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Labour supply incentives, income support systems and taxes in Sweden

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Labour supply incentives, income support systems and taxes in Sweden

by

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Abstract

Comparing Sweden to other EU countries, labour force participation rates of older individuals and females are high. These facts are consistent with the idea that institutional design matters: access to child care, paid parental leave, and a tax system with individual rather than household income taxation, probably explain a significant fraction of the high female participation rate; and the evidence suggests that the design of pension systems has an impact on the labour force participation of the elderly. Active labour market policies may contribute to high labour force participation, but cannot be relied on as a major means of raising employment and participation in the long run.

Keywords: Labour supply, taxes, income support systems

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1 Introduction

Sweden, as most European countries, has a set of extensive income support systems in place, providing i.a. unemployed persons, parents with young kids, students, sick persons and old persons with the means to live at a decent standard of living despite a reduced capacity to earn a living through market work. In addition, education (including higher education), health care, care for the elderly and child care are mainly publicly provided and tax financed.

Demographic projections for many EU countries indicate that their populations are ageing at fairly rapid rates. This development will exert pressure on the working-age population as well as on the public sector – in both cases because of the need to transfer resources from the shrinking working-age population to meet the needs of the growing share of older-age persons. In this perspective, labour supply issues and the creation of incentives for work play a central role. Maintaining a generous welfare state without creating disincentives for work (which will finally undermine the foundation for the welfare state) will become even more of a challenge than it already is.

Against this background it is important to identify policies that seem to have promoted labour supply as well as policies that seem to have had the opposite effect. In this paper I use a benchmarking approach to identify dimensions in which Sweden stands out, both in terms of labour supply and in terms of policies likely to affect labour supply.

2 Background – Swedish labour supply in a comparative perspective

Naturally, the design of the core elements of the Swedish welfare state, such as social insurance, publicly provided education, health care, care for the elderly and child care, will have consequences in a large number of areas, including total labour supply. So will, of course, also the taxes that generate the revenues used to pay for those institutions. Finally, active labour market policies (ALMPs) have for a long time been a distinctive feature of the Swedish labour market, and may also affect labour supply.

In this section I give a brief description of some main traits of Swedish labour supply. A convenient way to characterise Swedish labour supply is by way of

comparing it to labour supply in other EU countries to identify dimensions where Sweden stands out.² Performing this exercise, one easily identifies a number of facts. *First*, female labour supply is significantly higher than in most EU countries.³ In 2008, the average EU female participation rate was 65.5 %, whereas the corresponding Swedish number was 76.9 %. *Second*, labour force participation among the older was much higher than in any other EU country in 2008 (the EU average was 30.2 % as compared to 60.1 % among Swedish 60-64 year-olds). This does not primarily reflect high female participation rates; Sweden had the highest participation rates both among old males and old females. It is also noteworthy that the participation rate in this age group increased by about 8 percentage points between 1997 and 2008. *Third*, whereas inactivity is about average (slightly below at ages 16–24) among young Swedes, youth unemployment is relatively high and the employment rate is around the EU average at ages below 25. As pointed out by the OECD⁴, the median age for starting higher education in Sweden is high.⁵ In addition, the average duration of tertiary education is long. Combined, these two facts indicate that there is a margin to increase high-skilled labour supply. *Fourth*, Sweden has received large flows of non-EU immigrants, and these fare significantly worse than native Swedes or other EU citizens in the Swedish labour markets in terms of unemployment, employment and inactivity. However, immigrants from outside the EU fare worse than natives in most EU countries. Nevertheless, it seems that immigrants actually do relatively worse in Sweden than in other EU countries, along some dimensions. Having said this one should note that it is not entirely clear what the benchmark should be. A more thorough analysis would have to take both the share of political refugees among immigrants and the immigrants' labour market relevant characteristics into account.

² Unless otherwise indicated, statistical information has been collected from Eurostat's labour force survey data.

³ In fact, only Denmark among the EU countries has a slightly higher female participation rate than Sweden.

⁴ See for example the latest OECD Economic Survey of Sweden (OECD 2008).

⁵ This does not primarily seem to reflect "life-long learning"; a relatively large share of young persons enter tertiary education after a gap between secondary and tertiary education (Holmlund et al., 2008).

3 Institutions affecting labour supply

In this section I will survey institutions that are likely to have an impact on labour supply. The description will give a brief account of the present systems and major steps in their development. In addition, evidence with bearing on labour supply-effects will be surveyed. A more detailed account of recent reforms and their effects (or expected effects) is, however, postponed to sections 4 and 5.

A large number of institutions can be expected to have an impact on labour supply, employment and unemployment. Before describing some of these, there is a general point worth making in the Swedish case. This point is that most income support systems have benefits that in one way or the other are conditional on a previous work history. This is the case in unemployment insurance, where income related benefits are conditional on membership in an unemployment insurance fund and a sufficiently long work history. Sickness benefits depend on previous income, and the same is true for benefits during parental leave. Hence, the total effects of these systems on labour supply will entail both an “entitlement” effect and an effect of benefits conditional on entitlement.

