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**SOME ISSUES RELATED TO THE EQUITY-EFFICIENCY TRADE-OFF IN  
THE SWEDISH TAX AND TRANSFER SYSTEM**

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by  
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## ABSTRACT/RÉSUMÉ

The Swedish universal welfare model relies on a high tax level to finance a variety of transfers to the working-age population both in the form of income replacements and income supplements and as services for health-, child- and elderly care. The available evidence, reviewed in this *Working Paper*, indicates that the system has powerful redistributive properties. However, the efficiency costs of the system are substantial. Taxes and benefits combine to face income earners with high effective tax rates and the unemployed with little reward from moving into employment, resulting in a declining intensity in the utilisation of labour. A complex tax code arising out of a significant difference in tax rates for labour and capital income impedes the establishment and expansion of enterprises. An internationally-high taxation of capital income acts as an impediment to savings and the development of the domestic market for risk capital. To these domestic distortions has to be added the detrimental effects of high taxes due to the increasing international mobility of capital and skilled labour. The *Paper* reviews options for reform based on utilising differences in sensitivity of tax bases (optimal taxation approach) or on a greater uniformity of tax rates (a more proportional tax system), with a view to lowering of the overall tax level, particularly on labour, and alleviating some of the negative features of capital income taxation. It also sets out an approach to social insurance reform, which should encompass lower replacement rates, a review and reinforcement of eligibility criteria and a greater reliance on arrangements with risk-differentiated premiums.

*JEL classification:* H21, H23 to 24, H30, H55

*Keywords:* taxes, transfers, redistribution, Sweden

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Le modèle suédois de protection sociale universelle repose sur une fiscalité élevée afin de financer à la fois une variété de transferts au profit de la population en âge de travailler sous la forme de revenus de remplacement et de compléments de revenus ainsi que des services au bénéfice de la santé, des personnes âgées et de l'enfance. Ce système a des propriétés de redistribution très importantes qui sont mises clairement en évidence dans ce *Document de Travail*. Cependant, les coûts d'efficacité du système sont substantiels. Les prélèvements et les transferts se conjuguant pour assujettir les particuliers à des taux marginaux d'imposition élevés, et les chômeurs étant financièrement peu incités à prendre un emploi, il en résulte une intensité déclinante de l'utilisation de la main d'œuvre. Un code fiscal complexe ayant pour conséquence une différenciation importante entre l'imposition du revenu du travail et celle du revenu du capital fait obstacle à la création et à l'expansion des entreprises. Une taxation du revenu du capital élevée par rapport à d'autres pays représente un obstacle à l'épargne et au développement du capital-risque dans le marché intérieur. A ces distorsions d'ordre intérieur on doit ajouter les effets préjudiciables d'une fiscalité élevée face à une mobilité croissante au niveau international des capitaux ainsi que sur l'emploi qualifié. Le *Document* passe en revue les options de réformes basées sur l'utilisation des différences de sensibilité des bases d'imposition (approche optimale de l'imposition) ou une plus grande uniformité des taux d'imposition (un système fiscal plus proportionnel), avec en vue un abaissement du niveau général de la fiscalité, particulièrement celle touchant les revenus du travail et une réduction de quelques aspects négatifs de la fiscalité du revenu du capital. Le *Document* ébauche également une approche de réforme de l'assurance sociale qui comporterait des taux de remplacement plus faible, une revue et un renforcement du critère d'éligibilité et une confiance accrue dans les dispositions concernant les primes de risques différés.

*Classification JEL :* H21, H23 à 24, H30, H55

*Mots-clés:* impôts, transferts, redistribution, Suède

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## SOME ISSUES RELATED TO THE EQUITY-EFFICIENCY TRADE-OFF IN THE SWEDISH TAX AND TRANSFER SYSTEM

Henning Strand<sup>1</sup>

Sweden is generally seen as the embodiment of the universal welfare model. The government is heavily involved in the provision of social insurance, via transfers to the retired, compensation for short-term income loss and for expenses associated with children and housing. It also provides a variety of services in kind in health, child and elderly care. In general, these transfers and services are generous by most international comparisons and are extended on a universal basis regardless of the income and wealth position of the recipients. In consequence, a high tax level is required to finance an above-average level of both government transfers and public consumption. Income redistribution being an integral feature of the Swedish model, the tax and benefit system has reinforced an already rather compressed income distribution, both by a progressive income tax structure and by transfers tailored towards the needs of low-income families. But the “cradle to grave” model has come under intense scrutiny, with respect to its impact on incentives to work and save, and for the costs which a heavily redistributive system may incur in terms of lower longer-run potential growth. At stake is the issue whether, having weathered the severe economic imbalances of the 1990s, the Swedish model contains intrinsic flaws which detract from its capacity to adjust fully to an international environment of increased openness.

The chapter begins with an overview of the main features of the Swedish tax and transfer system, bringing out the underlying objectives of the system, its evolution and the overall impact in terms of coverage and demands on resources. The second part sets out in more detail the achievements in terms of a more equitable distribution of incomes and the considerations guiding policy towards the welfare state. The third part assesses the economic impact of the tax and transfer systems, in terms of incentive effects on the labour market and on saving and investment behaviour. To keep the paper within manageable proportions, the focus is on taxes and transfers as they affect the working-age population while issues related to old-age pensions are not covered<sup>2</sup>. Particular issues related to the provision of services in health, child and elderly care are not dealt with other than as they affect the tax level. The chapter concludes by identifying the

- 
1. This paper was originally produced for the 1999 *OECD Economic Survey of Sweden*, which was published in July 1999 under the authority of the Economic and Development Review Committee, with the heading “The tax and transfer system -- balancing efficiency and welfare”. The author is senior economist on the Sweden/Denmark Desk in the Economics Department. He is indebted to Robert Price (Head of Division) for substantial drafting contributions and to Val Koromzay, Andrew Dean and Mark Pearson for valuable comments. Special thanks go to Sylvie Toly for technical support and to Janice Gabela for technical preparation. The paper has benefited from discussions with numerous Swedish experts, in ministries and government agencies responsible for policy-making in this area as well as the academic staff of the Department of Economics at Uppsala University, the Swedish Institute of Social Research at the University of Stockholm, the Industrial Research Institute and members of the Economic Council.
  2. An overview of recent policy initiatives with respect to old-age pensions is provided in chapter II of the 1999 *Economic Survey of Sweden*.

emerging policy challenges and suggests some guidelines for the further evolution of the tax and transfer system.

## Objectives, institutions and instruments

### *The foundations of the welfare state*

In common with other European countries, social insurance developed during the last decades of the 19th century and the early 20th century in response to the transformation of the agriculturally-based economy to an industrial wage-earner society. The origins of a particular Swedish model can be traced back to the 1930s and the explicit commitment to full employment, achieved by government intervention and by the establishment of a wage bargaining framework based on co-ordination and co-operation between the social partners. This framework was refined in the immediate post-war period to embrace more or less all dimensions of economic policy. An environment conducive to high and expanding employment was meant to emerge from attempts to equalise wages across industries and between occupations and from a labour market policy which promoted the geographical and occupational mobility of the workforce. Growth and redistribution objectives were also meant to be served by human capital acquisition, provided by a strong expansion of the education system and by the gradual extension of the safety net of publicly-provided benefits, the most notable being the income-related pension scheme (*ATP* -- *allmän tilläggs pension*) in 1960.

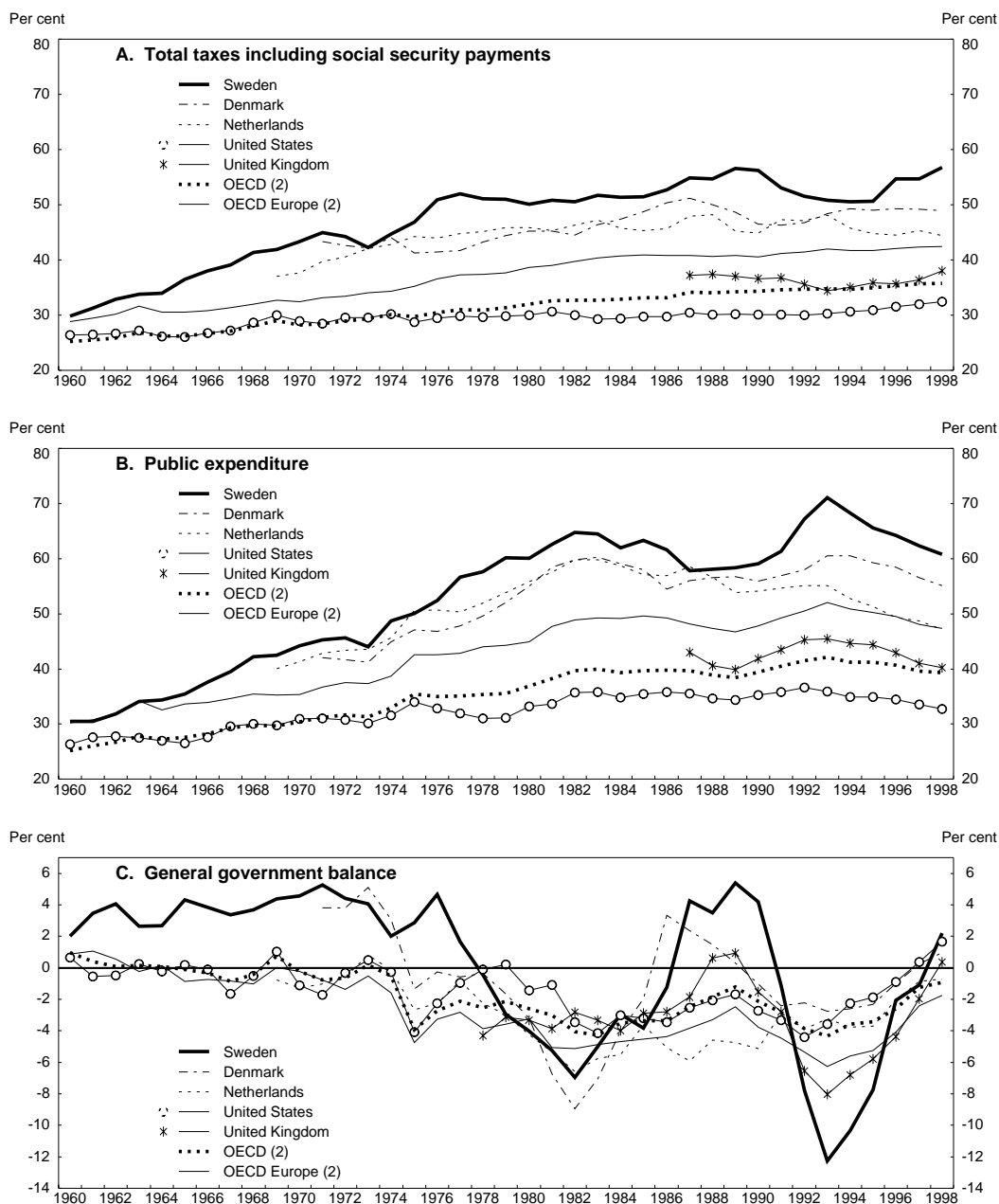
While all the main elements of the Swedish social insurance system were in place by 1960, that year marked only the starting point for a sustained expansion of public sector commitments to welfare provision, which gradually became more general and more generous, both in terms of eligibility and replacement rates (see *Annex 1* for a detailed exposé). The result was an increase in the share of public expenditures relative to GDP from less than 30 per cent in 1960 to above 60 per cent in 1980. The share of public employment in total employment increased from less than 15 per cent in 1960 to more than 30 per cent in the second half of the 1980s. Tax and expenditure levels quickly overtook those in other OECD countries, resulting in levels relative to GDP some 25 percentage points above the OECD average in 1980. (*Figure 1*). Since 1980, the upward trend in public expenditure and employment has been far less pronounced. The main force driving expenditure and tax ratios has been the economic cycle. The upturn in the late 1980s led to strong inflows of tax revenues and hence to more generous transfer schemes, while the downturn in the early 1990s weakened tax revenues and necessitated an overall tightening of transfer schemes to get public finances under control. In the process, Sweden's relative position *vis-à-vis* other OECD countries has been maintained, with tax and expenditure ratios currently about 20 percentage points above the OECD average and 10 to 15 percentage points above the EU average.

By international comparison, Sweden and Denmark have the highest overall tax levels in the OECD area, Sweden being relatively more reliant on social security contributions than income taxes (*Table 1, panel A*). As in Denmark, the relatively high level of taxation reflects, in part, the fact that most transfers are taxed, whereas most OECD countries provide transfers net of taxes. If differences in the scope of mandatory private social programmes and tax expenditures are also taken into account, social spending in Sweden falls from 36½ per cent of GDP to 25½ per cent, which is below German levels and more in line with most other European countries<sup>3</sup> (*panel B*). But even if accounting differences are adjusted for, Sweden ranks at the higher end in a comparison of generosity of benefits and effective tax levels (documented below).

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3. See OECD (1999), *A Caring World. The New Social Policy Agenda*, and Adema, W. (1997), "What do countries really spend on social policies? A comparative note", *OECD Economic Studies 1997/1*.

**Figure 1. Taxes, expenditure and net lending (1)**  
Per cent of GDP



1. Estimates for 1998.  
 2. Weighted average of available data.  
 Source: OECD.

Table 1. The structure of public finances and social expenditures

Panel A. Public sector revenues and expenditure <sup>1</sup> , per cent of GDP at market prices									
	Sweden	Denmark	Finland	France	Germany	Netherlands	Norway	United Kingdom	United States
<b>Revenue</b>									
Taxes on income, profits and capital gains									
Personal <sup>2</sup>	<b>21.5</b>	29.6	19.3	8.9	10.5	11.3	16.2	12.8	13.2
Corporate <sup>2</sup>	<b>18.2</b>	26.0	16.1	6.8	8.8	6.8	7.4	8.9	10.5
Social security contributions	<b>3.3</b>	2.6	3.2	2.1	1.8	4.6	8.8	3.9	2.7
Taxes on property, etc.	<b>15.9</b>	1.6	11.7	19.2	15.7	17.6	9.6	5.9	6.9
Taxes on goods and services	<b>2.1</b>	1.7	1.1	2.5	1.0	2.0	0.9	3.7	3.1
Total taxes	<b>12.0</b>	16.5	14.3	12.6	10.5	12.1	15.8	12.2	4.8
Other revenue	<b>53.3</b>	49.7	46.3	46.1	37.7	43.3	42.5	34.7	27.9
Total revenue	<b>7.9</b>	7.0	4.0	4.6	7.3	4.6	9.2	4.4	3.6
	<b>61.2</b>	56.7	50.4	50.8	45.1	47.8	51.6	39.0	31.5
<b>Disbursements</b>									
Final consumption expenditure	<b>25.8</b>	25.3	22.3	19.6	19.4	13.7	20.2	18.4	15.3
Interests and dividends	<b>6.6</b>	5.8	4.3	3.8	3.7	5.2	2.2	3.7	1.9
Subsidies	<b>4.3</b>	2.4	2.5	2.1	1.8	2.2	3.1	0.6	0.3
Other current transfers	<b>24.8</b>	21.2	22.2	26.1	20.8	26.0	16.9	16.6	13.8
Total current disbursements	<b>61.5</b>	54.8	51.3	51.6	45.8	47.0	42.4	39.3	31.3
Capital outlays	<b>0.8</b>	1.8	0.7	2.6	2.0	1.6	1.9	1.7	1.1
<b>Panel B. Gross and net social expenditure<sup>3</sup>, per cent of GDP at factor prices</b>									
Gross public social expenditure	<b>36.4</b>	37.6	35.7	..	30.4	30.1	31.5	25.9	17.1
Net publicly mandated social expenditure <sup>4</sup>	<b>25.6</b>	23.9	25.0	..	26.9	21.9	22.5	22.6	18.0
Net total social expenditure <sup>5</sup>	<b>27.0</b>	24.4	25.7	..	27.7	25.0	..	26.0	24.5
<i>Memorandum items:</i>									
Direct taxes and social security contributions on public benefits	<b>5.2</b>	6.1	5.3	..	1.2	5.1	2.7	0.4	0.3
Implicit indirect taxes on public benefits	<b>5.8</b>	8.0	5.5	..	4.2	3.9	6.9	3.7	0.9

1. 1997. 1996 for the United States.

2. Excluding taxes not entirely allocable to either sector.

3. 1995.

4. Includes effects of differences in mandatory private social programmes, tax treatment of benefits, and tax expenditures for social purposes.

5. Includes the effect of voluntary private expenditure.

Source: OECD, *National Accounts and Revenue Statistics*; OECD, SOCX database.

### *The interaction between social and occupational insurance schemes*

The Swedish social insurance system rests on four main pillars: *i*) compensation for short-term loss of income in case of unemployment, sickness and work injuries; *ii*) compensation for long-term loss of income due to old-age retirement and work incapacity; *iii*) family support such as compensation for loss of income to take care of children and to offset high housing costs, and *iv*) services in kind to reduce the costs to households of health, elderly and child care. It has the following major institutional characteristics:

- Unemployment insurance is *administered* by funds affiliated with the trade unions, while all the other schemes are run by government authorities and are open to all members of the workforce, who have to pay social security contributions, both directly and through payroll taxes.



- To reduce arbitraging between transfer schemes, *replacement rates* for short-term income losses and parental leave have been harmonised and are now 80 per cent, the only exception being compensation for work injury.
- The formal duration of unemployment benefits is fairly low, but entitlement to such benefits can be renewed through participation in active labour market policy schemes (ALMPs) administered by the National Labour Market Board (AMS), so that there is in practice no upper limit to their duration. Sickness benefits may also be extended without any upper limit as long as certain medical criteria are satisfied. For those suffering from long-term illness, transition back to work is dependent on access to rehabilitation; if that fails -- or access cannot be obtained -- disability pension, generally irreversible, is often the sole remaining option.
- Family support, encompassing both child allowances and allowances for leave during child-minding, is extended without *means-testing*, whereas social assistance and housing support (which mainly accrues to families with children) are subject to means-testing.

Further details are provided in *Box 1*. The Swedish set-up differs from countries with a heavy reliance on mandatory occupational insurance schemes, such as Germany and the Netherlands, and from countries which rely on income-independent basic insurance provided by the public sector, topped up by voluntary, but tax-advantaged, individual or occupational schemes, such as the United Kingdom.

#### **Box 1. Social insurance for the working-age population**

*Unemployment insurance* funds are government-financed, but trade union-administered. Membership is voluntary but open to all members of the labour force. Benefits may be claimed after twelve months of membership and 80 days of work within five months in this period, subject to a willingness-to-work requirement of at least 17 hours per week and a waiting period of five days. The replacement rate is 80 per cent of gross earnings, subject to a nominally fixed cap, which used to be close to the earnings level of the average production worker but has now fallen below 70 per cent of that wage. The formal duration of the benefit is 300 days, not necessarily consecutive, and 450 days for workers 55 years or older; but benefits can be extended through participation in ALMPs. For other job seekers above 20 years of age with a minor work record or who have recently finished education, a flat-rate benefit, corresponding to about 30 per cent of the gross earnings of an average production worker (APW), is available.

*Income replacement in case of sickness* is awarded after one waiting day, for the first fortnight through a *sickness wage* paid by the employer and for the remaining period through *sickness benefits* paid by social insurance. The replacement ratio is 80 per cent throughout for the sickness wage, whereas sickness benefits are capped at an income about 25 per cent above APW earnings. There is no formal upper limit on the length of the sickness period, but long sickness spells are subject to close surveillance and periodic checks to see how a process of rehabilitation can be initiated. Sickness benefits also cover cases of work injury, but in cases where full work capacity cannot be restored, a *work injury annuity* will be awarded, covering by 100 per cent the loss in income following from the injury.

