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Background

Low employment and high unemployment have been issues for intensive discussions within the European Union (EU). In June 1997 in Amsterdam, state and government executives took an important step toward co-ordinated policies and a common strategy for increased employment and they agreed on a special department for employment (*Amsterdam Agreement*).

As of 2002, the EU's *employment strategy* has been in force for five years and member states have thus agreed to evaluate the strategy and its effects on employment trends within the EU. The evaluation's primary purpose is to analyse effects that the strategy has had on formulation of national policies and on employment trends in member states. Results of the evaluation will contribute to further development of a future strategy to achieve common goals for increasing growth and employment in Europe.

The national evaluations intend to:

- A. Describe national policies after employment-strategy implementation and analyse the degree to which policies are aligned with the intentions of the EU recommendations.
- B. Determine the scope of initiated measures and their results.
- C. Estimate effects of measures taken and the degree to which the measures have contributed to fulfilling general, common goals of the EU's *employment strategy*.

Sweden's national evaluation is divided into sub-projects. The Ministry of Industry, Employment and Communications commissioned the IFAU to follow up the EU's recommendations for

1. Labour market policies (Rapport 2002:3)
2. Integrating immigrants into the labour market (Rapport 2002:4)
3. Tax and benefit systems (Rapport 2002:5)
4. Equal opportunities (Rapport 2002:6).

The papers are display on the IFAU Web site www.ifau.se.

These people were involved in the follow-ups: Dr. Susanne Ackum Agell, Associate Professor Peter Fredriksson, Associate Professor Anders Forslund, Dr. Maria Hemström, Caroline Runeson, PhL Oskar Nordström Skans, Associate Professor Marianne Sundström (SOFI, Stockholm University), Dr. Olof Åslund, and Dr. Björn Öckert.

Follow-up of the EU recommendations on the tax and benefit systems

Guidelines 2 and 3 of the EU Employment Strategy prompt the Member States to review and where needed reform their tax and benefit systems in order to reduce marginal effects and "unemployment traps". The purpose is to increase employment and encourage the return to work of unemployed persons. It should also be made more attractive for older workers to continue participating in the labour market. Guideline 12 urges the Member States to reform their tax systems so as to generate a favourable employment development.

In this area, Sweden received further recommendations for the implementation of the employment policy. According to the recommendations adopted by EU in January 2001, Sweden should:

- Increase the effort to reduce labour taxes, especially for low-income workers.
- Introduce policy measures to further adjust the allowance and benefit system such that there is sufficient incentive to work.

This report will, firstly, describe the policy measures taken based on these Guidelines and how they have developed since the employment strategy was introduced. Secondly, we will provide a description of the development of unemployment benefits in relation to earned income and how the tax on labour has varied over time. Finally, we will analyse the effects of implemented measures.

A. Tax and benefit reforms

This section describes the legislated changes of the Swedish tax and benefit systems since the introduction of the employment strategy. For obvious reasons, we only include reforms that are relevant in relation to the Guidelines. On our reading, a majority of the reforms strengthen the incentives to work and improves the incentives to search for a job.

A complete list of the tax and benefit reforms presented in Sweden's national action plans is found in Appendix A.2. Appendix A.2 also presents proposals that have as yet not resulted in legislation. The reforms concerning taxation of enterprises are presented and analysed in sub-project 4, hiring subsidies fall under sub-project 1.1, while study allowances are reviewed in sub-project 3.

A.1 Changes in the tax system²

The following tax reductions have been made:

- A temporary tax reduction for low and average income earners was introduced January 1, 1999. The reduction is at most SEK 1,320 per year and drops by 1.2 per cent of the taxable income exceeding SEK 135,000.
- In 1999, the marginal tax rate was lowered by 5 percentage points for most wage earners paying national taxes.
- The tax was lowered to compensate for the tax increases following the introduction of the individual pension contributions. The tax compensation amounted to a quarter starting January 1, 2000. Compensation was extended to one half of the individual contributions starting January 1, 2001. The individual pension contribution was increased from 6.95 to 7 per cent on January 1, 2000.
- The income tax bracket was raised to reduce the share of wage earners paying national tax. The long-term objective is that the share of tax-liable persons paying national income tax should be reduced to 15 per cent. In 1999, the lower income tax bracket corresponded to an annual income of SEK 219,300; it was raised in 2000 to SEK 232,600; and it was increased yet again in 2001 to SEK 252,000. The figures refer to taxable income.
- The tax allowance (*grundavdraget*) was increased to SEK 10,000 starting January 1, 2001. From 1997-2000, the tax allowance was SEK 8,700. SEK 1,200 of this raise was a result of the green tax shift.
- Deductions for travel expenses were increased January 1, 2001. The deductible amount for travel with a privately owned car between the home and the workplace was increased from SEK 15 to 16 per 10 kilometres.
- Tax relief for foreign experts, researchers and other key staff residing in Sweden for a limited period were introduced January 1, 2001. According to the relief, employers only pay tax and social fees on 75 per cent of the wage.³

²Unless otherwise stated, the following sources have been used: National Action Plans (1998, 1999, 2000, 2001), Government Bill 2000/01:1 and The Swedish National Tax Board (2000).