3.1 Taxes

It is well known that Swedish taxes are high. The labour-supply incentives of taxes, however, mainly reflect marginal tax rates and not average tax rates⁶ (which must be high in a high-tax country). This means that a given amount of taxes collected will affect labour supply differently depending on the design of the tax system.

The Swedish income tax system is divided in two parts; a proportional tax imposed by local governments and a slightly nonlinear national (state) income tax. The local tax rates differ, with an average rate (the average of the sum of the county, municipal and church tax rates) around 30 per cent.⁷

Income taxation has undergone many reforms during the last four decades. A major reform was implemented in 1971, when separate tax schedules for couples and singles were replaced by a national tax schedule common to all individuals regardless of marital

⁶ This statement applies to labour supply on the intensive margin. The decision to participate in the labour force is primarily affected by average tax rates.

status. As income taxes were substantially progressive, this reform effectively implied lower marginal tax rates for married women. In the early 1980s, the national income tax was highly progressive with many tax brackets. Summing local and state taxes, an average earner may have faced a marginal income tax rate of around 50 per cent, and the top rate exceeded 80 per cent.

A tax reform implemented 1983–85 mainly reduced marginal income tax rates for average and high income earners and reduced the number of tax brackets. In 1991, another major tax reform was implemented, resulting in a much simpler system with two tax brackets; a zero state income tax for taxable incomes below a threshold and 20 per cent for higher incomes.

Although the tax system has undergone frequent changes since 1991, much of the basic structure of the system remained fairly intact until recent reforms introduced by the present government. In 1995, however, an additional tax bracket was introduced, meaning that the top rate for the state income tax since then has been 25 per cent.

The value added tax rate is 25 per cent. However, for certain types of consumption, the rate is lower; either 6 per cent or 12 per cent. The statutory payroll tax rate is around 30 per cent.

Most empirical studies of the effects of taxes on labour supply suggest that the effects are modest on the intensive margin.⁸ Hence, although high marginal income tax rates among medium and high-income earners have been a permanent feature of the Swedish income tax system, estimated effects on the supply of hours are relatively small.⁹

From the perspective of labour force participation, the marginal effect for non-participants is the interesting margin. The major reform in this respect, disregarding recent reforms, is the 1971 move to individual taxation for spouses. Selin (2009) found that employment among married women would have been 10 percentage points lower in 1975 if the 1969 income tax system still had been in place in 1975. Hence, it is likely

⁷ This is not completely true after the recent reforms, see below.

⁸ Empirical studies of taxation and labour supply are surveyed in Aronsson & Walker (1997; 2009).

⁹ However, the evidence in Ljunge & Ragan (2004), who estimated the effects on the tax base rather than on hours worked, suggest somewhat larger effects, in particular for low-income earners.

that this reform is one of the contributing factors to the high Swedish female labour force participation.

3.2 Unemployment insurance

The Swedish unemployment insurance (UI) has a somewhat peculiar construction: the rules for UI are regulated by law and the UI system is predominantly tax financed. At the same time the insurance is run by around 35 independent organisations, UI funds, most of which have close ties to trade unions. Membership, which is necessary for income related unemployment benefits, is voluntary. Until recently, membership was close to 90 % of the labour force, but membership has declined rapidly after recent reforms which led to substantially higher membership fees.

In order to qualify for income-related benefits, an unemployed worker must have been a member of a UI fund for at least 12 months and in addition meet a work requirement stipulating some minimum amount of work prior to the unemployment spell. Furthermore, the unemployed must be job ready, actively looking for a job and prepared to accept a suitable job offer. Job search behaviour is monitored by case workers at the public employment service (PES) and violations of the rules may lead to sanctions.

Unemployed who are not members of a UI fund, but meet the same work and job search requirements, are entitled to a fixed daily benefit, which is substantially lower than the maximum income-related benefit.

Benefit eligibility lasts for 300 benefit days (420 calendar days; benefits are paid five days a week). The replacement rate is 80 % during the first 200 benefit days and then 70 % until day 300 of the unemployment spell. After this period, the unemployed receives 65 % of previous income conditional on entering an activation programme. The system is, however, much less generous for most unemployed, because there is a maximum daily benefit which is at a fairly low level.¹⁰ On the other hand, a number of supplementary insurance programmes have been established through collective agreements between trade unions and employers' organisation. The information on the

¹⁰ The system is similar to Danish UI in this respect.

exact contents of these agreements is scattered, and hence the knowledge about the exact conditions for unemployed persons is hard to collect.

3.3 Sickness insurance

The Swedish sickness insurance has been reformed on many occasions during the last two decades. In 1991, sickness benefits were reduced for the first time since the mid-1950s. Prior to this reform, the replacement rate was 90 % of previous earnings from day one of a sickness spell. In 1991, a waiting day was introduced and the replacement rate was cut from 90 to 75 percent. Currently, there is a one day waiting period. Days 2 through 14 are paid by the employer at 80 percent of the worker's salary (up to a certain level). The national health insurance system picks up the cost of the sickness benefits from day 15 and on. The replacement rate is 80 % of the pre-illness salary (up to a certain amount). Employees are required to get a doctor's certificate after 7 days. Depending on the type of illness (and, therefore, inability to work) the sick leave may be part time, in which case the benefit is adjusted accordingly. In addition to the national health insurance, there is, as is the case in the UI system, also supplemental insurance through collective agreements.

