.8	21.5	28.7	-3.3	2.4	17.5	18.5	19.6	12.1	15.7	18.4	12.4	15.3	17.6	0.0	0.0	14.7
Netherlands	5.1	6.7	21.7	2.9	2.9	4.8	5.8	6.0	4.8	5.8	6.0	4.8	5.8	6.0	1.4	4.1	5.8
Sweden	24.9	27.2	34.8	24.9	24.9	27.2	26.0	26.2	27.2	26.0	26.2	27.2	26.0	26.2	2.5	26.2	29.4
Switzerland	7.3	10.2	15.2	2.6	3.7	6.9	7.4	9.7	5.0	5.7	8.1	5.8	6.4	8.8	4.2	9.3	13.3
United Kingdom	13.2	16.5	19.1	11.6	11.7	15.4	12.4	14.6	15.4	12.4	14.6	15.4	12.4	14.6	0.6	10.6	15.7
United States	16.2	18.2	24.4	-1.7	6.7	14.9	16.8	17.9	11.0	14.0	15.7	13.1	15.4	16.8	0.0	5.4	11.0

Table 4. **Income tax and employee social security contributions less universal cash transfers as a percentage of gross income by family type and income level, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	20.5	25.9	34.3	-4.1	9.2	22.6	22.1	23.8	16.1	19.0	21.3	18.2	20.6	22.5	10.6	19.0	24.4
Canada	22.3	27.2	32.3	2.3	7.9	23.2	24.0	25.2	17.8	21.2	24.0	18.1	20.8	23.2	0.0	0.0	14.7
Netherlands	31.2	35.6	39.2	9.7	15.8	30.8	32.0	33.8	23.8	26.7	29.6	27.8	29.7	32.0	7.3	14.5	19.3
Sweden	32.0	34.3	40.5	19.9	26.0	34.3	33.1	33.3	26.3	27.0	28.4	30.3	30.0	30.9	2.5	26.2	29.4
Switzerland	18.8	21.7	26.7	1.9	9.1	18.5	19.0	21.2	8.4	11.2	14.7	13.3	14.8	17.9	4.2	9.3	13.3
United Kingdom	20.4	24.6	26.5	7.4	11.6	23.5	19.6	22.3	16.7	14.5	18.2	19.5	16.5	19.9	0.6	10.6	15.7
United States	23.9	25.9	32.0	6.0	14.4	22.6	24.4	25.5	18.7	21.6	23.3	20.8	23.0	24.4	0.0	5.4	11.0

Table 5. **Total tax wedge: income tax and employee and employer social security contributions less universal cash transfers, by family-type and income level as a percentage of gross labour costs, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	20.5	25.9	34.3	-4.1	9.2	22.6	22.1	23.8	16.1	19.0	21.3	18.2	20.6	22.5	10.6	19.0	24.4
Canada	27.1	31.8	35.1	8.3	13.6	28.0	28.7	29.9	23.0	26.1	28.8	23.2	25.7	28.0	0.0	0.0	14.7
Netherlands	40.3	44.4	44.3	21.8	27.0	40.3	41.1	42.8	34.2	36.5	39.2	37.7	39.1	41.2	18.9	25.9	30.3
Sweden	48.9	50.6	55.3	39.8	44.4	50.6	49.7	49.8	44.6	45.1	46.2	47.6	47.4	48.0	2.5	26.2	29.4
Switzerland	27.2	29.8	34.3	12.0	18.5	26.9	27.4	29.4	17.8	20.3	23.6	22.2	23.7	26.4	4.2	9.3	13.3
United Kingdom	26.2	31.0	33.5	14.2	18.1	30.1	25.5	28.6	23.8	20.7	24.8	26.3	22.6	26.3	0.6	10.6	15.7
United States	29.3	31.1	36.9	12.6	20.5	28.1	29.8	30.8	24.5	27.2	28.8	26.4	28.5	29.8	0.0	5.4	11.0

