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Implementing Flexicurity in Sweden?

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Abstract

Flexicurity, the term used to describe the Danish labour market regime, combines employment flexibility with income security and active labour market programmes. In recent years the model has received international recognition for its abilities to fight unemployment. The purpose of this thesis is to analyze if it would be possible to implement such a model in Sweden and investigate what would happen to the unemployment rate. In order to examine the different components of Flexicurity and their effect on the unemployment rate we apply a general equilibrium model on unemployment as well as an empirical analysis. Further, we study a possible implementation in Sweden by running a theoretical model and reviewing what the literature has to say on exporting Flexicurity. Our results indicate that relaxing the employment protection legislation in Sweden would not yield a significant effect on overall unemployment but rather redistribute employment from incumbent workers to youth. Also, increasing spending on active labour market programs could decrease the adverse effects of generous benefit levels, thus lowering unemployment. However, we conclude that the implementation seems unlikely due to a combination of vote maximizing politicians and Sweden's institutional setup.

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1. Introduction	3
2. Background.....	3
2.1 The Danish labour market	4
2.2. The Swedish labour market	6
3. Theory	8
3.1 A simple model of equilibrium unemployment.....	8
3.2 Deviations from the equilibrium unemployment rate.....	10
3.3 The Insider-Outsider theory.....	10
3.4 The role of effective job search	11
3.5 Persistence of unemployment.....	11
3.6 Theoretical conclusions regarding Flexicurity	12
4. Empirics	13
4.1 Key elements of Flexicurity	14
4.2 Summary of cross-country regressions.....	18
4.3 Empirical conclusions regarding Flexicurity.....	20
5. A model on Flexicurity.....	20
5.1 Calibrating the model for Sweden	22
5.2 Model discussion	24
6. Exporting Flexicurity?	25
7. Concluding discussion.....	26
8. References	28
9. Appendix	31
A. Mathematical Description of the Theoretical Model on Flexicurity	31
B. Sensitivity analysis.....	33

1. Introduction

Every now and then a word or an expression gets stuck on the political agenda. Flexicurity, the term used to describe the Danish labour market regime, is such a word and it has been intensively debated both here at home and abroad. Most Swedish politicians seem to have an opinion on the matter. In the public discussion Flexicurity is often described as a feasible “third way” between the generous benefits of the welfare state and the flexibility of the deregulated labour market seen in the Anglo-Saxon countries such as the U.K and the U.S. A system which is likely to please both labour and capital is obviously an attractive one for policy makers. In addition it has been recognised as the main explanation behind Denmark’s low unemployment figures. We find it relevant to investigate a possible implementation of such a model in Sweden and the outcome on the unemployment rate.

The first section of this paper is a brief overview of the Danish and Swedish labour markets. We limit the analysis to those labour market institutions that are key elements of Flexicurity; active labour market policies (ALMP), passive labour market policies i.e. unemployment benefits (PLMP), and employment protection legislation (EPL). Inevitably, the labour market policies will be costly thus generating a high tax wedge. Also, there is a vast amount of active labour market programs that usually deviates from country to country when it comes to set-up, duration et cetera. Evaluating program effectiveness is however outside the scope of this paper. Rather we treat the programs as a homogenous entity. As an analytical framework we apply a general equilibrium model on unemployment as well as some contemporary topics in labour economics. The following empirical section puts Denmark and Sweden in an international perspective and examines the relationship between the Flexicurity components and the unemployment rate. Since our aim is to examine a possible implementation of Flexicurity we run a model where we derive possible outcomes on the Swedish unemployment rate and tax wedge. Before concluding we look at the literature’s arguments for and against “exporting” the Danish model. Lastly, we discuss our findings.

Summarizing, our purpose of writing this thesis is to:

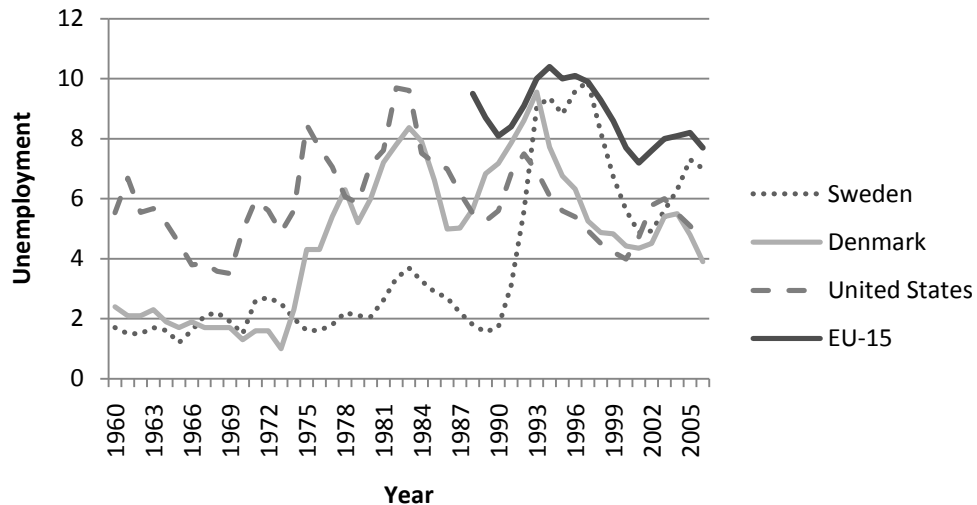
Analyze if it would be possible to implement the Flexicurity model in Sweden. If the model was to be implemented, what would happen to unemployment in Sweden?

2. Background

Denmark and Sweden are very much alike. Language, culture and even labour market institutions are similar, seen from an international perspective. Unemployment benefits are high and so is spending on active labour market programs. The main difference is perhaps found in the employment protection legislation. Swedish workers are strongly protected from dismissals by the law, while their fellow workers in Denmark are not. Unemployment in two countries has

varied substantially over time but both countries seem to have recovered from record-high levels in the early 1990's, see *Figure 1*.

Figure 1. Unemployment in percent 1960-2006 in Denmark, Sweden, the U.S and EU-15.

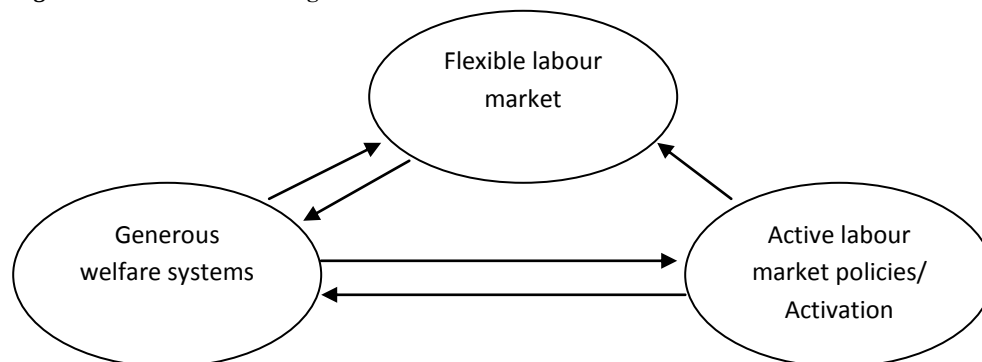


Source: OECD Main Economic Indicators, Labour Force Statistics

2.1 The Danish labour market

With low unemployment rates, especially among the young, the Danish labour market has received a fair amount of international attention and recognition. It combines a high degree of job mobility due to low employment protection legislation (the flex part) with a generous system of unemployment benefits (the security part) and active labour market programmes, hence the name Flexicurity. Companies in Denmark can relatively easy adjust the size of the work force to business cycle conditions while the unions may secure members' incomes in case of unemployment. We illustrate the model in the so called "Golden Triangle" seen in *Figure 2*. (OECD, 2004).

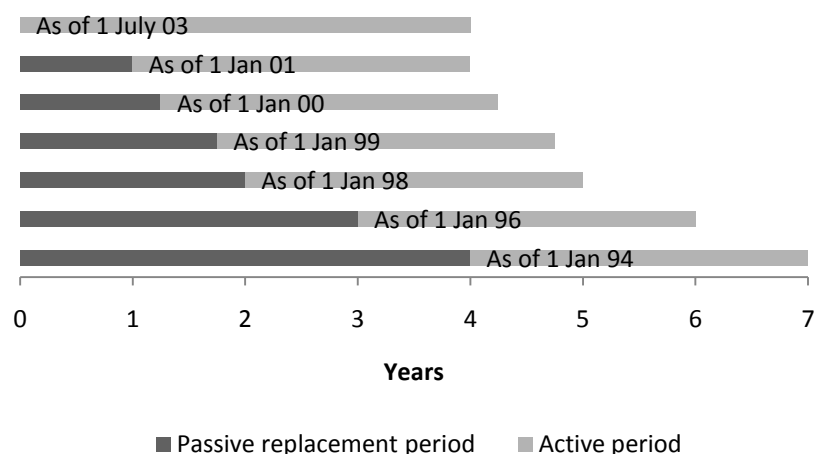
Figure 2. The "Golden Triangle" of the Danish labour market



The arrows in the figure show how Danish labour flows between work, welfare and ALMPs. The two arrows linking the flexible labour market with the welfare system indicates that a substantial number of workers lose employment every year, but the vast majority return to work after a short spell of unemployment. Those that still do not find work are transferred to an active labour market program, where they will hopefully return to work soon enough. The majority of unemployed, who are members of an unemployment fund, receive an allowance of 90 percent (with a maximum of 80 euro/day)¹ of previous income from the first day of unemployment. In order to counteract the potential disincentive effects arising from generous unemployment benefits the unemployed are required to actively seek work. They are also obliged to participate in full time activation programmes. In this manner activation entitles for benefits while at the same time motivates the unemployed to look for work. One should also note that that the high Danish spending on active and passive labour market policy is costly, totalling 4.25 percent of GDP in 2005 (OECD, 2007).²

Since 1994 benefit durations have continuously been shortened, today it is down to four years (see *Figure 3*). Before that the unemployed could receive compensation for seven years but in practice the duration was indefinite since program participation made the unemployed eligible for new allowances (Andersen and Svarer 2006). In 2003 the reform “More people into employment” ended an earlier distinction between passive and active periods. Activation can now begin day one and no later than 12 months after the first day of unemployment. Instead of focusing on general activation measures, which was common before 2003, the authorities now emphasize job-seeking, placement activities and individual action plans which is meant to be a faster way towards employment (OECD 2004).