³ Government Bill 2000/01:12.

A.2 Changes in unemployment insurance⁴

New rules for unemployment insurance were introduced in February 2001. The most important changes are presented below:

- Participation in active labour market programmes no longer qualifies for a new benefit period (see sub-project 1).
- Mobility requirements have been changed. During the first 100 days, job-seekers can now limit their search both in regards to profession and geographically. Thereafter, he or she must be prepared to apply for jobs in other professions and commute or relocate to find work.
- The income ceiling for unemployment benefits was raised during the first 100 days from July 2, 2001. A daily allowance of maximum SEK 680 per day is paid during the first period. Thereafter, the daily allowance is a maximum SEK 580 per day.⁵ The maximum daily allowance in 1997 was SEK 564. The increase to SEK 580 was implemented January 1, 1998.⁶
- Unemployment benefits can be collected for a maximum of 600 working days. Those who are, or are threatened by long-term unemployment should be offered participation in the so called activity guarantee (*Aktivitetsgarantin*); see sub-project 1. The offer should be made within 27 months of entering unemployment.⁷ Within the activity guarantee, the unemployed person shall receive the extra support and the measures needed to secure the return to the labour market. During this time, participants receive an activity allowance. The activity allowance equals the unemployment benefit for those who are entitled to benefits.
- Unemployed persons risk being sanctioned if he or she rejects a suitable job offer or a suitable labour market measure. The first sanction amounts to a reduction of the daily allowance by 25 per cent for 40 days; the second time an offence is committed benefits are cut by 50 per cent for a further 40 days; and on the third occasion within the same benefit period, the person loses the benefit entitlement. Previously, similar situations have lead to immediate suspension.
- In order to qualify for benefits, the jobseeker must participate in preparing an individual action plan.

⁴ Unless otherwise noted, this section is based on the Government Bill 1999/2000:139.

⁵ The Labour Market Board (2001).

⁶ Bergeskog (1998).

⁷ Regulation 2000:634.

A.3 Reforms in the pension system

The Swedish Parliament (*Riksdagen*) decided on June 8, 1998 to gradually introduce a new pension system. This reform entails a few changes that are relevant here:

- The pension is now based on a person's total life earnings.⁸
- As of September 1, 2001, agreements stipulating mandatory retirement before the age of 67 are no longer permitted. (Collective agreements are however still valid, though no longer than until the close of 2002.)⁹

In addition:

- On January 1, 2000 the possibility of having dormant early retirement was introduced.¹⁰

A.4 Changes in childcare and parental insurance¹¹

There a number of relevant changes of public childcare and the parental leave system (see also sub-project 5):

- If the municipalities so decide a ceiling on childcare fees will be introduced for pre-school activities and childcare starting January 1, 2002.
- As of July 1, 2001, municipalities are obliged to provide children to unemployed parents a place in pre-school activities at least 15 hours per week.
- Parental insurance is extended by 30 days as of January 1, 2002. This means that two months will be reserved for one of the parents.

B. Description of the development within selected areas

EU asks for a follow-up in two areas: (i) the development of unemployment benefits in relation to wage earnings and (ii) the development of the tax on labour.

To illustrate the first issue, we have calculated replacement ratios – the ratio between the unemployment benefit and the wage – using the wage statistics in LINDA. LINDA is representative individual data base covering approximately 3 per cent of the Swedish population; see Edin and Fredriksson (2000) for de-

⁸ Government Bill 1997/98:151.

⁹ Government Bill 2000/01:78.

¹⁰ National Action Plans (2001).

¹¹ Government Bill 1999/2000:129 and Government Bill 2000/01:44.

tails about the material. At present two years (1998 and 1999) of wage data have been compiled.

The review in section A.2 roughly identifies three types of changes relevant to the relation between the unemployment benefit and wage earnings: changes in the rules for unemployment benefits, changes in the tax system and changes in childcare fees. We therefore conducted a step-by-step analysis. We begin by only examining the changes in unemployment benefits and wages (see Table 1). Then we incorporated the tax changes that occurred during the period (see Table 2). Lastly, we accounted for the effects of the proposed changes in childcare fees (see Figure 1). Throughout we present the "actual replacement ratio", that is the replacement ratio when the income ceiling in the unemployment insurance system is taken into account. The actual replacement ratio changes when the maximum daily allowance changes and when wages change. The reported replacement rates apply to individuals who were employed at the particular point in time under the assumption that they qualify for unemployment benefits should they become unemployed.¹² Furthermore, the replacement ratios are age standardised.