Table 6. **Marginal rate on principal earner of income tax plus employee social security contributions by family-type and earnings level as a percentage of income, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	35.5	44.5	48.5	84.0	104.0	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	20.0	35.5	44.5
Canada	29.8	43.3	43.6	49.6	30.9	43.3	43.3	43.3	48.3	48.3	48.3	45.8	45.8	45.8	0.0	0.0	0.6
Netherlands	44.4	53.0	50.0	40.0	40.0	40.8	53.0	53.0	40.8	53.0	53.0	40.8	53.0	53.0	16.8	25.2	53.0
Sweden	39.7	36.6	50.6	39.7	39.7	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	30.6	51.7	31.8
Switzerland	25.0	31.1	35.7	19.9	20.6	25.7	28.6	30.5	24.5	25.5	30.5	24.6	28.4	30.5	10.0	17.6	22.9
United Kingdom	33.0	33.0	23.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	10.0	23.0	34.5
United States	29.9	29.9	42.9	51.0	45.9	29.9	29.9	29.9	51.0	29.9	29.9	29.9	29.9	29.9	0.0	30.0	15.0

Table 7. **Marginal rate on secondary earner of income tax plus employee social security contributions by family-type and earnings level as a percentage of income, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	—	—	—	—	—	—	20.0	35.5	—	20.0	35.5	—	30.1	35.5	—	—	—
Canada	—	—	—	—	—	—	30.9	29.8	—	35.9	34.8	—	33.4	32.3	—	—	—
Netherlands	—	—	—	—	—	—	34.8	44.4	—	34.8	44.4	—	34.8	44.4	—	—	—
Sweden	—	—	—	—	—	—	27.8	39.7	—	27.8	39.7	—	27.8	39.7	—	—	—
Switzerland	—	—	—	—	—	—	28.6	30.5	—	25.5	30.5	—	29.7	30.5	—	—	—
United Kingdom	—	—	—	—	—	—	33.0	33.0	—	33.0	33.0	—	33.0	33.0	—	—	—
United States	—	—	—	—	—	—	29.9	29.9	—	29.9	29.9	—	29.9	29.9	—	—	—

Table 8. **Marginal rate on principal earner of income tax plus employee and employer social security contributions by family-type and earnings level as a percentage of gross labour costs, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	35.5	44.5	48.5	84.0	104.0	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	20.0	35.5	44.5
Canada	34.5	47.0	43.6	52.9	35.4	47.0	47.0	47.0	51.7	51.7	51.7	49.3	49.3	49.3	0.0	0.0	0.6
Netherlands	53.0	58.2	50.0	49.2	49.2	47.4	58.2	58.2	47.4	58.2	58.2	47.4	58.2	58.2	27.2	36.7	58.2
Sweden	54.7	52.4	62.9	54.7	54.7	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	30.6	51.7	31.8
Switzerland	32.7	38.2	41.9	28.2	28.8	33.4	36.0	37.7	32.3	33.2	37.7	32.4	35.8	37.7	10.0	17.6	22.9
United Kingdom	40.3	40.3	31.4	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	10.0	23.0	34.5
United States	34.9	34.9	47.0	54.4	49.7	34.9	34.9	34.9	54.4	34.9	34.9	34.9	34.9	34.9	0.0	30.0	15.0

Table 9. **Marginal rate on secondary earner of income tax plus employee and employer social security contributions by family-type and earnings level as a percentage of gross labour costs, 1999**