*Partial early retirement pensions* have been available for employees and self-employed 61 to 64 years of age who want to reduce their weekly working hours. The reduction cannot exceed ten hours per week and the pension amounts to 55 per cent of the estimated loss in earnings. However, the old-age pension has been unaffected by this reduction in total income. This option is no longer available now that the old-age pension reform has entered into force (see chapter II).

*Disability pensions* are available for persons 16 to 64 years of age whose work capacity has been reduced by at least 25 per cent. The pension is graduated with respect to the loss in work capacity. The earlier option to supply this assessment with considerations with respect to age, local employment conditions etc. has been terminated, restricting the overall access to the scheme. The replacement rate is calculated on the same basis as for old-age pension, with an assessment of the future income stream that would have accrued in the absence of the disability.

*Social assistance benefits*, administered by local authorities, are available to households who for reasons of low income (and a host of other factors) are unable to obtain a reasonable living standard. Up to 1997, municipalities had wide discretion in adapting design, content and levels of support to local circumstances, resulting in 25 per cent of municipalities adhering to centrally-provided norms and the remainder adopting lower levels. A 1997 amendment has restricted the room for local discretion, imposing the nation-wide norms on most components entering into the support. Access to the scheme is subject to strong means-testing, going as far as requiring recipients to sell their capital assets, and youths can be required to undertake training or education to reduce their future benefit-dependence.

*Housing benefits* are means-tested and are determined by an interplay of three parameters, the number of children, the income of the household and the level of housing costs. Their formulation insures that benefits accrue mainly to households with children (75 per cent of the total). Housing costs above a basic amount are compensated by an initial 75 per cent, then by 50 per cent up to a ceiling (corresponding to 30 to 40 per cent of an APW for families with three children or more). Benefits are then modified according to income and phased out at a rate between 20 to 33 per cent (depending on family circumstances) of additional earnings for family incomes above 55 per cent of an APW.

*Child benefits and family benefits* are again universal. *Child benefits* are related to the number of children in the family, with a higher amount coming into effect from the third child on; *family benefits* compensate parents for staying at home to take care of their children during the period immediate after their birth. The replacement rate for the latter is 80 per cent (as elsewhere in the social insurance system) for the first twelve months, then a fairly low flat rate support is available for another three months (and for the entire fifteen months for parents without income from work). In addition, divorced parents with child custody receive a guaranteed minimum *alimony benefit* disbursed by social insurance authorities. The effect is to top up the alimony which is dependent on the circumstances of the payer (and paid as a refund to the social insurance).

In addition, *day care for children* is provided at prices below costs incurred, with payments dependent on parents' income. These income-dependent payments has been found to imply on average clawbacks of 5 to 7 per cent when incomes increase; however, marginal effects are much more pronounced when moving from unemployment to employment.

Finally, from a taxation perspective, transfers are taxed on a par with labour income when they substitute for a short- or long-term earnings loss to avoid tax considerations playing into the take-up of benefits. Social insurance benefits are thus generally provided gross of taxes, the exception being social assistance. Child and housing benefits are consequently provided net of taxes.

Insurance provided by the public sector faces less strict financing constraints than private schemes insofar as it is backed by the power to levy taxes. Similar considerations apply to collective or obligatory arrangements in the private sector, where enterprises and wage earners as a whole have to finance current disbursements. In the Swedish case, social insurance has been financed by general payroll taxes, thereby involving an implicit income transfer from low-risk to high-risk participants. With undifferentiated premia, own-account risk is imposed on participants only via replacement rates lower than 100 per cent, by introducing "waiting days" at the start of each insurance spell, or an upper limit to the duration of each spell. The development of these parameters, and of qualification and eligibility criteria, are crucial to assessing the possible impact on job search intensity, reservation wages and labour supplied.

Looked at from a longer-term perspective, the development of the social insurance system has been through various stages (details are provided in *Annex I*). The process of extending the scope and coverage accelerated in the 1960s, particularly with respect to sickness and disability benefits. The evolution of the system in the 1970s partly reflected a response to emerging labour-market imbalances, partly a further increase in generosity such as a lowering of the formal retirement age to 65 years. The focus of the 1980s was partly on extending family transfers, partly on lowering own-account risk in sickness and unemployment benefits. These modifications had to be reversed in the 1990s when public expenditures were cut in order to try to keep public finances under control. Waiting days in sickness and unemployment benefits were again introduced and labour-market criteria ceased to qualify on their own for disability benefit. They are at present not incorporated into the eligibility criteria at all. The culmination of

this process came in 1996 with the reduction of the replacement rate in all social insurance schemes to 75 per cent -- a step retracted in 1998 when the rate was increased to 80 per cent.

Less noticed, but of equal importance for the evolution and impact of the social insurance system, has been the emergence and growth of occupational pensions. These were initially an integrated feature of contractual work arrangements for white-collar employees in both the private and public sector and have come to encompass 90 per cent of the Swedish labour market. Such pensions are stimulated by favourable tax treatment (premiums being exempt from full social security contributions, partially offset by a special wage tax and low taxation of the return of accumulated funds). They now complement social insurance in the areas of unemployment insurance, sickness benefits, early retirement, work injuries, survivor's and old-age pensions (see *Annex I*) and are also providing services in kind on a par with the Public Employment Service. They serve to raise replacement rates above those provided for in public arrangements or to cover incomes which are left uninsured by these, i.e. earnings above a certain level and thereby benefiting individuals at the upper end of the earnings distribution. These arrangements are financed in part by undifferentiated premia and enterprises organised in employers' federations party to such agreements cannot opt out of them. They interact with social insurance to add to replacement rates and have similar effects on the behaviour of wage earners<sup>4</sup>.

Reflecting the extension of social insurance and adverse demographic trends, the household sector has become far more dependent on transfers as a source of income. Whereas 15 per cent of household incomes in the mid-1960s consisted of transfers, that share rose to 38 per cent at the trough of the recession in 1993 and is still as high as 35 per cent (*Figure 2*). Even if the increase stemming from old-age pensions is discounted, transfers to the working-age population have increased from 8 to 20 per cent of overall household receipts. As a result, the Swedish economy has seen a steep increase in the non-active population relative to the active (*Table 2*). On the social services side, government consumption related to the provision of social insurance increased from below 9 per cent of GDP in 1960 to close to 20 per cent in the early 1980s. The expansion was then arrested, but the share has remained well above 15 per cent of GDP.

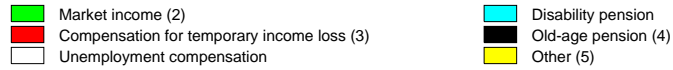
Table 2. Pensioners, benefit recipients and employment

	1 000 persons			
	1970	1980	1990	1997
I. Old-age pensioners	947	1362	1533	1592
II. Working-age benefit recipients	606	835	1009	1286
of which:				
a) Disability pensioners	188	281	354	423
b) Unemployed	59	84	69	342
c) ALMPs participants	69	121	140	269
d) Sickness benefit recipients <sup>1</sup>	262	274	289	129
e) Family benefit recipients	28	75	157	123
III. Employed	3529	3736	3968	3567
of which:				
a) Public sector	766	1183	1298	1139
b) Private sector	2763	2553	2670	2428
Total (I + II + III)	5082	5933	6510	6445
Indicators:				
Non-active to active population [(I + II)/III]	0.44	0.59	0.64	0.81
Non-activity in the working-age population [II/III]	0.17	0.22	0.25	0.36
Total pressure on private-sector resources [(I + II + IIIa)/IIIb]	0.84	1.32	1.44	1.65

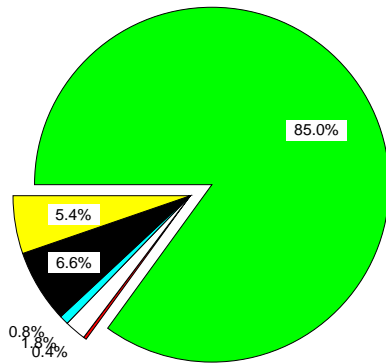
1. Recipients of sickness wages from employers, an arrangement introduced in 1992, are counted as employed.  
Source: Swedish Employers' Confederation.

4. A case in point is sickness benefits which during 1987-91 had total replacement rates of 100 per cent. This provoked a public regulation for sickness benefits in 1991 whereby modifications in the social insurance scheme are fully reflected in the total replacement rate, and supplementary benefits from the occupational scheme are not allowed beyond 90 days of sickness.

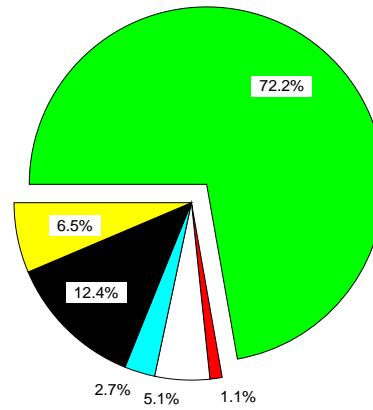
**Figure 2. Household income by origin**  
Per cent of total households receipts (1)



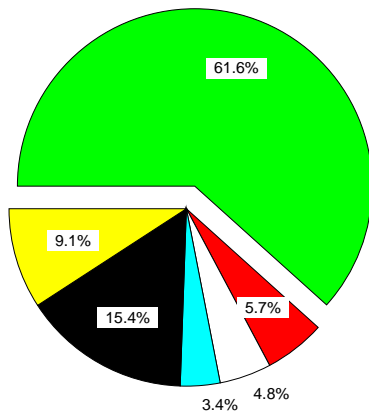
1965: Total receipts= SKr 77.0 billion



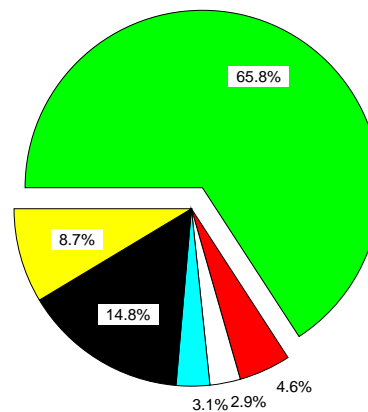
1980: Total receipts= SKr 369.3 billion



1993: Total receipts= SKr 1027.8 billion



1997: Total receipts= SKr 1199.6 billion



1. Wages and salaries, entrepreneurial income, govt. transfers, capital income net of interest payments and net private transfers.  
 2. All income except government transfers.  
 3. Sickness insurance, parent insurance and part-time pensions.  
 4. National basic pensions, KBT, national supplementary pensions (ATP) and occupational pension schemes in the public sector.  
 5. Child allowances, education allowances, housing allowances, social assistance, etc. .  
 Source: National Institute of Economic Research (NIER); SCB, National Accounts.

### *Financing the welfare state*

With employment in the private sector actually declining in size over the past three decades, there has been a continuous underlying pressure to increase the tax base and effective tax rates. In the mid-1950s, the overall Swedish tax level was in line with the OECD average, but it then started to increase steeply, taking it to the top of the ranking in the early 1970s. This reflected the introduction of a general sales tax (converted to value added tax in 1969), which rose markedly in the years after its inception, and the financing of the social insurance system through general taxes, in particular through payroll taxes. Employers' social security contributions were introduced in the mid 1950s and top rates reached 35 per cent in 1980. The major sources of revenue-generation thus came to lie in broadly-based income taxes and general consumption taxes, embracing a high degree of progressivity but with heavy taxation beginning very early in the income distribution. The wage earner on average incomes, having faced marginal tax rates around 35 per cent in the early 1950s was to see them increase to around 60 per cent in the early 1970s and to 65 to 70 per cent a decade later.

The tax deductibility for interest payments made borrowing for acquiring real assets such as owner-occupied houses and consumer durables highly profitable in the inflationary environment of the 1970s and 1980s, even more so when capital gains on property escaped taxation and the imputed rent for owner-occupied housing was set below market rates. The gains accrued, in particular, to those at the upper end of the income distribution, as their higher marginal tax rates translated into lower after-tax interest rates. The redistribution actually achieved was thus far lower than that implied by the high tax rates at the upper end of the tax schedule. Indeed, so extensive were the deductions of interest payments that the net revenues from the taxation of household capital income actually became negative.

On the corporate side, high nominal tax rates on corporate profits were offset by generous depreciation allowances and other tax credits, intended to stimulate fixed capital investment. Set up before the war, the system was refined in the 1950s and 1960s, *inter alia* to fit in with the prevailing demand management approach<sup>5</sup>, which sought to stabilise investment over the cycle. In consequence, statutory tax rates of 50 per cent or more were rather misleading as a guide to the effective rate of corporate taxation, which in the manufacturing sector was in the range of 20 to 30 per cent. However, with taxation dependent on capital intensity and the methods of ownership and finance, required rates of return on investment differed widely across projects. Differences were amplified by the inflation-sensitivity implied by high marginal tax rates in a nominally based system. Moreover, the tax system became highly complex, requiring legal and financial expertise to utilise the wide range of tax expenditures available. By the mid-1980s, small and medium-sized enterprises were facing significantly higher effective rates of taxation than larger ones.

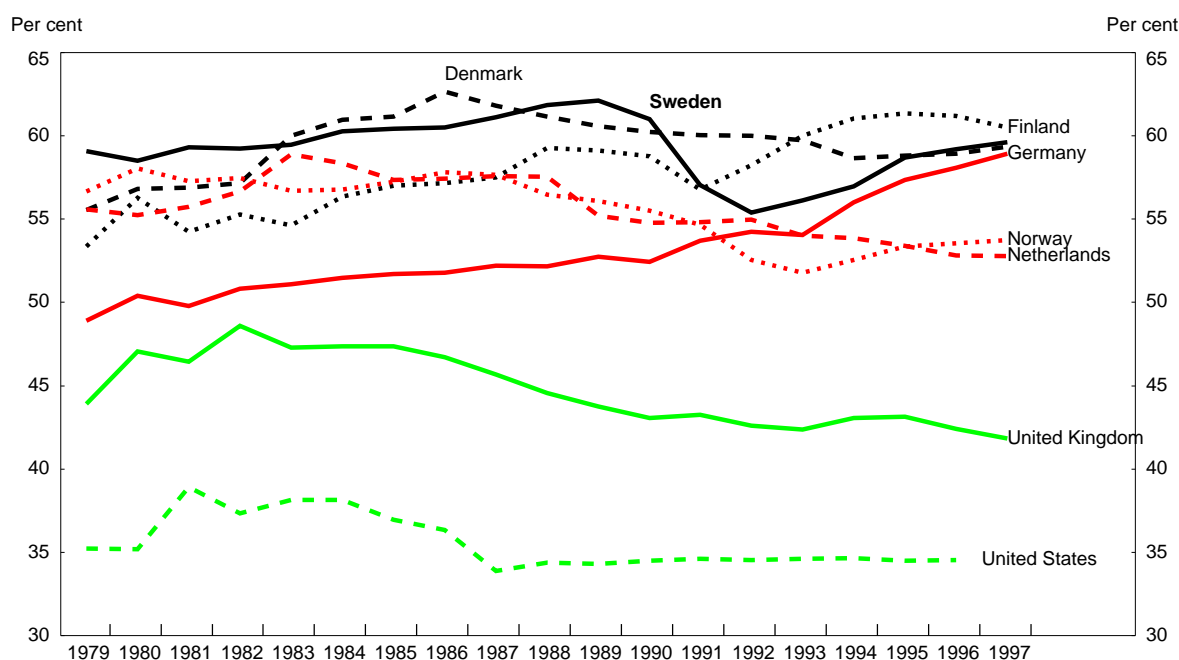
Against this background, the 1991 tax reform embraced the principle of base-broadening and rate-cutting, while separating the taxation of capital income from labour income. It applied a uniform rate of taxation to capital income (already partially in use in Denmark and about to be introduced in Norway at the same time)<sup>6</sup>. The Swedish tax reform entailed a restructuring on a scale rarely seen in tax reform programmes. The revenue loss following from lower tax rates -- recuperated by broader tax bases -- was about 6 per cent of GDP as against 1 to 2 per cent of GDP in the 1986 US tax reform<sup>7</sup>. The main aim of the reform was to reduce distortions and welfare losses stemming from high tax rates and narrow tax bases and

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5. The vehicle used was the so-called Investment Fund system which induced firms to reserve profits during boom years to be used for investment during periods of low activity.
  6. The reform was embarked upon in 1990 with the major changes being in place by 1991; the last step was taken in late 1993 when the tax regime applying to proprietary firms and partnerships was brought in line with that of incorporated enterprises.
  7. See Ministry of Finance (1991), *The Swedish Tax Reform of 1991*.

at the same time to alleviate the tax system of its redistributive role by increasing child allowances and housing benefits. The marginal tax rate on capital income was brought down to a uniform 30 per cent, while labour income would be taxed at a low rate of about 30 per cent and -- for the income above a threshold corresponding to 110 per cent of the gross wage of the average production worker -- at a higher rate of about 50 per cent. Reducing the value of the tax deductibility of interest payments provided two-fifths of the financing of the revenue loss. The other main source of finance was an extension of the base for the value added tax, which provided just under a third.

In the event, the tax structure envisaged in the reform proved impossible to maintain in full in the face of the negative demand shock in the early 1990s, which acted to lower tax revenues and increase transfers to the working-age population. Fiscal consolidation relied in roughly equal parts on raising taxes and lowering expenditures, and was implemented by an increase in the highest marginal income tax rate on labour incomes to about 57 per cent and the introduction of employees' social security contributions which by 1998 had reached close to 7 per cent. Moreover, indexation clauses were partially abandoned, leading to tax brackets gradually declining in real terms. In total, these changes represented an income loss to households amounting to 3 to 4 per cent of GDP, and the number of wage earners facing the highest marginal income tax rate rose to 40 per cent of full-time employees in 1998 from about 30 per cent in the early 1990s. Taxes paid out of wage income which had started to fall relative to other countries after the reform, turned upwards again and are now on a par with Denmark, Finland and Germany (*Figure 3*).

**Figure 3. Effective tax rates (1)**  
Per cent



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

### Redistribution: the achievements of the welfare state

Even if income distribution objectives are rarely quantified in any operational sense, two separate considerations are crucial to an understanding of the restrictions imposed by equity aims on economic

policies in the Swedish context. Firstly, poverty alleviation is an important consideration for the evolution of the income distribution in the short term, feeding into the formulation of social insurance and social assistance. Secondly, an equalisation of economic opportunities is seen as crucial for avoiding longer-run inequalities, motivating the extension of education, discussed in the 1998 OECD *Economic Survey of Sweden*, and slanting benefits in favour of families with children. Moreover, old-age pensioners have generally been seen as a broad category requiring special attention.

### *Sweden still compares favourably internationally*

Comparison of the equality of the income distribution across countries is fraught with difficulties and measured levels of inequality from aggregate indicators are often not comparable<sup>8</sup>. A strong compression of market-based wage rates and a small dispersion in hours worked have traditionally worked in Sweden's favour in such comparisons, and at the aggregate level, the Swedish system incorporates a much stronger element of redistribution than elsewhere (*Table 3*). A better gauge for the redistribution effected is often provided by comparing relative income levels for key target groups. These are high in Sweden and have improved immensely over the past 20 years, particularly in the case of old-age pensioners.