Figure 3. Danish benefit durations since 1994



Source: Andersen and Svarer (2006)

¹ Madsen (2006)

² OECD: Public expenditure and participant stocks on LMP

Andersen and Svarer gives credit to the Danish youth reforms during the 1990s in fighting unemployment. The reforms have toughened up the eligibility criteria for receiving unemployment benefits. As of 2007 the unemployment rate among the young in Denmark was 7.7 percent compared to 21.3 percent for Sweden (Eurostat)³.

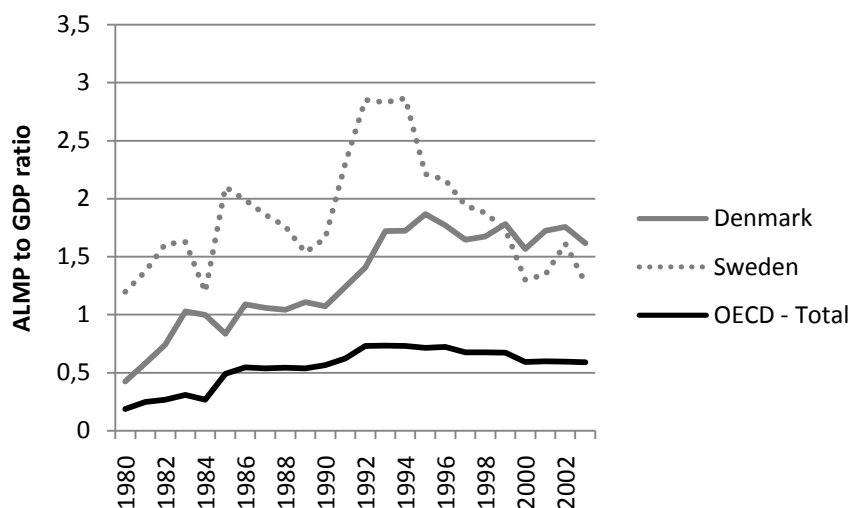
It is important to note that it is not the employment protection legislation that has changed in Denmark since the period of high unemployment in the early 1990s. EPL was roughly the same now as then. On the other hand, the government has reduced benefit durations, shortened the maximum period for participation in active labour market programs and tightened up on the eligibility criterion for receiving unemployment benefits (Andersen and Svarer 2006).

Danish wage setting agreements are highly decentralized. Only minimum wages are set centrally, while all other wages may be negotiated locally (Westerlund 2006).

2.2. The Swedish labour market⁴

For the first sixty years following the “Saltsjöbaden Agreement” in 1938, where unions and employers laid out the foundation for a peaceful labour market, unemployment rates in Sweden were low. Sweden got world-wide attention and the active labour market policies were regarded as a key component of the “Swedish model”. Note in *Figure 4* how ALMP spending traditionally has been high in Sweden (and how it roughly follows the unemployment rate shown in *Figure 1*) especially during the high unemployment years around 1990. In recent years however, Denmark has passed Sweden in spending.

Figure 4. ALMP/GDP ratio in Sweden, Denmark and the OECD countries. 1980 - 2003.



Source: OECD Social Expenditure database 2007.

³ Eurostat: Harmonized unemployment rates, +/- 25 years

⁴ This section is mainly based on the first chapter of the second NBER report (2006) written by Freeman et al.

Even during the oil crisis of the 1970s when unemployment plagued other western countries, this was kept in check through company subsidies, devaluations and increased public employment (Olofsson and Wadensjö 2005). The macro economic shock in the early 1990s put an end to the labour market stability and damaged the reputation of the famous “Swedish model”.

The labour market is dominated by large firms, a high degree of union membership and a big public sector (employing roughly 38 percent of the labour force compared to 26 percent in Denmark)⁵. Two main components characterize the Swedish labour market: Firstly, wages are negotiated centrally through collective agreements although some changes have occurred since the crisis years. Parts of the negotiated agreements can nowadays be decided locally, minimum wages excluded. This year’s wage agreements⁶ comprised roughly 3 million workers and reached an average of 4.6 percent (Konjunkturinstitutet 2007). Secondly, labour market policy plays a big role in fighting unemployment with total costs adding up to roughly 2.52 percent of GDP in 2005 (OECD 2007)⁷. In 2000 the socialist government tightened up on the benefit eligibility when participating in an ALMP. Previously, participation in a program was enough for renewal of allowance from the unemployment fund (“a-kassa”). Further, an “Activity Guarantee” was introduced. It was renamed “Job and Development Guarantee” by the new government and demands that the unemployed must, on full time basis, either participate in a program or look for work (Regeringskansliet 2007)⁸.

Similar to Denmark, the benefit system in Sweden is generous, taxed and based on unemployment insurance funds with close ties to the trade unions. For the first 200 days an allowance of 80 percent is received and for the following 100 days the unemployed is entitled to 70 percent with a maximum of around 70 euro/day (SO 2007)⁹. These rules were put into practice in July 2007 and meant a tightening of the previous legislation. Should the unemployed still not have found work after 300 days he or she transfers, under certain conditions, into the Job and Development Guarantee with 65 percent of the previous allowance for a maximum of 450 days.

The strictness surrounding the employment protection legislation in Sweden deserves consideration. France is the only high-income country with a stricter EPL (OECD 2007). Sweden has scored high in the cross-country EPL indices since 1974 when the legislated but controversial last-in-first out rule (in “Lagen om antälningskydd”, LAS) was introduced. It states that when laying off staff, employers must fire employees in reverse order of seniority within each professional segment. However, it should be noted that there are ways for companies to side track this law and for firms with less than ten employees, exceptions can be made. The centre-right government elected in 2006 has also extended the 6 months temporary contracts to

⁵ Hammouya, ILO, 1999

⁶ Wage increases were set for 2007-2009.

⁷ OECD: Public expenditure and participant stocks on LMP

⁸ <http://www.regeringen.se/sb/d/8941>

⁹ Arbetslöshetskassornas Samorganisation, updated July 2nd 2007.

24 months. In Sweden these temporary contracts now account for 15 percent compared to 8 percent in Denmark (OECD 2007, Andersen and Svarer 2006).

3. Theory

We start by presenting a simple model of equilibrium in the labour market (Scarpetta 1996). Moving on we investigate why unemployment deviates from equilibrium and why wages do not fall when markets do not clear. The insider-outsider theory as well as the persistence of unemployment and the role of effective job search will be discussed. In the end of this section we look into what implications these theories have for the components of the Flexicurity system.

3.1 A simple model of equilibrium unemployment

The model assumes imperfect competition among profit maximizing firms. Each firm faces exogenous product market conditions as well as predetermined capital and technology. For simplicity the model will not capture labour force growth and trend productivity. In the model wages are bargained between workers and firms. The firms will decide on the level of employment, output and prices once a wage agreement is settled. The relationships are stated as follows:

Labour demand

The demand for labour is determined by the real wage and other factors influencing the demand. If the wage exceeds what is expected, which we refer to as an unanticipated wage increase, it has a negative impact on employment.

$$n = -\alpha(w - p) - \beta Z_n - w^u \quad \alpha > 0 \quad (1)$$

where n , w and p are the logarithms of employment, wage (including payroll taxes) and prices respectively. Z_n is a vector of variables which influence labour demand for example a mark-up of price over marginal costs and w^u is unanticipated wage changes.

Labour supply

The supply is assumed to be inelastic to wages and a function of factors (Z_p) affecting participation decisions as described by the function below.

$$l = \delta_1 Z_p \quad \delta_1 > 0 \quad (2)$$

where l is the logarithm of the labour force. Factors affecting the decision to participate in the labour force include some of the wage-pushing factors described later on.

Wage Setting

The real wage is assumed to be a decreasing function of unemployment but an increasing function of factors that push the wage (Z_w) and unanticipated price changes (p^u):

$$w - p = \delta_2 Z_w - \gamma u - p^u \quad \delta_2 \geq 0; \gamma \geq 0 \quad (3)$$

where w and p are just as earlier the logarithms of wages and prices. The wage-pushing variable captures policies and institutions that strengthen the employed worker's power in the wage bargaining process and thereby puts upward pressure on the real wage. Examples are generous unemployment benefits and the relative strength of unions.