Table 1 shows the actual replacement ratio during the period 1997-2001 for different groups. For 2000 and 2001, we generated wage data by applying the average wage growth for white-collar workers during 2000 and 2001 to all individuals in the 1999 data. We estimated the wages for 1997 in a similar manner.

With the exception of the increase in the maximum allowance during the first 100 days of unemployment 2001 – see column 5 – the benefit levels dropped continuously during the period. The level of compensation for short periods of unemployment is today about the same as in 1997. The insurance value of unemployment benefits also shows the expected variation with respect to observed individual characteristics. For example, men with a university education living in large cities receive the least compensation in relation to previous earnings.

How does the picture change when we incorporate tax reforms? Table 2 presents the development of the replacement ratio when we take tax changes that occurred during the period into account. We see that the average level of

¹² We will probably *underestimate* the replacement ratio for *unemployed persons* (who are entitled to unemployment benefit) since the unobserved components in wages and unemployment risks are most likely negatively correlated.

compensation rises by just over 2 percentage points and that the variation between categories drops. Both these results are a consequence of the progressive tax system.

Table 1: Replacement rates, 1997-2001, per cent.

	Year					
	(1) 1997	(2) 1998	(3) 1999	(4) 2000	(5) 2001 (-100)	(6) 2001 (101-)
All	71.8	71.3	68.1	66.2	71.2	64.4
Gender						
Men	67.2	66.5	64.2	62.2	67.8	60.4
Women	75.4	74.9	72.1	70.3	74.7	68.7
Country of birth						
Native-born	71.7	71.1	67.8	65.9	71.0	64.1
Foreign-born	73.1	72.6	70.8	69.2	73.4	67.7
Schooling						
≤ 10 years schooling	75.9	75.5	73.8	72.2	76.1	70.7
Upper secondary school	74.5	74.0	70.8	69.0	73.7	67.2
> upper secondary school	66.5	65.8	60.5	58.4	64.5	56.5
Region of residence						
Metropolitan	70.7	70.1	66.3	64.3	69.5	62.6
Other counties	72.8	72.2	69.5	67.7	72.6	65.9
Forest counties	73.2	72.6	70.5	68.6	73.5	66.9

Lastly, in Figure 1 we illustrate how the replacement ratio is affected by the introduction of maximum childcare fees. The calculation is based on a single mother with a small child.¹³ We see that the incentive to search for a job and to accept job offers rises markedly when maximum childcare fees are introduced. The benefit ratio drops by about 7 percentage points for all income categories.

¹³ The calculation is based on earnings in 2001 and the fee for one child under the age of two in the municipality of Uppsala. Individuals are assumed to work full-time with the child in full-time municipal childcare.

Table 2: Replacement rates after tax, 1997-2001, per cent.

	Year					
	(1) 1997	(2) 1998	(3) 1999	(4) 2000	(5) 2001 (-100)	(6) 2001 (101-)
All	74.1	73.6	70.9	69.0	73.5	67.2
Gender						
Men	70.1	69.3	67.4	65.3	70.4	63.4
Women	77.3	76.8	74.6	72.8	76.7	71.1
Country of birth						
Native-born	74.0	73.4	70.6	68.7	73.3	66.8
Foreign-born	75.3	74.8	73.5	71.9	75.6	70.3
Schooling						
≤ 10 year schooling	77.9	77.5	76.2	74.6	78.0	73.1
Upper secondary levels	76.6	76.0	73.4	71.5	75.8	69.7
> upper secondary levels	69.4	68.6	64.0	61.8	67.3	59.8

Notes: We have used the average municipal tax in Sweden (therefore we do not present figures by region of residence). Income is generated under the assumption that the people work full-time.)

According to the standard theory of equilibrium unemployment (see Holmlund and Kolm, 1995, for example), the wage pressure on the labour market can to some extent be determined by the tax wedge. The tax wedge is the difference between the wage paid by the employer and the wage the employee actually receives.¹⁴

Figure 2 illustrates the development of the tax wedge during the period 1979-1999.¹⁵ As yet, there is no information on the size of payroll tax contribution for 2000. However, the changes of the income tax indicate that the tax wedge will fall 2000 and 2001, see Table 3 below. We observe a reduction of the tax wedge following the tax reform of 1991. During 1997-1999 it has remained more or less constant.