Sickness absence has been high in Sweden.¹¹ From a book-keeping perspective this is "explained" a very high long-term sickness absence rate. The most likely explanation for the high Swedish long-term unemployment is the fact that sickness benefits in Sweden have had an indefinitely long duration (OECD, 2009b). A number of recent studies, using different reforms to identify effects, have shown that there is a clear relationship between the generosity of sickness insurance and sickness absence.¹²

3.4 Early retirement

The main pathway to early retirement in Sweden has been disability insurance. From 1970 disability pension could be given for labor market reasons in combination with work capacity losses for those at least 63 years old. From 1972 individuals at least 63 years old with exhausted unemployment benefits were eligible for disability pension for

¹¹ See, for example, the figures presented in OECD (2009b).

¹² See Hesselius (2008) for a short survey and a description of the reforms in the system. See also OECD (2009b) for a description of the reforms.

labor market reasons only. The eligibility age was lowered to 60 in 1974. This early-retirement option was removed in 1991.

In 2003, periodical reviews of work capacity and time limited sickness compensation were introduced. The current compensation level in disability retirement¹³ is either income related up to a ceiling or flat-rate for individuals with low or no income.

The main source of the inflow to disability pension is long-term sickness absence. Inflow rates have been high during recent years, and the disability benefit reciprocity rate is high (above 10 % in 2007). What is especially troublesome is that the fraction of young recipients has been growing rapidly.¹⁴ A number of recent reforms in sickness insurance and disability pensions are designed to address the large inflows and stocks in long-term sickness and early retirement. There is, however, no evidence available as to the effects of these reforms. Indeed, the knowledge of what works in this field is very limited.

3.5 Pensions

Pension systems will affect labour-supply decisions in many complex ways. These effects are often analysed in terms of the implications of the pension system for pension wealth.¹⁵ Reforms affecting the level of pension wealth may be seen as reforms of the general generosity of a given pension system. Under the reasonable assumption that leisure is a normal good, a more generous pension system will have a negative effect on labour supply. Another key feature of pension systems is how pension wealth is affected by another year of work. The higher the effect of extra work on pension wealth, the stronger the incentives to go on working instead of entering retirement. Another dimension of pension systems that affects the retirement age is the statutory retirement age. There is a strong clustering of retirement around the statutory retirement age that cannot be understood unless this parameter of the pension system is taken into account.

The Swedish pension system was reformed in the 1990s. Both the new and the old systems are fundamentally notionally defined contribution systems with pensions based

¹³ The scheme was renamed in January, 2003. For persons at least 30 years old the new name is "sickness compensation" (sjukersättning) and for younger persons the new name is "activity compensation" (Sic!) (aktivitetsersättning).

¹⁴ This is an international phenomenon, see OECD (2009b).

on rules rather than on contributions.¹⁶ Under the old system, pensions were based on an individual's 15 best years, whereas pensions under the new system are based on the whole employment history of an individual. An additional year of work may have a stronger impact on pensions in the new system for this reason. The old system was more generous, so the effect on pension wealth of the reform can be expected to have stimulated labour supply. Finally, in the reformed system labour protection rules apply up to age 67 rather 65 as was the case in the old system. Despite a lack of evaluations of the Swedish pension reform, we see that the average retirement age among men started to increase shortly after the reform was announced after a long period of a falling average male retirement age. In 1995 (one year after the reform was announced) the average retirement age among men was 62 years. By 2006 it had increased to 63.4 years (see The Fiscal Policy Council, 2009).¹⁷

3.6 Interactions between different income support systems

When reforming income support systems, it is important to recognise that changes in one system will in general induce flows to or from other sources of income support. In the Swedish context, Larsson (2006) and Hall & Hartman (2009) showed that unemployed workers who could receive sickness benefits that were higher than their unemployment benefits tended to report sick.

To give a perhaps idiosyncratic example to illustrate that interactions between systems may matter, Figure 1 shows sickness absence rates and unemployment rates in Sweden and Germany as well as the sum of the two in both countries. Although by no means evidence for any conclusion about flows between the two types of income support, it is striking how much more similar the two countries look when the comparison refers to the sum of the two components rather than the components separately.

¹⁵ Pension wealth is the expected present value of net payments from the pension system.

¹⁶ There is a small part of the new system that is based on contributions.

¹⁷ As is the case in many cases in the Swedish set-up, the analysis of the pension system is complicated even further by the presence of collectively agreed pensions with conditions that differ across bargaining areas.

