Attacks on the Welfare State

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The Scandinavian welfare state -as a model for society -is characterized by an economic policy that aims at providing the population economic security and equality, together with a high living standard. The instruments to achieve these ambitious goals have varied over time, ranging from legal and economic institutions through state owned companies to taxes and subsidies.

In recent years the welfare state has been under attack. The opponents of the welfare state (see for instance Lindbeck (1994)) have argued that a growing public sector has been achieved at the price of severely distorted resource allocation. Moreover, it has been argued that unemployment benefit and other labour market policies were shaped during years with low unemployment rates and were not designed for years with high unemployment rates. Thus - the story goes - when high and persistent unemployment reached the Scandinavian countries in

the late 1980s and the beginning of the 1990s, the safety net became a hammock. With a reference to Sweden it has been argued that the hammock-effect may turn the welfare states into stagnant economies and marks the start for the dissolution of the welfare states. Finally, the public provision of private goods has been criticised for being too encompassing and that it is the result of over-ambitious welfare state paternalists forcing their political values on a silent majority.

In this paper we examine whether these attacks on the the welfare state can be supported by recent empirical results.

Tax reforms: Overall gain and distributional consequences

In recent years the existing and progressive tax systems of many countries have shifted in the direction of proportional taxation.

Progressive taxes are characterized by marginal taxes being higher than average taxes. In most progressive tax systems in use the average tax rate approaches the highest marginal tax rate as taxable income increases. Individuals with the highest taxable income pay the highest average tax. Thus, given the

pay the highest average tax. Thus, given the gross income distribution, individuals with the highest gross income contribute more to total tax revenue than individuals with lower gross income. It is important to note that this statement must be qualified: *Given* the gross income formation, progressive taxes redistribute disposable income. Later we will comment on the impact of taxes on the gross income formation.

Proportional taxation on the other hand is characterized by the marginal tax rate being equal to the average tax rate. In proportion to their income the rich and the poor pay the same tax.

The justification for the recent tax reforms in the Scandinavian countries has been the supposed large cost of taxation. Progressive taxes have introduced a substantial wedge between the wage income earned in the labour market and the income kept on the margin. The incentives to work -in particular long hours -have been weakened. Moreover, the tax wedges have encouraged doing-it-self activities and may have given rise to a substantial parallel economy.

Opponents of the current state of affairs in the welfare state have argued that the cost of progressive taxation is substantial. Consistent with this view is that the economy is far below its supply-side potential. This potential is typically estimated by replacing the current tax system by lump-sum taxation.

There have been many studies of the cost of taxation, or equivalently of the gains from reforming the tax system. In all studies the key and underlying procedure in measuring the gain from reforming taxation of wage income is the following:
-Two tax systems are considered, the present and an alternative system.
-Given the tax system, the behaviour of an individual with respect to labour supply and commodity demand are derived from microeconomic theory.
-The gain for the individual of being exposed to an alternative tax system is defined as the amount of money that has to be added to his/ her disposable income *under the initial tax* rules in order to render him/her indifferent to the outcome under the new tax rules.

This measure was coined "equivalent variation" in the 1930s by the late British economist John Hicks. We note that this measure is at an individual -or household level. It is invariant with respect to a monotonic, increasing transformation of the utility function of the household and thus can in principle be revealed by market data. It sums up the individual net welfare gain of say, increased consumption and reduced leisure. The latter may occur as a consequence of the positive impact on labour supply of marginal tax cuts. Increased consumption is in part due to the direct effect on disposable income of lower tax rates, and in part to increased wage income as a consequence of working longer hours. If tax cuts are to improve individual welfare, the increase in individual welfare caused by increased consumption has to outweigh the reduction in welfare caused by reduced leisure.

The overall gain of a tax reform is typically calculated by summing the gain over individuals. This summation is critical since it assumes that each individual carries the same "weight" in a welfare function for the society. This fact is often forgotten, or hidden, in applied works which try to estimate the efficiency losses to the society of say, distortive taxes, for a discussion of this ignorance in the literature, see Hammond (1990). A less normative interpretation of the overall gain is that it is the total willingness to pay for a tax reform in the economy,

given the income distribution. The latter interpretation has rarely been applied.