¹⁴ In more formal terms, the tax wedge is defined as $\theta=(1+\tau)/(1-t)$, where τ represents the (proportional) payroll tax and t is the average income tax. Under certain conditions, wage pressure is independent of the tax wedge. If the unemployment benefit is a constant portion of a worker's net earnings, the tax wedge has no effect on wage pressure and, thus, no effect on unemployment.

¹⁵ Data for the period 1979-1997 is from the study by Forslund and Kolm (2000). Details on calculations are described in the study. The values for 1998 and 1999 were estimated using the same method.

Figure 1: Replacement ratio during the first 100 days 2001, single mothers with small children.

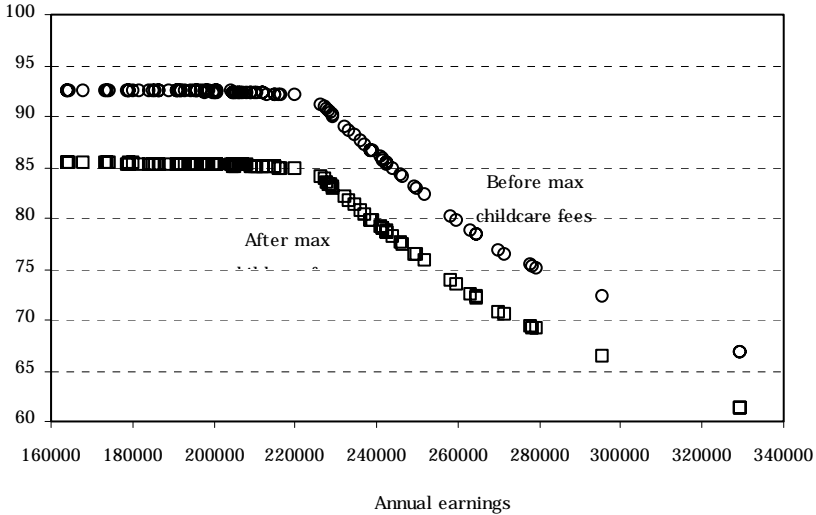
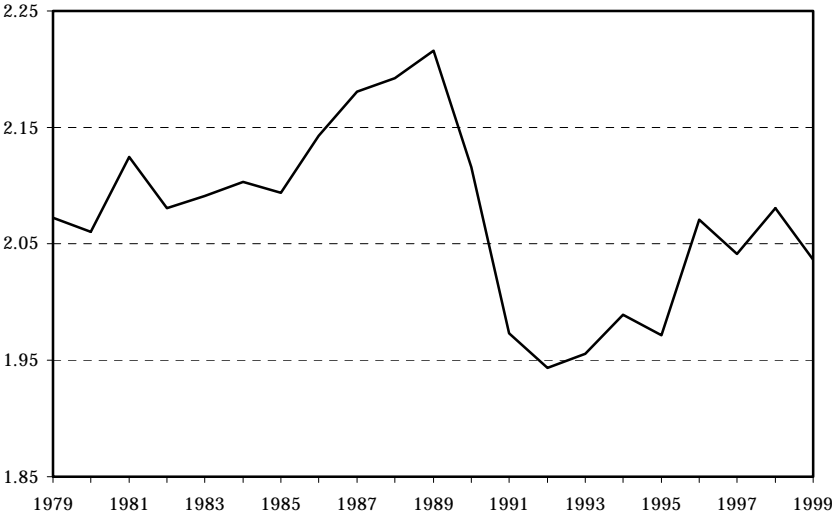


Figure 2: Tax wedge on work, 1979-1999.



How have marginal taxes changed for individuals at different points in the income distribution? Table 3 presents marginal and average taxes by gender and percentiles of the (gender-specific) earnings distribution. Marginal taxes in the lower half of the income distribution have dropped somewhat between 1997 and 2001. The decrease is greater in the upper segment. For individuals in the 90th percentile, marginal taxes have dropped by 5 percentage points.

Table 3: Marginal and average taxes by gender and percentiles of the earnings distribution, 1997-2001, per cent.

	Year				
	(1)	(2)	(3)	(4)	(5)
	1997	1998	1999	2000	2001
<u>Marginal tax</u>					
Men					
10 th percentile	38.9	39.6	40.6	39.5	38.5
50 th percentile	38.9	37.7	37.5	36.4	35.3
90 th percentile	56.7	56.6	51.5	51.6	51.7
Women					
10 th percentile	38.9	39.6	40.6	39.5	38.5
50 th percentile	38.9	39.6	40.6	39.5	37.5
90 th percentile	59.3	57.5	54.9	54.1	53.4
<u>Average tax</u>					
Men					
10 th percentile	33.3	34.3	33.8	33.0	32.1
50 th percentile	34.4	35.2	35.0	34.0	33.0
90 th percentile	41.2	41.9	41.1	40.3	39.2
Women					
10 th percentile	32.8	33.8	33.3	32.5	31.6
50 th percentile	33.8	34.7	34.6	33.7	32.7
90 th percentile	34.6	35.6	36.9	36.0	34.5

Notes: Tax payments consist of municipal taxes, national taxes and individual pension contributions. The calculation is based on the average municipal tax in Sweden. Earnings are generated under the assumption that the persons work full-time.