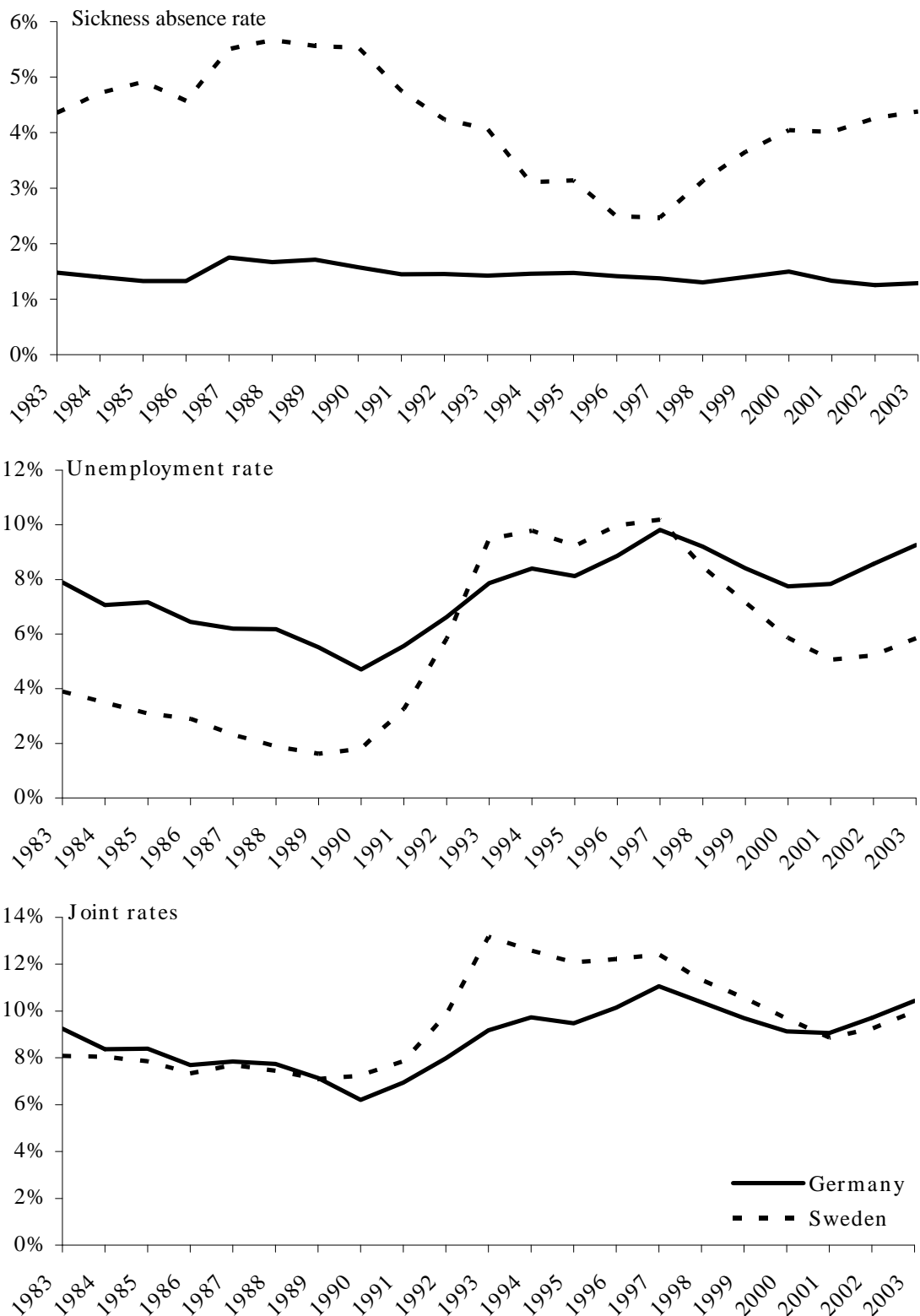


Figure 1: Sickness absence, unemployment and the sum of these rates (joint rates) in Sweden and Germany. Source: Hesselius (2008).

3.7 Child care

Access to some kind of child care is a necessary prerequisite for households who want to combine children and professional careers for both parents. Given traditional gender patterns of household work and market work, access to public child care most likely have had an impact on female labour supply.

Beginning in the mid 1960s, Swedish child care was rapidly extended, and in the late 1990s, the coverage for children between 0 and 5 years of age was around 80 %. This expansion largely took place in the form of heavily subsidised public day care provided by the municipalities. Although there is a lack of empirical evidence of the effects of the provision of child care on female labour supply, it seems highly likely that public provision of day care is an important part of the explanation of the high Swedish female labour supply.¹⁸ A related reform, likely to have reinforced the effects of publicly provided child care, was the introduction in 1974 of paid parental leave.

3.8 Active labour market policies

Sweden has pioneered the use of active labour market policies (ALMPs); the foundations of modern ALMPs were laid in the late 1950s, when a National Labour Market Board was set up to administer the Public Employment Service (PES) and labour market programmes. Sweden also stands out as one of the EU countries devoting most resources to ALMPs.¹⁹

One explicit objective of ALMPs is to improve matching in the labour market. To the extent that this objective is actually achieved, ALMPs will contribute to a higher employment rate and may also give rise to higher labour force participation. Indeed, some evidence suggests that Swedish ALMPs actually contributed to higher labour force participation in the 1990s (Calmfors et al., 2004). Evidence also suggests that some programmes, targeted at long-term unemployed, may contribute significantly to employment in the target group. However, numerous studies on cross-sections and panels of countries as well as evaluations of Swedish ALMPs in the 1990s have found

¹⁸ There is one study (Lundin et al, 2007) estimating the effects of lowering the prices of child care. The estimated effects in this study suggest that there is no effect. However, the reform that is studied is mainly one of lower prices in a system that already has a high coverage.