Family type:	*Single person, working age*					*Couple, working age*									*Single pensioner*		
Number of children:	*0*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*2*	*1*	*1*	*1*	*0*	*0*	*0*
Earnings/income:	*0.67*	*1*	*1.67*	*0.67*	*0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*1,0*	*1,0.33*	*1,0.67*	*0.33*	*0.67*	*1*
Australia	—	—	—	—	—	—	20.0	35.5	—	20.0	35.5	—	30.1	35.5	—	—	—
Canada	—	—	—	—	—	—	35.4	34.5	—	40.1	39.1	—	37.8	36.8	—	—	—
Netherlands	—	—	—	—	—	—	42.9	53.0	—	42.9	53.0	—	42.9	53.0	—	—	—
Sweden	—	—	—	—	—	—	45.7	54.7	—	45.7	54.7	—	45.7	54.7	—	—	—
Switzerland	—	—	—	—	—	—	36.0	37.7	—	33.2	37.7	—	36.9	37.7	—	—	—
United Kingdom	—	—	—	—	—	—	40.3	40.3	—	40.3	40.3	—	40.3	40.3	—	—	—
United States	—	—	—	—	—	—	34.9	34.9	—	34.9	34.9	—	34.9	34.9	—	—	—

Australia

Personal income tax

Basic relief

Income up to A$ 5 400 taxed at a zero rate.

Marital-status reliefs

Taxpayers who contribute to the maintenance of a dependent spouse (legal or *de facto*) can claim a credit of A$ 1 340 for a dependent spouse and A$ 1 452 for dependent children. The credit is withdrawn at a 25% rate once the spouse's own net income exceeds A$ 282.

Reliefs for children

Parenting payment: designed to replace the tax credit for a dependent spouse where there are dependent children. In the second quarter of 2000, an average employee with a dependent spouse and dependent children would have received an annual cash transfer of A$ 1 716 instead of the full rebate of A$ 1 452 above.

Lone parent credit: A$ 1 258 credit for resident single, widowed or divorced taxpayers who with sole care of a dependent child.

Family tax assistance: families in receipt of more than the minimum amount of family payment (see below) receive a fortnightly cash transfer, 'family tax payment'. All other eligible families received family tax assistance: an equivalent benefit claimed through the tax system in the form of an increased tax-free threshold. Families may be entitled to one or both of the two parts of family tax assistance.

Part A benefits depend on the combined taxable incomes of the parents. The income ceiling to eligibility of A$ 70 000 increases by A$ 3 000 for second and further children. Part A benefits claimed though the tax system result in an increase in the tax free threshold for the parent with the higher income of A$ 1 000 for each dependant child. If it was paid in the form of a fortnightly cash payment, the family received A$7.70 per dependant child.

Eligibility for Part B benefits requires the main income earner and his or her spouse to meet separate income tests and have at least one dependent child under the age of five. The income ceiling of A$ 65 000 for the main income earner increases by A$ 3 000 for second and additional dependant children irrespective of their age(s). The spouse income test is the same as the cut-off for basic parenting payment (see below). Part B benefits claimed through the tax system increase the tax-free threshold of the main income earner by A$ 2 500. The alternative cash payment is A$ 19.24 per fortnight.

Reliefs for low incomes

A tax credit of A$ 150 for taxpayers whose taxable income is less than A$ 20 700. This credit is withdrawn at a 25% rate for taxable income above the ceiling.

Tax schedule

Table 10 shows the tax schedule.

Table 10. **Personal income tax schedule: Australia, 1999**

Lower limit of bracket (A$)	*Tax rate (%)*
0	0
5 400	20
20 700	34
38 000	43
50 000	47

Medicare levy

1.5 per cent of taxable income subject to certain thresholds. Single taxpayers with incomes less than A$ 13 550 are exempt. Married taxpayers or lone parents are exempt if taxable family income is below A$ 22 865, with an extra A$ 2 100 for each dependent child. For incomes between A$ 13 550 and A$ 14 648, the levy is introduced at a 20% rate.

Social security contributions

There are no employer or employee social security contributions.

Universal cash transfers to families of working age

Fortnightly family allowances are payable at a rate of A$ 24.00 for each of the first three children and A$ 31.90 for the fourth and subsequent children.

No family allowances can be claimed when family income exceeds A$ 67 134, which increases by A$ 3 359 for second and subsequent children.