There are certain intervals in the Swedish tax system where marginal taxes actually fall with increases in earnings. Table 3 shows two such intervals. The first has to do with the fact that the tax allowance decreases with earnings. There is, however, a minimum tax allowance, resulting in lower marginal taxes

on income over a certain threshold. This explains the fact that the marginal tax for men is lower at the median than for those at the 10th percentile. The second interval is explained by the fact that there is a maximum amount of individual pension contributions. Contributions are not based on incomes that exceed this limit. The result is that women in the upper segment of the female earnings distribution encounter a higher marginal tax than men in the same segment of the male earnings distribution.

The final observation we make in Table 3 is that average taxes have dropped across the board. The reduction for individuals with median income is just over one percentage point.

C. The effects of the reforms

EU calls for an evaluation of the reforms presented in section A.2. However, since too little time has passed since the introduction of the reforms, it is impossible to evaluate them. Therefore, the evaluation will be based on studies of similar reforms.

The evaluation is organized in the same manner as in Section A. We begin with tax changes. Thereafter we deal with the changes in the unemployment insurance, followed by the effects of the reformed pension system. The section ends with an evaluation of the changes in childcare fees and parental insurance.

C.1 Changes in taxes

The implemented changes in taxes have primarily resulted in lower average tax rates and a decrease in tax progression. There are a few Swedish studies that analyse if wage pressure is affected by tax changes, see Holmlund and Kolm (1995) and Forslund and Kolm (2000). The empirical analysis in Holmlund and Kolm is based on wage data at a micro-level, while Forslund and Kolm analyse aggregate time-series data.

These two studies arrive at similar conclusions regarding the effects of proportional tax changes, but different conclusions regarding changes in tax progression. According to the estimates in Holmlund and Kolm, proportional tax changes increase the wage cost for employers while increased progressiveness reduces wage pressure. The last result is in line with the findings of a so-called

union model for equilibrium unemployment.¹⁶ Forslund and Kolm (2000) arrive at the opposite conclusion regarding the degree of progressiveness.

Forslund and Kolm also find that the tax wedge contributes to increased wage pressure in the long run. The evolution of the tax wedge during the period was given in Figure 2. Since data are lacking for 2000 and 2001, it is impossible to determine the extent of the change during the period 1997-2001. The income tax changes do however suggest a decline, which would contribute to increase the level of employment somewhat. At the same time, it is important to remember that there are good theoretical and empirical reasons suggesting that long-term unemployment is unaffected by the tax wedge. After all, the payroll tax rose drastically during the 1960s and 1970s without any marked changes in unemployment. In a long panel of OECD countries, Nickell and Layard (1999) find that long run wage pressure is unrelated to the payroll tax. Similar results appear in Gruber (1997).

The structure of the tax system also affects other margins. Labour force participation and the number of work hours (given participation) both depend on the tax system. If there is a fixed cost associated with work, the average tax is relevant to participation decision, while marginal taxes affect the number of work hours. Empirical studies of labour supply are mainly based on data from the time prior to the tax reform of 1991. These studies indicate that marginal tax changes have relatively small effects on labour supply, especially among men. According to the review in Aronsson and Walker (1997), the elasticity of supply with respect to the net wage is around 0.1 for men and 0.4-0.8 for women.¹⁷ Only a few studies explicitly analyse the effect of tax changes on labour force participation. According to Andersson (1989), the elasticity of participation with respect to the net wage is higher for men than for women: the

¹⁶The logic is as follows: Consider two tax systems with the same average tax but different degrees of tax progression. In the tax system with a high level of progressiveness, the "price" for achieving a given increase of the net wage is higher since a given increase of the net wage implies a greater increase in the wage cost for the employer and therefore a lower labour demand. The trade union considers this during wage negotiations and therefore moderates its wage demands

¹⁷ According to Blomquist and Hansson-Brusewitz (1990), the higher elasticity for women is driven by the fact that it is generally evaluated at the average wage for women. If it would be evaluated at the average wage for men instead, the elasticity for men and women would be about the same. In general, labour supply appears to be less elastic at higher wages (and thereby a higher labour supply).

elasticity is about 1.6 for men and 0.75 for women. The extensive margin is thus somewhat more elastic than the intensive margin.