¹⁹ This is, e.g., clear from the data presented in OECD's Employment Outlook (OECD, 2009a).

that the contribution of ALMPs to employment and labour force participation are at best modest.²⁰ Hence, ALMPs do not seem to be a major way to increase labour force participation.

4 Recent reforms in Sweden and some of their expected effects

The present government has implemented a series of labour market reforms, primarily addressing issues related to labour supply, labour force participation and sickness absenteeism. The reforms have concerned many policy areas, the most important ones are perhaps income taxes and unemployment insurance. But I will also describe the reforms of active labour market policies, sickness insurance and early retirement.

4.1 Reforms in unemployment insurance (UI)

In UI, a number changes have been introduced. *First*, the maximum replacement rate is lowered from 80 % to 70 % after 200 insured days in an unemployment spell.²¹ *Second*, the maximum daily benefit has been lowered by approximately 7 % during the 100 first days – previously, the maximum amount was higher during the 100 first days.²² *Third*, the regulations for the coordination between UI and labour market programmes have been changed. Earlier, the clock in UI stopped ticking if an unemployed entered a labour market programme during an ongoing insured unemployment spell. Under the new rules days spent in programmes are counted in the same way as days with UI benefits. This means that an insured unemployment spell can last at most for 300 insured days (420 calendar days). Finally, the funding of UI system has been changed in a way that has increased membership fees substantially and also introduced a small degree of experience rating.²³ All these reforms can be expected to affect flows from unemployment to work at a given wage rate, but also wage setting.

²⁰ Much of this research is surveyed in Calmfors et al. (2004). See also the survey by Kluve (2006).

²¹ 200 insured days correspond to 280 days in calendar time; the daily benefit is paid out five days a week.

²² The maximum amount was lowered from 730 SEK (approximately 70 Euros) to 680 SEK a day.

²³ In the present system there is a rather weak connection between the membership fee in a UI fund and the unemployment rate for the fund's members.

4.2 Reforms in active labour market policies

Continuity rather than structural breaks characterises recent reforms in active labour market policies in most respects. One possible exception from this is that a significant fraction of actual policy measures now are contracted out to private providers. Although an interesting experiment, it is far too early to pronounce any verdict on the effects of contracting out. Evidence from a pilot study, a small-scale randomised experiment, suggests some, but limited differences between the public employment service and private providers of job-search assistance. The most clear-cut result was that long-term unemployed immigrants benefited from receiving job-search assistance from private providers (Benmarker et al, 2009).

The most prominent feature of recent ALMP reforms, which complement the reforms in UI creating more incentives for job search, is that they generally imply more focus on job search assistance. There are several examples of this. A new programme targeted at young unemployed involves a first phase of mandatory job search; a programme for long-term unemployed also involves a first phase with job search as one main ingredient. In addition, more resources have been allocated to case workers, both hired by the PES and among private providers.

Another feature of the reforms is that they have put more focus on time limits and structure (“rules”) during an unemployment spell and leave less discretion to case workers.

None of the reforms has as yet been evaluated. But the evidence on similar policy initiatives suggests that the focus on job search assistance is warranted.²⁴ Regarding the question of whether rules or discretion works best, there is some evidence that programmes where the entry date can be predicted with some accuracy are associated with pre-programme effects.²⁵

²⁴ See Kluge (2006) and Calmfors et al. (2004) for evidence.

²⁵ There is some evidence of a pre-programme effect of a previous programme for young persons (Forslund & Nordström Skans, 2006) with a rule based entry time. The effect was an increased flow to jobs before the expected entry into the programme. Similar results were found by Hägglund (2006) in a small-scale randomised experiment. It is not clear how much these results can be generalised.

4.3 Reforms in sickness insurance

Sickness insurance has been reformed in a number of ways, many of which implying more control. First, the sickness benefit period is now limited to one year, as opposed to the previous system with sickness benefits of unlimited duration. Needless to say, this will give rise to shorter sickness spells. The interesting (still open) question, however, is whether the reform will bring more persons to work or whether the result will be an increase in early retirement or some other long-term state not involving market work.

Second, a “rehabilitation chain” has been introduced. Under the rehabilitation chain, the sickness benefit claimant receives sickness benefits for three months if he or she is unable to go back to the old work. After three months, a meeting is to take place and the sickness benefit claimant can receive benefits for another three months if no other job at the present employer can be found. At the same time the benefit claimant should use the public employment service to look for jobs outside the present employer. Another meeting should take place after 6 months. Sickness benefit receipt after this meeting is conditional on not having any (or reduced, in which case sickness benefits can be part-time) capacity to do a regular job anywhere in the labour market. To the extent that the sickness benefit claimant is ruled to be able to do market work, he or she is referred to the public employment service like any other unemployed person and should instead claim unemployment benefits.