Supplementary family allowances paid to low-income families at A$ 77.60 per fortnight for each child under 13, with higher rates for older children. The family allowance supplement is reduced by 50% when family income exceeds A$ 23 550, increasing by A$ 624 for second and subsequent children.

Parenting payment, instead of the tax credit for a dependent spouse with dependent children, is payable at a basic rate of A$ 67.20. Payments are withdrawn at a 50% rate for dependent spouse's income between A$ 60 and A$ 140 per fortnight and 70% for income above the latter threshold. Additional parenting payment is asset-tested and affected by the income of the main earning spouse. The maximum additional payment is A$ 231.90 per fortnight, reduced by 70% cents when the main income exceeds A$ 511.00. Additional payments are also withdrawn at the same rate as the basic parenting payment against the dependent spouse's income.

Canada

Personal income tax

Basic relief

Personal tax credit of C$ 1 212.27.

Marital-status relief

A taxpayer supporting a spouse receives a tax credit of C$ 972, reduced by 17% on income accruing to the spouse above C$ 572. The same amount is granted to lone parents.

Reliefs for children

Child tax benefit provides a basic payment of C$ 1 104 per child plus C$ 219 for each child under seven where no child care expenses are deducted and C$ 77 for the third and subsequent children. The basic payment is reduced by 25% of child-care expenses claimed for all qualified dependants and by 5% of family net income above C$ 30 004 for families with two or more children and 2.5% for families with one child.

National child benefit supplement (NCB) is provided to low-income families with children at a maximum rate of C$ 977 for one child, C$ 771 for a second child and C$ 694 for the third and subsequent children. The benefit is withdrawn against income above C$ 21 214 by 11.1% for one-child families, 19.9 per cent for two children and 27.8% for larger families.
Goods and services tax credit provides a refundable tax credit of C$ 105 per child, withdrawn at a rate of 5% on family incomes over C$ 25 921.

Reliefs for older people

Over 65s are granted two additional sources of tax relief other than the basic credits. An age credit of 17 per cent — to a maximum of C$3 482 — is available on income up to C$25 921 and withdrawn at 15% of income above that ceiling.

Reliefs for pension income

There is a credit of 17% up to C$1 000 of pension or annuity income other than that from the public schemes (old-age security, Canada Pension Plan and/or Québec Pension Plan). Public pension benefits are taxable, with the exception of the means-tested component, the guaranteed income supplement.

Tax schedule

Table 11 gives the income-tax schedule.

Table 11. Personal income tax schedule, Canada, 1999

Lower limit of bracket (A$)	*Tax rate (%)*
0	17
29 590	26
59 180	29

State and local income taxes

All the provinces and territories (except Québec) levy income tax as a proportion of the federal tax liability, varying between 44 and 69%. (The modelling uses a tax rate of 50.5%, which is the weighted average for nine provinces.) Québec has its own income-tax statute.

Social security contributions

Employee contributions

Contributions of 3.5% of earnings up to a maximum contribution of C$ 1 186.50 after a basic exemption of C$ 3 500. The maximum contribution is reached at C$ 37,400.

Unemployment insurance requires a contribution of 2.55% of earnings up to C$ 750 per week. Unemployment insurance contributions give rise to a tax credit of 17% of the amount contributed.

Employer contributions

Employers contribute the same amount as employees for the Canada Pension Plan and 1.4 times the employee contribution for unemployment insurance. Three provinces levy payroll taxes for health (and, in one case, education). Employers also pay contributions for provincial work-injury schemes, where contribution rates vary by province and industry.

Contributions for older people

These are not levied on pension income.

Universal cash transfers to families of working age

These are now implemented as tax credits (see above).

Netherlands

Personal income tax

Basic relief

Basic allowance of NLG 8 799.

Marital-status relief

If one spouse has income less than NLG 8 380 then NLG 8 380 can be transferred and claimed by the other spouse.

Reliefs for lone parents

Single parents receive an extra allowance of NLG 6 704 plus 12% of earnings earned outside the household (to a maximum of NLG 6 704).