**Table 3. Features of income distribution in selected OECD countries<sup>1</sup>**

	Gini coefficient			Individuals below the poverty line <sup>2</sup> , per cent	Children's disposable incomes <sup>3</sup> , per cent	Disposable incomes of old-age pensioners <sup>3</sup> , per cent	Lone parents' share of households in lower quintile, per cent	
	Before taxes and transfers (1)	After taxes and transfers (2)	Per cent changes due to taxes and transfers (2)/(1)-1				Non-working	Working
<b>Sweden</b>	<b>48.7</b>	<b>23.0</b>	<b>-52.9</b>	<b>6.5</b>	<b>97.9</b>	<b>89.3</b>	<b>66.5</b>	<b>30.4</b>
Australia	46.3	30.6	-33.9	..	84.8	68.2	86.8	25.8
Belgium	52.7	27.2	-48.4	..	104.9	..	74.4	29.7
Denmark	..	28.4	..	..	96.7	73.4	92.7	56.1
Finland	42.0	21.7	-48.3	..	100.4	78.1	62.1	23.3
France	39.2	23.1	-41.0	8.2	92.1	95.0	76.4	36.4
Germany	43.6	28.2	-35.3	5.5	91.5	89.3	81.8	51.0
Italy	51.0	34.5	-32.4	..	89.3	84.7	79.7	40.0
Japan	34.0	26.5	-22.0	..	88.2	93.1	70.6	67.1
Netherlands	42.1	25.3	-39.9	..	88.9	87.5	89.2	39.4
Norway	..	25.6	..	..	97.4	73.7	83.7	18.5
United States	45.5	34.4	-24.5	17.7	83.7	91.9	94.6	45.5

1. 1995.

2. Individuals with adjusted equivalent income below 50 per cent of the median.

3. Relative to the average in each country. Children are assumed to receive the same share as their parents.

Source : Burniaux, J.-M. *et al.* (1998), "Income Distribution and Poverty in Selected OECD Countries", OECD Economics Department, *Working Paper No. 189*; Ministry of Finance (1998): *Proposition 1997/98:150, Bilaga 5*.

Government intervention has played a key role in poverty alleviation. For the population as a whole, the share below the poverty line -- set at 50 per cent of the median observation -- was the same in Sweden as in North America for incomes before taxes and transfers (*Table 4*). However, the effect of taxes and transfers is to reduce the poverty rate by some 80 per cent in Sweden, and only by around 30 per cent in North America. But the tax and transfer level is much higher in Sweden and incorporates few mechanisms for targeting transfers explicitly on the poor. When this is taken into account, the return (per

8. Swedish indicators of the inequality of the income distribution are biased upwards compared with other countries owing to the Swedish practice of counting youths above 18 years of age as independent households even if they are living with their parents.

krona spent) in terms of the number of people brought above the poverty line is very low. On the other hand, the universality of transfers in Sweden serves to reduce the extent of poverty traps and thereby increases the upward income mobility at the lower end of the income distribution. Over the 1991-95 period, the transition out of poverty was rather high insofar as only one out of eight of those affected remained below the poverty line throughout the entire period<sup>9</sup>. The strong upward mobility documented in a number of studies indicates that movements from inactivity into activity may play a significant part<sup>10</sup>.

Table 4. Reduction of poverty due to taxes and transfers

		Poverty rates (per cent)			Transfers per capita		Number of poor escaping poverty per hundreds of US\$ of transfers
		Before taxes and transfers (1)	After taxes and transfers (2)	Rate of poverty reduction (1)/(2)-1	In real national currencies <sup>1</sup>	In constant prices and constant PPPs (US\$)	
Canada	1975	22.6	15.0	-33.6	853	701	11
	1991	22.9	11.2	-51.2	1367	1123	10
	Per cent changes 1975-91	1.1	-25.7	52.4	60.2	60.2	-3.7
Sweden	1975	25.9	6.4	-75.3	25332	4126	5
	1992	33.9	6.5	-80.8	48814	7951	3
	Per cent changes 1975-92	30.6	1.5	7.3	92.7	92.7	-27.5
United States	1974	20.8	15.2	-26.8	558	558	10
	1995	25.3	17.7	-30.2	819	819	9
	Per cent changes 1974-95	21.6	15.9	12.8	46.7	46.7	-6.5

1. Deflated with the CPI of the initial year.

Source: Burniaux, J-M. *et al.* (1998), "Income Distribution and Poverty in Selected OECD Countries", OECD Economics Department, *Working Paper No. 189*.

### Considerations shaping income distribution policies

The 1991 Swedish tax reform was intended to preserve the existing redistributive outcome. Indeed, analysis of the tax reform proposal showed a more or less identical Lorenz curve at every decile of the income distribution pre- and post-reform<sup>11</sup>. But whereas the redistribution in the pre-reform system was effected fairly evenly by taxes and transfers, the post-reform system relies far more on transfers, in particular housing and family transfers (*Figure 4*). The effect on redistribution was arrived at by increasing the weight of transfers in total income rather than making housing and family transfers more progressive in themselves<sup>12</sup>. Less progressivity in the income taxes reduced vertical equity, but this was partly offset by a considerably more equitable tax treatment of income earned in families with one as opposed to two

9. The propensity to remain in poverty is on a par with that in Canada and Germany, whereas a larger proportion of those affected in the United Kingdom and the United States remains below the poverty line, see OECD (1998), *OECD Economic Outlook No. 64*. Movements up and down the income distribution will obviously be easier to effect in countries with a narrow income distribution.

10. See e.g. Uddhammar, E. (1997), *Arbete, velfärd, bidrag -- en dynamisk analys av folkets välbefinnande och välfärdsforskningens missförstånd*. Income mobility is also discussed in Annex V to the 1999 Budget Bill of the Government. The 1996 *OECD Economic Survey of Sweden* documented earnings mobility in Sweden on a par with other OECD countries surveyed.

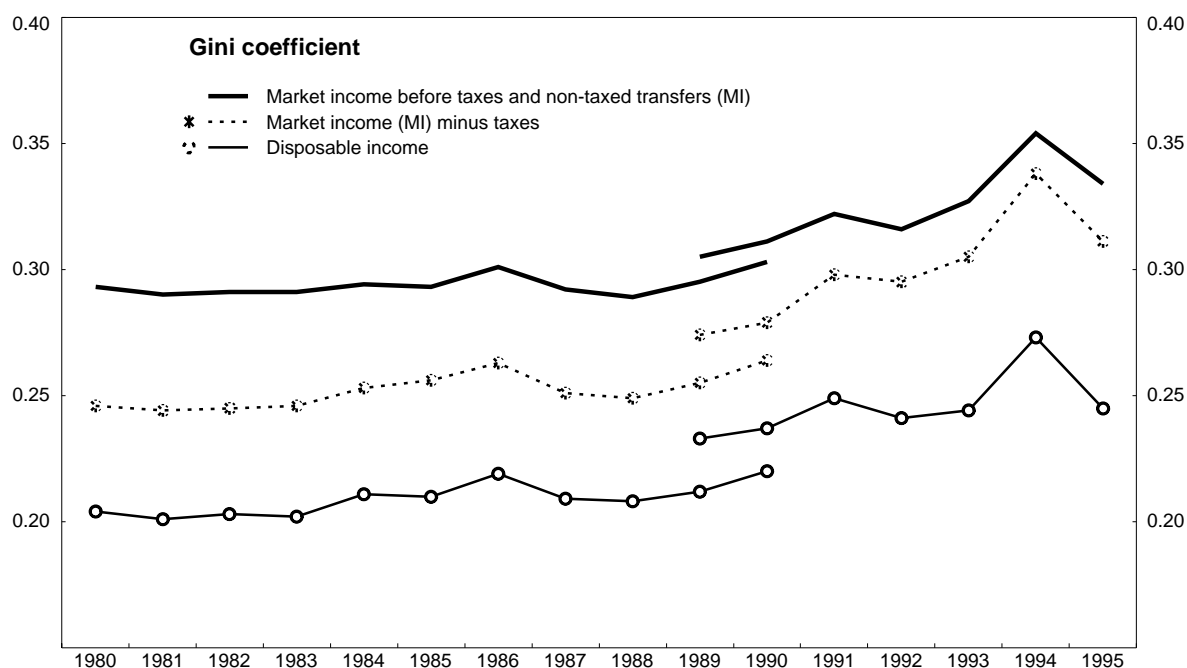
11. See Schwarz, B. and B. Gustafsson (1991), "Income Redistribution Effects of Tax Reforms in Sweden", *Journal of Policy Modeling Volume 13, No. 4*. An *ex post* evaluation is contained in Eklind, B. *et al.* (1995), "Fördelningseffekter av skattereformen", *Annex V to SOU 1995 : 104, Skattereformen 1990-1991. En utvärdering*.

12. See Palme, M. (1996), "Income Distribution Effects of the Swedish 1991 Tax Reform: An Analysis of a Microsimulation Using Generalized Kakwani Decomposition", *Journal of Policy Modeling Volume 18, No. 4*.



breadwinners (reflecting lower marginal tax rates) and a more consistent tax treatment of all components of labour income<sup>13</sup>. Since 1991 tax levels have increased, reinforcing the redistributive effect of the tax system, which has also become somewhat more progressive. Transfers have been reduced, but with the redistributive impact of programmes being maintained.

**Figure 4. Income distribution trends (1)**



1. All incomes.

Source: Submission from professor Anders Björklund, the Swedish Institute for Social Research.

The extensive safety net appears to have prevented unemployment shocks from spilling over into weaker distributional outcomes<sup>14</sup>, insofar as the income distribution has remained fairly stable in Sweden irrespective of cyclical influences. During the first half of the 1990s, Sweden did see a minor increase in inequality outside the prime-age group, as youths postponed their labour force participation. Greater concentration of earned incomes served to increase inequality as employment contracted. But this was counteracted by higher income from unemployment benefits, which traditionally work to lower inequality. Overall, the impact of the severe labour-market imbalances was rather small and dominated by the effects of the tax reform and of the maturing of the income-related supplementary old-age pension scheme. In recent years the capital gains realised by households have shown up in higher inequality of incomes, both before and after tax.

13. See Palme, M. (1996), *op.cit.* The changes in indirect taxes were not integrated into this study. The extension of the VAT base and introduction of more uniform rates (later partly abandoned) should have worked to increase horizontal equity.

14. On the evidence available, Nordic countries have in general fared well on this score during the labour market imbalances erupting in the late 1980s (Denmark and Norway) or in the early 1990s (Sweden and Finland). See Aaberge, R. *et al.* (1997), "Unemployment Shocks and Income Distribution -- How Did the Nordic Countries Fare during their Crises?", *Discussion Paper No. 201 Statistics Norway*.

Periods of low income may adversely affect long-term income prospects, so that the effects of taxes and transfers on the variability of incomes should also be taken into account in assessing distributional outcomes. Income variability has been found<sup>15</sup> to be most pronounced among those with low long-term incomes who are also potentially most exposed to capital market rationing preventing them from smoothing their life-time income. Hence, the stabilising effect of taxes and transfers on the flow of market incomes has been most pronounced for those at the bottom of the income distribution. Moreover, in a purely static sense taxes and transfers serve to lower both the inequality of the distribution of incomes over a longer time horizon and short-run income variability. The main effect on the income distribution emanates from means-tested benefits working through families with children. A far smaller contribution comes from the impact of unemployment and sickness insurance on the lower deciles of the income distribution (*Table 5*).

Table 5. **Transfers and the distribution of incomes**<sup>1</sup>

	Per cent of disposable income			
	First quartile	Second quartile	Third quartile	Fourth quartile
	All 20 to 64 years			
Sickness benefits	7	8	8	6
Unemployment benefits	2	2	1	1
Child allowances	6	3	1	0
	Families with children up to 17 years			
Sickness benefits	25	18	18	11
Unemployment benefits	5	5	3	2
Child allowances	53	29	18	10

1. In 1990.

Source : Björklund, A. and R. Freeman (1994), "Generating equality and eliminating poverty -- The Swedish Way", SNS *Occasional Paper* No. 60.

The static annual income distribution most often used to assess distributive outcomes is known to exaggerate income inequality insofar as at any given time some people will have temporarily depressed incomes which will be offset by higher earnings in the longer run. Viewed over a time horizon of 40 years, the inequality of life-time incomes is estimated to be 35 to 40 per cent below that implied by the annual distribution<sup>16</sup>. The discrepancy can be fully accounted for by a high inequality among youths, as labour market entry is affected by unevenly distributed spells in higher education, while the static distribution of income from the age of 30 closely resembles the life-time distribution. From this perspective, taxes and transfers which appear to be redistributing income among persons at any given point in time, should actually be understood as redistributing incomes over the life-cycle of the individual. Based on the flows of taxes and transfers in the 1987-91 period, two-thirds of transfers have been characterised as pertaining to

15. See Björklund, A. and M. Palme (1997), "Income redistribution within the life cycle versus between the individuals: Empirical evidence using Swedish panel data", *Working Paper Series in Economics and Finance No. 197, Stockholm School of Economics*. The analysis covers income developments over the 1974-91 period and specifies income taxes, the universal child transfer and means-tested housing benefits. Short-term income replacements (sickness and unemployment benefits etc.) have been included in market incomes.
16. Björklund, A. (1993), "A comparison between actual distributions of annual and life-time income: Sweden 1951-89", *The Review of Income and Wealth, Volume 39, No. 4*. An analysis of the relationship between the annual and the 10-year income distribution in the Scandinavian countries and the United States indicates that income mobility is fairly similar across countries, implying that differences between the annual distribution of incomes will carry over into the life-time distribution of incomes. See Aaberge, R. *et al* (1996), "Income Inequality and Income Mobility in the Scandinavian Countries Compared to the United States", *Discussion Paper No. 168 Statistics Norway*.

redistribution over the life cycle, and only one-third to inter-personal (“pure”) redistribution<sup>17</sup>. Even if the old-age pension is excluded, more than half of unemployment, sickness and early retirement (disability) benefits fall into the former category. When assessed in terms of life-time incomes, taxes appears to be broadly proportional across the income distribution and the redistribution is effected by transfers which are evenly distributed and thus matter the most for lower incomes. The system remains highly redistributive, but this is accomplished at the cost of a relatively high “churning” of incomes, involving large payments into and from the budget.

### **Economic impact of the tax and transfer systems**

The Swedish tax and transfer systems have changed over time in response to the perceived trade-off between economic efficiency and income redistribution. They have also been influenced both by the global mobility of capital and labour and by changing fashions as to the relative value of interventionism or policy stability in providing a framework for decision-making. It is not evident, however, that distributional objectives have been achieved with the least impact on labour supply, human and physical capital formation, or effects on Swedish growth potential in general and hence on living standards.

The extent to which the tax structure affects incentives and resource allocation can be measured only if there is some notion of tax neutrality. For capital income taxation, this notion is frequently invoked to indicate a situation where choices with respect to savings and investment are unaffected by the definition of tax bases and of tax rates. Capital is highly mobile and changes in taxation can affect the allocation of saving and investment quite dramatically. Partly as a result, revenues from capital income taxation are generally small, and most countries tax the income from labour rather heavily. A negative effect on labour supply will occur insofar as the marginal rewards from work are reduced. The same applies to saving, as the rewards for deferring spending are reduced. But the loss in disposable income from taxation can also have subsistence effects (usually referred to as “income effects”), which may undermine the work/leisure trade-off and induce people to work more. Average tax rates determine income effects, while marginal tax rates are the key parameters in respect of incentives. It is commonly assumed that distortions will be minimised by applying uniform tax rates to the broadest possible tax base, but governments can also attempt to optimise revenues by concentrating taxation on sectors where the base is relatively unresponsive to price (tobacco and spirit excises are a case in point). Moreover, environmental taxes do not fit easily into the “neutrality” framework, since their objective is actually to use taxes to affect economic behaviour. The tensions between an “optimal taxation” approach and ‘tax neutrality’ are an important feature of the current tax debate.

### ***Taxes, transfers and labour-market outcomes***

#### *Transfers and labour supply: participation, absence and the retirement decision*

The work requirement is deeply embedded in the Swedish approach to social insurance, with access to these schemes being dependent on a recorded work history and benefits being closely related to the income-loss sustained. This principle has been confirmed with the adoption of a new framework for old-age pensions, which relies on a closer link between life-time incomes and pensions received. It underlies both sickness benefits and unemployment insurance. Working parents also receive a far higher support for staying at home to take care of their children than non-active parents, while an extensive and

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17. See Hussénus, J. and J. Selén (1994), “Skatter och socialförsäkringar över livscykeln -- en simuleringsmodell”, *ESO Report Ds 1994:135*.

subsidised system of publicly-provided day-care of children is available to allow both parents to work outside the home<sup>18</sup>. With the more general expansion of the public sector *inter alia* providing a variety of part-time jobs, the female participation rate reached 70 per cent already in the mid-1970s. However, at 77 per cent, the overall participation rate in Sweden no longer stands out in an international context and annual working hours in Sweden are still substantially below other OECD countries despite a slightly rising trend over the past 20 years. Indeed, over the past 30 years a rising participation rate has been more than offset by higher unemployment among those in the labour force, a higher absence from work among those employed and lower weekly working hours among those at work. This has led to a decline in labour input per capita among the working-age population of 17 per cent (*Table 6*).

**Table 6. Trends in labour supply<sup>1</sup>**

	Participation rate	Employment rate	In work rate	Weekly working hours for those in work	Weekly working hours per capita
	Per cent				
All					
1965	71.6	98.8	90.5	41.9	26.8
1998	76.5	93.5	84.6	36.8	22.3
Men					
1965	89.3	99.2	91.7	45.8	37.2
1998	79.0	93.1	87.4	39.9	25.6
Women					
1965	53.8	98.2	88.3	35.0	16.3
1998	73.9	94.0	81.6	33.1	18.7

1. Population 16 to 64 years.

Source: Labour Force Surveys and Björklund, A., P.-A. Edin, B. Holmlund and E. Wadensjö (1996), *Arbetsmarknaden*.

The requirement of work attachment for accessing social insurance should in principle serve to offset some of the disincentives associated with high taxes. But other features of these schemes -- and their interaction with the tax system -- have, as noted above, served to ingrain a heavy benefit-dependence in the working-age population at large. The share of the population relying on transfers increased from 16 per cent in the mid-1960s to around 35 per cent in the early 1990s, of which one half reflects the demographically-determined increase in old-age pensioners. During the most recent year for which data are available (1996, with the following figures not necessarily being exclusive), 19 per cent of the working-age population received unemployment benefits for a shorter or longer period, and 11 per cent sickness benefits. 7 per cent received disability pension. Family transfer arrangements comprised 17 per cent (parental leave) and 11 per cent (housing benefits) (*Table 7*). In addition, 7 per cent of the population were receiving social assistance for a shorter or longer period during the year.

18. Bergström, T. and Blomquist, S. (1996), "The political economy of subsidised child care", *European Journal of Political Economy* Volume 12, No. 3 show that in economies with marginal tax rates at Swedish levels, subsidies of child care by around 50 per cent might be beneficial from the perspective of the average tax payer. The increase in the tax base from higher employment will cover the initial outlay and reduce their share of the financing burden of welfare services. Subsidies to child-care thus offset the disincentives following from high tax rates. Rosen, S. (1995), "Public Employment and the Welfare State in Sweden", *SNS Occasional Paper No. 61*, points out that this effect has to be set against the welfare loss following from distortions of the composition of private consumption induced by these subsidies. In this assessment, the overall effect is negative.