The rehabilitation chain has not been evaluated. Some knowledge can, however, be gained from knowledge of the effects of increased control in sickness insurance.²⁶ A large-scale experiment involving the time at which a doctor’s certificate is compulsory for benefit receipt convincingly demonstrated that increased control (shorter period before certificate necessary) gave rise to an increased flow from sickness benefits to work (Hasselius et al., 2005). Similar findings resulted from an experiment involving randomised timing of information meetings for benefit claimants (Johansson & Lindahl, 2008). Hence, to the extent that the rehabilitation chain involves more control of the benefit claimant, it should be expected to increase the flow from sickness benefit receipt to work.

4.4 Reforms in early retirement

Parallel to the reforms in sickness insurance, a number of reforms have been introduced in early retirement with the aim of reducing both the stock and the inflow. An interesting experiment is that more generous rules apply to the stock of individuals already receiving sickness compensation or activity compensation before July, 2008, in that they can earn substantial labour incomes before income support is first reduced and finally phased out completely. At the same time rules are tightened for individuals flowing into the system as well as for persons on temporary early retirement.

The reform obviously creates economic incentives for early retirees for job search as well as for rehabilitation. There is, however, a fundamental lack of knowledge both of labour supply and labour demand elasticities for this group of persons, which makes it hard to predict the order of magnitude of the effect.

4.5 Tax reforms

The main element in the recent series of Swedish tax reforms can be characterised as an earned income tax credit (EITC). The explicit main objective of the reforms has been to stimulate labour supply and employment. In Figure 2 the marginal tax rates applying to labour income before and after the sequence of reforms are plotted. As is clearly visible, the main thrust of the reforms has been to lower marginal tax rates for low and medium income earners. As nothing is phased out, the effect for high income earners is a lower average income tax rate at unchanged marginal tax rates. The design implies that the share of a wage increase that is taxed away after a transition from non-work to work is monotonically decreasing in income. At the monthly wage rate of a low-income earner in health care (SEK 19 000) taxes are lowered by 5.8 %, whereas at the wage rate of a doctor (SEK 50 000) taxes are lowered by 3.0 % as a result of the reforms. The reforms certainly have decreased tax wedges and made market work more profitable. Hence, the expected effect is that the reforms have increased labour supply, at least at the extensive margin. Notice, however, that the EITC is counteracted by the increased membership fees in UI, which fall exclusively on employed UI fund members. This increase is just

²⁶ The rehabilitation chain also involves rehabilitation. Unfortunately, there is an almost complete lack of knowledge about the effects of rehabilitation.

below 3 % at SEK 100 000 annual income and just below 2 % at annual income SEK 150 000. This implies that the net effects at low incomes should be in the order of 4 %.

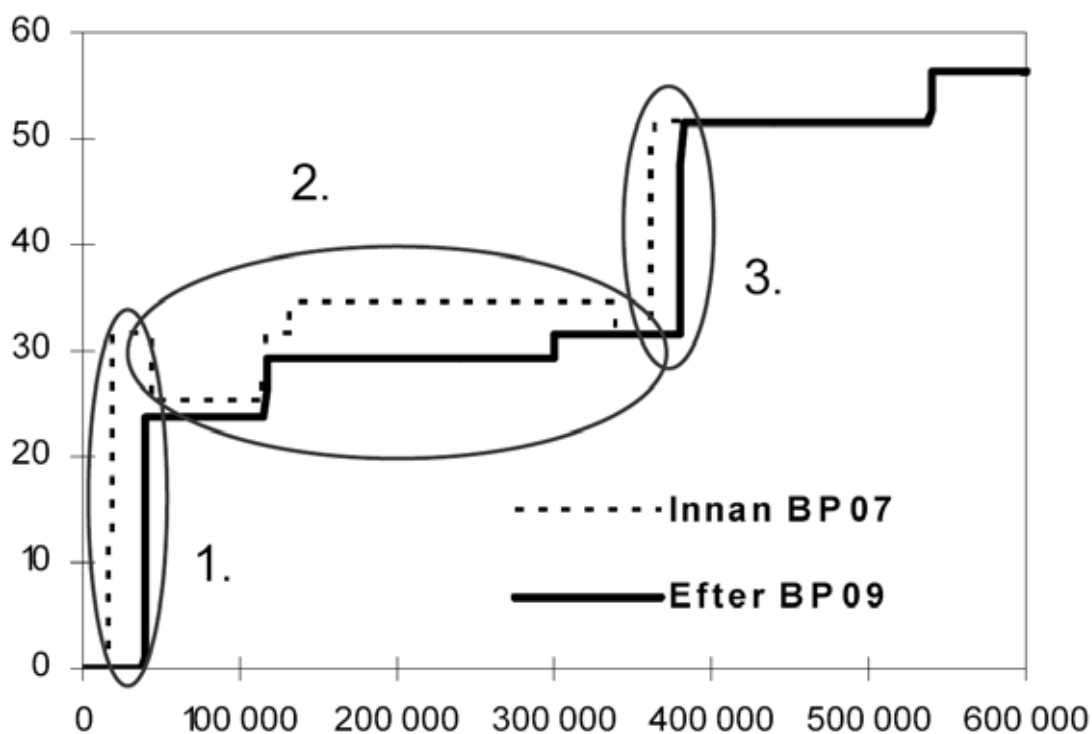


Figure 2: Marginal labour income tax rates (%) before (dotted line) and after (solid line) tax reforms