Equilibrium unemployment rate

We re-write the equation of labour demand in the following way:

$$l - u = -\alpha(w - p) - \beta Z_n - w^u \quad (4)$$

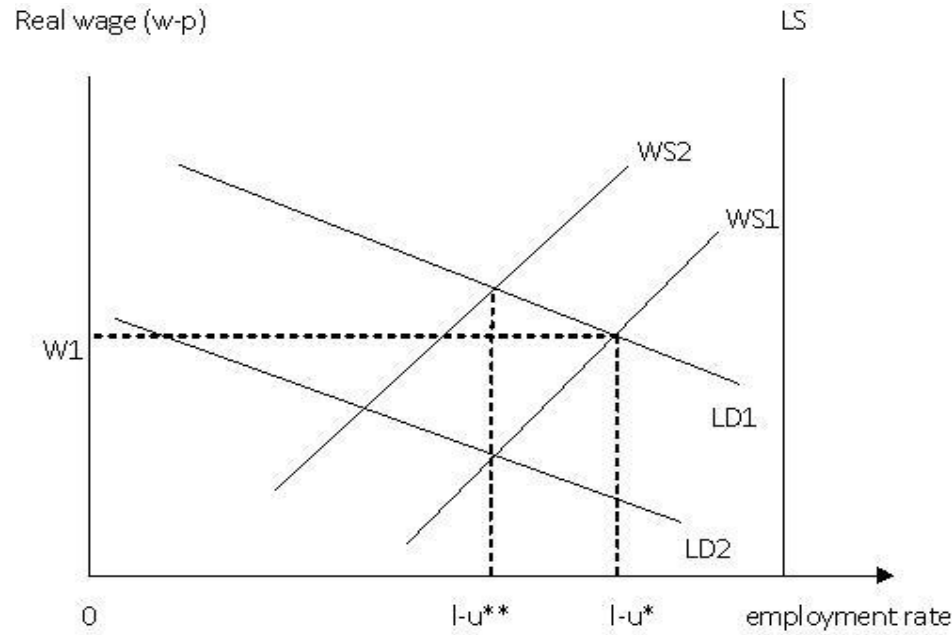
since u is approximately equal to $l - n$.

In the long-run price and wage expectations are met so that $p^u = w^u = 0$. The equilibrium long-run unemployment rate i.e. the structural unemployment rate (u^*) can then be solved from equations (2), (3) and (4):

$$u^* = \frac{\alpha \delta_2 Z_w}{1 + \alpha \gamma} + \frac{\delta_1 Z_w + \beta Z_n}{1 + \alpha \gamma}$$

This is illustrated by the intersection of the labour demand and wage setting curves in *Figure 5*.

Figure 5. Equilibrium unemployment.



An increase in the bargaining power of labour will shift the wage setting curve to the left (from WS1 to WS2) and result in higher real wages and higher unemployment. Reduced competition in the product market leading to persistently higher mark-ups will reduce demand for labour and shift the labour demand curve to the left (from LD1 to LD2). This results in rising unemployment and a fall in real wages.

3.2 Deviations from the equilibrium unemployment rate

Demand and supply shocks cause fluctuations in the unemployment rate. An aggregate demand shock associated with a rise in nominal GDP will raise inflation and employment. On the other hand an aggregate supply shock will increase inflation and lower employment which happened in the beginning of the 1970s when commodity prices rose dramatically, contradicting the earlier views that unemployment and inflation always moves in opposite directions. (Layard 2005)

Another source of deviations occurs when wages deviate from market clearing wage. When markets do not clear one would expect wages to fall, thus creating job opportunities, but this appear not to be the case. There are two main explanations for this phenomenon. A quite obvious reason is that wages are held above equilibrium wage due to legislation of minimum wages and/or strong unions. Unions' main concern is to push for higher wages albeit taking into account the risk of members losing their jobs (Layard 2005). Calmfors (2007)¹⁰ points out that the unemployment insurance decreases the effect of adverse consequences for trade union members who become unemployed and thereby strengthens the incentives for the incumbent workers to push for higher wages.

The second explanation is that the firms are actually willing to pay more than the price of labour and does so in order to maintain high morale and encourage effort among the employees (Layard 2005). Higher wages also helps the firm to retain and recruit workers and at the same time higher unemployment raises profits by reducing labour turnover.

3.3 The Insider-Outsider theory

Lindbeck and Snower (2001) argue that employed workers (i.e. insiders) have some kind of market power. Replacing workers is associated with costs which the firms can not entirely pass on to their employees. The labour turnover costs include production related costs for the search, hiring and training of the new workers as well as costs resulting from rent seeking behaviour by the insiders. The latter refers to for example severance pay, seniority rules and other legal protections.

Higher labour turnover costs ads more market power to the insiders which enable them to put an upward pressure on wages above market clearing levels. This limits the unemployed workers' (i.e. outsiders) chance of getting a job by reducing the number of job opportunities. Even without

¹⁰ Sieps 2007

production and rent related costs insiders can gain market power by for instance cooperating with each other in the production process but refusing to cooperate with underbidding entrants.

3.4 The role of effective job search

The role of effective job search is important since it raises the effective supply of labour. If the threat of an excess supply of labour is absent, unions will feel strong enough to press their claims and firms will bid up wages against each other. With effective job search firms find workers more easily and the workers will face fiercer competition for jobs. This behaviour restrains wage pressure and affects unemployment.

According to Layard (2005) the replacement ratio, defined as benefits relative to wage, affects job search behaviour negatively. Other factors concerns social attitudes to work, the stigma attached to unemployment, employers' attitudes and so on. Also, the effectiveness of the job search to result in employment is not only dependent on how hard the workers look for a job but also how willing employers are to consider them.

3.5 Persistence of unemployment

Labour market policies and institutions are important in determining how quickly the labour market will recover after an exogenous shock. Past experience has proved the existence of hysteresis in unemployment, i.e. how a short-term change seems to persist in the long run.

Insiders seem to be more responsive to changes in the unemployment rate than the level. In a situation with rising unemployment there is an increasing proportion of short-term unemployed, whom are the largest threat to the insiders. This puts more downward pressure on real wages than a stable level of unemployment would have done (Scarpetta 1996). With institutions (e.g. employment protection legislation) that enhance the power of the insiders this downward wage pressure will be counteracted and unemployment prolonged. Moreover it is argued that such an institution will harm the job creation required for long term growth but on the other hand a strict EPL might also reduce job destruction in a downswing. According to Calmfors (2007)¹¹ the net effect on aggregate unemployment is quite small and a strict EPL merely seems to redistribute unemployment from old groups to young groups, from men to women, from short-term to long-term unemployed and to other marginalized groups. In another report this¹² year Calmfors brings up a possible problem of the segmentation between very strict EPL for a vast majority of the employees with open-ended contracts and very low protection for a minority on fixed-term contracts. The low employment protection can create an "easy-to-fire" group of workers that shields the large strongly protected group from unemployment risks thereby increasing the power of insiders and thus weakening incentives to adjust their wage. Hence it might be hard or even impossible to get support for necessary wage moderation in order to increase employment.

¹¹ EEAG Report on the European Economy

¹² Sieps 2007

Long duration of available unemployment benefits makes employment much less likely to rebound after a major downward shock. If employment does not rebound quickly there is a tendency among governments to increase the duration of benefits which may affect job search (Layard 2005). An unemployment culture may develop through the external effect of one man's unemployment on another man's job search. If no one on your street is out of work the social pressure on you to find a job is much greater than if half the street has been out of work for a number of years. This mechanism could also shed light on the persistence of unemployment.

3.6 Theoretical conclusions regarding Flexicurity

Generous unemployment benefits tend to raise unemployment mainly through two channels. Firstly, through the negative impact on the search behaviour of the unemployed and the acceptance of job offers. Secondly, through increased power of insiders and unions which tend to raise the aggregate wage levels. When it comes to the effect of employment protection it is less clear. It might slow down job destruction but it will also hamper job creation.

To reach a broad social consensus on the implementation of the Flexicurity model the generous benefit system might be important since it is likely to weaken the resistance against loosening the employment protection. Thus the security component of the model is attractive politically but as mentioned generous unemployment benefits have adverse effects on unemployment. However, these can be counteracted by a strict control of the unemployed and active labour market programs can play a role (OECD 2006). Calmfors (2007)¹³ points out that the main effect of the active programs is the *ex ante threat effect* meaning that the program changes the behaviour of the unemployed prior to participating in the program. Active participation in a program might not be very compelling, therefore the unemployed intensifies his or her job search activities and increases the chance of getting a job.

The Flexicurity model is costly which implies high taxes on labour. A tax increase, however, generates a wage pressure by reducing feasible real wage growth (Layard 2005). The wage pressure requires unemployment to increase. The tax wedge may also have an indirect effect on unemployment through the replacement rates. If the tax increases the value of benefits relative to wage, this will reduce attractiveness of finding a new job as well as strengthening the market power of insiders.

¹³ Sieps 2007

On the basis of our analysis so far we would expect the structural unemployment rate to be affected in the following manner:

Table 1. Effect of labour market institutions and policies on unemployment.