Table 7. Generosity of social insurance and other transfers<sup>1</sup>

1996

	Monthly transfer as a per cent of APW's gross wage income	Number of recipients <sup>2</sup>		Target age group
		As a per cent of the adult population	As a per cent of the relevant age group	
1. Unemployment benefit		15.1	18.7	16-64
Highest benefits	71.6			
Basic benefits	29.2			
2. Sickness benefit	75.0	8.6	10.5	16-64
3. Parental leave benefit	75.0	14.0	17.3	16-64
4. Ordinary old-age pension		22.3	99.4	65-
Basic unmarried	16.6			
Basic married	13.6			
Extra guarantee	9.6			
5. Supplementary old-age pension		Included in 4.	Included in 4.	65-
Maximum	67.6			
Mean all pensioners	31.6			
Mean full-time pensioners	31.7			
6. Disability pension		5.8	7.2	16-64
Basic unmarried	15.6			
Basic married	12.6			
Extra guarantee	19.3			
7. Supplementary disability pension		Included in 6.	Included in 6.	16-64
Maximum	67.6			
Mean all pensioners	29.6			
Mean full-time pensioners	33.8			
8. Student grant		8.1	33.0	18-30
Benefits for students	8.6			
Loans for students	22.4			
9. Alimony grant		5.6	6.9	16-64
Amount per child	6.9			
10. Housing benefits to families or youths 18 to 28 years		8.9	11.0	16-64
1 child (maximum)	14.7			
2 children	18.6			
3 children or more	22.9			
Single youths	6.4			
Married youths	6.4			
11. Housing benefits to pensioners		9.8	32.4	65-
Maximum benefits	19.4			
12. Special housing benefits to pensioners		0.3	1.0	65-
Maximum benefits singles in Stockholm	4.9			
13. Social assistance		6.8	6.8	18-

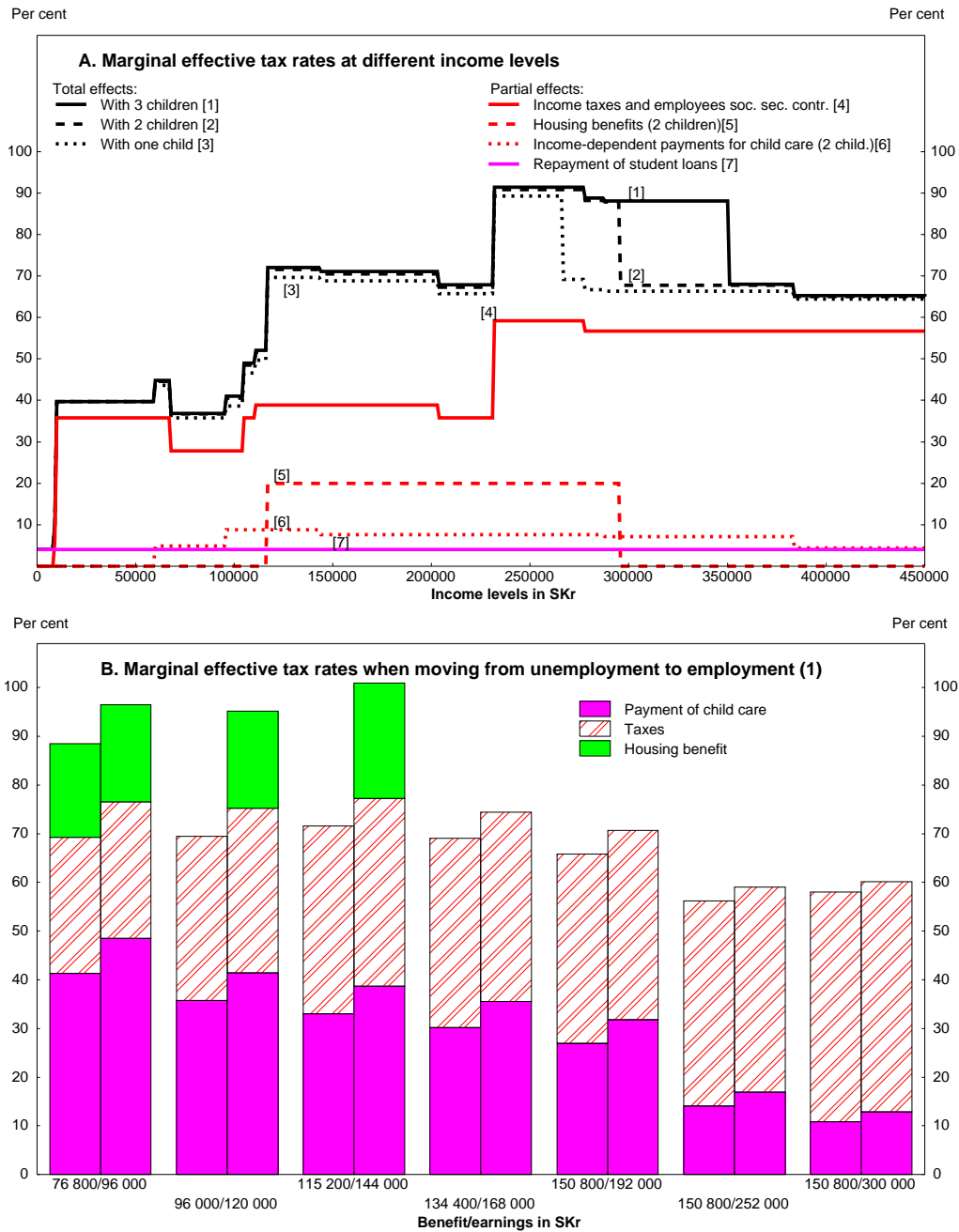
1. Benefits 1 to 7 are taxable; 8 to 13 are not taxable.

2. All those who have received a benefit during the year. Benefits 9 to 13 are allocated to households, all adult persons in the household are included.

Source: Ministry of Finance.

Income taxes, social security contributions and means-tested benefits all combine to reduce the return to individuals from taking on better-paid jobs. In the Swedish case, the total claw-back when earning another krona -- the so-called marginal effective tax rate -- is typically 30 to 40 per cent, with around 250 000 wage earners (8 per cent of those employed at half time or more) facing rates above 60 per

**Figure 5. Poverty and unemployment traps**  
Per cent



1. Working spouse, children in full-time day-care. First bar represents a family with one child, second bar with two children. Source: Ministry of Finance (1997), 'Lönar sig arbete?' ESO report Ds 1997:73.

cent<sup>19</sup>. High marginal rates are concentrated at the upper rather than the lower end of the income distribution, and disincentives for “working poor” to move up the income ladder are not very pronounced: in this sense poverty traps are almost non-existent in Sweden (*Figure 5, panel A*). But the income gain from moving from unemployment to employment is heavily distorted insofar as means-testing compounds the marginal impact of the 80 per cent replacement rate and fairly high taxes apply above a very modest basic allowance. Unemployed parents with an earnings potential up to the level of the average production worker face marginal rates above 60 per cent and in the lower income ranges marginal effective rates are above 90 per cent (*panel B*). The disposable income of an average unemployed worker is estimated at 85 per cent of the disposable income that person could realise in a full-time job; however, 4 per cent of the unemployed would not see any increase in income from entering work and about a third would only see a rise in their disposable incomes from 1 to 10 per cent. The replacement rate is similarly high for those transferring to a disability pension, 35 per cent facing losses in disposable income of less than 10 per cent. Reflecting a fairly high income-independent basic pension, individuals with high incidence of disability and low earnings capacity, often women and part-time or low-paid workers, will often retain their disposable income in full.

The replacement rate in unemployment insurance affects behaviour through its effects on the intensity of job search and on the reservation wage individuals use to assess job offers. The reduction of the replacement from 90 to 80 per cent in 1993 was associated with a reduction of unemployment spells by 8 per cent, most probably attributable to a lowering of reservation wages rather than more intensive job search<sup>20</sup>. Employment Offices are obliged to report to the Unemployment Insurance funds if suitable job offers are rejected; the funds have the authority to discontinue benefits and there is an eventual upper limit to the duration of the benefit. But the option of requalifying for unemployment benefits through participation in ALMPs has made the formal upper limit to benefits rather ineffective, even if an increase in the rate at which people find jobs tends to be observable as the limit to the benefit period nears. These effects are, however, far less pronounced than in countries which have an explicit upper limit on the duration of unemployment benefits<sup>21</sup>.

The replacement rate and number of waiting days applying to sickness benefits also have a strong impact on the effective labour supply via absence from work, which in Sweden has historically been around 15 per cent of the labour force and half of this relating to own or children’s sickness. A change in the replacement rate of 10 percentage points in the public-run scheme has been empirically associated with a change in the overall absentee rate of around 1½ percentage points, while the imposition of a waiting day is estimated to have lowered the absence rate by 0.3 percentage points<sup>22</sup>. The response comes from the changed propensity to register as sick rather than any change in tendency to return earlier from a sickness

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19. See Eklind, B. *et al.* (1997), “Lönar sig arbete?” *ESO Report Ds 1997:73*.

20. See studies contained in Harkman, A. *et al* (1997), “Arbetslöshetsersättningen och arbetsmarknadens funktionsätt”, *Report from the Labour Market Board, Ura 1997:1*. The reservation wage tends to be reduced by 4 kronor for every 10 kronor cut in the replacement rate, but the effects of the 1993 reform appear to be high compared with those identified in other studies.

21. The effect was demonstrated in Carling, K. *et al* (1996), “Unemployment duration, unemployment benefits, and labour market programmes in Sweden”, *Journal of Public Economics, Volume 59 No. 3*. Studies cited in Harkman, A. *et al* (1997), *op. cit.* show even smaller effects for Sweden and a corresponding larger difference *vis-à-vis* other countries.

22. See Gustafsson, B. and N.A. Klevmarken (1993), “Taxes and Transfers in Sweden”, in Atkinson, A.B. and G.V. Mogensen (eds.) (1993), *Welfare and Work Incentives: A North European Perspective*. Changes in the public-run scheme have historically been partly neutralised by modifications of the occupational schemes, and the effects quoted are probably on the lower side. In a framework which only specifies changes in waiting days, Edgerton, D. (1997), “The Effects of Cutbacks in Swedish Sickness Benefits”, *Working Paper Series No. 73/97, Department of Economics, University of Lund*, estimates the effect of another waiting day to be 1.1 percentage points on the sickness rate.

spell, which was not affected<sup>23</sup>. Modifications of the parameters in the early 1990s exerted a stronger effect on the take-up of sickness benefits than the deterioration of macroeconomic conditions and increase in unemployment. Work disincentives are compounded by occupational pension arrangements insofar as its sickness insurance component (*AGS*) has been used to supplement both sickness benefits and disability pension and severance payments (*AGB*) have supplemented unemployment benefits.

Social security provisions enter importantly into the decision to retire from work. Initial spells in either unemployment or sickness insurance are often precursors to longer spells of inactivity and/or the take-up of a disability pension. Motivated by high, often regionally concentrated, unemployment, several countries have made available early retirement schemes or special arrangements within the Unemployment Insurance well ahead of the formal retirement age. However, such options have actually been reduced in recent years in Sweden, labour-market reasons no longer qualifying for disability pension. For older workers still qualifying for disability pension, the net gain from remaining in work is close to zero<sup>24</sup>. But for other older workers, Sweden imposes an internationally-low tax on further work, of around 30 per cent, as against 75 to 80 per cent in countries such as the United Kingdom, Belgium, France and Italy (*Table 8*). This has had the effect of sustaining participation rates for older male workers at a higher level in Sweden than in most other countries<sup>25</sup>.

**Table 8. Features of early retirement schemes and labour force participation for older male workers<sup>1</sup>**

	Non-participation 55-65 years	Propensity to take early retirement at first option	Pay-off from further work at early retirement age <sup>2</sup>	Implicit tax on earnings in next year
	Per cent	Per cent	Percentage change	Per cent
<b>Sweden</b>	<b>35</b>	<b>5</b>	<b>-4.1</b>	<b>28</b>
Belgium	67	33	-5.6	82
Canada	45	32	-1.0	8
France	60	65	-7.0	80
Germany	48	55	-4.1	35
Italy	59	10	-5.8	81
Japan	22	12	-3.9	47
Netherlands	58	70	-12.8	141
Spain	47	20	4.2	-23
United Kingdom	55	22	-10.0	75
United States	37	25	0.2	-1

1. 55-65 years. The early retirement age has been set at 55 years for Italy, 62 years for the United States, otherwise 60 years.

2. Increase in net social security wealth (pension and transfer benefits and contributions discounted) from staying another year in work.

Source: Gruber, J. and D. Wise (1997), "Social Security Programs and Retirement Around the World", *NBER Working Paper No. 6134*.

23. See Broström, G., P. Johansson and M. Palme (1998), "Assessing the Effect of Economic Incentives on Incidence and Duration of Work Absence", *Working Paper Series No. 228, Stockholm School of Economics*; and Johansson, P. and M. Palme (1998), "Assessing the Effects a Compulsory Sickness Insurance on Worker Absenteeism", *Working Paper Series No. 287, Stockholm School of Economics*.

24. See Palme, M. and I. Svensson (1997), "Social Security, Occupational Pensions and Retirement in Sweden", *Working Paper Series in Economics and Finance No. 184 from Stockholm School of Economics*.

25. See Gruber, J. and D. Wise (1997), "Social Security Programs and Retirement Around the World", *NBER Working Papers No. 6134*; and Blondal S. and S. Scarpetta (1998), "The retirement decision in OECD countries", *OECD Economics Department Working Papers No. 202*. Participation rates in the years preceding the formal retirement age have been higher in Sweden than can be accounted for by the economic variables generally found to be significant in the cross-country analysis.



*Generous social assistance feeds through to other transfers and reservation wages*

Social assistance -- the last resort when social insurance is unavailable -- embodies rather generous norms, in particular for families with children. In 1991, half of married or cohabiting couples with three children had after-tax earnings from work *below* the social assistance norm; the proportions were 30 per cent for couples with two children and for singles 90 per cent (two children), 70 per cent (one child) and 30 per cent (no children). The potential scope of social assistance take-up because of its generosity has been addressed by a rather harsh means-testing, requiring households to realise their accumulated savings before accessing it. More importantly, the coverage and the generosity of the remaining social insurance schemes -- child and housing allowances in particular -- has been adjusted to ensure that households' disposable income are taken above the social assistance norms. In 1991 these allowances alone ensured gains in disposable incomes which moved 150 000 out of 500 000 households above the norms<sup>26</sup>. Family allowances are thus needed to prevent reservation wages (determined by the basic social assistance) from exceeding market wages (*Table 9*). Indeed, the tax and transfer system leaves persons on fairly normal earnings dependent on benefits to maintain a standard of living commensurate with those who are inactive.

**Table 9. Reservation wages implied by social assistance and social insurance**

Household	SKr per month					Pre-tax reservation wages <sup>1</sup>	
	Social assistance norms	Child allowance	Housing allowance	Alimony allowance	Required after-tax wages to match social assistance	With allowances	Without allowances
Single	6870	0	150	0	6720	9300	9500
Single with one child (5 years)	9750	750	1750	1170	6080	8300	15700
Single with two children (3 and 5 years)	12550	1500	2600	2340	6110	8400	21400
Married couple without children	10000	0	0	0	10000	6900	6900
Married couple with one child (5 years)	14340	750	0	0	13590	9400	10000
Married couple with two children (3 and 5 years)	17690	1500	170	170	16020	11300	12600
Married couple with three children (3, 5 and 12 years)	20440	2625	740	0	17075	12100	14800
<i>Memorandum items:</i>							
Monthly wages 1994 <sup>2</sup>							
1. percentile							9400
5. percentile							10700
10. percentile							11400
25. percentile							12500

1. 1994 year rules. For married couples, both spouses are assumed to work and receive the same earnings.

2. Based on actual hours worked.

Source : Bröms, J. *et al.*, (1994), "En social försäkring", *ESO Report Ds 1994:81*; Statistics Sweden (1994), *Lönestatistik årsbok 1994*.

*The generosity of social insurance*

In sum, social insurance in Sweden would appear to be generous by international comparison (*Table 10*). The replacement rate is high and the *de facto* indefinite duration of spells both in sickness and

26. The argument is developed in detail in Bröms, J. *et al* (1994), "En social försäkring", *ESO Report 1994:81*.

unemployment insurance compares with clearly delineated upper limits in other countries<sup>27</sup>. The impact on labour supply was for a long time offset by the expansion of the public sector and strong emphasis on job availability, adequate resources being available to follow up the unemployed with job offers. Tighter eligibility criteria for the disability pension have closed off an often-used access to early retirement and served to maintain incentives for continued labour market participation among older workers, which has held up better in Sweden than in most other countries (partly underpinned also by a strong unemployment

Table 10. **International comparison of social insurance schemes****A. Percentage change in annual disposable income for the average production worker from moving from employment to social insurance, 1996**

Benefit	Sweden, 1997 <sup>1</sup>	Denmark	Finland	Germany	United Kingdom	Netherlands	Canada
Sickness, one week <sup>2</sup>	-0.8	0	0	0	-0.4	0	-1.5
Twelve months unemployment							
Insured	-29	-35	-38	-42	-79	-27	-44
Non-insured	-71	-57	-71	-48	-79	-53	-91
Work injury							
Total incapacity	0	+26	-8	+15	-57	-27	-10
One-third incapacity	0	-5	-2	+12	-17	-10	+1
Family allowance							
One child	+4	+4	+5	+5	+3	+3	+2
Two children	+7	+9	+11	+10	+6	+6	+3
Three children	+11	+13	+17	+17	+8	+8	+6
Maternity leave							
Maximum duration	-9	-6	-7	0	-4	0	-7
Common duration	-2	-3	-2	0	-3	0	-4
Old-age pension <sup>3</sup>							
Full work record	-36	-44	-33	-25	-47	-53	-45
No work record <sup>4</sup>	-61	-50	-66	-100	-84	-53	-58

**B. Replacement rates for disability pensions 1996<sup>5</sup>, per cent**

Income, per cent of APW	Sweden		Denmark		Finland		France		United Kingdom		Italy		Netherlands		Spain	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
50	99	193	139	188	88	104	93	93	78	66	91	87	77	81	98	93
67.5	87	113	108	134	74	74	73	70	61	46	88	85	74	66	104	102
75	86	100	99	117	70	66	66	62	55	41	88	85	74	62	106	104
100	84	76	77	82	65	56	67	60	43	30	88	86	74	66	111	111
150	86	82	58	57	65	59	59	53	30	19	88	87	74	68	116	118
200	82	78	47	44	65	61	46	40	22	14	88	84	58	51	118	120

Note: Column II is net of housing costs.

- Based on a general replacement rate of 75per cent in social insurance, the increase to 80per cent in unemployment insurance in the fourth quarter is taken into account.
- Including occupational pensions.
- Maximum (and not average) benefit in public schemes but without additions from occupational schemes.
- Relative to disposable income of an APW.
- In terms of disposable incomes for a single person.

Source: Hansen, H. (1998), "Elements of Social Security", *Report 98:4* from the Danish National Institute of Social Research; *ESO Report Ds 1997:73*.

27. See Hansen, H. (1998), "Elements of social security", *Report 98:4* from *The Danish National Institute of Social Research* for an extensive overview of parameters in social insurance in Denmark, Sweden, Finland, Germany, Great Britain, the Netherlands and Canada.

protection). For the working-age population at large, the ratio of recipients of income-replacement benefits to employed persons (converted to full-time equivalents) in Sweden is now in line with European countries such as Denmark, Germany, the Netherlands and the United Kingdom and below Austria, Belgium and France<sup>28</sup>. Reflecting an extensive use of income-supplement programmes, the coverage of the main social protection programmes among the working-age population is nevertheless much higher than in most other OECD countries<sup>29</sup>. Higher unemployment, inflexible aggregate and relative wages and rigid employment protection and industrial relations legislation, have all combined with the generosity of social insurance to entrench a low effective utilisation of labour during the 1990s. Indeed, by maintaining security for both incomes and jobs, Sweden has a double safety net, which reduces the capacity of labour markets to adapt<sup>30</sup>. The modifications of social insurance undertaken since the early 1990s have put the system on a more sustainable footing. But the eligibility criteria seem to be vague, and evidence is mounting that their application varies across the country as well as from one Unemployment Insurance fund to another. Lax enforcement of eligibility criteria would give disincentive effects from the generosity more leverage.