Source: Government Bill 2008/09:1

Another reform of the tax system is the implementation of a tax reduction for certain household services. For the services to which the deductions apply, the household receives 50 % of the labour cost as a direct reduction of income tax. This reform should first and foremost be expected to decrease the size of black-market work, but there should also be some efficiency gain to the extent that households substitute the purchase of those services for household production.

5 A more detailed look at recent UI and tax reforms

These reforms are too recent for any (ex post) evaluation to have taken place.²⁷ To get an idea about the magnitudes of expected effects, I use parameters estimated for other purposes and use these together with some simple theory. The earlier studies are either micro studies, which do not capture general equilibrium effects, or macro studies, which in the best of worlds will capture both individual responses and general equilibrium effects. The macro studies either use within-country aggregate time series variation or panel data for a number of countries to identify the relevant parameters.

5.1 Expected effects of reforms in the UI system

To predict the likely impact of UI reforms, three types of evidence can be used: micro studies of previous reforms in the UI system, macro studies of Swedish wage setting and macro studies of unemployment/wage setting for panels of OECD countries. Estimates from the first type of studies can be used to estimate effects on equilibrium unemployment excluding effects through wage setting. Results from the macro studies should give us general equilibrium effects. As lower UI benefits never will raise wages according to any standard theoretical model, the micro studies will *a priori* give a lower bound for the total effects.

5.1.1 Micro studies

There are some studies of the effect of reforms in Swedish UI on the flow from unemployment to employment. The study with the most credible identification strategy is Carling et al. (2001). This study identified the effects of lowering the replacement rate from 80 % to 75 % in January, 1996, by comparing a treatment group with a control group that was not affected by the reform because their benefits were restricted by the maximum daily benefit rather than by the replacement rate.

A main result in Carling et al. (2001) is that the elasticity of the hazard from unemployment to employment with respect to the UI benefit was estimated to around 1.6. How large an effect on unemployment does this imply?

²⁷ However, the reform effects have been simulated in a number of papers (Aaberge & Flood, 2008; Ericson et al, 2009; Sacklén, 2009).

Assuming a flow equilibrium in the labour market where flows to and from unemployment are of equal size, it can be shown that the effect on unemployment is proportional to the elasticity of the hazard from unemployment to employment with respect to the UI benefit and that the factor of proportionality equals the ratio of employment to the labour force.

Given an employment to labour force ratio at slightly above 0.9, the results reported above imply that the elasticity of unemployment with respect to unemployment benefits should be approximately equal to 1.5.

It is, however, not entirely evident how large the decrease in UI benefits due to the reforms is for an “average” or “typical” unemployed. The reforms entail a lower maximum daily benefit during the first 100 days, a lower replacement rate after 200 days and a shorter effective benefit period. These changes affect different subsamples of unemployed differently, and it is not obvious that it is meaningful to summarise all these changes into one single index number. Given some information on the pool of unemployed, it would seem reasonable that the reforms have lowered the benefits by something between 5 % and 10 %. Given such an interval, the reforms can be expected to have lowered equilibrium unemployment by between 0.5 and 1 percentage point.

5.1.2 Studies on Swedish macro data

A number of studies of Swedish wage setting have incorporated measures of the generosity of UI. Most of these have not found any significant effects.²⁸ An exception is Forslund et al. (2008), who estimated a model with a wage-setting equation and a labour demand equation. This model can be solved for long-run equilibrium effects of UI benefits on wages and unemployment. The estimated long-run versions of the estimated equations can be written

$$w = K_1 + 0.42b - 0.082u$$

$$u = 16.87w + K_2$$

where w is wages, b unemployment benefits, u unemployment and K_1 and K_2 include constants and exogenous variables. These two equations can be solved for wages and unemployment, and it is straightforward to compute the elasticity of

unemployment with respect to unemployment benefits. This elasticity is approximately equal to 3, so the general equilibrium effects found using this model are about twice as large as the effects derived from the micro estimates.²⁹

5.1.3 Studies on panels of countries

There is a large literature, initiated by Layard et al. (1991), using panel data on different sub-samples of OECD countries to estimate effects of different policies and institutions on employment/unemployment.³⁰ Two fairly recent studies in this tradition are Nickell et al. (2005) and Bassanini & Duval (2006). Both studies include estimates of the effect of UI benefits on unemployment.

The estimates in Nickell et al. (2005) imply an elasticity of unemployment with respect to UI equal to 1.9 evaluated at 5 % unemployment. Bassanini & Duval (2006) estimated that lowering the replacement rate by 10 percentage points would give a decrease in unemployment amounting to approximately one percentage point. In both cases the effects are smaller than those found by Forslund et al. (2008), but still non-trivial.