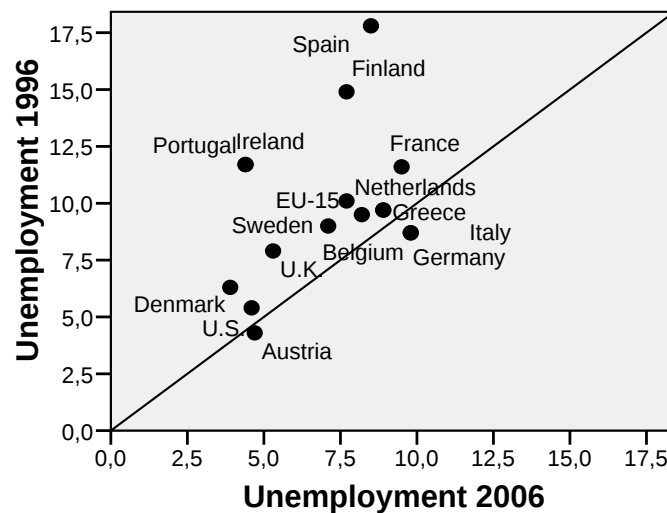
Variables	Effect
Active labour market programs	-
Replacement ratio	+
Employment protection legislation	+/-
Tax wedge	+

4. Empirics

In this section the idea is to analyse how the different Flexicurity components affects unemployment in order to understand what would happen, should the model be “exported” to Sweden. Firstly we put the labour market policies and institutions of Sweden and Denmark in an international context. In addition, we study the persistence of unemployment in relation to the legislation of employment protection for a number of countries. We then summarize other authors’ findings on cross-country panel regressions.

To see the latest decennial trend on the European and U.S labour markets we plot these countries as shown in *Figure 6*. All countries above the 45 degree line have seen falling unemployment rates. The trend is clear; all countries except Germany, Italy and Austria had higher unemployment in '96 than '06. The further a country is from the diagonal the bigger the change in unemployment. We see that unemployment has fallen both in Denmark and Sweden, but from initially lower levels in Denmark.

Figure 6. Falling unemployment in most EU-15 countries and the US, 1996-2006. Percent.

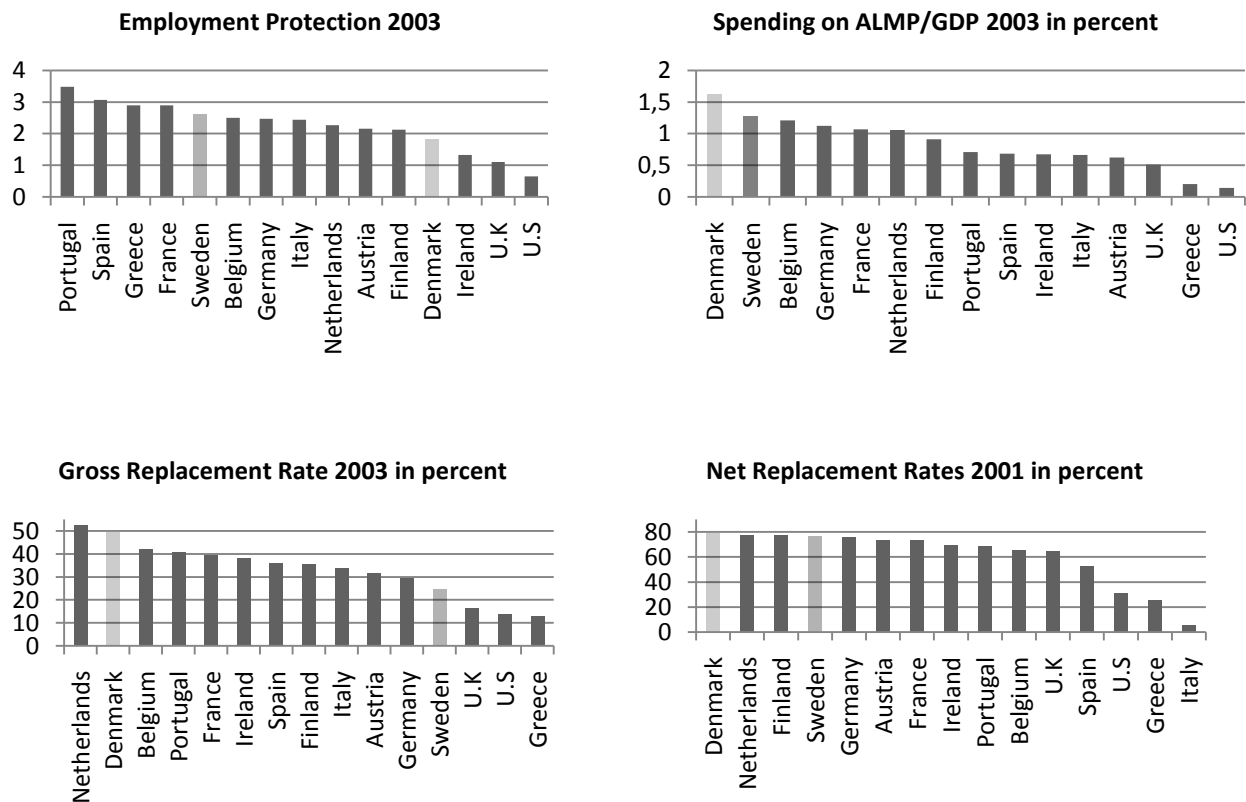


Source: OECD Main Economic Indicators 2007, Labour Force Statistics

4.1 Key elements of Flexicurity

In Figure 7 we plot the Flexicurity components for EU-15 (except for Luxemburg) and the U.S. The first diagram clearly illustrates the difference in EPL between Denmark and Sweden and the second diagram shows both countries' high spending level on ALMP. Note that Sweden gets a very low rating for the Gross Replacement Rate (GRR)¹⁴. Countries with a short formal duration of unemployment benefits (like Sweden) get a low value since the index is calculated over five years. Hence, Denmark gets a high value. Perhaps then the Net Replacement Rate (NRR)¹⁵ is better for comparison since it is calculated over a shorter period of time. Using this measure, Sweden and Denmark are quite similar. Further we note that income taxes¹⁶ are higher in Denmark. Hence, if Sweden was to copy the Flexicurity system it would mean lowering EPL and slightly increasing spending on ALMP. This would imply (at least initially) a higher tax wedge on labour in Sweden.

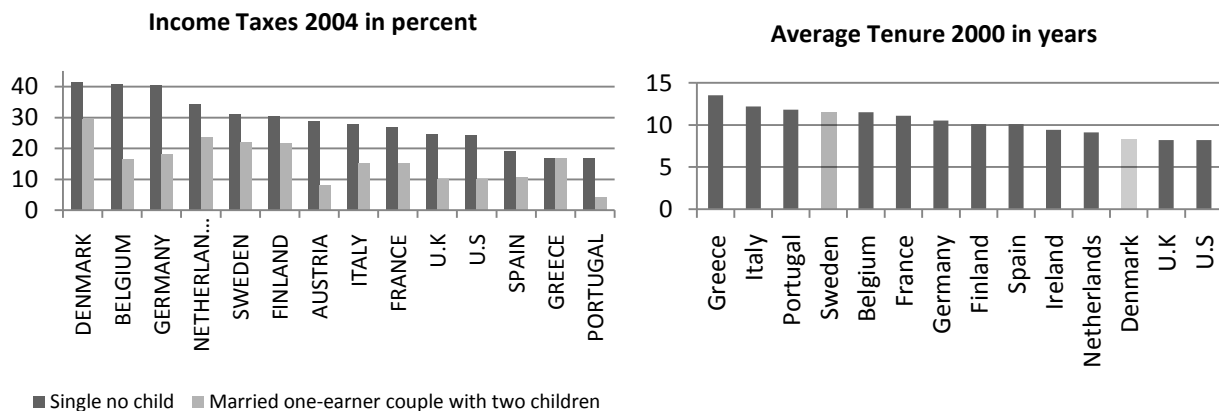
Figure 7. Cross-country comparisons of the Flexicurity elements



¹⁴ The GRR is a calculated average of the unemployment compensation for two income levels, three family types and three durations of unemployment.

¹⁵ The NRR takes into account all replacements, not only unemployment insurance.

¹⁶ Taxes are calculated by taking the employees' social security contributions and personal income tax less transfer payments as percentage of gross wage earnings.

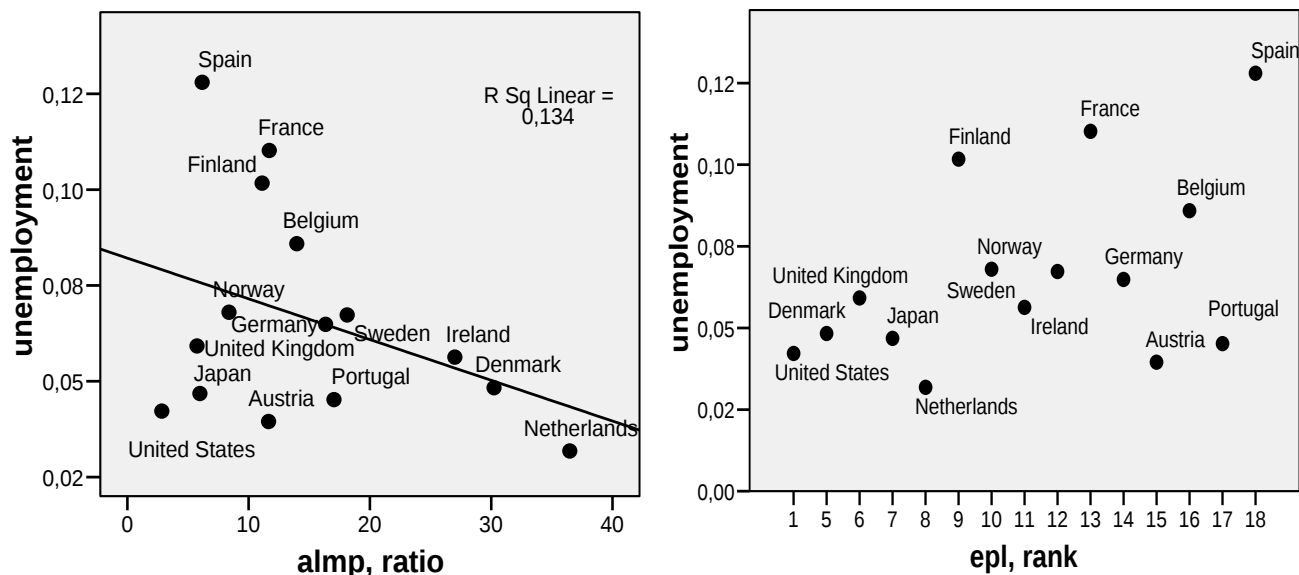


Source: All data and definitions are extracted from OECD 2007 except for Average Tenure which was taken from Auer and Cases (2002), table 2.1.