What effects on labour supply can we expect of the implemented tax changes? The greatest change between 1997 and 2001 is that the marginal tax dropped by five percentage points for those paying national tax with an annual income below the second threshold in the national income tax schedule. A simple calculation shows that the annual labour supply (for those qualifying for this reduction) is expected to rise by about one per cent as a result of the change.¹⁸

C.2 Changes in the unemployment insurance

As presented in section A, a number of changes have been made in the unemployment insurance. Here we will discuss the changes affecting benefit generosity and the introduction of the new sanctioning rules.

Many studies have investigated the effects of changes in the unemployment benefits; see for example the review in Holmlund (1998). The effect is generally positive but small in time-series studies. Studies based on individual data generally estimate the effect by comparing those qualified with those not qualified for benefits. In both cases, the variation used to estimate the effects are problematic.

Carling et al (2001) estimate the effect of changes in the generosity of unemployment insurance (UI) in a more credible manner.¹⁹ More specifically, the variation stems from the reduction of the nominal replacement ratio from 80 to 70 per cent on January 1, 1996. Those above the income ceiling in the insurance were not affected by the change and can therefore be used as a control group. Carling et al find that the outflow from unemployment to work drops by 1.6 per cent when the benefit ratio increases by 1 per cent.²⁰

During the first 100 days of unemployment 2001, the UI system is about as generous as in 1997, see Tables 1 and 2. A typical period of unemployment lasts more than 100 days however, considering both the time in open unemployment and the time in labour market programmes. Therefore, in practice, the

¹⁸ At a fixed gross wage, the relative effect of the marginal tax change on the net wage is about 0.115. The labour supply effect is thus about 1% for a net wage elasticity of 0.1.

¹⁹ A similar method appears in Harkman (1997).

²⁰ In comparison with previous studies, the effect of a change in the unemployment benefit level this estimate is on the high side. Earlier studies generally indicate that the elasticity is between 0.2 and 1; see Layard et al (1991).

benefits have become less generous. A rough estimate shows that the level of compensation after tax dropped by about 2 percentage points or 2.7 per cent.²¹ According to the results in Carling et al (2001), the outflow from unemployment to work increased by 4.3 per cent as a consequence of the reduction in the generosity of UI. Translated to a change in unemployment, this implies that the unemployment rate dropped by 0.2 percentage points during the period.

The unemployment insurance reform has led to varying benefit levels by unemployment duration for jobseekers exceeding the income ceiling. No study estimates the effects of such a change, but Fredriksson and Holmlund (2001) analytically show that a system in which benefits drop during the course of the unemployment spell contributes to raising employment. From an employment perspective, however, it is unclear why this time dependence should only apply to those whose earlier wage exceeds the income ceiling.

The reform of the UI system implies less harsh penalties for breaking the rules in conjunction with an increase in the probability of being subjected to a work test. There are no Swedish empirical studies on the effects of such a change. Dutch studies indicate however that the transition rate from unemployment to employment increases substantially for those subjected to a relatively mild sanction; see Abbring et al (1998). Moreover, experimental evidence from the US (Benus and Johnson, 1997) shows that monitoring can have considerable effects: When jobseekers were informed that reported employer contacts would be verified, the duration of the benefit period dropped by 7.5 per cent relative to the control group. Based on the analysis by Boone et al (2001) the implemented changes appear to improve welfare, which does not necessarily mean that they increase employment. Boone et al also point out that general job search requirements are preferable since these reduce the risk of substituting formal search channels (such as the employment office) for informal channels.²² Substitution may prove problematic if sanctions are only associated to referrals to jobs and labour market programmes.

²¹ The median duration (median in the stock) of open unemployment in 2000 was 12 weeks according to the Labour Force Surveys. The ratio between the median duration of registered unemployed and registered open unemployment was about 1.6 according to Ackum Agell et al (1995). A rough estimate of the median period of registered unemployment in 2001 is thus 19 weeks (133 days). A typical unemployment period would then constitute 100 days with a replacement ratio of 73.5% and 33 days with a replacement ratio of 67.2%. The average of these benefit levels yields a compensation level of 71.9%.

²² See also van den Berg and van der Klaauw (2000).

The reforms in the unemployment insurance also altered mobility requirements. Since the changes both lessen and strengthen the requirements it is impossible to predict the employment effects.

C.3 Reforms of the pension system

As in most other industrial countries, labour force participation among older people in Sweden has declined. Only a few studies investigate if the changes in the pension system (and other transfer systems) are a contributing factor in the decline. The studies by Palme and Svensson (1999, 2001) are exceptions.