Work-related expenses

Work-related expenses are deemed to be 12% of earnings, with a minimum of NLG 258 and a maximum of NLG 3 174.

Reliefs for older people

There is a basic additional allowance for over 65s of NLG 511. This allowance is increased to NLG 2 152 for incomes of less than NLG 56 974. There is an additional allowance for individuals 'who have a general old-age pension for a single person'. This is worth a further NLG 511 (or NLG 3 057 for incomes under NLG 56 974).

Reliefs for pension income

No special reliefs are available.

Tax schedule

Table 12 gives the tax schedule.

Table 12. **Personal income tax schedule: Netherlands, 1999**

Lower limit of bracket (NLG)	*Tax rate (%)*
0	6.2
15 000	7.5
48 175	50
105 955	60

Social security contributions

Employee contributions

For unemployment insurance, 6.1% of gross wage less compensation allowance up to NLG 80 910. There is a contribution floor of NLG 28 188.

For health insurance, 1.55% of gross wage less compensation allowance if earnings below NLG 64 300 up to a ceiling of NLG 54 810. Also a fixed payment of NLG 396 if earnings below NLG 64 300.

Contributions to other schemes are levied on the same income as the first and second brackets of the income tax system. Rates are 17.9% for old-age pensions, 1.4% for survivors' pensions and 10.25% for exceptional medical expenses.

Employers pay the compensation allowance to employees to compensate for the switch from employer to employee contributions for exceptional medical expenses. The allowance is 2.2% of gross earnings less employees' social security contributions less the standard deduction for work-related expenses plus the employers' contribution for health insurance. The maximum is 2.2% of NLG 83 200.

Employer contributions

For unemployment insurance, 4.95% on the same base as employee contributions. This includes 4% to the general unemployment fund (with a threshold of NLG 28 188) and 0.95% for the redundancy payments fund.

For invalidity benefits, 7.75% of gross wage less compensation allowance (again with a ceiling NLG 80 910).

For health insurance, 5.85% on the same base as employee contributions.

Contributions for older people

Pensioners pay 11% of pension income for health insurance and survivors' pensions.

Universal cash transfers to families of working age

Family cash transfers depend on the number and age of the children. For a family with two children aged between 6 and 12 years the total benefit is NLG 4 230 a year.

Sweden

Personal income tax

Basic reliefs

Basic allowance against central government taxation varies between SKr 8 700 and SKr 18 100 depending on income.

There is also a tax credit of SKr 1 320 if the income does not exceed SKr 135 000. The tax credit is reduced by 1.2% of income above this ceiling.

There are no reliefs for marital status or children.

Reliefs for older people

Older people are entitled to a special deduction, which varies between SKr 8 700 and SKr 55 900, depending on the amount of pension income received. The additional exemption for older people is withdrawn at a rate of 65% on income in excess of the minimum pension level. The net effect is that there is no special deduction for pensioners whose incomes are above SKr 109,000. This special deduction can not be less than the deduction to which a worker on the same income would be entitled.

Reliefs for pension income

No special reliefs are available.

Tax schedule

The schedule is set out in Table 13.

Table 13. **Personal income tax schedule: Sweden, 1999**

Lower limit of bracket (SKr)	*Tax rate (%)*
0	0
219 400	20
360 000	25

Local income taxes

The local taxes vary between 26.4 and 33.15%, and averages 30.59%.

There is also a lump sum tax of SKr 200 a year.

Social security contributions

Employee contributions

For pensions, employees pay 6.95% of income.

Employer contributions

Employers pay a total contribution of 33.06%, divided as follows: old-age pension, 8.1%; parental insurance, 2.2%; health insurance, 7.5%; labour market, 5.84%; industrial injury, 1.38%; general wage fee, 8.04%.

Contributions for older people

Social security contributions are not levied on pension income.

Universal cash transfers to families of working age

SKr 9 000 per dependent child.