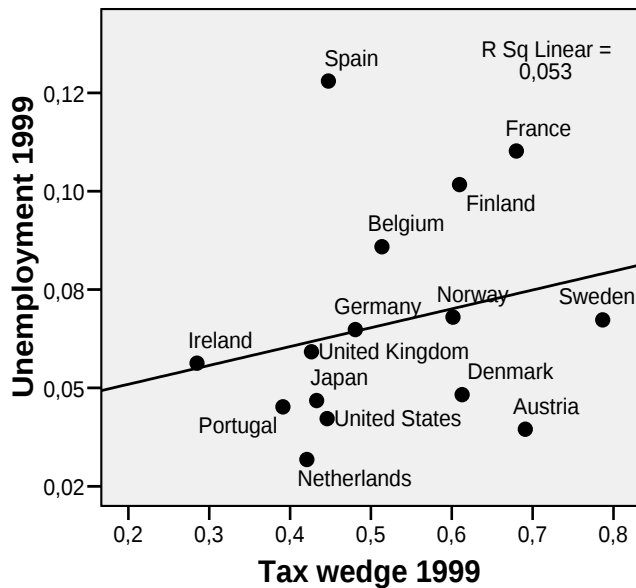
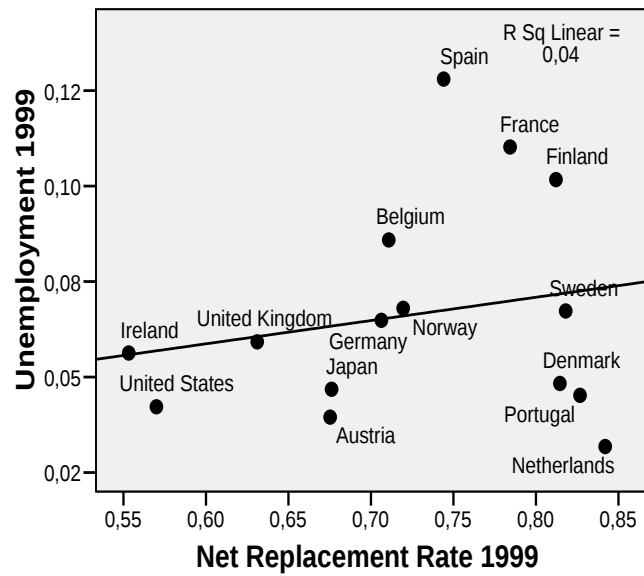
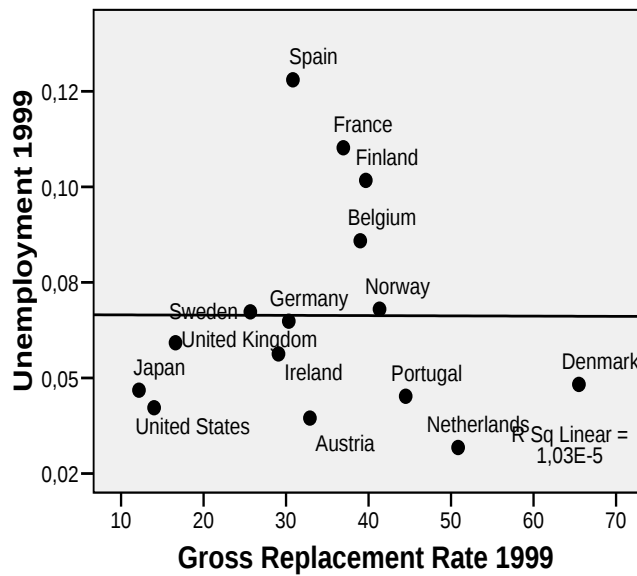
The average tenure depicted in the last diagram is rather a consequence than an element of Flexicurity but it shows an interesting difference between Sweden and Denmark. Danish workers change jobs more often. Interestingly enough, OECD (2007, p. 92) finds that in countries with high EPL workers' perception of security on the labour market is lower. This is also consistent with studies made by the Confederation of Swedish Enterprise, claiming that Danes feel more secure than Swedes (Lindgren 2007)¹⁷.

In order to get a better picture of how the countries compare to each other when it comes to Flexicurity and unemployment we illustrate this in simple scatter plots for a specific year (1999). This is shown in Figure 8.

Figure 8. Scatter plots of Flexicurity elements vs. unemployment in some OECD countries, 1999.



¹⁷ See also Fölster and Lindgren on DN-debatt 28/11/07



Source: Data received from Jianping Zhou at the IMF (2007). The first figure shows ALMP spending on each unemployed as a percentage of the average wage.

In the cross-country comparisons we notice that there seem to exist a positive relationship between unemployment and EPL, NRR and the tax wedge respectively. For ALMP the relationship is the opposite and for the GRR it is not clear. However, these results should be interpreted with caution since the plots only show one point in time and we do not control for any other variables that might influence unemployment or the explanatory variables. Before we can draw any conclusions of the Flexicurity variables' effect on unemployment we will need

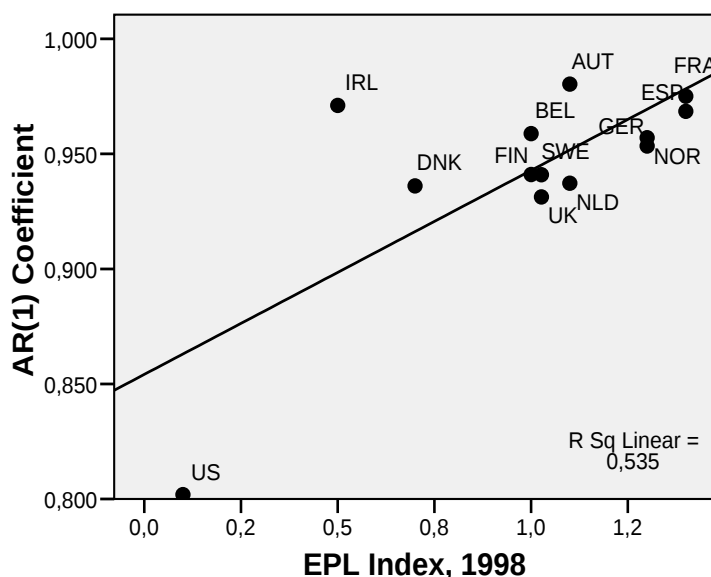
more evidence. Before going deeper we will however look more closely at EPL and the persistence of unemployment mentioned earlier in the theory section. According to those findings, EPL may affect the speed by which unemployment reacts to economic shocks, also known as persistence in unemployment. In order to test for this we run a first-order autoregressive model where the persistence is denoted by α (the AR(1) coefficient).

The model looks as follows:

$$u_{it} = \mu + \alpha u_{i,t-1} + \varepsilon_{i,t}, i = 1, 2 \dots N \quad (5)$$

u_{it} is the unemployment rate at time t in country i , μ the constant term and $\varepsilon_{i,t}$ the residual. A higher value on α means that the persistence is more severe. In *Figure 9* we see that the point estimates of the country-specific regressions disclose that the persistence in unemployment is larger in countries with a stricter EPL, which is consistent with the findings in Gaard (2005).

Figure 9. EPL and persistence of unemployment



Source: Data received from Jianping Zhou at the IMF (2007). Note that the EPL index used varies from 0-2.

The results indicate that a stringent EPL makes reducing unemployment difficult after a negative shock, probably due to the reluctance of firms to hire new labour. It should be noted that the data used in this regression range from 1963-2002 while EPL is from 1998. Unemployment can not by definition contain a true unit root, hence no such tests were made.¹⁸ Also, Portugal is a known outlier when it comes to unemployment performance and EPL so we have not taken that country into account.¹⁹

¹⁸ A random walk (consistent with a unit root) is a process which over time can take on values between negative and positive eternity which is not the case for the unemployment rate.

¹⁹ See Gaard (2006 p. 8) for more information on this.

4.2 Summary of cross-country regressions

The cross-country regressions are static analyses that aim at explaining the differences in unemployment over countries by differences in institutions. Studies like these have been carried out in quite a few articles. Therefore, rather than doing another similar study we chose to summarize the findings of a few well-known economists.²⁰ The studies consist of regressions made on different specifications of an equation similar to

$$u_{it} = \alpha_i + \tau_t + \sum_j \beta_j X_{jit} + \sum_k \beta_k Y_{kit} + \sum_l \beta_l Z_{lit} + \sum_m \beta_m C_{mit} + \sum_n \beta_n P_{nit} + \lambda \cdot cycle_{it} + v_{it}.$$

Where α : country-specific dummy variable, τ : time-specific dummy variable, X_j : policy variables contributing to labor market flexibility, Y_k : policy variables contributing to income security, Z_l : active labour market policy variables, C_m : cost and financing of the Flexicurity model, P_n : product market deregulation, $cycle$: output gap or similar, v_{it} : error term.