*Taxes and labour supply: strong response to changes in economic incentives*

The tax and transfer systems combine to face individuals with high marginal tax rates across all income brackets. The tax system on its own implies a wedge between gross labour costs and net take-home pay of close to 60 per cent even for very low incomes<sup>31</sup> (*Figure 6*). Under such circumstances, a reduction in the tax wedge translates into a strong increase in the after-tax wage: a reduction from 75 to 70 per cent would lead to an increase in after-tax wages of 20 per cent. The ultimate macroeconomic impact rests on the associated labour supply elasticities, which are estimated to range from around 0.1 for men to 0.4 to 1.0 for women<sup>32</sup>. As a result of the 1990/91 tax reform (which lowered marginal tax rates, especially on higher incomes), hours worked by those at the upper end of the income scale were expected to increase, while participation rates and working hours of those at the lower end would be unaffected. Reflecting previous behaviour, married men were expected to increase their work inputs by 5 per cent, while those of married women -- often with relatively low incomes -- should have been largely unaffected, resulting in an overall response of around 3 per cent. However, it would appear that the main response to changes in the

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28. See Dutch Ministry of Social Affairs and Employment (1999), *Sociale Nota 1999*.

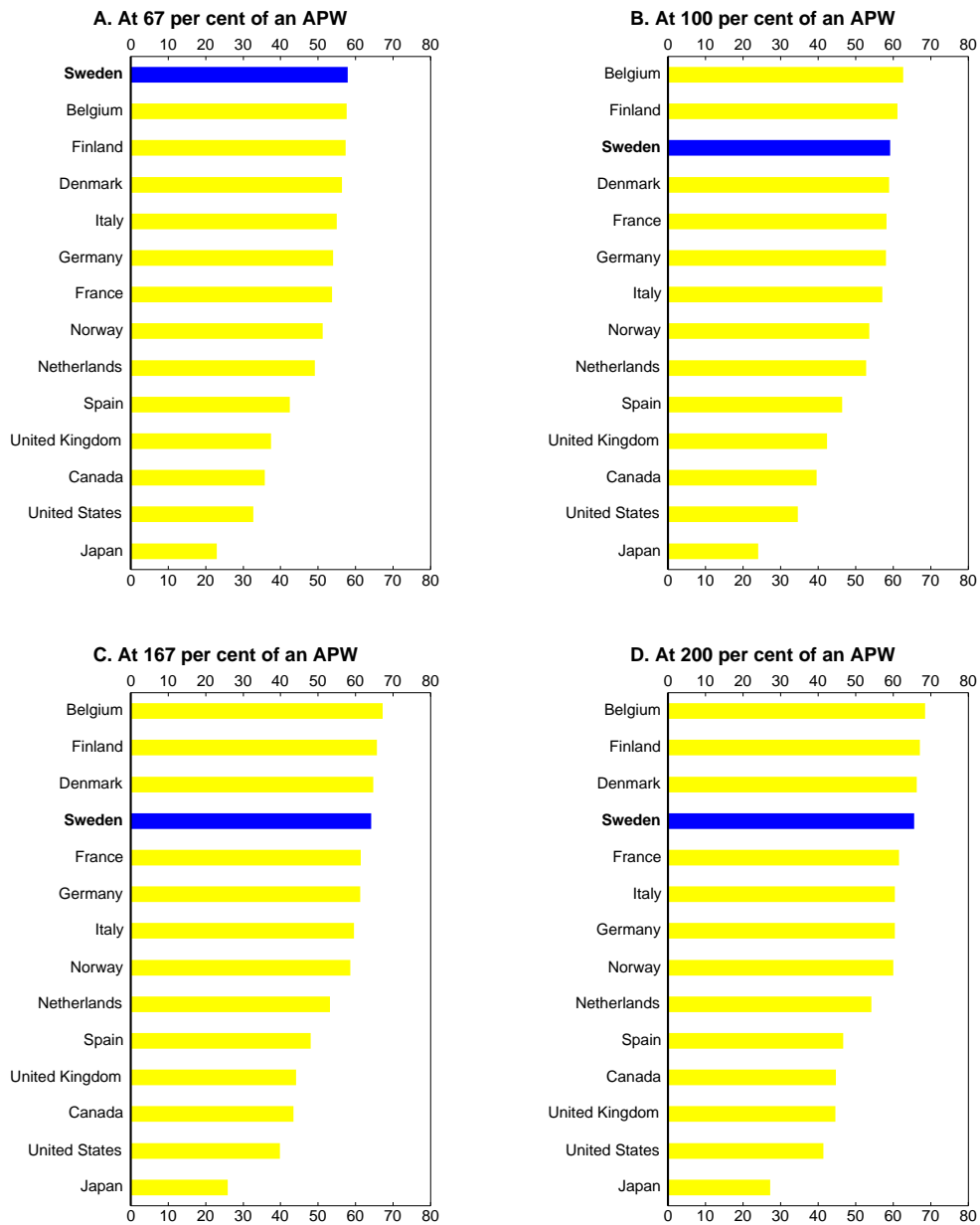
29. See OECD (1999), *op. cit.*, in particular Chapter II: Expenditure trends.

30. In a Nordic comparison, it has been pointed out that Denmark matches Sweden in terms of generosity of its social insurance, but allows for an internationally-high enterprise flexibility at a cost of a lower job security. Sweden is recognised as having one of the strictest set of job availability criteria in unemployment insurance, but it would appear that the implementation of these criteria has become rather lax in recent years. See Ministry of Finance, Denmark (1998), "Availability criteria in selected OECD countries", *Working Paper No. 6*.

31. See OECD (1998), *The tax/benefit position of employees*, for a documentation of the methodology involved.

32. An overview is provided in Björklund, A., P.-A. Edin, B. Holmlund and E. Wadensjö (1996), *Arbetsmarknaden*.

**Figure 6. Effective tax rates at different income levels (1)**  
Per cent



1. In 1996. Employees' social security contributions and personal income taxes as a percentage of gross labour costs (incl. employers' social security contributions) and taking into account price level effects of consumption taxes. Income levels are given relative to the earnings of a single Average Production Worker (APW).  
Source: OECD, The Tax/Benefit Position of Employees.

after-tax wage have taken place among women and young men, with an implied aggregate elasticity at the upper end of previous estimates. The total increase in labour supply appears to have been around 5 per cent<sup>33</sup>.

Even in cases of fairly low labour supply elasticities, high marginal taxes produce substantial economic costs. Again with reference to the effect of the reduction in the tax wedge from 75 to 70 per cent: the labour supply response may be weak (around 2 per cent) but at this level of taxation there is a particularly high efficiency cost of taxes, reflected in a large difference in the value to society of further work effort and the post-tax value to workers themselves of that effort. In fact, the reduction of economic cost -- the so-called excess burden -- may under reasonable assumptions be around 20 per cent in this case<sup>34</sup>. Add to this the small effect on tax revenues of a lower tax rate when tax rates already are high, and the reductions in distortions may be bought at a very low sacrifice of revenues. Conversely, increasing tax revenues comes at a very high economic cost in terms of misallocation of resources. The 1991 tax reform which focused on lowering the highest marginal tax rates on labour income, could therefore be expected to lead to a far lower cost of collecting the given tax revenue. If the changes in transfer schemes are included, one third of the excess burden associated with the Swedish system in the early 1980s was removed with the reforms up to 1991<sup>35</sup>. However, with the increase in marginal tax rates over the 1990s and the substantial number of wage earners facing marginal effective tax rates at 60 per cent or higher, welfare losses arising out of the system are still substantial. These effects are particularly pronounced where high effective tax rates combine with an elastic supply. This is most particularly the case for highly-paid workers who are internationally mobile. But it is also potentially important at the lower end of the income scale, when the effect on the decision to participate, not only the decision to vary hours worked, is taken into account. The implication is that the redistribution achieved by using high taxes to finance an array of transfers needs to be evaluated in terms of quite important costs in terms of disincentives.

A further dimension of possible incentive effects on labour supply relates to the skill acquisition embodied in the workforce. Market-based incentives to human capital formation have on the whole been weak in Sweden. The strong compression of wages has been compounded by a further compression of take-home wages. Human capital acquisition concentrates an individual's income stream at particular phases of his life-cycle, and in this case a progressive tax system tends to tax lifetime earnings more heavily than if they were more evenly spread through his working life. This reduces the return for an individual investing in his education. In this context, the increase in taxes over the 1970s and 1980s implied an increase in the effective rate of taxation of human capital from 25 per cent in the late 1960s to

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33. See Klevmarcken, A. (1997), "Did the tax cuts increase hours of work? A pre-post analysis of Swedish panel data", *Working Paper Series No. 1997:21, Department of Economics, University of Uppsala*. Labour supply elasticities derived from a cross-section of countries have been found to be higher than those derived from country-specific countries. The interpretation given is that changes in tax levels will necessitate or induce institutional changes in the labour market which magnify the effect of the initial modification of the tax system. See Hansson, I. and C. Stuart (1993), "The Effects of Taxes on Aggregate Labor: A Cross-Country General-Equilibrium Study", *Scandinavian Journal of Economics*, Vol. 95, No. 3.

34. The relevant labour supply response is given by the compensated labour supply elasticity which indicates the marginal impact of taxes on the choice between labour supply (and thereby consumption of goods) and leisure. The income effect reflect only the effect of taxes on disposable income and should be disregarded when assessing the distortions to economic decision-making. If the excess burden is positive, indicating a less optimal allocation of resources, it should be added to the actual tax take to express the cost of collecting taxes -- the marginal cost of funds. If the excess burden is negative, indicating i.e. an improvement of resource allocation by using taxes to reduce environmental externalities, the marginal cost of funds is less than the actual tax take.

35. Aronsson, T. and M. Palme (1998), "A Decade of Tax and Benefit Reforms in Sweden: Effects on Labour Supply, Welfare and Inequality", *Economica Vol. 65, February Issue*.

90 per cent in the early 1980s<sup>36</sup>. The 1991 tax reform implied a reduction to 25 per cent, but a somewhat more progressive tax system will have raised the effective tax rate over the 1990s. Nevertheless, the tax on education implied by the tax system has necessitated generous grants and loans to students to ensure a motivating return on education<sup>37</sup> (Table 11).

Table 11. **Effects of taxes and grants on the return from undertaking university education**<sup>1</sup>

	Percentage points			
	1968	1974	1981	1991
Taxes	-3.8	-3.3	-3.8	-1.5
Grants	+3.2	+2.0	+1.2	+3.1

1. Effects on private rates of return of an additional year of university study. For males.

Source: Björklund A. et C. Kjellström (1994): "Avkastningen på utbildning i Sverige 1968 till 1991" in Erikson, R. and J. Jonsson (eds.), *Skola och sortering*; Edin, P.A. and B. Holmlund (1993), "Avkastning och efterfrågan på högre utbildning", *Ekonomisk Debatt*, 1993 No. 1.

### *Savings, investment and the allocation of capital*

#### *Household savings: its composition highly responsive to tax-induced changes in economic returns*

Taxation of income as it is earned affects the return on savings and thereby the rate of transformation of present into future income. Systems relying on expenditure taxation do not affect this rate of transformation and are therefore neutral *vis-à-vis* savings. A pure expenditure tax would be closer to the ideal, but in practice, a broad-based and uniform consumption tax may be fairly neutral with respect to savings decisions, while being more practical to introduce and administer. To this end, the 1991 Swedish tax reform broadened the base of the value added tax to include all private consumption items with only a few exemptions, whereas previously tax-exempt and low-taxed items had constituted 40 per cent of private consumption. However, reversions from the principle of uniform VAT rates have been frequent throughout the 1990s, and the proportion of tax-exempt and low-taxed items is not much different from what it was before the reform.

Savings disincentives were reduced in scope by the imposition of a uniform rate of capital income taxation of 30 per cent, which applies not only to capital incomes (interest income, dividends and capital gains) but also, symmetrically, to capital expenses, interest payments being the most important<sup>38</sup>. This rate is aligned with a basically similar corporate tax rate. From a resource allocation perspective, the effect was to face households with a price of capital independent of their tax position, underlined in the Swedish case by the absence of any basic capital income allowance. But these features would also tend to set Sweden apart from its European neighbours, of which only a few allow tax-deductibility of interest

36. See Edin, P.-A. and B. Holmlund (1993), "Avkastning och efterfrågan på högre utbildning", *Ekonomisk Debatt*, 1993 No. 1.

37. These issues were covered in more detail in the special chapter on education in the 1998 *Economic Survey of Sweden*.

38. The counterpart to the tax deductibility of interest payments is in the Swedish case a property tax levied on the market value of the stock of owner-occupied housing. An equivalent option, in use in some other countries, is to add an imputed rent on this stock to capital income. The present property tax rate of 1.5 per cent corresponds to an imputed rent of 5 per cent with a 30 per cent capital income tax rate.

payments but most of which have fairly large basic allowances against capital income taxation. As noted above, tax wedges take on importance only to the extent that they are associated with significant elasticities. As regards savings, Swedish studies have been unable to establish empirically an intertemporal elasticity of substitution significantly different from zero. With such results, the time profile of private consumption would not be strongly affected by changes in the real after-tax interest rate<sup>39</sup>. This is in line with results from most single-country studies; however, panel data incorporating data for most industrial countries over several decades indicate a significant negative impact of tax levels on the household savings ratio, with income taxes appearing to have a far stronger effect than consumption taxes<sup>40</sup>.

As a result of the tax reform, tax wedges have been made more uniform between real and financial savings and across investment opportunities. This resulted from lower tax rates, which drastically reduced the inflation sensitivity of after-tax rates of return, and from a more consistent tax treatment of all components of nominal incomes. Consequently, the profitability of financial investment increased relatively to housing, setting in train a strong downward adjustment of the housing stock. The composition of savings would thus appear to be highly sensitive to changes in relative rates of return. The reform nevertheless left wealth taxes at 1.5 per cent to be levied on the capital stock, adding to the effect of capital income taxes which are related to the return on that stock. As a result, the effective taxation of savings is still fairly high for households which pass the threshold for paying wealth taxes. With bond yields around 4 per cent, marginal effective tax rates increase from 30 to close to 70 per cent once that threshold is passed. Moreover, wealth taxes introduce a highly inflation-sensitive component into capital income taxation.

#### *A more neutral taxation of corporate investment ...*

On the corporate side, the 1991 reform virtually abolished tax credits and targeted allowances, which allowed the corporate tax rate to be reduced to 30 per cent, later to 28 per cent. In conjunction with the changes in personal income taxation, the result was a significant reduction of the previously highly dispersed required rates of return of investments by type of investor and by mode of finance (*Table 12*). The most notable effect has been the reduction of the prohibitively high marginal tax rate on new share issues in companies owned by households. The temporary abolition of double taxation of dividends in 1994 and an accompanying reduction of the household capital gains tax rate to 12½ per cent actually came close to achieving full neutrality in this respect<sup>41</sup>. The reintroduction of double taxation of dividends and capital gains at standard rates in 1995 could be considered as impeding the supply of risk capital, affecting not the larger enterprises with internationally-traded shares, but listed and unlisted enterprises which rely on domestic equity finance. A partial exemption for unlisted businesses was re-introduced with effect from 1997, but such a formulation introduces disincentives for small and medium-sized enterprises to grow and to become listed<sup>42</sup>. Moreover, it would appear that some features of double-dividend taxation still gives

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39. See Agell, J., P. Englund and J. Södersten (1995), "Svensk skattepolitik i teori och praktik", *Annex 1 to SOU 1995:104, Skattereformen 1990-1991. En utvärdering*. A summary is provided in Agell, J. et al (1996), "Tax reform of the century -- the Swedish experiment", *National Tax Journal Volume 49, No. 4*.

40. See Tanzi, V. and H.H. Zee (1998), "Taxation and the Household Savings Rate: Evidence from OECD Countries", *IMF Working Paper 98/36*.

41. The pre-1991 tax system had contained an extra tax credit (the Annell deduction) granted to firms issuing new shares which served to reduce the cost of capital. This deduction was retained until 1994.

42. The personal wealth taxation may create some advantages for small businesses, compared with larger enterprises. All equity listed on the OTC and the O lists of the stock market, along with equity unlisted altogether, is considered as working capital. Such working capital is untaxed, whereas ownership of publicly-listed equity (equity appearing on the so-called A-list) is taxed. In order to avoid disincentives to public listing in the future, main owners of companies moving from the OTC and O lists to the A-list will retain their exemption from wealth taxes.

rise to problems for the Swedish multi-national enterprises. Cross-border mergers involving these have in a few cases resulted in the new corporations relocating their headquarters outside Sweden, in part because other countries involved allow their tax subjects imputation for dividend taxes paid at corporate level for domestic corporations but not for corporations residing abroad. For Swedish shareholders with no imputation, the location will not affect their tax liabilities which effectively puts Sweden at a disadvantage in matters of locating businesses. A mitigation of the economic double taxation of both distributed and retained profits (i.e. allowing a full imputation at shareholder level of taxes levied at the corporate level) is sometimes proposed as a way of reforming capital income taxation, as it would make it neutral *vis-à-vis* location decisions while also stimulating the domestic supply of risk capital (see below). However, the overall impact on fixed capital formation would be limited to the extent that enterprises with access to international capital markets would experience no change in the required after-corporate-tax rate of return.

A crucial issue for the evaluation of the effects of the reform of corporate taxation is to what degree companies used the ability to create untaxed reserves under the-1991 regime. It would appear that, though the practice was widespread, the need to show operations running with a surplus, to avoid showing a high indebtedness and to maintain dividends to stockholders at a reasonable level prevented enterprises from using them in full<sup>43</sup>. The distortionary impact from the tax system was therefore probably smaller than previously thought. Even so, the scope for tax arbitrage is generally reckoned to have fallen with the reform: the advantage still enjoyed by debt-finance over share issues does not seem to distort to any significant degree the ranking of investment projects by post-tax rates of return compared with a ranking based on pre-tax rates of return. The tax reform has in most respects redressed the bias in favour large and capital-intensive industries and against newly-established enterprises and enterprises with few tangible assets. Capital mobility across enterprises should thus have been enhanced, the last step being the 1994-extension of the principles underlying corporate taxation to non-incorporated enterprises. As a result, the cost of capital is lower for the self-employed than for incorporated enterprises (*Table 13*).

**Table 12. Effective marginal tax rates in capital income taxation**

	Per cent		
	(Real pre-tax rate of return 10 per cent at actual inflation rates)		
	Debt	New share issues	Retained earnings
<b>1980</b>			
Households	58.2	136.6	51.9
Tax exempt institutions	-83.4	-11.6	11.2
Insurance companies	-54.9	38.4	28.7
<b>1994</b>			
Households	32.0/27.0 <sup>1</sup>	28.3/18.3 <sup>1</sup>	36.5/26.5 <sup>1</sup>
Tax exempt institutions	-14.9	21.8	21.8
Insurance companies	0.7	32.3	33.8
<b>1995</b>			
Households	32.0/27.0 <sup>1</sup>	67.7/57.7 <sup>1</sup>	48.0/38.0 <sup>1</sup>
Tax exempt institutions	-3.5	25.7	25.7
Insurance companies	21.0	53.3	50.4

Note: All calculations are based on the actual asset composition in manufacturing.

1. Excluding wealth tax. Wealth tax on unlisted shares was abolished in 1993.

Source: Henrekson, M. (1996), *Företagandets villkor*.

43. The utilisation of tax allowances among tax-paying firms in the second half of the 1980s was between 80 and 95 per cent for ordinary depreciation allowances, 30 to 50 per cent for contributions to investment funds and 40 to 85 per cent for other allowances. See Forsling, G. (1998), "Utilization of Tax Allowances" *Finnish Economic Papers*, Vol. 11, No. 2.