Switzerland

Personal income tax

Basic reliefs

There are no basic reliefs (but there is a zero-rate band: see below).

Reliefs for children

SFr 5 600 for each dependent child.

Work-related expenses

A deduction of 3% of net income (after social security contributions) with a minimum of SFr 1 800 and a maximum of SFr 3 600.

Reliefs for older people

There are no specific reliefs for older people in the federal income tax.

Reliefs for pension income

There are no specific reliefs for pension income.

Tax schedule

The schedule shown in Table 14 is for a single person. There is a separate schedule for married couples. Also, sub-central government operates a different schedule: see below.

Table 14. **Personal income tax schedule: Switzerland, 1999**

Lower limit of bracket (£)	*Tax rate (%)*
0	0
16 100	0.77
27 900	0.88
36 500	2.64
48 600	2.97
63 800	5.94
68 800	6.6
91 100	8.8
118 400	11
154 700	13.2
664 400	11.5*

* Applies to total income

State and local income taxes

These vary between cantons and communities. The modelling assumes that the taxpayer lives in the canton and city of Zürich. Table 15 shows the cantonal tax schedule.

Table 15. **Personal income tax schedule, cantonal level: Switzerland, 1999**

Lower limit of bracket (£)	*Tax rate (%)*
0	0
5 500	2
9 600	3
13 700	4
20 400	5
28 600	6
38 100	7
49 000	8
63 900	9
92 500	10
121 000	11
165 900	12
224 300	13

The actual tax liability is calculated as a multiple of the amount resulting once this schedule is applied. The commune levies a further charge on the same base, and church taxes are calculated in the same way. The relevant multiples for 1999 were:

Zürich canton	108%
Zürich commune	130%
Church taxes:	
Roman Catholic	13%
Protestant	11%

The modelling assumes that the taxpayer is covered by the Protestant (reform) church, given a total multiple of 249%.

Zürich offers older people an additional personal deduction of SFr 3 200 for a single person (SFr 4 500 for a couple)

Social security contributions

Employee contributions

For public pensions, 5.05%. For unemployment insurance, 1.5% of income up
to SFr 97 200 plus 0.5% of income between SFr 97 200 and SFr 243 000.

Employer contributions

Same as employee contributions.

Mandatory occupational pensions

The minimum contribution varies with age from 7% to 18%, of which the employee must pay no more than half. The modelling assumes a 10% total contribution (which applies to men aged between 35 and 44 and women aged between 32 and 41) divided equally between employee and employer.

Universal cash transfers to families of working age

There are no public benefits. However, employers must pay SFr 2 476 per dependent child to their employees. (This applies only to the canton of Zürich).

United Kingdom

Personal income tax

Basic relief

Personal allowance of £4 335 for each individual.

Marital-status reliefs

Additional allowance of £1 970. A couple can choose to allocate the whole allowance to the wife or to split it equally between them. The wife has the right to claim half the allowance although the default is to give it to the husband. The 10% relief is implemented as a wasteable tax credit.

Reliefs for children

Additional allowance of £1 970 for single parents, implemented as the married couple's allowance. The working families' tax credit was introduced in October 1999. Since this is after the start of the 1999-2000 tax year, it has not been modelled.

Reliefs for older people

People of pension age receive a higher tax allowance: £5 720 for single 65-74 year olds and £5 980 for single people 75 or over.

Married couples aged between 65 and 74 receive an extra allowance of £5 125 and couples aged 75 or over an extra £5 195. The allowances for couples are deductible only at 10% (and so work like a wasteable tax credit).

Once a pensioner's total income exceeds £16 800, the additional allowances are withdrawn at 50% of the excess.

Reliefs for pension income

No special reliefs are available.

Tax schedule

The income tax schedule is shown in Table 16.

Table 16. **Personal income tax schedule: United Kingdom, 1999**

Lower limit of bracket (£)	*Tax rate (%)*
0	10
1 500	23
28 000	40

Social security contributions

Employees' contributions

Payable at 10% on weekly earnings between £66 and £500. These rates are reduced for employees who contract out of the state earnings-related pension scheme (Serps).