Blanchard and Wolfers, compared to the other authors presented below, use a different approach by choosing to study effects of institutions and policies interacted with time which sheds some additional light to the issue of hysteresis in unemployment. We will only present the influence²¹ of ALMP, PLMP, EPL and the tax wedge on overall unemployment.

Table 2. Literature survey of the econometric evidence of the influence on equilibrium unemployment.

Study	Effect of ALMP	Effect of PLMP	Effect of EPL	Effect of TW	Comments
OECD employment outlook (2006, Ch 7)	n.a.	+	No	+	Effect of EPL is negative and significant for <i>employment</i> rates for youth and full-time working prime age women.
Gaard (2005)	-	+	+	+	
Blanchard and Wolfers (2000)	-	+	+	+	The variables enters the regression interacted with time thus the sign captures the responsiveness of unemployment to adverse shocks, i.e. – reduces responsiveness.
Nickell (1997)	No	+	No	+	Significant effect of ALMP only found for long-term unemployed.
Scarpetta (1996)	-	+	+	No	Only significant effect of TW for long-term unemployed.

PLMP: Passive labour market programs, EPL: Employment protection legislation, ALMP: Active labour market programs, TW: Tax wedge. No: No significant effect on overall unemployment, +/-: Significant effect on overall unemployment, n.a.: Not available.

²⁰ We did however estimate a similar equation with data on Sweden. The result was consistent with the results presented in this section except from a significant and negative coefficient for EPL. The result, even though significant, should be interpreted with caution since the sample only consisted of 24 observations.

²¹ Note that we only present the direction of effects on unemployment since the different authors use different datasets and specifications of models, thus the parameter values are difficult to compare.

PLMP: The survey substantiates what theory implicates, that generous benefits tend to raise the equilibrium level of unemployment. All the studies confirm that higher unemployment benefit levels are associated with more unemployment. According to OECD (2006) several recent studies conclude that some of the adverse effects of generous unemployment benefits can be offset by benefit administration practices that use financial sanctions to enforce an obligation to actively search for job and to accept reasonable job offers. Equally important as formal legislation is how the eligibility rules are applied in practice as well as well-established procedures by the public employment services for monitoring job-search activity. The Blanchard and Wolfers study suggest that more generous unemployment benefits significantly increase the responsiveness of unemployment to adverse macro economic shocks.

ALMP: Two out of three studies in our survey found significant negative effects of ALMP on overall unemployment. A finding which is consistent with the *ex ante* threat effect of ALMP. When running regressions with ALMP two problems arise. First, there is the simultaneous causality bias; unemployment effects spending on ALMP and in turn ALMP effects unemployment. Second, due to the definition of unemployment a false correlation between the two variables can appear.²² As pointed out by several authors (e.g. Kluve 2006) an increase in ALMP *per se* may not be welfare enhancing. It is the quality rather than the quantity of the programs that matter if individuals are to re-enter the labour market or not. Also, some groups are easier to help than others. Older workers seem to gain more by participating in programs than younger workers (Kluve 2006).

Blanchard and Wolfers found the unemployment rate to rise less strongly in response to negative shocks, with higher spending levels on ALMP. Another interesting finding is that some studies have found evidence for interaction effects between ALMP spending and unemployment benefits (OECD 2006). More specifically the adverse effect on unemployment of generous unemployment benefits is mitigated by higher spending on ALMP.

EPL: From the conclusions drawn in the theoretical analysis and the findings of the first part of the empirical section the effect of EPL is expected to be very small if at all significant. Two out of four studies did find significant as well as positive effects which imply that a stricter EPL will result in rising unemployment. The impact on unemployment is however probably small. It is noteworthy that Employment Outlook (OECD 2006) found EPL to have negative impact on employment for youth and full-time working prime age women, supporting the theoretical finding that a strict EPL tends to compromise the employment prospects for those groups most subject to entry problems. EPL interacted with time is shown to increase the negative impact of shocks on unemployment the stricter EPL is.

Tax wedge: According to theoretical models higher taxes would result in higher unemployment through the institutional set-up of wage setting by pushing for higher wages to compensate the

²² In some definitions of unemployment, participants in ALMP do not count as registered unemployed.

tax increase. All but one in our survey found evidence that a higher labour tax wedge increases overall unemployment. Scarpetta (1996) finds this significant for long-term unemployed.

4.3 Empirical conclusions regarding Flexicurity

The descriptive analysis put Sweden and Denmark in an international perspective concluding that Denmark ranks in the top when it comes to both replacement rates and the tax wedge but in the lower end regarding employment protection legislation. Sweden and Denmark seem to be more similar with regard to generous unemployment benefits (disregarding formal duration) than strictness of EPL and spending on ALMP. Thus these two components and as a consequence the tax wedge are in focus of an implementation of the Flexicurity model in Sweden.

The derived evidence is consistent with the theoretical conclusions that a rise in PLMP and the tax wedge seem to raise unemployment while an increase in the spending on ALMP has the opposite effect. Very interesting for Sweden is the result that ALMP and PLMP interacted seem to lower unemployment. This would imply that the adverse effects of the country's generous unemployment benefits would be offset by a rise in the spending on ALMP. One should however be aware of the variety of programs labelled ALMP and that program type and quality matters more than the spending *per se*. As expected EPL appears to be important for marginalised groups while it does not appear to be important for overall unemployment. Hence, a less strict EPL may facilitate employment for youth which is of great concern for Sweden. It also seems to be essential when dealing with persistence of unemployment.

5. A model on Flexicurity

In this section we run a simplistic model²³ describing the effects on unemployment and the tax wedge when implementing Flexicurity. The model is based on two equations where Equation (6) describes the dynamics of unemployment as a function of policies:

$$u_t = c + \rho u_{t-1} - \alpha almp_t + \beta plmp_t + \gamma epl_t + \delta tw_t \quad (6)$$

where u_t is the structural unemployment rate; $almp_t$ is public expenditure on active labour market policies per unemployed worker expressed as share of the average wage; $plmp_t$ is the gross replacement rate; epl_t is a measure on the employment protection legislation; and finally tw_t is the tax wedge. Note that all coefficients are positive. Equation (7) shows the budget constraint and implies that any expenditure on active or passive labour market policies is financed by a rise in taxes on labour income:

$$(1 - u)L_t W_t tw_t = (1 - u_t)L_t W_t \emptyset + u_t L_t W_t (almp_t + plmp_t) \quad (7)$$

²³ Zhou (2007) calibrates this model for France, we will do it for Sweden instead.

The left-hand side shows the income from imposing the tax wedge tw_t on the wage income $(1 - u)L_tW_t$ where L_t is the labour force and W_t is the average wage. The second part of the right-hand side, $u_tL_tW_t(almp_t + plmp_t)$, shows the costs of labour market policies and the first part represents all other possible expenditures that the labour tax revenue can be spent on.

From the model we can derive three results²⁴:

Result 1. The fiscal impact (i.e. the effect on the tax wedge) of increasing labour market policies depends on the level of the unemployment rate.

Result 2. As a result of the two-way causality between the unemployment rate and the tax wedge two equilibrium unemployment rates appear for a given set of policies: A stable equilibrium associated with a low unemployment rate and a small tax wedge, and a non-stable equilibrium associated with a high unemployment rate a large tax wedge. As long as the initial rate is lower than the “bad equilibrium” it will converge toward the stable long-run equilibrium.

Result 3. The impact of ALMP is dependant on a country’s original unemployment level and tax wedge. The unemployment declines in a country with a low unemployment rate and low taxes but rises in a country with high unemployment and high taxes.

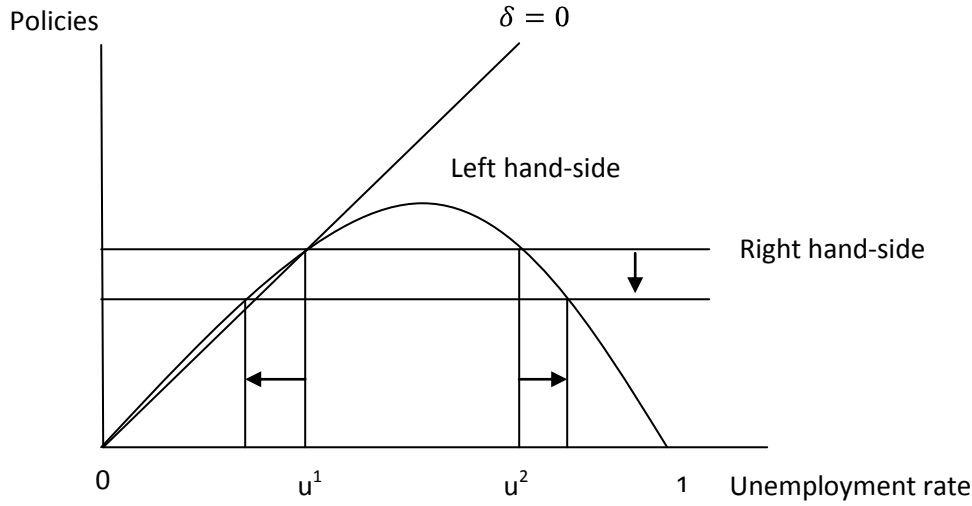
The last result is shown in *Figure 10*. In that figure the horizontal line depicts the right-hand side of the equation below, determined by policy variables

$$\left[(1 - \rho) - \frac{\delta}{1-u} (almp + plmp) \right] u = c + \delta\emptyset - \alpha almp + \beta plmp + \gamma epl.$$

The left-hand side of the equation is illustrated by the concave curve, which is influenced by the level of unemployment. Increasing spending on ALMP will put a downward pressure on the horizontal line. On unemployment, it has the opposite effect: it falls in low equilibrium but rises in the high equilibrium. This is due to the dynamics of ALMP, taxes, and unemployment rates. If $\delta = 0$, i.e. when spending on ALMP is not paid for by higher taxes, the concave curves becomes a straight line and ALMP would only lower the unemployment rate.