It is difficult to quantify the effects of the pension system reform on the labour supply of the elderly. Palme and Svensson (2001) do show that economic incentives affect the retirement decision and that collective agreements stipulating that pension should be collected from the age of 65 play a substantial role. The pension system reform has led to changes in both these areas, which should stimulate participation. However, the magnitude of the effect is unclear as it is difficult to estimate how much economic incentives changed as a result of the reform.

C.4 Changes in childcare and parental insurance

The introduction of a maximum on childcare fees and the right to day-care for children to unemployed persons should contribute to more active job search on the part of unemployed persons. Figure 1 shows that the replacement ratio exceeds 90 per cent for single parents with low incomes prior to the change of maximum childcare fees. It is easy to imagine that the actual marginal effect exceeds 100 per cent, when account is taken to the marginal effects stemming from other transfer systems (such as welfare benefits) and fixed costs associated with working. The introduction of a maximum childcare fee should mean that parents with small children and low incomes are more inclined to look for a job.

Flood and Wahlberg (1999) investigate the effects on labour supply of the introduction of the maximum childcare fee. They find that the effects vary across the household income distribution. Labour supply for women in low-income households increase by about 7 per cent; for average-income households the effect is 3 per cent, while labour supply for women in high-income

households do not respond to childcare fees.²³ Converted to elasticities, these results indicate that labour supply is relatively unresponsive to changes in fees: the supply elasticity for women in low-income households is -0.11; it is -0.05 in average-income households and 0 in high-income households.²⁴ It is reasonable to suppose that the decision to participate (the extensive margin) is more responsive to variations in childcare fees, which in such case would mean that the above result underestimates the supply effects.

The basic pattern in Flood and Wahlberg's study is consistent with the results from the US. Anderson and Levine (1999) find that the participation rates among women with low education levels react more to variations in fees than among women with high education levels. For women with low education levels, the elasticity with respect to the cost of childcare is -0.69, while the figure for highly educated women is -0.23.

Finally, let us say a few words about the extension of the parental insurance. By construction it reduces the labour supply among those with small children. This can to some extent be counteracted by an increase the supply of presumptive parents before they have children. Nonetheless, the total effect should be negative. Since two of the months will be reserved for one of the parents, the total effect is probably greatest for men. The magnitude of these effects is however unclear.

²³ Low and high-income households refer to households belonging to the bottom and top decile of the household income distribution.

²⁴ The proportionate fee reduction amounts to 63% for all income groups.

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Appendix

Changes in taxes and benefits

Below we summarize the changes in taxes and benefits contained in the Swedish National Action Plans (NAP). Policy proposals that have not yet been decided upon are also presented. Throughout, we present the government's intention in making the changes and do not comment on the actual outcome.

A.1 Changes in taxes

A.1.1 Tax reform

NAP 1999 The government is investigating the conditions for a tax reform. The main features should be:

- Reduced tax on labour income for all and for low and average income earners in particular. The marginal tax should be reduced and labour force participation and training encouraged.
- The tax policy should play an active role in increasing employment. The government proposes subsidies for employers that employ long-term registered unemployed persons.
- Continued review of the environmental dimension of the tax system.
- Reduced benefit fraud. The government intends to initiate a joint-effort to reduce fraud and over-usage of the public welfare system. The efforts of public authorities should be co-ordinated to increase monitoring efficiency.

NAP 2000 A first step in the tax reform has been taken. The primary changes that took effect in 2000 were:

- Reduced tax as compensation for a quarter of the individual pension contributions.
- Raised limit for the national income tax.
- Tax increases on diesel, electricity and nuclear power. This was yet another step towards a green tax shift. The tax revenue will be used for a tax subsidy in conjunction with individual skills development.

During the autumn of 2000, the government intends to assess the possibility of further tax reductions. The government will also initiate a joint-effort to reduce fraud and over-usage of the welfare system.

NAP 2001 Further steps in the tax reform initiated during 2000 were taken during 2001:

- Compensation was extended to correspond to one half of individual pension contributions.
- The income tax bracket for the national tax was adjusted upwards. The proportion of wage earners paying national tax is expected to drop from 19 per cent in 1999 to 16 per cent in 2001. The goal is to limit the proportion of those paying national tax to 15 per cent of taxpayers.
- The government has presented a strategy for adjusting the tax system such that environmental concerns are given greater weight and has taken yet another step towards a green tax shift. As a part of the green tax shift, this has entailed an increase in the tax allowance.
- Tax revenue was set aside for a tax subsidy in conjunction with individual skills development.

A.1.2 Tax relief for foreign experts:

NAP 2001 As of January 1, 2001 tax relief were introduced for foreign experts, researchers and other key staff.