Employers' contributions

Payable at 12.2% on earnings above £83 per week. Again, the rate is reduced for employees who are contracted out of Serps (but only on earnings between £83 and £500 per week).

Contributions for older people

Social security contributions are not levied on pension income. People of pension age who are employed are also not liable.

Universal cash transfers to families of working age

Child benefit of £14.40 per week for the first child and £9.60 per week for each subsequent child. An extra £2.70 per week is paid to lone parents in respect of the first child.

United States

Personal income tax

Basic reliefs

Taxpayers who do not itemise their deductions are entitled to a lump-sum standard deduction of US$ 7 200 for married couple filing jointly, US$ 6 350 for heads of households and US$ 4 300 for single people.

There is also a US$ 2 750 personal exemption. This is reduced by 2% for each US$ 2 500 by which the income exceeds US$ 189 950 for married couples, US$ 126 600 for single taxpayers and US$ 158 300 for heads of households.

Reliefs for children

For each child and other dependant, the taxpayer can deduct US$ 2 750.

There is a child credit of up to US$ 500 per child. This is withdrawn at a 5% rate once income exceeds US$ 110 000 for married taxpayers and US$ 75 000 for others.

Taxpayers with three or more qualifying children may be eligible for a non-wasteable child credit, subject to certain restrictions. The refundable amount is equal to the amount by which the child credit exceeds the taxpayer's tax liability, but cannot exceed the taxpayer's social security taxes less the earned income credit received (see below).

Reliefs for low-income workers

Low-income workers with dependants receive a non-wasteable earned-income credit. For taxpayers with one child, the credit is 34% of earnings up to US$ 6 800. The credit is withdrawn on earnings between US$ 12 460 and US$ 26 928.

For taxpayers with two or more children, the credit is 40% of earnings up to US$ 9 540. The credit is withdrawn on earnings between US$ 12 460 and US$ 30 580.

The earned income credit for people without children (aged between 25 and 65) is 7.65 per cent on earnings up to US$ 4 530. The credit is withdrawn on earnings between US$ 5 670 and US$ 10 200.

Reliefs for older people

There is an additional standard deduction in the federal income tax. For single people the deduction is US$ 5 350 and it is US$ 8 900 for married couples.

There is also a tax credit targeted on poorer pensioners and the disabled. The maximum credit is US$ 1 125, but this is withdrawn once total income exceeds US$ 17 500 or non-taxable public pension benefits exceed US$ 5 000.

Reliefs for pension income

Social security (public pension) benefits included in taxable income for are limited the lesser of one-half of annual benefits or the excess of income (including half the benefits) over US$ 32 000 for married couples and US$ 25 000 for others. A maximum of up 85% of benefits is taxable (if income, including half the benefits, exceeds US$ 44 000 for married couples and US$ 34 000 for others.

Tax schedule

Table 17 shows the personal income tax schedule.

Table 17. **Personal income tax schedule: United States, 1999**

Lower limit of bracket (US$)		*Tax rate (%)*
Single person	*Married couple filing jointly*	
0	0	15
25 750	43 050	28
62 450	104 050	31
130 250	158 550	36
283 150	283 150	39.6

State and local income taxes

The vast majority of states levy an income tax.[16] The modelling assumes that the taxpayer lives in Detroit, Michigan. The state of Michigan has a personal exemption of U$ 2 800 for each taxpayer, their spouse and each child dependent child. The tax rate is 4.4%. The city of Detroit has a personal exemption of US$ 750 and a tax rate of 3%. Michigan provides a credit for city taxes. For city income tax paid up to US$ 100, the credit is 20%. The credit is 10% on city taxes between US$ 100 and US$ 150 and 5% on city taxes over US$ 150.