In order to measure the gain we need to know the behaviour of individuals under alternative tax systems. The common practice has been to estimate labour supply and commodity demand under an existing tax system and then use the estimated model to predict the behavior under the alternative tax system. Of course, this is the only feasible procedure if the alternative system has never been in use or, worse, can never be implemented.

In Browning (1987) the total welfare cost of taxation follows from a comparison between the existing tax system and lump-sum taxation. The ratio of the total welfare cost to initial tax revenue is termed the average welfare cost of taxation. With lump-sum taxes all distortive effects of taxation are removed. However, this exercise is only of academic interest since lump-sum taxes can never be implemented. Browning (1987) also considers the gain from replacing the current tax regime by another-implementable-system. The ratio of this gain to the change in tax revenue is called the marginal welfare cost of taxation. In Hausman (1984) the gain from tax reforms minus the changes in tax revenues is called the deadweight loss of taxation, while others, like Small and Rosen (1981), call it the excess burden of taxation.

In the actual measurement of the gain from tax reforms - or cost of taxation - several approaches have been pursued in the literature. The best known procedure is to employ a computable general equilibrium approach with one or a few representative households representing commodity demand and labour supply in the economy; see Ballard et al (1985) and Vennemo (1992) who apply this procedure to the Norwegian

economy. The advantage of theses studies is that they allow wage rates and prices to respond to changes in tax rules. The disadvantages, however, are numerous:
- Heterogeneity is almost completely ignored. The reported overall gain from reforming a tax system may conceal large variations in gains across households, King (1987).
- Estimates of labour supply and commodity demand are taken from different sources, so it may be questioned whether the modelled economy really exists. When these models are used to predict the outcomes of the economy for years later than the year they are calibrated for, they perform poorly.
- The models are deterministic. Unobserved tastes and unknown opportunity sets are not accounted for, the uncertainties associated with the estimates of supply and demand elasticities are typically ignored.
- The relationships used are rather simple and may deviate substantially from the relationships used in the microeconometric models that the estimates are taken from. For instance, in Vennemo (1992) estimates from a stochastic, labour supply model for *married couples* (Aaberge, Dagsvik and Strøm, 1990) are used as parameters in a deterministic, average, labour supply model for *single individuals* with a functional form quite different from the original microeconometric model.
- Full utilization of resources is assumed. All unemployment is voluntary.

Another approach is to estimate the gain from tax reforms as the area under the Hicks-compensated average labour supply curve, Browning (1987). The size of the area follows from the slope and location of the average curve representing the labour supply of all individuals, together with the difference in the tax rates under the alternative tax regimes. The wage rate is assumed to be given exogenously given and these studies are

therefore partial equilibrium approaches. The advantage of this method is that it is fast. The disadvantages are the same as with the general equlibrium approaches outlined above.

In Aaberge, Dagsvik and Strøm (1995) individual welfare gains from different tax reforms are estimated based on a microecometric model for married couples estimated on Norwegian data from 1979.

Households are assumed to maximize utility with resepct to type of jobs, given the budget constraints and the opportunity sets of feasible jobs. Utility is assumed to depend on household consumption and the leisure of wife and husband. The number of children below and above 6 years of age is assumed to affect the marginal utility of leisure. Jobs are characterized by hours, wages and non-pecuniary factors. The budget constraint says that household consumption has to be less than or equal to disposable income. All details of the tax and benefit structure, together with claimed deductions, are reflected in the disposable income function.

As econometricians, we do not observe all factors affecting preferences, nor do we know the opportunity sets of the individuals. This lack of knowledge is dealt with in the study by introducing a taste vaiable in the utility function and by representing the opportunity sets by opportunity densities. These densities describe the demand side of the economy, and they also reflect the fact that hours are regulated in the Scandinavian welfare states. Jobs with full and part-time working loads are far more likely to be present in the opportunity sets of individuals than other types of jobs.

In the simulations the distribution of offered hours and wages is kept fixed. This is the parallel to keeping wage levels fixed in the partial and deterministic equilibrium models of the Browning type.

Due to the stochastic taste shifters, the gain of tax reforms at the household level is stochastic. The estimated household model is used to simulate the distribution of this gain. The mean in this distribution can be interpreted as an estimate of the mean willingness to pay for the considered tax reforms, hereafter called the mean gain. In contrast to the other studies referred to above this approach allows for an assessment of the distributional consequences of tax reforms. These distributional consequences can be related to the distribution of the individual welfare gain as well as to the traditional distributions of gross and disposable income.