²⁴ For a more detailed description of the model please refer to the Appendix A.

Figure 10. Impact of ALMP on unemployment.



5.1 Calibrating the model for Sweden

The purpose of simulating the model for Sweden is to gain some insights into what a real world reform would look like. In the model we will change the values of Sweden's labour market institutions to those of Denmark.

We assume that Sweden is in a steady-state with a constant unemployment rate of u_0 and constant policies $almp_0, plmp_0, epl_0$, and tw_0 . A permanent change in Sweden's policies takes place in period 1. The policies then become

$$almp_1 = almp_0 + \Delta almp,$$

$$plmp_1 = plmp_0 + \Delta plmp,$$

$$epl_1 = epl_0 + \Delta epl,$$

for the first period and all the following periods. By combining equation (6) and (7) we solve for unemployment.²⁵ We can now find out how the unemployment rate and the tax wedge responds to a policy change, given that Sweden's unemployment rate initially is below the "bad equilibrium" (see *Result 2*).

Iterating the combined equation we derive the dynamics of the unemployment rate, starting from the initial level $u_0 = 0.056$ (the standardized unemployment rate in 2003 according to the OECD). We then calibrate the model for Sweden using the following parameters from the IMF study (Zhou 2007).

²⁵ Please refer to Appendix A for further information.

Table 3. Parameter values for calibration of model.

Parameter	c	ρ	α	β	δ	Φ	γ
Value	-0,002	0,9	0,01	0,01	0,01	0,437	n.a

ρ , α , β , and δ are parameter values for the lagged unemployment rate, ALMP, PLMP, and the tax wedge respectively. c is a country specific constant. Φ is the country specific residual found in Equation (8). The rest of the parameters are values used in the model by Zhou (2007). Note that there is no value for γ , since EPL is excluded from the calibration. One reason for this is that empirical studies fail to find consistent significant results for EPL and when results are significant the impact on unemployment is extremely small (OECD 2006). Another reason is that EPL is measured as an index which this simplistic model does not seem to be able to handle.

We calculate the initial conditions for Sweden using OECD data for 2003 (expressed as fractions of 1):

$$almp_0 = 0.22$$

$$plmp_0 = 0.50$$

$$tw_0 = 0.48$$

The ambitious reader notices that Sweden has a much higher Gross Replacement Rate here than the levels reported in section 4.1. As has been mentioned, countries with a short formal duration will have a rather low value even though remuneration during participation in ALMP is comparable with unemployment benefits as is the case for Sweden. Since Sweden and Denmark have similar levels of the Net Replacement Rate which indicates that they do not differ much when it comes to generosity in the unemployment insurance we correct the low value by letting it equal that of Denmark. Due to this similarity the calibration for Sweden will not include changes in PLMP. Let us now assume that a reform takes places in Sweden, increasing ALMP to Danish levels, i.e. $almp_0 = 0.35$. The simulation results are shown in *Figure 11 and 12*.

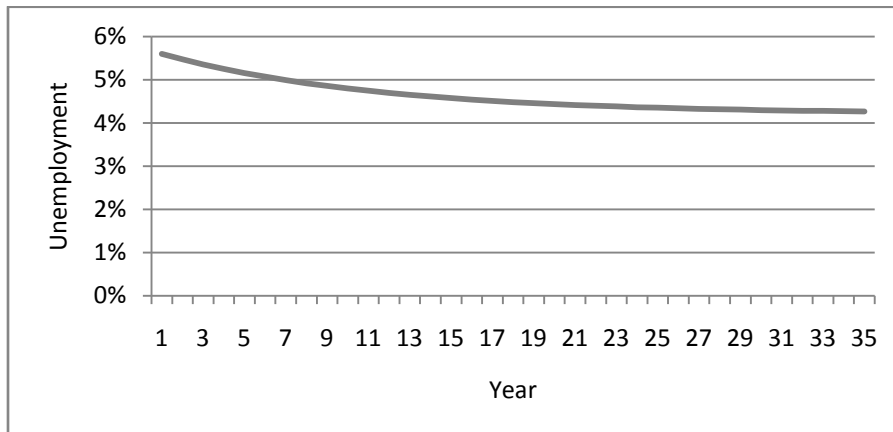
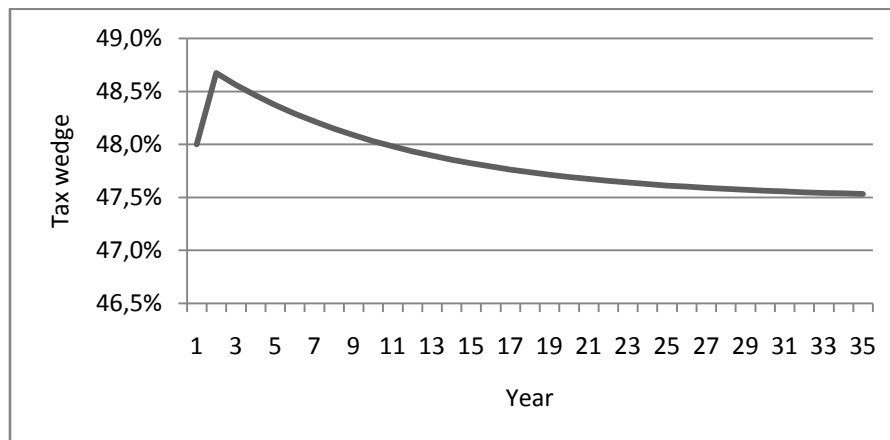
Figure 11. Effect on the unemployment rate in Sweden when increasing ALMP spending to Danish levels.

Figure 12. Effect on the tax wedge in Sweden when implementing an ALMP reform.



Two results emerge: Firstly, the steady-state unemployment rate falls and will be reduced by some 1.5 percent in the long-run. However, it does so very slowly. It takes roughly ten years for the unemployment rate to fall 1 percent. Secondly, the tax wedge widens initially and does not fall below its initial level of 48 percent until ten years after the reform. According to *Result 1 and Result 3*, the higher the initial unemployment rate is the higher the tax wedge would become and the longer time would it take to recover from the tax raise when implementing the Flexicurity model. This suggests that the implementation would be very costly for a country with severe problems of unemployment; Sweden's level does induce costs but not as high as would be the case for a country like France.²⁶

5.2 Model discussion

Mentioned already is the model's disability regarding the EPL-variable since changes in it tends to dominate the outcome. This is due to the fact that the model is formulated as a linear approximation of the unemployment rate close to a steady state value, using only the Flexicurity elements as explanatory variables. Thus, changing the EPL variable tends to give less reasonable results since such a reform would alter the basic structure of the labour market. The big difference between the Swedish and Danish labour market is the latter's less strict employment protection legislation and not being able to simulate this difference is disappointing. On the other hand, empirical studies are not consistent when it comes to the effect of EPL on overall unemployment and often it is hard to find significant results.

When excluding EPL, however, the model is quite robust but of course dependent on the values of the parameters. In order to test the robustness of the model we performed a sensitivity analysis (see *Appendix B*) plugging in respectively the highest and the lowest parameters estimated by the authors summed up in the literature survey earlier on (*Table 2*). In none of the studies examined did the authors do dynamic regressions thus we failed to find other values for the parameter of lagged unemployment. Instead we used Zhou's value. In the lowest value scenario an increase in

²⁶ See calibration for France in Zhou (2007).

active labour market programs would increase unemployment as would the tax wedge. It resulted in an increase in the unemployment rate by approximately 2 percentage points while the tax wedge increased by 1,5 percentage points over the next 35 years. The other scenario where the effect went in the same direction as in the base case, but amplified, resulted in a negative unemployment rate which is not very reasonable. It seems the model is not very robust when it comes to higher parameter values for ALMP.

By this simulation we can, given the original parameter values from Zhou, conclude that an implementation of Flexicurity would result in a modest reduction of the unemployment rate as well as an initial increase of the tax wedge.

6. Exporting Flexicurity?

A crucial question for policy makers and researchers is whether or not the Danish system could be implemented in their home countries. In Sweden Flexicurity has already gained many influential supporters, including Anders Borg, Minister of Finance.²⁷ The EU has also shown interest in the system and recently the European Commission (2007) published a report to “explore the development of a set of common principles on Flexicurity”.

Kongshoj Madsen (2002) points out that the Danish Flexicurity model has been developed over a long period of time, built upon stable institutions and that it has important preconditions in the social-political history of Denmark. Labour and capital struck liberal agreements on high level of worker mobility already in the early 20th century. This system was backed by the trade unions in exchange for a state supported unemployment insurance system supplemented with cash reimbursements for uninsured workers. These two pillars of the Danish labour market constitute the heart of flexibility-security system, and have been present since the late 1960's. As mentioned already the active labour market policies were expanded during the 1990's, while more pressure was exerted on the unemployed both to look for work and to qualify for benefits. Kongshoj Madsen concludes (p. 156) that “...it [Flexicurity] should be taken as a source of inspiration for new ideas about alternative configurations of flexible labour markets and economic security for the individual – not as a simple scheme, which is ready for immediate export.”