5.2 Expected effects of tax reforms

Given the design of the Swedish EITC, we should first and foremost expect an impact on the extensive margin, and incentives should be strongest at low incomes. How large an effect should we expect? I am not aware of any direct estimates on Swedish data of such elasticities.³¹

However, one possibility is to use estimated effects of UI reforms. The argument is that in both cases, what is affected is the relative payoff of work compared to non-work. However, the tax reforms should affect both unemployed job seekers and persons not in the labour force. For the former group, the analysis is completely analogous to the analysis of the UI reform. Given that the tax reduction, including the effects of

²⁸ Perhaps due to the fact that it is hard to capture all relevant dimensions of UI generosity in one single measure.

²⁹ This elasticity may seem high, but it is nevertheless lower than the estimated elasticity in Fredriksson & Söderström (2008), who used regional panel data to estimate unemployment effects of UI.

³⁰ Cahuc & Zylberberg (2004) surveys this literature.

³¹ Flood et al. (2003) found positive labour supply effects for single mothers of a reform where taxes, social assistance and child care fees were lowered. Andrén (2003) simulated non-trivial effects for the same group of lower taxes and lower social assistance.

increased UI membership fees is around 4 %, the elasticity estimated by Carling et al. (2001) implies that unemployment should decrease by approximately 6 % or just below half a percentage point.

For persons outside the labour force, the incentives to go to work are affected in a similar way. However, it is not obvious that the estimated effects on hazards to employment can be applied directly to this group, so if anything, the effects should be smaller.

Another way to derive estimates of the reform effect is to use estimates of the participation elasticity from other countries. Krueger & Meyer (2002) survey studies of how the participation decision is affected by different social security programmes and conclude that the elasticity is significantly larger than the usually very low estimated elasticities of tax changes on hours worked. The best “guess” of the participation elasticity in Krueger & Meyer (2002) is that it approximately equals one. If this number is correct, the reform effect would approximately equal 4 %.

All this is based on constant wages. Studies of wage setting on aggregate Swedish data suggest that tax changes affect consumption real wages – if the tax wedge between product real wages and consumption real wages decreases, consumption real wages tend to increase proportionately. These results are, however, not necessarily directly applicable to the EITC. The studies pertain to aggregate wage setting, and it is not obvious that the mechanisms are the same for those most affected by the reforms – new entrants into the labour market. These are probably to a smaller extent unionised and can be described as “outsiders” in the labour market, so it is not completely clear how relevant earlier studies are for this labour market segment.

Kolm & Tonin (2008) analyse equilibrium effects of an EITC in a theoretical search model and find that wages under reasonable assumptions will fall. If this result is applicable, the effects would be larger than in the case with unchanged wages. It is, however, impossible to have any empirically based view on the size of the wage setting effect.

6 Concluding comments

Swedish women and old Swedes are labour force participants to a higher degree than in most other countries. Institutional design is likely to be an important explanation of the high female labour force participation. First, access to child care and paid parental leave has enabled Swedish women to combine child rearing with professional careers. Second, a switch in 1971 to from family income taxes to individually paid income taxes is likely to have contributed substantially to higher female labour force participation.

The fact that older Swedes have high labour force participation is not equally straight forward to understand. The recent rise in labour force participation is likely to reflect incentives to work in the reformed pension system. However, also prior to this reform older Swedes had a relatively high participation rate. One possible interpretation is that, although by no means a perfect system from a labour supply perspective, also the old Swedish pension system provided less disincentives to work than the pension systems in many other countries. It is also noteworthy that early retirement has never been officially endorsed as a way to combat high unemployment in Sweden – the possibility to get disability pension for labour market reasons was actually removed in 1991 in the beginning of the worst post-war unemployment crisis in the Swedish economy.

Active labour market policies have been a part of the Swedish policy package for quite a long time. Available evidence suggests that although some programmes actually seem to contribute to higher employment rates in target groups, these effects are at best modest. Hence, ALMPs cannot be relied on as a major means to encourage labour force participation. Reforms in labour market policies have implied a stronger focus on job-search assistance. This shift is supported by available evidence on the effects of active labour market policies.

Recent reforms in unemployment insurance and income taxation have been undertaken with the explicit aim of promoting labour supply. As yet, there are no ex post evaluations of these reforms, but using knowledge from previous empirical studies of changes in taxes and unemployment insurance, the prediction is that these reforms will actually have a non-trivial positive effect on labour force participation.

Careful institutional design involves getting the incentives right in different income-support programmes. A general lesson learned from the Swedish example, however, is

that it is also important to consider the interdependence between the different programmes. If rules are tightened in one programme, benefit claimants may often get incentives to use other systems if possible. This is found in studies of the interaction between unemployment insurance and sickness insurance in Sweden, where unemployed workers who gain from higher sickness benefits have been found to report sick. The example of Swedish female labour force participation also suggests that positive policy complementarities should be considered – it is likely that it is the interaction between tax reforms, child care reforms and parental leave reforms that have resulted in the high Swedish female labour force participation.

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