In this study the initial - or pre-reform - tax system is the Norwegian system as of 1979. Two alternative system are analysed:
- Proportional taxation of wage income,
- Tax rules as of 1992.

The justifications for considering these alternative tax systems are:
- The marginal tax rates as of 1979 were an all-time high. The marginal tax rate when the taxable income was equal to NOK 325 000 (1992 prices, moderate high level), was 74.1 percent.
- The marginal tax rates were gradually cut throughout the 1980s and the beginning of the 1990s with the most substantial cut taking place in 1992. From 1991 to 1992 the marginal tax rate on a taxable wage income of NOK 325 000 (1992 prices) was cut from nearly 60 percent to 48.8 percent.
- The slashing of tax rates has moved the tax system towards a proportional tax on wage income.
- Proportional taxes can be implemented while lump-sum taxes cannot. The supply-side potential of the economy is not much lower with proportional taxes than with

lump-sum taxes. Simulation gave the result that with proportional taxes the average gross income was 88 percent of the gross income under lump-sum taxes. Under the 1979 rules the utilization rate of the supply-side potential is estimated at 58 percent, while under the 1992 rules it is found to be 66 percent.

When the 1979 rules are compared with proportional taxation the tax revenue is kept constant. The model is used to simulate the proportional tax rate which is found to be 20.1 percent. When the 1979 rules are compared with the 1992 rules, the tax revenue is not kept constant and it is tacitly assumed that government spending of the extra tax revenue has no impact on labour supply.

The main results of this study are the following:

(i) 1979 rules replaced by proportional taxation of wage income.

-The mean gain per NOK tax revenue is 64 percent, which is somewhat lower, but in the same range, as the estimate of the marginal cost of fund reported in Vennemo (1992).

-The welfare gain varies substantially across households. In the subgroup of the 10 percent who gain most, the mean gain is 28 times higher than the mean gain in the subgroup of the 10 percent who gain least. The gross pre-reform household income among those 10 percent who gain most is a little more than two times higher than the income among the 10 percent who gain least. (Hereafter the first subgroup is called rich, while the other subgroup is called poor).

-If the welfare function of the society gives no "weight" to people other than the rich, the cost of taxation is quite high (119 per cent). The cost of taxation is in contrast quite low (4 per cent) if the welfare function of the society gives no "weight" to people other than the poor. If all individuals have the same "weight" in the welfare function, the estimate of the mean gain gives the cost of taxation, that is 64 percent of initial tax revenue.

-The proportional tax reform reduces inequality in the distribution of disposable income. The reason for this seemingly perverse result is that inequality in the distribution of gross income diminishes. This is due to the fact that the (utility constant) labour supply elasticities are much higher among the poor than among the rich (1-2 times higher). A proportional tax reform induces the poor to work much longer hours. The rich work long hours initially despite the fact that marginal tax rates are high.

-This latter distributional consequence is consistent with the former related to the distribution of welfare gains: The rich benefit from the reform mostly in the form of higher disposable income without increasing their disutility so much from working longer hours. The poor also benefit from the tax reform but to a much smaller extent since they are induced to work much longer hours.

(ii) 1979 rules replaced by 1992 rules

-The mean gain relative to the increase in tax revenue is estimated at 19 percent. In contrast to the previous experiment around half of the population loses from the reform and the other half wins.

-The inequality in the distribution of disposable income increases.

The conclusions are in the first place that giving a precise and objective estimate of the welfare costs of taxation is an unresolved- or rather unsolvable-problem. Second, it is not possible to disentangle distributional considerations from an estimate of the effciency losses created by distortive taxes.

Wage differentials

It might be surprising that a tax experiment which replaces the progressive tax structure of the late 1970s and beginning of the 1980s with proportional taxes on wages income has so weak-or rather perverse-effects on the income distribution. As mentioned above, one reason why is that the tax reform induces the poor to work much longer hours. Another reason is that tax deductions have been generous in the past. In 1979 all interest payments were deductible against a marginal tax rate of around 74 percent while in 1992 these expenses could be deducted against a marginal tax rate of 28 percent (the marginal tax rate in the taxation of capital income). Thus in the past the loans of the rich were far more subsidised than the loans of the poor. A proportional tax reform with no deduction opportunity reduces the marginal tax rates for the rich net borrower, but not to the same extent as the formal differences should indicate.