Table 13. Real cost of capital for personally-owned enterprises and closely-held corporations<sup>1</sup>

	Per cent			
	1991		1995	
	Closely held corporation	Personally owned	Closely held corporation	Personally owned
<b>Source of finance</b>				
Debt	3.1	1.4	3.0	1.2
Equity	3.8	4.5	5.8	2.6
Retained earnings	4.1	4.5	4.4	2.6

1. Real rate of interest 4 per cent, 4 per cent inflation.

Source: Agell J. *et al.* (1995), "Svensk skattepolitik i teori och praktik", *Annex I to SOU 1995:104*.

*...but impediments to savings and capital formation remain*

With corporate tax rates internationally competitive and a high degree of neutrality achieved, overall taxation of investment is favourable. By international comparison, Swedish capital income taxation stands out for its more consistent treatment of the main income components: business profits, interest payments and expenses, dividends and capital gains, rather than for overall high tax rates (*Table 14*). The deductibility of interest payments implies that the household sector in practice does not pay capital income taxes. In 1994, a recorded capital income deficit of around 2 per cent of GDP entailed offsets in other taxes of about  $\frac{3}{4}$  per cent of GDP. Revenues from corporate and property taxes at around  $3\frac{3}{4}$  per cent of GDP made for an overall capital income tax revenue of 3 per cent of GDP, to be compared with revenues from labour income taxation of 48 per cent of GDP<sup>44</sup>. From the perspective of the potential for tax evasion, a discrepancy appears to be opening up between income and financial accounts regarding financial savings in the household sector. This has been interpreted as an increasing outflow of savings abroad.

Scope for tax arbitrage still remains substantial, serving to erode the capital income tax base. On the personal side, taking up residence outside Sweden offers advantages through elimination of wealth taxes. The high personal income taxation nevertheless allows foreign-based investors to operate with a lower required pre-tax return on investment than more highly-taxed Swedish investors, both in Sweden and abroad<sup>45</sup>. Domestic savings are thus potentially depressed, with detrimental effects on long-term income growth and the revenue base for government. The discrimination against household investment in equity capital has been particularly strong, contributing to the long-term decline in households' participation in the equity market. For small and growing enterprises, this may have had particularly adverse effects on the supply of risk capital, as a direct placement market failed to emerge. Low household savings and an equal distribution of wealth compounded this effect. Inheritance and gift taxes may impede a successful transition of small and medium-sized enterprises within the family or between generations, and the obstacles emanating from the Swedish tax system appear to be on the high side internationally. Tax rates are high and the threshold at which they take effect is low, although against this there is a substantial rebate when assessing capital employed in a going business concern. Larger established enterprises were better able to protect their investor base and capital supply insofar as family fortunes built up through these enterprises most often were converted to tax-favoured foundations.

44. See Hansson, I. and E. Norrman (1996), *Skatter -- teori och praktik*.

45. This is documented in more detail in Andersson, K. (1995), "Kapitalets rörlighet -- den svenska skatte- och utgiftsstrukturen i ett integrerat Europa", *ESO Report Ds 1995:74*. See also Andersson, K. (1999), "Skatternas betydelse för den finansiella sektorns konkurrenskraft", *Annex to the expert report on financial markets*, forthcoming.

Table 14. Dimensions of capital income taxation

## A. Interest, profits, dividends, capital gains and wealth taxes

	Highest tax rate on interest income	Corporate tax rate	Total dividend taxation <sup>1</sup>	Taxation of capital gains	Wealth tax	
					Rate	Threshold <sup>2</sup>
<b>Sweden</b>	30*	28	50**	30	1.5	0.9
Austria	25	34	50**	0	0	
Belgium	15*	40	49	0	0	
Denmark	59*	34	60	0-40	0	
Finland	28*	28	28***	28	0.9	1.65
France	25	33	66***	26	0.5-1.5	6.25
Germany	56	58 <sup>3</sup>	49***	0	0	
Ireland	48	32	55	40 <sup>4</sup>	0	
Netherlands	60*	35	74**	0	0.7	0.77
Norway	28*	28	28***	28	0.7-1.1	0.13
United Kingdom	40	31	48	0-40	0	
United States	47*	35	68**	0-20	0	

## B. Inheritance taxes

	Spouses			Children			Valuation rules: fair market value unless otherwise noted
	Rate	Lower threshold <sup>2</sup>	Upper threshold <sup>5</sup>	Rate	Lower threshold <sup>2</sup>	Upper threshold <sup>5</sup>	
<b>Sweden</b>	10-30	0.28	0.88	10-30	0.07	0.67	Business capital 30 per cent of substance value
Austria	2-15	0.02	38.53	2-15	0.02	38.53	Immovable property assessment values significantly below market values
Belgium	3-30	0.11	4.49	3-30	0.11	4.49	
Denmark	0			15	0.23		
Finland	10-16	0.09	0.51	10-16	0.03	0.45	
France	5-40	0.44	15.53	5-40	0.40	15.49	n.a.
Germany	7-30	2.71	228.61	7-30	1.81	227.70	First DM 0.5 million (SKr 2.26 million) of business property not assessed
Ireland	0			20-40	2.10	2.55	Value of business and agricultural property reduced by 90 per cent
Netherlands	5-27	2.27	8.74	5-27	0	6.47	
Norway	0			8-20	0.11	0.42	n.a.
United Kingdom <sup>6</sup>	0			40 <sup>7</sup>	2.83		
United States <sup>8</sup>	18-50	4.97	28.81	18-50	4.97	28.81	Special-use valuation for farms and closely-held businesses

Notes: Tax rates are in per cent and thresholds are in SKr million

\* Tax deductibility of interest payments for housing mortgages

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

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

- Taxation at both corporate and investor level.
- When tax rates above 0 become effective.
- Retained profits
- Inflation-adjusted capital gains.
- When the highest rate becomes effective.
- Inheritance tax is dropped upon transfers of i) interest in an unincorporated business; ii) controlling interest in a trading company and shares in unquoted trading companies. Other transfers of business may have a 50 per cent reduction of rates.
- Applying to property passing on death. The rate is halved for property transferred *inter vivos* into a discretionary settlement or a closely-controlled company.
- Federal tax schedule.

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

On the corporate side, the higher international mobility of both financial and real capital also increases the scope for arbitraging to take advantage of differences between tax systems<sup>46</sup>. To what extent this scope has been utilised is far more difficult to document: the expansion of Swedish multi-nationals abroad probably owes more to the desire for market proximity and adaptation to differences in cost levels than to pure tax factors<sup>47</sup>. Signals abound that differences in capital income taxes and the high marginal income tax rate facing highly paid professionals will lead to a relocation of corporate headquarters. To what extent such a relocation will affect the location of service functions (IT departments, marketing) and research and development functions on one hand and production facilities on the other is still a matter of conjecture with little empirical evidence available. A recent study<sup>48</sup> indicates that there are headquarter effects on the development of multi-national enterprises, in part with respect to the balance between employment in foreign versus Swedish affiliates, in part on the use of foreign versus Swedish subcontractors. Substantial caveats apply to the results and against them shall be set the effect of inward foreign direct investment which has served to develop Swedish enterprises<sup>49</sup>. But significant irreversibilities cannot be ruled out, the potential cost of not adjusting capital income taxation in time to prevent tax factors spilling importantly into location decisions, may thus be of some consequence.

*The Achilles heel of the system: the tension between capital and labour income taxation*

Efforts to prevent tax arbitrage between wage and capital income, as a result of the large discrepancy between capital income taxes and wage income taxes, have resulted in a tax system of some complexity<sup>50</sup>. These efforts concentrate primarily on self-employed and active owners who earn both capital and labour income in the same capacity and for whom the decisions to save and invest are fully integrated. For the *self-employed*, the capital income component, to be taxed at 30 per cent, is imputed through a complicated formula. A quarter of the remaining income may be allocated to an income equalisation fund allowing a five-year credit, and a further allocation to an expansion fund is allowed to establish parity with corporations which may expand through single-taxed funds. The remaining income -- if any -- is taxed as labour income, subject to the progressive income tax schedule and employers' and employees' social security contributions. For *active owners of closely-held companies*<sup>51</sup>, earnings less than 5 per cent of a benchmark -- calculated as the capital invested corrected for certain wage payments<sup>52</sup> -- are exempt from the tax on capital income and are only taxed at the corporate level (28 per cent). Income from 5 to 12 per cent of the benchmark is taxed at both the corporate and the personal level (giving an overall tax burden of approximately 50 per cent). However, income exceeding 12 per cent of the benchmark is taxed at the high marginal tax rate applying to wage income which together with the corporate tax on the

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46. See Andersson, K. (1995), *op. cit.*

47. Documentation and discussion of issues involved are provided in Braunerhjelm, P. and K. Ekholm (eds.) (1998), *The Geography of Multinational Firms*.

48. See Fölster, S. *et al.* (1999), "Behövs svenska företag? -- Sysselsättningseffekter av huvudkontorets lokalisering", *Forskningsrapport S39, Handelens Utredningsinstitut*.

49. See Modén, K.-M. (1998), "Patterns of Foreign Direct Investment into Sweden", in Braunerhjelm, P. and K. Ekholm, *op. cit.*

50. The total tax rate on capital income, taking into account the corporate tax of 28 per cent and the personal income tax of 30 per cent, is 49.6 per cent ( $0.28 + 0.3 \times (1-0.28)$ ). The maximum tax rate on wage income, taking into account social security contributions paid by employers (25 per cent measured on an inclusive basis) and personal income tax on earned income (56.5 per cent), is 67.3 per cent ( $0.25 + 0.565 \times (1-0.25)$ ).

51. A closely held company is defined as a company owned by "few" persons (usually fewer than ten), and where persons employed by the company hold more than 70 per cent of the equity.

52. The formula is: invested capital plus the total wage cost minus salaries to active partners minus SKr 363 000.

underlying income, results in an overall tax burden approaching 70 per cent. While tax arbitrage may be prevented, the complexity of the system may discourage entrepreneurs and involve relatively high administrative costs for small enterprises.

### **Options for reform**

The 1991 tax reform left Sweden with a thoroughly overhauled tax system, which adhered closely to the main principles of broad tax bases and uniform tax rates. Capital income taxation has been adapted to an environment of highly mobile tax bases and stands out internationally for its consistent treatment of income components. Efficiency aims have become more prominent in the formulation of labour income taxation. However, developments subsequent to the reform have served to highlight the remaining distortions emanating from the tax system. The impact of capital mobility was thought to have been resolved with the reform, but has only increased in significance with globalisation, in the process exposing some of the remaining inconsistencies of the system. At this stage, policy-makers are confronting a spectrum of issues:

- *How to alleviate the tax burden on labour:* the tax burden on labour stems principally from the level of public spending that needs to be financed, but attention has focused on the possibility of reformulating taxes and transfers so as to reduce their labour-market impact and stimulate employment growth.
- *How to formulate an appropriate response to international tax competition:* there are still areas where Sweden's relatively high tax rates may not be sustainable in the face of internationally-mobile tax bases.
- *How to improve the framework for decision-making in small and medium-sized enterprises:* while the framework for taxing entrepreneurial income has improved, certain facets of the tax system may still create obstacles to their supply of capital and inhibit SMEs from expanding.
- *How to sharpen incentives to work without significant losses in terms of income equality:* the basic trade-off between redistributive aims and economic incentives is not well understood and may need to be reassessed in the light of the dynamic effects of the system on lifetime incomes.

### ***Easing the tax on labour***

#### *Shifting the tax base*

One focus of the present Swedish tax debate relates to the possibility of developing other tax bases to ease the burden on labour income. Environmentally-motivated taxation ("green taxes") is often mooted as a substitute. Insofar as such taxes are designed to reduce economic externalities (pollution), the cost of imposing them is lower than for other taxes and may even be negative. In the Swedish context, more extensive use of such taxes was an integral part of the 1991 tax reform and they have increased in importance since then. However, a recent evaluation<sup>53</sup> saw no significant scope for increasing such taxes in the short term. Indeed, the thrust of energy taxation in recent years has been to maintain lower energy taxes on the exposed manufacturing sector while raising them for consumers and sheltered sectors. Under the

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53. See SOU 1997:11, *Skatter, miljö och sysselsättning*.

influence of the higher mobility of fixed capital, the principle of uniform taxation and neutrality between domestic agents has thus been abandoned in this area.

A second candidate for higher taxation is housing. This is presently fully integrated into capital income taxation, but in view of its lower mobility it has the potential of shouldering a heavier taxation than financial capital and business fixed capital. From a purely practical perspective, however, the scope for raising taxes on housing appears quite small, as the property tax has been meeting heavier resistance in recent years. A planned increase in the property tax rate had to be postponed, and the same was the case for an elimination of tax privileges given to housing vintages built when prices were at their highest in the early 1990s<sup>54</sup>.

Given the restricted scope for national tax policies to transfer tax from labour to capital, and in the absence of expenditure cuts to pave the way for lower tax levels, reform efforts will therefore have to proceed on the basis of *i*) identifying areas of major distortion where differentiated tax rates may be used to mitigate the economic impact of high labour taxes, and/or *ii*) utilising the scope for base broadening. Tax expenditures -- tax concessions given through tax allowances and exemptions -- have been estimated at around 8 per cent of GDP<sup>55</sup> (Table 15). The tax base most strongly affected by exemptions from the

Table 15. Tax expenditures by tax category<sup>1</sup>

	SKr billion					Memorandum item: net erosion of potential tax base, per cent
	1995	1996	1997	1998	1999	
<b>Expenditures</b>						
Income taxes						12
Capital income	60.4	48.2	42.4	38.5	35.1	..
Others	25.4	33.7	34.1	34.6	35.8	..
Social security contributions and payroll tax	3.8	3.2	7.9	7.5	7.7	2
Value-added tax	19.4	34.6	34.3	35.8	37.4	22
Excise taxes	28.4	32.5	35.5	41.4	43.1	37
<b>Sanctions<sup>2</sup></b>						
Income taxes						
Capital income	-10.7	-13.4	-14.7	-11.7	-10.4	
Excise taxes	-1.5	-3.7	-2.0	-2.1	-2.1	
Expenditures and sanctions affecting the budget balance	125.2	135.0	137.4	143.9	146.4	
Per cent of GDP	7.6	8.0	7.9	8.0	7.9	
Expenditures relating to non-taxed transfers <sup>3</sup>	63.3	62.4	60.1	62.7	46.8	
<b>Total</b>	188.5	197.4	197.5	206.6	193.2	
Per cent of GDP	11.4	11.7	11.4	11.5	10.5	

1. Outlay equivalent method.

2. Taxation above what the standard rates and definition of taxable incomes would imply.

3. The objectives of these transfers are related to their effect on household disposable incomes.

Source: Ministry of Finance.

general tax code is indirect taxes, with a weakening of the potential VAT base by 20 per cent and of the base for excise taxes of 35 per cent. Departures from the tax schedules for labour and capital incomes are also significant and entail an erosion of the tax base of 15 per cent. However, by international comparison, the Swedish tax expenditure estimates are very comprehensive in terms of items included and in terms of consistency of income definitions, allowing very few departures from the standard tax rates of the system.

54. The property tax is a central government tax in Sweden. Its acceptance may increase if it were to finance local government, in line with a reform about to be implemented in Denmark.

55. The outlay equivalent method used indicates the equivalent taxable subsidy payment necessary to compensate recipients. The budget balance would improve by around SKr 100 billion or 5½ per cent of GDP if tax privileges were removed. Amounts are calculated at the margin and adding them up is not entirely meaningful, but allows an assessment of their importance.

(The lower rate of VAT on food, for example, gives rise to a tax expenditure.) The scope for reducing tax expenditures, which are still significantly lower than before the tax reform, may thus be more restricted than first impressions might indicate as illustrated by the considerations just discussed now guiding the formulation of energy taxes.

*Alternative approaches to tax reform: differentiated rates or a flat tax?*

As noted above, the economic distortions of the tax system may be reduced if tax rates are differentiated according to differences in labour supply elasticities between categories of workers. This so-called “optimal-taxation” approach motivated the reduction of the higher marginal tax rates in 1991 (higher income earners being particularly mobile internationally), and it is now argued that the present high unemployment argues for a similar reassessment of the taxation of labour income at lower levels of earnings. The participation decision of low-paid workers appears to be rather sensitive to the remuneration offered, and tax and transfer schedules imply at present only small or negligible gains from moving out of transfer receipt into employment. Against this background, the upper marginal income tax rate of 55 per cent has been retained while the 1999 budget focused on lowering average taxes for low and middle incomes<sup>56</sup>.

The optimal-taxation approach has also motivated the more far-reaching proposal for lowering taxes on some service sectors, either through lower payroll taxes or lower VAT rates on services. Underlying the proposal is the perception of employment opportunities being lost in private services, which have developed less in Sweden than in other countries (*Table 16*). Lower taxes on services are seen as a way stimulating market-based production at the expense of home (“do-it-yourself”) production, to the benefit of low-productivity and low-paid workers. At the same time it would lower the return from tax evasion<sup>57</sup> (see *Box 2*). The suggestion that earned income tax credits be paid to low-paid workers focuses more directly on the incentives to take a job, the tax credit maintaining their after-tax income but allowing wages to shift down to improve their competitive position in the labour market. However, the impact on employment is in both cases fairly small (or even negative) in the Swedish case and would come at the expense of a far more complex tax structure. The financing of such reforms would thus add to disincentives elsewhere, both in terms of higher tax rates for other categories of workers and for low-productivity workers to undertake education to improve their labour market position more permanently.

**Table 16. Employment growth since 1980<sup>1</sup>**

	Per cent			
	Private services	Public services	Total services	Total
<b>Sweden</b>	<b>0.9</b>	<b>-0.3</b>	<b>0.4</b>	<b>-0.3</b>
Australia	2.8	1.6	2.7	1.8
Denmark	1.0	0.8	0.9	0.4
Finland	-0.1	1.3	0.5	-0.8
France	1.3	1.7	1.4	0.1
Germany (west)	1.8	0.4	1.4	0.3
Japan	1.8	0.1	1.6	0.8
Netherlands	1.9	-0.2	1.5	0.7
United States	2.8	0.7	2.3	1.6

1. 1980-95 for the Netherlands, 1980-96 for Australia, Finland, Japan, Germany (west) and the United States, 1980-97 for Denmark, France and Sweden.  
Source : OECD.

56. The tax relief was given as a direct reduction of taxes paid. It is being phased out for incomes between 60 per cent and 110 per cent of an APW, adding 1.2 percentage points to marginal effective tax rates over this interval.

57. See SOU 1997:17, *Skatter, tjänster och sysselsättning*.

## Box 2. Alleviating the effects of high tax wedges

### *Lower taxes on services*

The high tax wedge on labour income is generally seen as restricting the demand for services, at present four hours of paid work are needed to buy an hour of work. This acts to promote do-it-yourself production at the expense of enterprises offering low-productivity services, and thereby impedes an allocation of labour in accordance with underlying productivity differentials. Lower taxes on services are thus seen as a way of improving labour-market prospects for low-paid workers. It is also seen as a way to lower the return from tax evasion which is more likely to occur in the production of private services than elsewhere in the economy. In the Swedish economy, hourly inputs into home production exceed those going into market-organised work, while the shadow ("black") economy is estimated at 5 per cent of hours worked\*. Arguably, there might be significant gains from rearranging the tax structure.

However, from an employment perspective, exploiting differences in price elasticities between services and other sectors does not appear to have a large potential. By one estimate, if employers' social security contributions of around 31 per cent were to be removed on a selection of services in transport, restaurant, repairs and cleaning etc. and financed by an increase for other sectors of around ½ percentage point, overall employment would increase by around 1 per cent\*\*. But there is uncertainty about the estimated elasticities and abandoning the principle of a uniform tax rate for such an uncertain gain would seem hard to justify. Efforts to release the employment potential in market-organised services would probably best be served by lowering the overall level of taxation whilst looking into the particular obstacles to the creation and expansion of small and medium-sized enterprises stemming from labour-market regulations and the advantages enjoyed by municipally-owned enterprises.