A.1.3 Investigation of the future of the tax system:

NAP 2001 During 2001, the government appointed an investigative committee to analyse the requirements of internationalisation on the Swedish tax system.

A.2 Changes in unemployment insurance and active labour market policy

A.2.1 Changes in unemployment insurance:

NAP 1999 The unemployment insurance is being reviewed. The purpose is to facilitate and stimulate adjustments in the labour market. The proposal should be submitted no later than September 15, 1999.

NAP 2000 Reform of the unemployment insurance. Greater requirements are placed on the individual.

NAP 2001 New rules for unemployment insurance introduced in February 2001. Important changes include:

- Participation in active labour market programmes no longer qualifies for a new benefit period.
- Mobility requirements increase.
- Unemployment benefits are limited to 600 working days.
- The income ceiling for benefits will be reduced after 100 days.

A.2.2 Activity guarantee:

NAP 2001 The activity guarantee introduced on August 2 will ensure that unemployed persons actively seek employment and is intended to break the vicious circle between labour market programmes and open unemployment. The activity guarantee will also make it more difficult to use unemployment benefits for early retirement.

A.2.3 Subsidies to employers that hire unemployed persons:

NAP 1999 The government proposes a reinforced hiring subsidies for employers that hire persons with long registration periods.

NAP 2000 A reinforced hiring subsidy was introduced October 1999. The government proposes an additional recruitment subsidy for long-term unemployed persons and those that have been unemployed or engaged in labour market measures for at least 48 months.

NAP 2001 A hiring subsidy in line with the above proposal was introduced during 2000.

A.3 Changes in childcare and parental insurance

A.3.1 Childcare reforms:

NAP 1999 In 1998, the government announced the introduction of a maximum on childcare fees. The reform will be gradually introduced starting 2001.

NAP 2000 The government proposes that:

- A ceiling on childcare fees should be introduced as of January 1, 2002.

- Municipalities are obligated to offer childcare for children with unemployed parents as of July 1, 2001.

- Municipalities are obligated to offer childcare for children with parents on parental leave to care for another child as of January 1, 2002.

- Public pre-school for all 4-5year-olds as of January 1, 2003.

NAP 2001 The above proposal has been adopted.

A.3.2 Reforms in the parental insurance:

NAP 2000 On January 1, 2002 parental benefits will be extended by 30 days with an amount corresponding to the parent's sickleave benefit. This means that there are now two months reserved for one of the parents.

NAP 2001 The government has made a proposal to increase the guarantee level of the parental benefit from SEK 60 per day to SEK 120 per day as of January 2002. Additional increases will be made in January 2003 to SEK 150 per day and again January 2004 to SEK 180 per day.

A.4 Changes in the pension system and policies to increase the activity of the elderly

A.4.1 Changes in the pension system:

NAP 2000 The government has made a proposal that employees should be given the possibility to remain at work until the age of 67.

NAP 2001 The government has presented a bill concerning the possibility of employment until the age of 67 and it is proposed that the law takes effect as of September 1, 2001.

NAP 2001 The new pension system promotes employment since the whole life income affects the pension.

NAP 2001 Rules on dormant early retirement were introduced in January 2000. Few people have taken advantage of this possibility, however, and the National Social Insurance Board has therefore been assigned to intensify information endeavours.

A.4.2 Policies to increase the activity of the elderly:

NAP 2000 The government has appointed a committee to define the conditions for the long-term development of policies that stimulate the activity of the elderly. The committee will for example address the question of the labour force participation of the elderly.

A.4.3 Study allowance for the elderly:

NAP 2001 The government has decided that persons between 51 and 55 may receive study allowance for training in professions with labour shortages.

A.5 Other policy measures

A.5.1 Review of financial family support:

NAP 1999 There will be a review of the development of the obligation to support children. Proposed measures will be submitted in the Spring Bill in 2000.

NAP 2000 The government appointed a committee in February 2000 to review the financial support to families. The purpose is to analyse how family support can be made more effective and increase the incentives to work.

NAP 2001 The committee on the financial family policy submitted its report to the government in February 2001. The government will decide on the proposal after submitting the report to interested parties for comments.

A.5.2 Goal for reduced benefit dependency:

NAP 1999 The number of people, translated to whole-year equivalents, dependent on different types of benefits is to be reduced from 1 million in 1997 to 0.8 million by 2004.

NAP 2001 The government has set a target of halving the number of people dependent on social welfare between 1999 and 2004.

A.5.3 Skills development fund:

NAP 2000 A committee has been appointed to prepare the design of a system for skills development accounts. The report will be presented in January 2001.

NAP 2001 The committee on skills development accounts submitted its report to the government. The government plans on taking measures to stimulate skills development and funds have been set aside for a tax subsidy in conjunction with individual skills development.