A third reason for the weak impact of tax reforms on the distribution of income is the following. A significant feature of Norwegian income distribution is the small gross income differentials among wage earners; for references see Westergård-Nielsen (1995) and Barth and Zweimueller (1994). Consequently, the need for a progressive taxation system to redistribute income is less than if the gross income differentials were larger. A major contribution to these small income differentials is the wage policy pursued by the government for employees in the public sector. Since the beginning of the 1970s, wage dispersion in the public sector has been reduced, giving the higher-educated in the 1990s much less return for their education than 20 years earlier.

To illustrate this we have estimated the disposable discounted income for three

different categories of employee in the Norwegian police force:
- Low-education employee; office clerk,
- Middle-education employee; police sergeant
- High-education employee; assistant chief-of-police.

The estimates are in millions of 1994 NOK, and they are based on assumptions which are as close to the actual rules as possible, for further details, see Appendix 1. Table 1 describes the result:

Table 1. Estimated discounted disposable income. Millions 1994-NOK.

Categories	Discount rates,	percent
	2	5
Clerk	4.0	2.2
Police sergeant	4.0	2.1
Assistant chief of police	4.3	2.2

We observe that the discounted disposable income differentials are very small. With a 5 percent discount rate the clerk and the assistant chief-of-police have the same lifetime disposable income, despite the fact that the assistant chief-of police has 8-9 years' longer education than the clerk. In the estimates in table 1 careers are not accounted for. This can for instance be simulated by using cross-section information. However, if this is done the differentials are affected only to a minor extent. In the case of a 2 percent discount rate the assistant chief-of-police earns a slightly higher lifetime income relative to the others.

Income equality is a key feature of the Scandinavian welfare states. The empirical results reported above indicate that this equality may not be threatened by tax reforms that move the the tax systems towards proportional taxation. Higher wages asked by well-educated employees in the

public sector may constitute a stronger threat to the survival of an egalitarian welfare state. However, the relative low return on education has not prevented many to undertake long education and to work long hours for a pay which in a lifetime context is not so very different from what the less educated obtain.

Labour market policies:
Safety net or hammock?
Labour market policies are in part labour market programmes that aim at bringing the unemployed back to an ordinary job at an earlier point in time than would otherwise have been the case. Furthermore, labour market policies also include unemployment benefits. These benefits are characterized by their levels relative to earnings, and by how long they can be received.

The causes of unemployment are many. In the first place, a worker may be laid off, registering as unemployed immediately afterwards. Second, the unemployed may come directly from school, military service or from a life at home with small children etc. Consequently, only a fraction of the unemployed is entitled to unemployment benefit. In most countries this benefit can be received for a given number of weeks (in Norway it is 80) without any break, but after the break the individual can start on a new, but shorter, period with receiving unemployment benefit. When the individual is not on unemployment benfit, he or she is entitled to welfare payments. This latter payment is lower than the unemployment benefit.

The unemployed may exit from unemployment to several destinations, such as an ordinary job, labour market programmes, education, military service and out of the labour force.

In Hernæs and Strøm (1995) the expected duration of unemployment is esti-

mated on Norwegian data covering all who registered as unemployed in October 1990. They were followed until the end of 1992 and the data set also allowed for observations of several variables prior to October 1990 (back to January 1989).

Unemployment benefit among those entitled to unemployment benefit was estimated to increase the unemployment spell before exiting to an ordinary job. The unemployment benefit effect was only significantly different from 0 among those who had no previous unemployment spells in the period 1.1 1989 -30.9 1990. They amount to around 20 percent of the total of those who became unemployed in October 1990. Evaluated at sample means that the elasticity of the expected duration of unemployment with respect to the unemployment benefit was calculated at around 0.20. To interpret this elasticity, assume that the expected duration is 400 days (sample mean for Norway in October 1990) for individuals with an entitlement to unemployment benefit and with no unemployment spells before their first job-loss. If the replacement ratio (unemployment benefit relative to the expected wage income) is increased by 10 percentage points say, from 55 to 65, the expected duration of unemployment increases from 400 to 415 days. A 10 percentage increase in the replacement ratio is rather a large increase. So, while it is true that the unemployment benefit may increase the spells of unemployment, this is true only for a minor share of the unemployed and those affected seem to be affected only to a minor extent.