### *Earned income tax credits*

Intervention focused on characteristics of the workers most susceptible to unemployment should *a priori* be a more efficient way of addressing labour-market imbalances than differentiating tax rates by sector of employment. Tax credits attached to earned income have been seen as a way of strengthening work incentives for and employability of low-skill/low-paid workers without compromising distributional objectives, insofar as wage rates could fall while after-tax income from work would still increase relative to unemployment compensation or other transfers.

In this context the low basic income allowance in the Swedish income tax schedule -- an income tax rate of 30 per cent applying from 5 per cent of the earnings of the APW -- is often seen as a major impediment to work effort. An increase in the basic allowance would reduce the high average taxes at low income levels and in particular affect the decision to participate, whereas an additional lowering of marginal (effective) tax rates would be more suited to effect an increase in hours worked. But the substantial increase in the basic allowance needed to bring Sweden up to standard European levels would on the whole be rather costly in budgetary terms insofar as it will automatically be extended to all tax payers, at all income levels and regardless of source of incomes. Moreover, the fact that it does not differentiate between labour income and other sources of income, implies that the reward of moving from transfer to earned income will not increase (which would set it apart from how a standard EITC works).

To handle the budgetary consequences of earned income tax credits they would have to be fairly narrow in scope and offset financially elsewhere in the tax system. These prerequisites appear to present particular obstacles in the Swedish case. A fairly strong compression of incomes implies that the easily targeted groups at the very lower end of the income scale, with a potentially significant supply potential through higher participation rates, are not numerous in Sweden. If the credit were extended close to average incomes, there would be a rather large group which would face lower average taxes but higher marginal taxes. Higher income groups would be facing both higher average and marginal income taxes.

These effects are captured in a computable general equilibrium model for Sweden (and three other countries, see *Annex II*) which assumes that the distribution of wages is allowed to open up to get low-paid workers into jobs. It would appear that negative effects on the labour supply of wage earners at the middle and higher end of the income scale would outweigh the positive effects for low-paid wage earners, implying a fall in overall labour supply and economic activity. Insofar as the outcome entails a more equitable distribution of disposable incomes, by getting the low-paid back into work, it might be seen as justifying the efficiency costs involved. But the efficiency cost of an EITC reform is higher in Sweden than in the other countries surveyed while redistribution has already been taken further at the outset. A more suitable formulation of the earned-income tax credit, drawing in more detail upon particular Swedish features, might result in a positive impact on employment. But any such gain would come at the expense of a more complex tax system. Moreover, from a long-term labour-market perspective earned income tax credits have the distinct disadvantage of muting incentives to undertake education to enhance future earnings from work.

\* See Riksrevisionsverket (1998), "Svart arbete, Del 2", *RRV 1998:28* which estimates a loss of tax revenues at around SKr 20 to 40 billion due to transactions being organised in the black economy. Separate studies of home production on the dwelling of the household give an amount corresponding to 2½ per cent of GDP, indicating that the proportion of home production amenable for transfer to market production may be rather small, see Brodersen, S. (1998), "Danskernes og svenskernes gørdet-selv arbejde i 1997", *Nyt Fra Rockwool Fondens Forskningsenhed 1998/6*.

\*\* See SOU 1997:17, *op. cit.*

The alternative approach would be to further simplify the tax system. A broadly proportional income tax would have particular advantages in view of the potential international mobility of the higher-educated and may well be the way to prevent a further erosion of the domestic tax base. Distortions to labour supply and human capital investment would diminish, while tensions associated with the divergent tax rates on labour and capital income would be relieved. With revenues from the progressive part of the income tax schedule being fairly small, a proportional tax on labour income would be close to the tax rate on capital incomes. The cost would be a less extensive redistribution of income. But disincentives for workers with low incomes, who could expect to see an increase in tax rates from such an operation, could be attenuated by drawing down tax expenditures. In the context of a lower overall income tax level, employment creation should strengthen while higher marginal tax rates at the lower end of the income distribution can be avoided.

Assessing the properties of the 1992 tax system compared with a fully proportional system, it has been calculated<sup>58</sup> that the latter would increase labour supply of those in work by 2½ to 3 per cent (*Table 17*). The effects may be on the high side insofar as the analysis covers only married couples, thus encompassing the most elastic part of the labour supply, married females. However, the Swedish data do not allow for an assessment of the effect on the participation rate, which is a potentially significant impact from a fully proportional system. In terms of effects on the income distribution, the study shows a larger increase in inequality from a proportional tax in Sweden than in the other countries. But only the higher average tax and lower disposable income of low-income earners is captured for Sweden, not the potential offsetting effect on household income of the spouse taking on a job. Nevertheless, taking into account changes in consumption following from higher labour supply, even in the Swedish case the welfare effects of replacing the progressive system with a proportional one are estimated to be positive.

58. Aaberge, R., U. Colombino and S. Strøm (1998), "Labour Supply Responses and Welfare Effects from Replacing Current Tax Rules by a Flat Tax: Empirical Evidence from Italy, Norway and Sweden", *Memorandum No. 1998/18 from the Economics Department, University of Oslo*.



Table 17. Effects of implementing a proportional income tax system<sup>1</sup>

	Participation rate <sup>2</sup> , per cent		Hours worked given participation	Disposable income, index	Gini coefficients	
	Males	Females			Gross income	Disposable income
Italy						
1992 system	96.2	38.2	1864	100.0	0.243	0.234
Proportional system	96.2	36.4	1885	102.4	0.238	0.238
Norway						
1992 system	96.0	75.4	1995	100.0	0.205	0.177
Proportional system	99.2	81.4	2288	138.6	0.165	0.165
Sweden						
1992 system	..	..	1891	100.6	0.192	0.164
Proportional system	..	..	1947	105.6	0.202	0.202

1. Effects for married couples.

2. Not modelled for Sweden. Effects on disposable incomes and the income distribution for Sweden reflect thus only effects on hours worked of those in work.

Source: Aaberge, R., U. Colombino and S. Strøm (1998), "Labour Supply Responses and Welfare Effects from Replacing Current Tax Rules by a Flat Tax: Empirical Evidence from Italy, Norway and Sweden", *Memorandum No. 1998/18 from the Economics Department, University of Oslo*.

### ***Responding to capital mobility and obstacles to enterprise growth***

The composition of investment is strongly affected by the relative rates of return on different financial and real assets. Close attention should be paid to ensuring tax neutrality between different alternatives and the Swedish tax system has come far in this direction. However, the overall high taxation of savings, reflecting a very broad tax base and wealth taxes, as well as double dividend taxation, puts Swedish investors at a general disadvantage compared with those operating from other jurisdictions, and this may serve to erode the tax base in the long run. In the short run, tax harmonisation at the EU level is unlikely offer substantial respite in the face of increasing international mobility of financial and real capital. It cannot, thus, be expected to obviate the need to close the gap between Sweden and other European countries.

A narrowing of tax rates between labour and capital income is a key element in simplifying the tax regime applying to self-employed and proprietary firms (*fåmannsföretag*). Lower tax rates on high labour incomes, presently above 60 per cent, would also be important to the larger enterprises which are facing a gradually more mobile labour market for highly qualified personnel. Apart from this basic prerequisite, some modifications of capital income taxation appear particularly apposite:

- i) Removal of the wealth tax, currently bringing in ¼ per cent of GDP, but embodying a very unequal treatment of different financial instruments and a high effective taxation of capital for those it applies to; and
- ii) Alleviation of the effects of the double taxation of dividends and retained profits, currently bringing in 1¾ per cent of GDP.

A general lowering of the rates of taxation of interest income, dividends and capital gains would reduce the need for an elimination of the double taxation. It would also be less costly from a public finance perspective insofar as the aggregate net taxable capital income, taking into account the deductibility for interest payments, is rather small (below 2 per cent of GDP). On the other hand, the corporate tax rate at 28 per cent remains internationally competitive and the symmetry with capital income taxation for households at 30 per cent is crucial to the dual income taxation model in use in Sweden.

***Social insurance reform: incrementalism or reorganisation?***

High effective marginal tax rates stem as much from generosity of income-replacement transfers and clawbacks embedded in means-tested transfers as from the tax system. Within the scope of the present system, an agenda for reform could comprise initiatives to: *i*) lower the 80 per cent replacement rate of income replacement and family transfers as well as introduce a definite upper limit on their duration; *ii*) review eligibility criteria and strengthen their enforcement to offset the moral hazard implied by the present generosity; and *iii*) lower the social assistance norms or allow wider local discretion in their application. In view of the options outlined for tax reform, it would also be desirable if child and housing transfers could be reformulated to allow a closer targeting of their redistributive impact. But there are limits to how far one can go in extending family transfers without introducing unintended repercussions on household behaviour. Housing transfers are already more extensively used in Sweden than elsewhere. And even greater reliance on child-dependent transfers to achieve income-distribution objectives would have to be effected judiciously given the very generous levels of compensation already extended to families with children.

A more wide-ranging reform would ensue if social insurance, to the extent possible, were transformed into privately-organised, often occupationally-based, schemes, made mandatory if necessary by public regulations. A reorganisation of unemployment insurance, so that financing would be jointly provided by the workers and employers themselves, is now widely seen as a way of making the social partners more directly aware of the costs of the high unemployment level in Sweden, and hence of inducing behaviour which could counteract it. The other main candidates for a reorganisation along these lines would appear to be occupational injury and sickness benefits -- ideas pursued in the first half of the decade but then left to rest. The issue at stake is what constitutes insurable risk in the domain of social insurance and to what extent redistribution should be integrated into such schemes.

The high degree of "churning" implied by the present system suggests the need for a more radical approach to social insurance reform. It has been proposed to replace the present system with actuarially based life-time drawing rights, whereby individuals are allowed to draw, at their own discretion, on accounts which comprise compulsory fees accumulated over their working life<sup>59</sup>. The proposal envisages a fully integrated scheme whereby expenditures for education and training, sickness and unemployment are set against their future old-age pension. The recent pension reform in Sweden incorporates the idea of individual notional accounts which ensure a close connection between contributions and future pensions (see chapter II). Depending on the coverage of the account system, it has been calculated that marginal effective tax rates could be reduced by 20 to 40 percentage points. The problem with such a scheme is that it may be difficult to prevent people drawing down their accounts excessively if the envisaged guaranteed minimum pension is set too high. And individuals actually face quite different risks with respect to sickness, disability and unemployment, so supplementary risk insurance would still need to be provided. This reduces the scheme's intuitive appeal.

***Summing-up: incentives versus equity***

The present organisation of the Swedish tax and benefit system has continued to emphasise short-term equity objectives with great success, and the robustness of the system from this perspective has been confirmed during the 1990s. However, the disincentives to labour supply and entrenchment of benefit-dependence have become far more difficult to offset than before. Youths are recognised as being the losers

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59. See Fölster, S. (1997), "Social insurance based on personal savings accounts: a possible strategy for overburdened welfare states?" in European Commission, Directorate-General for Economic and Financial Affairs (1997), *European Economy 1997 No. 4*.

from the upheavals in the Swedish economy in the 1990s. Against this background, a significant premium attaches to reform which increases the potential for employment growth. In these terms, a reassessment of the weight attached to short-term equity objectives may give rewards in terms of long-run equity objectives. OECD recommendations for reforming the tax and transfer structure are given in *Box 3*.

Further reform of the Swedish tax and transfer system will thus have to reconcile the existing structure, based heavily on equity considerations with three competing objectives: *i*) improving incentives to labour supply; *ii*) reducing the tensions following from the wide disparities in the taxation of labour and capital income; and *iii*) restraining the erosion of the tax base arising from increasing factor mobility. Priority will have to be given to reducing the high marginal effective tax rates on labour, attributable both to taxes and transfers, if necessary at some cost in terms of short-term equity objectives. But lower taxation of labour would bring about a significant response in labour supply, not least for those at the lower end of the income distribution. This high upward income mobility would be reinforced by the improved pay-off from higher education. If aligned with a more favourable enterprise climate, and underpinned by a financially-stable welfare system, employment creation would improve and underpin equity over the longer run.

### **Box 3. Options for reforming the tax and transfer system**

Taxes and transfers contribute equally to labour-market disincentives which give rise to under-utilisation of labour. The focus of reform should therefore be on increasing the rewards from work, both from moving from inactivity to work and from increasing hours worked. This would also help to reduce the tensions arising from disparities in taxation of labour and capital income, which inhibit enterprise development. Stemming the erosion of the tax base due to international capital and skilled-labour mobility also merits attention.

A co-ordinated modification of transfers and taxes could proceed along the following lines:

- *Introduce upper limits to the duration of sickness and unemployment insurance benefits.* Sweden is alone in having no upper limit on these benefits, thereby relying too much on administrative routines to prevent long spells from developing.
- *Lower the replacement rate in social insurance from 80 to 75 per cent to reduce the scope of the unemployment trap facing benefit recipients.* A differentiation of replacement rates should be considered if eligibility criteria are reinforced in full, thereby preventing arbitrage between benefit schemes.
- *Reconsider the norms embedded in the social assistance system.* These norms appear to calibrate the rest of the transfer system, acting in particular as a lever for the generosity of child and housing transfers.
- *Leave the financing of unemployment insurance to workers and employers.* This will serve to internalise the cost of high unemployment and excessive wage growth.
- *Develop a premium system for sickness, disability and occupational injury insurance to reflect differences in risks between branches, enterprises and employees.* Where appropriate, mandatory and fully actuarial insurance arrangements outside public budgets should be considered.
- *Review the interaction between social and occupational insurance schemes.* Their combined generosity may still entail moral hazard problems which need to be addressed.

Further modification of *the tax system* could proceed in two phases:

*In the short- to-medium-term:*

- *Lower the upper marginal income tax rate to allow for a top marginal rate of 50 per cent when employees' social security contributions are included, while raising the threshold at which the 50 per cent rate applies in line with indexation formulas agreed upon in 1991.* Emphasis should be on reinstating the framework of the 1990/91 tax reform.

- *Start lowering taxes on low and middle incomes.* Sweden has the highest tax rate on low incomes among OECD countries, reflecting a very low basic income tax allowance (currently below SKr 10 000) and employees' social contributions of 7 per cent, on top of municipal taxes at around 31½ per cent.
- *Remove wealth taxation,* which introduces serious distortions of capital income taxation while raising little revenue.
- *Alleviate the double taxation of distributed and retained profits* which appears warranted from savings and long-term capital-market considerations, in particular with respect to households' participation in the market for risk capital; some urgency may be required if relocation effects continue to emerge, not only with respect to corporate headquarters but also, especially for production facilities.

*Changes in the above direction could entail costs of around 5 per cent of GDP or more. Some offset may be found within the tax system by reducing the scope of tax expenditures, currently around 8 per cent of GDP.* Deviations from standard rates are significant both for value added and income taxes. But tax cuts will have to be accompanied by sizeable savings on the expenditure side, preferably on transfers to reinforce the economic effects of the tax cuts.

*In the longer run,* a more proportional tax system may underpin incentives to human capital formation and better withstand international tax competition. Such a process has so far been restrained by income distribution objectives. It would be facilitated if transfer schemes could be further modified to handle redistribution but cannot be made dependent on this: Long-run equity would benefit from improved labour-market outcomes in the wake of a higher growth capacity of the economy.

## *Annex I*

### **The evolution of social insurance**

The fundamental choice of relying upon publicly-provided universal social insurance rather than supplementing basic public provisions with occupational insurance arrangements was taken in the second half of the 1950s when it was decided to set up an all-embracing earnings-related old-age pension scheme (*ATP*) as a part of public social insurance. Since then, the scope of social insurance relates basically to the evolution of the publicly-run system.

#### ***The 1960s: extending scope and coverage***

Means-testing of the disability benefit was abolished in 1962, while the upper limit to the duration of sickness benefits was removed in 1963, implying that long-term illnesses would eventually lead to receipt of disability benefit. The generosity of sickness benefits was increased in 1967 by lowering the number of waiting days from 4 to 1 and adjusting the replacement rate to ensure benefits at about 80 per cent of actual earnings. On another front, unemployment insurance was made somewhat more generous, the duration of UI benefits being raised from 130 to 150 days (1964). More important from a public finance and long-term labour supply perspective was the introduction of a means-tested supplement to the basic old-age pension (*pensionstilskott*) (1969).

#### ***The 1970s: reacting to emerging labour-market imbalances***

Several modifications of insurance schemes resulted from the emerging regional disparities in labour-market performance and from the impact of slowing overall GDP-growth from the middle of the decade:

- In 1970, local labour market conditions were included in the qualification criteria for disability pension for elderly workers (above 63 years of age, later lowered to 60 years); from 1972 labour market reasons alone qualified for benefit.
- In 1974, the duration of unemployment insurance benefits was increased from 150 to 300 days for workers below 55 years of age and set at 450 days for those above 55 years, while cash transfers (*KAS*) were introduced to cover workers ineligible for Unemployment Insurance.
- In 1976, a part-time pension for workers above 60 years of age was introduced, with a replacement rate of 65 per cent (lowered to 50 per cent during the 1981-87 period).

The lowering of the formal retirement age from 67 to 65 years of age in 1976 should, however, be seen as part of the overall extension of generosity of the system throughout the decade, encompassing the following: an allowance for leave for childbirth also for fathers (1974); a doubling of the supplement to the basic pension for disability pensioners compared with old-age pensioners (1976); and a considerable

extension of work injuries qualifying for benefit or pension (1977). Finally, the system was modified in 1974 with a view to a more symmetric tax treatment of earnings from work and income-loss replacing transfers such as sickness and unemployment benefits. The increase in the replacement rate in sickness insurance to 90 per cent relative to actual earnings but with the benefit being subject to taxation, implied no increase in the overall generosity of the system.

### ***The 1980s: generosity increasing across the system***

The 1980s saw social insurance being used as an instrument of family policy, with maternity allowance being more generous for births close in time (1980) and child allowances being raised for a third child and above (1982). This gave rise to large fluctuations in fertility over the 1980s and 1990s. The focus of schemes covering short-term income losses shifted towards lesser own-account risk on the insured. The waiting day in sickness insurance was removed in 1987. All ALMPs were allowed to qualify for re-establishing unemployment benefits (1987) and, with effect from 1989, the replacement rate in unemployment insurance was increased to 90 per cent. The five waiting-day waiting period was abolished.

### ***The 1990s: tightening social insurance in response to burgeoning budget deficits***

The 1990/91 tax reform relied on an increase in child and housing allowances to ensure distributive neutrality. Thereafter, a number of actions were taken to stem the rise in social expenditure outlays but also to correct some of the disincentives following from the overly generous system.

- In 1991, the replacement rate in sickness benefit was lowered to 65 per cent for the first three days of illness, 80 per cent from the fourth to the ninetieth day, thereafter remaining at 90 per cent. Another reform in 1992 obliged employers to pay sickness wages during the first two weeks of an illness spell with replacement rates above those pertaining to sickness benefits. Finally, in 1993, one waiting day was reintroduced in sickness benefits and the replacement rate for sick leave above one year was lowered to 70 per cent. From 1991, labour-market reasons have not on their own qualified for disability benefit, and from 1997 they are not allowed at all into the eligibility criteria.
- In 1993, the replacement rate in unemployment insurance was lowered to 80 per cent and six waiting days were reinstated. Also eligibility for work injury pension was severely restricted.
- In 1994, the replacement rate for part-time pension was lowered to 55 per cent and the eligibility age raised to 61 years.

The end of this process came in 1996 with the reduction of the replacement rate in all social insurance schemes to 75 per cent: a step retracted in 1998 when the rate was increased to 80 per cent. The decade ended with the adoption of the wide-ranging reform of the old-age pension system, moving from a benefit- to a contribution-defined basis for old-age pensions.