State and local treatment of pension income varies. The state income tax system for Michigan gives an extra tax-free allowance of US$ 900 for people

[16] See Keenay and Whitehouse (forthcoming) and Penner (2000) for broader data on different states tax treatment of older people.

over age 65 (US$ 1 800 for a married couple filing jointly). Public pensions are entirely exempt from the state income tax, as is the first US$ 33 810 of income from a private pension. All income from pensions is exempt from the Detroit income tax.

Social security contributions

Employee contributions

Contributions are 6.2% for old-age, survivors, and disability insurance, and 1.45% for old-age hospital insurance. The former applies only to earnings up to a ceiling of US$ 72 600 while there is no ceiling on the latter.

Employer contributions

Employers pay the same contributions as employees for pensions and hospital insurance. There is also a levy for unemployment insurance of 6.2 per cent on earnings up to US$ 7 000. There are also state-sponsored unemployment and work-injury plans to which employers must contribute.

Contributions for older people

Social security contributions are not levied on pension income. However, people working between pensionable age and age 70 continue to pay contributions.

Universal cash transfers to families of working age

There are no general transfers related either to marital status or the number of dependent children.

References

Adema, W. (1999), 'Net social expenditure', Labour Market and Social Policy Occasional Paper no. 39, OECD, Paris.

— and Einerhand, M. (1998), 'The growing role of private social benefits', Labour Market and Social Policy Occasional Paper no. 32, OECD, Paris.

—, —, Eklind, B., Lotz, J. and Pearson, M.A. (1996), 'Net social expenditure', Labour Market And Social Policy Occasional Paper no. 19, OECD, Paris.

Disney, R.F. and Whitehouse, E.R. (2001), *Cross-Country Comparisons of Pensioners' Incomes*, Research Report no. 142, Department for Work and Pensions, London.

Keenay, G. and Whitehouse, E.R. (forthcoming), 'Taxing older people: a study of nine OECD Member countries', in OECD, *Taxing Wages: Income Tax, Social Security Contributions and Cash Family Benefits, 2001 Edition*, Paris.

Organisation for Economic Co-operation and Development (OECD) (1982), *The Personal Income Tax Base: A Comparative Study*, Paris.

— (1994*a*), *Taxation and Household Saving*, Paris.

— (1994*b*), *Taxation and Household Saving: Country Surveys*, OECD Documents, Paris.

— (1997), *The OECD Jobs Strategy: Making Work Pay: Taxation, Benefits, Employment and Unemployment*, Paris.

— (1999), 'Taxing powers of state and local government', Tax Policy Studies no. 1, Paris.

— (2001*a*), *Taxing Wages: Income Tax, Social Security Contributions and Cash Family Benefits, 2000 Edition*, Paris.

— (2001*b*), *Retirement-Income Systems in Nine OECD Countries: Challenges and Responses*, DEELSA/ELSA(2001)6, OECD, Paris.

— (2001*c*), *Revenue Statistics of OECD Member Countries*, Paris.

Penner, R.G. (2000), 'Tax benefits for the elderly', Occasional Paper no. 5, Retirement Project, Urban Institute, Washington, D.C.

Smeeding, T.M., Saunders, P., Coder, J., Jenkins, S.P., Fritzell, J., Hagenaars, A.J.M., Hauser, R. and Wolfson, M. (1993), 'Poverty inequality and living standards impacts across seven nations: the impact of non-cash subsidies for health, education and housing', *Review of Income and Wealth*, vol. 39, no. 3, pp. 229-256.

Steckmest, E. (1996), 'Non-cash benefits and income distribution', Working Paper no. 150, Luxembourg Income Study.

Whiteford, P. and Kennedy, S. (1995), *Incomes and Living Standards of Older People: A Comparative Analysis*, Research Report no. 34, Department of Social Security, London.

Whitehouse, E.R. (forthcoming), 'The value of pension entitlements: an illustrative model of nine OECD countries', Labour Market and Social Policy Occasional Paper, OECD, Paris.