Narendranathan and Stewart (1991) have analysed the effect of unemployment benefit on the behaviour of the unemployed as the remaining period of unemployment benefit gets shorter and shorter. They find that the numerical value of the effect of the

unemployment benefit increases as the unemployment period approaches the expiry date for the unemployment benefit. But their finding does not indicate that the effect is very strong.

Public provision of private goods: The day-care case

As mentioned in the introduction, the comprehensive public provision of private goods in the Scandinavian welfare state has been criticised for being the result of welfare state paternalism, without real backing from the electorate.

In Table 2 we report the day-care cost and government subsidies given to day-care centres in Sweden.

Table 2. Day-care cost and subsidies in Sweden, 1975 -1987

Year	Annual cost per place (SEK 1986)	Subsidy rate, percent of costs
1975	54 500	88
1980	63 500	91
1985	60 500	90
1986	62 000	90
1987	62 500	90

Source: Gustafsson and Stafford (1993)

The subsidy rate is as high as 90 percent and an obvious question is whether this high subsidy rate is due to paternalism forced upon voters, or if it can be justified by the preferences of selfish voters without children. This issue has been studied by Bergstrom and Blomquist (1993). From the introduction to their paper we quote: " It might be beneficial for selfish voters without children to vote for subsidies to day care centers to induce both parents to enter the labor force. Parents of small children may contribute more in taxes than they receive in subsidies. If so, the tax burden on the childless voters

to finance a given level of public goods will be reduced".

The optimal solution for the tax and subsidy rates derived in Bergstrom and Blomquist, op.cit. implies that the higher the tax rate, the higher the tax burden on childless voters; and the more they would prefer parents with children to enter the labor market and to share the tax burden with them. One would therefore expect the subsidy rate to be higher in high-tax countries like Sweden and Norway, and lower in low-tax countries like the USA. And that is in fact the case.

Based on Swedish estimates of preferences among childless voters, of day-care costs and of the inclination to enter the labour force among parents with small children, Bergstrom and Blomquist estimate the subsidy rate at around 80 percent. This estimate is lower than the observed 90 percent. If we account for the fact that many Swedish voters are voters with children and hence have stronger incentives to vote for a high subsidy rate, the observed subsidy rate of 90 percent is not out of range with the preferences among selfish voters in a high-tax country.

Conclusion

Some of the criticism levelled at the welfare state may be justified, for instance as regards efficiency losses related to taxation of wage income. However, the magnitude of the cost is an unresolved issue, and estimates of the magnitude cannot be disentangled from distributional considerations. In order to cut the possible costs of taxation it seems worth while to look for tax bases that are less affected by taxation than for instance labour earnings. Increased taxes on real estate and on the use of natural resources may serve as examples of less costly taxation.

The redistributive impact of taxes on earnings may have been exaggerated somewhat in the past. But this conclusion hinges strongly on the assumption that the gross income differentials are not widened, for instance as a consequence of a more aggressive wage policy among the unions towards individuals with higher education, i.e. with a degree from a college or university.

Some of the other criticism levelled at the welfare state is harder to justify, and it may be the result of anecdotal evidence and myths. One myth is that benefits such as unemployment benefit functions as a hammock rather than a safety net for the unemployed. The empirical evidence reported here and elsewhere, based on detailed microdata, gives little support to the hammock hypothesis.

Appendix 1. Assumption used in estimating discounted disposable incomes in Table 1.
-5 percent, alternative 2 percent discount rate
-police sergeants receive a 2-year training with an educational grant (NOK 40 000 a year) and with food and textbooks paid for.
-military service or similar length of delay after college
-training as a police sergeant or in law-school (in the case of assistant chief of police) starts after military service
-clerks start work right after 10-11 years in a state school
-annual earnings are based on wage scales (seniority rules etc.) as of July 1994
-taxes are according to tax rules as of 1994
-in the case of assistant chief-of-police, law-school studies (6 years) financed by grants (NOK 7300 per year) and a maximum loan of NOK 48 000 per year
-repayment of loan according to the rules set by the bank, State Loan Fund for Education

(Lånekassen)
-police sergeants are employed until the age of 57
-clerks and assistant chiefs-of-police retire at the age of 67
-pension payments start at the various retirement ages
-life expectancy is 76 years.

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