### ***Occupational pensions: small in terms of expenditures but not in economic significance***

The social partners are able to influence the evolution of social insurance in several ways. Social insurance may be modified to accommodate their wishes, *inter alia* to facilitate the outcome of wage bargaining rounds, occupational benefit schemes may be set up as forerunners of publicly-provided schemes or reformulated to provoke modifications to these, and they may be retained to supplement social insurance. All these options have been used in Sweden:

- Supplementary *sickness benefits* were made available at an early stage (1955) for white-collar workers in the SAF area, central and local government employees, allowing for benefits during waiting days in the social insurance scheme and as an addition to the latter. Insurance cover for long-term illnesses/sickness (the AGS scheme) for blue-collar workers in the LO/SAF-area was introduced in 1972.
- A supplementary *old-age pension* for white-collar workers (the ITP scheme), available from the age of 65 and covering incomes above the upper limit in the public scheme, was introduced in 1960. A similar scheme for blue-collar workers (STP) was introduced in 1973.
- *Severance* payments (AGB) to compensate for costs associated with loss of job were introduced in 1964, and from 1966 these payments have been also available even if a new job has been found. From 1985, AGB can also be used to supplement the public disability pension.
- *Insurance for occupational injuries* not requiring assignment of guilt to any party (TFA) was introduced in 1974 for blue- and white-collar employees in the SAF area; this principle has been applied from 1977 in social insurance.

During the 1987-91 period, the interaction of public and occupational schemes produced total replacement rates of 100 per cent in sickness benefits, with occupational schemes topping up the social insurance rate of 90 per cent. This provoked a public regulation for sickness benefits, implemented in 1991, whereby modifications in the social insurance scheme are to be passed fully on to the total replacement rate, and supplementary benefits are not allowed beyond 90 days of sickness.

*Annex II***A cross-country comparison of the effects of earned income tax credits**

Earned Income Tax Credits (EITC) have been proposed as a way of maintaining the generosity of unemployment compensation while strengthening the incentives to take on ordinary jobs. These tax credits are attached to earnings from work and thus serve to increase the gap between earned income and transfer income without lowering the replacement rate of benefit schemes. Their employment effect depends on market wages shifting downwards to increase the competitiveness of the low-skilled, low-paid *vis-à-vis* other categories of workers. Such tax credits are in use in some OECD countries; they were first introduced in the United States in the mid 1970s and have later spread to Canada, Ireland, Italy, New Zealand and the United Kingdom.

This Annex contains an analysis of the main channels through which an EITC influences labour-market outcomes, underpinning the conclusions drawn above. The effects of an EITC are illustrated in the context of four OECD labour markets: Sweden, Germany, the United Kingdom and the United States. The tool applied is a computable general equilibrium model which contains a representation of the labour supply decision of households as well as the labour demand of enterprises, see *Box A1*. The focus of the analysis is on the long-run effect of the EITC with a far more detailed description of the labour supply decision than labour demand. The introduction of an EITC has been made subject to a requirement of maintaining the balance on public finances to eliminate effects of a more expansionary fiscal policy. Several formulations of an EITC and ways of financing it are possible. In the present analysis, low-paid workers at full time are allowed a general allowance (credit) against their taxes paid of 10 per cent of gross income, while the formal income tax schedule is left unchanged. Moreover, it is assumed that offsetting finance will have to be found within income taxes, the net costs of the EITC have been offset in full by higher taxes on workers not targeted by the EITC.

The 10 per cent tax credit is assumed to apply to a target group of full-time workers on an income between 25 and 60 per cent of the Average Production Worker (APW). For these workers, both average and marginal *effective* tax rates will decline, the latter -- combining the effects of the marginal income tax rate and the tax credit -- by 10 percentage points. The EITC is then phased out for workers in the interval 60 to 90 per cent APW. Their tax bill (average taxes) will still be lower than without the EITC but the phase-out of the credit increases the marginal effective tax rate they are facing. The marginal effective tax rate over this income interval is 20 percentage points higher compared with the situation prior to the introduction of the EITC. Workers with incomes above 90 per cent APW will see both their average and marginal tax rates increase as they will have to finance the revenue loss in the taxation of lower incomes. The resulting tax rates are given in *Table A1*.



### Box A1. The model applied

The main features of the economic behaviour of households, enterprises and the public sector can be summarised as follows:

*Households' labour supply* is based on their assessment of income (and thereby consumption) against leisure. The modelling of labour supply is fairly elaborate in order to account for their decision whether to supply labour or not (the participation decision) and -- when participating -- how many hours to work. The factors entering into these decisions are wages, unemployment benefits, income tax rates and the EITC. The participation decision depends on wages net of taxes and the tax credit and the reservation wage implied by the level of unemployment benefits. It has to be modelled somewhat differently for the three groups of workers, respectively the target group, those who face a phasing-out of the EITC and those who have to finance it.

$$(1 - t_{in}^a + eitc_{in})W_{res} = \tau + (1 - t_b^a)B \quad (1)$$

$$(1 - t_{in}^a + eitc_{in}) * I_{threshold} + (1 - t_{out}^m + eitc_{out})(W_{res} - I_{threshold}) = \tau + (1 - t_b^a)B \quad (2)$$

$$(1 - t_{finance}^a - \Delta t_{finance}^a)W_{res} = \tau + (1 - t_b^a)B \quad (3)$$

where	$W_{res}$	=	reservation wage
	$B$	=	unemployment benefit
	$t^a$	=	average income tax rate
	$t^m$	=	marginal tax rate
	$t_b^a$	=	tax rate for unemployment benefits
	$eitc$	=	the earned-income tax credit
	$\Delta t_{finance}^a$	=	additional tax on finance group
	$\tau$	=	value of leisure
	$I_{threshold}$	=	threshold where the phase-out of the EITC starts

*The labour demand of enterprises* is derived directly from their output level (total consumption) with the four different types of labour being used in proportions depending upon their supply price and the rate of substitution between them. The three blue-collar groups -- those at wages up to 90 per cent APW -- easily substitute for each others, while the rate of substitution between those three groups and white-collar workers is somewhat lower.

*The public sector* is represented only by its budget constraint. Expenditures are assumed to fall into one of two categories -- unemployment benefits which depend on labour-market outcomes and all other expenditure which are assumed to be unrelated to the labour market situation. Revenues are also assumed to fall into two categories -- indirect taxes which responds to variations in consumption and output and income taxes which are calculated net of EITC expenses and adjusted to retain the budget balance.

A more detailed description of the model and a wider set of simulations are provided in Bassanini, A., J.H. Rasmussen and S. Scarpetta (1999), "The economic effects of employment-conditional income support schemes for the low paid: an illustration from a CGE model applied to four OECD countries", *Working Paper No. 224*, OECD Economics Department. Further documentation is provided in Rasmussen, J.H. (1998), "Beskæftigelsesfradraget analyseret i en anvendt generel ligestrømsmodel", *Working Paper from the Centre for Labour Market and Social Research, University of Aarhus*, 1998, No. 1.

Table A1. Tax structure prior to and after an EITC reform

	Earnings				All
	Very low	Low	Low to middle	Middle to high	
	(25-60 per cent APW)	(60-75 per cent APW)	(75-90 per cent APW)	(Above 90 per cent APW)	
Per cent					
Average taxes					
Pre-reform					
Sweden	30	32	32	36	..
Germany	26½	29½	32½	36½	..
United Kingdom	15½	21½	24	29	..
United States	17	20½	23½	30	..
Post-reform					
Sweden	20	22	28	40	..
Germany	16½	22½	30	39	..
United Kingdom	5½	15	22	31½	..
United States	7	13	21½	34	..
Marginal taxes <sup>1</sup>					
Pre-reform					
Sweden	37	38	38	47	..
Germany	46½	49½	51	54	..
United Kingdom	30	34	34	34	..
United States	26	30	30	43	..
Post-reform					
Sweden	27	58	58	60½	..
Germany	36½	69½	71	61	..
United Kingdom	20	54	54	41	..
United States	16	50	50	49½	..
Per cent of total					
Distribution of EITC expenses, per cent					
Sweden	19	58	23	0	100
Germany	49	40	11	0	100
United Kingdom	56	35	9	0	100
United States	54	36	10	0	100

1. Including the effect of the EITC  
Source: OECD.

The main labour-market features pertinent to the working of the EITC are the incidence of low-paid workers, the replacement rate of unemployment benefits and the responsiveness of labour supply to post-tax earnings for different categories of workers, summarised in *Table A2*. The incidence of low-paid workers determines the potential for pricing workers into jobs but also -- together with the size of the phase-out group -- the cost of the EITC. The effect on labour supply reflects in part the decision to move from benefit recipient to earnings from work (the participation decision) -- with the replacement rate of unemployment benefits being crucial for the reservation wage of workers -- and in part the decision to offer more hours of work (the hours decision). The labour supply elasticities are generally reckoned to differ between categories of workers, the first channel being more important for low-paid workers, the latter dominating for high-paid workers. In the absence of satisfying empirical evidence for all the countries involved, a standardised distribution around the country average has been utilised.

Table A2. Labour-market structures

	Earnings				All
	Very low	Low	Low to middle	Middle to high	
	(25-60 per cent APW)	(60-75 per cent APW)	(75-90 per cent APW)	(Above 90 per cent APW)	
Labour force shares, per cent					
Sweden	9.9	19.8	20.9	49.4	100.0
Germany	21.0	14.9	14.3	49.9	100.0
United Kingdom	26.2	15.0	12.6	46.2	100.0
United States	26.3	14.8	14.0	44.8	100.0
Net replacement rate for unemployment benefits, per cent					
Sweden	84.5	82.2	79.8	68.1	..
Germany	84.3	83.9	80.9	84.7	..
United Kingdom	83.6	61.8	54.2	41.9	..
United States	73.6	70.2	68.6	59.7	..
Labour supply elasticities					
Sweden, United Kingdom and United States	0.4	0.34	0.3	0.25	0.3
Germany	0.27	0.23	0.2	0.16	0.2

Source : OECD.

The introduction of the EITC would allow the target group -- those at very low wages -- to lower their supply price and would result in an increase in both participation rates and hours worked (*Table A3*). For workers in the lower half of the 60 to 90 per cent APW interval, the participation response outstrips the hours response whereas these two effects roughly balance each other for those in the upper half in the Swedish case (75 to 90 per cent APW). For middle and high incomes (above the 90 per cent APW mark), both effects are negative and the lower labour supply in this segment dominates the positive effects for other groups. This result is particular to Sweden in so far as positive labour supply effects at the lower end of the income distribution dominate those at the upper end both in the United Kingdom and the United States and balance them in Germany. This difference can be attributed mainly to the difference in labour-market structures, Sweden having a below-average share in the phase-in group but an above-average share in the phase-out group which implies a high financing requirement to be filled by higher incomes. As a reflection of this, the target group receives a smaller share of overall EITC disbursements in Sweden than in the other countries (*Table A2*).

An EITC in the present formulation has quite opposite effects for different categories of workers, improving the labour-market position of the low-paid and weakening it for the high-paid. In consequence, real disposable incomes will increase for the former and decline for the latter. An assessment of overall welfare effects thus requires a comparison of income gains for some with income losses for others. Using so-called equivalent variations -- the change in real incomes which would leave workers indifferent between the consumption/leisure pattern before and after the EITC -- the overall effect for Sweden is clearly negative when all workers are given the same weight, regardless of initial income level (*Table A3*). This compares with modest welfare losses in the other countries, reflecting distortions from an initially higher tax level in Sweden than in the United Kingdom and the United States. Germany has higher taxes for high incomes but a lower supply elasticity reduces the associated distortions.

Table A3. Labour-market responses to an EITC reform

	Earnings				All
	Very low	Low	Low to middle	Middle to high	
	(25-60 per cent APW)	(60-75 per cent APW)	(75-90 per cent APW)	(Above 90 per cent APW)	
<b>Wages, before tax, per cent change</b>					
Sweden	-4.7	-3.0	0.2	0.9	..
Germany	-3.6	-1.3	0.2	0.5	..
United Kingdom	-3.7	-1.2	0.3	0.6	..
United States	-3.7	-1.4	0.4	0.7	..
<b>Wages, after tax, per cent change</b>					
Sweden	8.9	11.5	5.9	-5.1	..
Germany	9.6	8.5	3.5	-3.3	..
United Kingdom	8.0	7.1	3.0	-3.0	..
United States	7.9	7.8	2.8	-3.1	..
<b>Persons employed, per cent change</b>					
Sweden	2.2	1.7	0.3	-0.3	0.5
Germany	2.1	1.0	0.2	-0.5	0.3
United Kingdom	2.1	1.1	0.2	-0.1	0.7
United States	2.0	1.0	0.2	-0.2	0.6
<b>Effective labour supply response<sup>1</sup>, per cent change</b>					
Sweden	3.8	1.4	-0.2	-2.2	-0.5
Germany	3.4	0.5	-0.4	-1.3	0.0
United Kingdom	3.6	0.5	-0.5	-1.0	0.4
United States	3.4	0.5	-0.6	-1.3	0.2
<i>Memorandum item:</i>					
<b>Welfare effect prior to distributional considerations, per cent of GDP</b>					
Sweden					-0.8
Germany					-0.4
United Kingdom					-0.1
United States					-0.2

1. Combined effect of persons employed and hours worked.

Source : OECD.

In sum, an Earned Income Tax Credit introduces as many problems as it solves. While reducing disincentives for low-paid workers, it adds to them for workers at incomes just above the target group who face much higher marginal tax rates than before and for workers on middle and higher incomes who face both higher marginal and average taxes. This applies to all countries, but it appears particularly unsuited to the Swedish situation. The main reasons for this lie in the compression of incomes which makes it rather costly in terms of lost tax revenues from workers with incomes just above the target group along with a larger distortionary impact in terms of lower hours worked.

### *Annex III*

#### **A select bibliography**

The working paper draws on a variety of sources and references, some available in English, others -- the majority -- only in Swedish.

The select bibliography given below summarises the most central English-language references pertaining to taxes and transfers as they are formulated in Sweden. Articles in and contributions to conference volumes and collections of essays cited below are not referenced separately.

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*Annex IV*

**The structure of public finances and the tax system**

Table A4. The public sector <sup>1</sup>

	1980	1990	1994	1995	1996	1997	1998
<b>Budget indicators : General government</b> (per cent of GDP)							
Current receipts	56.1	63.3	57.9	57.8	62.1	61.2	63.0
Non-interest expenditure	60.5	59.0	66.2	62.9	60.9	59.2	58.1
Primary budget balance	-4.4	4.3	-8.3	-5.1	1.2	2.0	4.9
Net interest expenses	-0.4	0.1	2.0	2.7	3.3	3.1	2.7
General government budget balance	-4.0	4.2	-10.3	-7.8	-2.1	-1.1	2.2
<b>Structure of expenditure and receipts</b> (per cent of GDP)							
Expenditure							
Income transfers	20.1	21.5	27.5	26.3	25.5	24.8	24.8
Interest payments	4.1	5.1	6.9	7.1	7.2	6.6	5.8
Subsidies	4.3	4.7	5.3	5.1	4.8	4.3	3.8
Consumption	29.3	27.4	27.2	25.8	26.2	25.8	25.9
Education	6.0	5.3	5.3	5.1	..	..	..
Health	7.3	6.5	4.8	5.0	..	..	..
Social welfare	4.8	5.2	6.0	6.2	..	..	..
Housing	0.6	0.5	0.5	0.5	..	..	..
Economic services	1.4	1.8	2.2	2.2	..	..	..
Other	9.2	8.0	8.4	8.5	..	..	..
Gross investment	6.6	2.4	3.0	2.9	2.0	2.4	2.2
Taxes and charges							
Property income	5.6	6.5	6.3	6.2	5.9	5.2	4.9
Taxes	35.0	40.6	36.1	35.9	38.9	39.0	41.0
Indirect taxes	13.5	17.2	14.9	14.4	16.5	16.3	17.0
Direct taxes	21.5	23.4	21.2	21.6	22.3	22.7	24.0
Social security contributions	14.1	15.6	14.4	14.7	15.8	15.7	15.7

1. For all years, according to the national accounts standard in use up to 1999.

Source: Statistics Sweden.

## ECO/WKP(99)17

Table A5. Tax rates

	1980	1985	1988	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Personal income tax													
State income tax													
Top marginal rate	58	50	45	35	20	20	20	20	25	25	25	25	25
Lowest marginal rate	1	4	5	3	0	0	0	0	0	0	0	0	0
Average local income tax rate	29.09	30.37	30.56	31.16	31.15	31.04	31.04	31.04	31.50	31.65	31.66	31.65	31.48
Basic allowance, SKr.	6000	7500	10000	10000	10300	10700	11000	8800	8900	8600	8700	8700	8700
Bracket for top marginal rate, SKr.	174000	351000	190000	190000	170000	186600	190600	198700	203900	209100	209100	213100	360000
Capital income tax rate <sup>1</sup>	n.a.	n.a.	n.a.	n.a.	30	30	30	30 <sup>2</sup>	30	30	30	30	30
<i>Memorandum item:</i>													
Average marginal tax rate on capital incomes	56	52	54	30	30	30	30	30	30	30	30	30	30
Social security contributions													
<i>of which:</i> Employees													
Employers	0	0	0	0	0	0	0.95	1.95	3.95	4.95	5.95	6.95	6.95
Self-employed	35.25	36.46	37.07	38.97	38.77	34.83	31.00	31.36	32.86	33.06	32.92	33.03	33.06
	34.00	34.41	34.29	34.19	35.49	33.85	29.55	29.75	31.25	31.25	31.25	31.25	31.25
Value-added tax, standard rate													
Non-standard rates:	21.57 <sup>3</sup>	23.46	23.46	24.23 <sup>4</sup>	25	25	25	25	25	25	25	25	25
Food	..	..	..	..	..	18	21	21	21	12	12	12	12
Restaurants	..	..	..	..	..	18	21	21	..	..	..	..	..
Hotels	..	..	..	..	..	18	16.5 <sup>5</sup>	12	12	12	12	12	12
House repair and maintenance	11.91 <sup>6</sup>	12.87	12.87	13.26 <sup>7</sup>	..	..	..	..	..	..	..	..	..
Corporate tax rate	57.5	57.1	57.1	47.8	30	30	30	28	28	28	28	28	28
Wealth tax rate	1-2.5	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Real estate tax rate			0.47	0.47	1.2	1.2	1.5	1.5	1.5	1.7	1.7	1.3-1.5 <sup>8</sup>	1.3-1.5 <sup>8</sup>
Taxation in per cent of the return of assets in:													
- pension funds					10	10	10	3.6	15	15	15	15	15
- life insurance funds <sup>9</sup>	-	-	-	-	30	25	25	6.5 <sup>10</sup>	27	27	27	27	27

n.a = not applicable.

.. = equals standard rate.

1. Prior to 1991, capital income was added to earned income for tax purposes.

2. A rate of 12.5 per cent applied to capital gains, while dividends were not taxed at household level.

3. From 1.1.1980 to 7.9.1980: 20.63 per cent, then 23.46 per cent.

4. From 1.1.1990 to 30.6.1990: 23.46 per cent, then 25 per cent.

5. From 1.1.1993 to 30.6.1993: 21 per cent, then 12 per cent.

6. From 1.1.1980 to 7.9.1980: 11.43 per cent, then 12.87 per cent.

7. From 1.1.1990 to 30.6.1990: 12.87 per cent, then 13.64 per cent.

8. Real estate taxes has been temporarily lowered for 1998-99.

9. Prior to 1991, taxes were differentiated according to source of earnings: capital gains were taxed from 11 to 14 per cent, dividends around 16 per cent, interest income around 18 per cent.

10. Applicable to dividends and capital gains. A rate of 15.5 per cent applied to interest income.

Source: Ministry of Finance.

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