Andersen and Svarer (2006) states there is a strong link between Flexicurity and the rest of the Danish welfare system. Therefore, implementing the system in other institutional environments may be difficult. They also mention that even though unemployment is low there is a growing number of benefit dependants in Denmark. Further, they find that the main reason behind the low unemployment rates in Denmark is the tightening of the eligibility criteria for receiving unemployment benefits. Calmfors (2007)²⁸ also argues that the decline in unemployment the last

²⁷ Dagens Industri, “Danmark förebild för Anders Borg”, 2007-05-11

²⁸ Sieps 2007

decade has been associated with a large reduction in the generosity of unemployment benefits e.g. duration has been limited to four years rather than being infinite as previously.

A difference between the two countries is the business culture. Danish manufacturing industry is dominated by small and medium sized firms while in Sweden this sector mainly consists of large firms (Westerlund 2006). This should be one reason why the employment legislation by tradition has been less strict on the other side of the strait. Also, while Swedish incumbent workers gain security through the law (“Lagen om anställningsskydd”), Danish workers get their security through mobility and high replacement rates.

There are two presumably negative effects that are remarkably often left out in the vast amount of literature on Flexicurity. The first one concerns the incentives of employers to train and educate their workforce. On a labour market with a high degree of mobility, firms might find it unattractive to train workers since they may leave for more attractive jobs (Björling 2007). The other concern is that the Danish labour market with activation policies and strict eligibility criteria has not yet faced a severe recession. So far it is unclear what would happen should unemployment start to rise rapidly (Andersen and Svarer 2006). In addition, the same authors note that the Danish government’s austerity measures during the 1990’s were enforced during boom years which made it politically easier to argue for stricter eligibility rules.

7. Concluding discussion

The debate on Flexicurity in Sweden has mainly concerned the importance of the employment protection legislation (“arbetsrätten”). Therefore we start this last section by concluding that we could not find any clear empirical evidence that a less stringent EPL would in fact lower *total* unemployment. Our finding in *Figure 9* suggests that countries with a strict EPL would not be able to create as many new jobs after a shock as economies with a less strict legislation. We also find that a looser legislation would benefit employment levels for marginalized groups, such as youth. In fact, the youth unemployment rate is one of the major differences between Denmark and Sweden. This could potentially be explained by the country variation in EPL. Another consequence of Sweden’s stricter EPL is that twice as many in the labour force work on temporary contracts. Although these contracts help firms to side-track EPL it is likely that the long run effect shields insiders. Thus, the labour market might polarize with a protected insider group and an “easy-to-fire” outsider group. As long as insider power remains strong there will be no downward pressure on wages. This implies that the Swedish labour market is less likely to clear and reach the low levels seen before the 1990’s. This year’s wage negotiations, with wage increases reaching 4.6 percent for the following three years, do not facilitate a decrease in unemployment. Our assessment is that lowering EPL (that is, reforming LAS) is not likely to occur in Sweden at the moment since the powerful trade unions and the largest party will oppose it. Also, the leading party in the present centre-right government recently decided not to alter

EPL. We believe the unwillingness to change EPL derives from the risk of upsetting potential voters and distancing the government from the trade unions.

Understanding the difference in EPL between Denmark and Sweden one must put the two countries' in their historical context. In Denmark EPL has hardly existed but on the other hand benefit levels have been high thus securing income for the unemployed. In that sense both labour and capital have benefited. However, we believe that this trade-off between mobility and security is not feasible in Sweden since benefit levels are high already. If benefit levels will not be raised it is unlikely that labour would agree on a less strict EPL. Perhaps the most important implication for Sweden is that low Danish EPL can hardly explain the country's recent success in fighting unemployment. In the 1970's and 1980's when unemployment plagued Denmark, EPL was on the same levels as it is today. What has changed is that during the 1990's benefit durations were reduced substantially and eligibility criteria tightened, although they are still at high levels in an international perspective. It should be noted that these changes were made in an economic upswing, thus making it easier to propose stricter rules since fewer people were out of work. In Sweden too, there has been changes in PLMP in the last decade but not to the same extent as in Denmark.

In our model we found that increasing spending on active labour market programs would decrease unemployment in the long run. This is also consistent with theory; the disincentive effects arising due to generous benefit systems can be offset by high spending on ALMP, mainly through the ex-ante threat effect. As mentioned though, ALMP is a blunt and costly instrument with program effectiveness differing substantially. Obviously, it is important that policy makers create programs that diminishes, not hides, unemployment.

Danish business structure has traditionally been based on small and medium sized companies while in Sweden large export based companies have dominated business life (which is also one factor that explains EPL differences). Now in the wake of globalization, labour intense industries in Sweden are moving abroad and the importance of the service economy grows, the more so since this sector is benefiting from tax cuts and deregulation. It is therefore reasonable to assume that the Swedish business structure will move towards and resemble the Danish structure over time. Arguing for a reformed labour market in a changing economy seems rational. If the service economy of the future is to thrive and flourish in a globalized world, new thinking from the policy makers is needed. In that sense, Flexicurity may be seen as a source of inspiration.

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9. Appendix

A. Mathematical Description of the Theoretical Model on Flexicurity

The model is based on Equation (6) which describes the dynamics of unemployment as a function of policies,

$$u_t = c + \rho u_{t-1} - \alpha almp_t + \beta plmp_t + \gamma epl_t + \delta tw_t, \quad (6)$$

and Equation (7) showing the budget constraint,

$$(1 - u)L_t W_t tw_t = (1 - u_t)L_t W_t \emptyset + u_t L_t W_t (almp_t + plmp_t). \quad (7)$$

It implies that any expenditure on active or passive labour market policies is financed by a rise in taxes on labour income.

Result 1 is derived in the following way:

Rewrite Equation (7) and solve for the tax wedge,

$$tw_t = \emptyset + \frac{u_t}{1-u_t} (almp_t + plmp_t). \quad (8)$$

By taking the derivative of Equation (9) we get

$$\frac{\partial tw_t}{\partial almp_t} = \frac{\partial tw_t}{\partial plmp_t} = \frac{u_t}{1-u_t},$$

which means that the fiscal effect increases more than proportionately with the unemployment level. For example, a unit increase in $almp_t$ implies that tw_t will increase more than proportionally with the unemployment level.

In order to obtain *Result 2* we start by replacing tax wedge in Equation (6) by Equation (8) and setting $u_t = u_{t-1}$. This gives us the long-run steady state relationship between the unemployment rate and the policies:

$$(1 - \rho)u = c + \delta \emptyset - \alpha almp + \beta plmp + \gamma epl + \delta \frac{u}{1-u} (almp + plmp) .$$

It can be written as a second-order equation for the unemployment rate:

$$u^2 - \lambda u + \mu = 0,$$

with

$$\lambda = 1 + \frac{c + \delta \emptyset - (\alpha + \delta) almp + (\beta - \delta) plmp + \gamma epl}{1 - \rho}, \text{ and}$$

$$\mu = \frac{c + \delta\phi - \alpha almp + \beta plmp + \gamma epl}{1 - \rho}.$$

The long-run unemployment rate in steady state is

$$u = \frac{\lambda \pm \sqrt{\lambda^2 - 4\mu}}{2}.$$

This multiple equilibrium is due to the two-way causality between the level of the unemployment rate and the tax wedge. A large tax wedge tends to increase unemployment, resulting in bigger public spending on unemployment benefits which will cause even larger taxes on labour income.

In order to prove that only the low unemployment rate is stable we can use Equations (6) and (8) to get:

$$u_t^2 - (\eta + \rho u_{t-1})u_t + \rho u_{t-1} + \eta - 1 + \delta(almp_t + plmp_t) = 0, \quad (9)$$

where

$$\eta = 1 + c + \delta\phi - (\alpha + \delta)almp_t + (\beta - \delta)plmp_t + \gamma epl_t.$$

Differentiating Equation (10), we get the first derivative of the unemployment rate period t with respect to the unemployment rate in the previous period:

$$\frac{\partial u_t}{\partial u_{t-1}} = \frac{\rho}{1 - \delta(almp_t + plmp_t)/(1 - u_t)^2}.$$

Since $\frac{\partial u_t}{\partial u_{t-1}}$ increases with u_t , it implies that if there are two equilibrium the one with the higher rate is unstable due to $\left| \frac{\partial u_t}{\partial u_{t-1}} \right| > 1$. The stable long-run equilibrium will be

$$u^* = \frac{\lambda - \sqrt{\lambda^2 - 4\mu}}{2}$$

The unemployment rate u_t converges toward u^* if and only if it is initially lower than the unstable equilibrium,

$$u^{**} = \frac{\lambda + \sqrt{\lambda^2 - 4\mu}}{2}.$$

Result 3 is based on the following equation which is only a rewriting of Equation (9)

$$\left[(1 - \rho) - \frac{\delta}{1 - u} (almp + plmp) \right] u = c + \delta \emptyset - \alpha almp + \beta plmp + \gamma epl.$$

By solving u_t in Equation (9) and given that the initial unemployment rate is lower than the unstable equilibrium the dynamic equation of the unemployment rate is

$$u_t = \frac{1}{2} \left[\eta + \rho u_{t-1} - \sqrt{(\eta + \rho u_{t-1})^2 - 4(\eta + \rho u_{t-1} - 1 + \delta(almp + plmp))} \right].$$

B. Sensitivity analysis

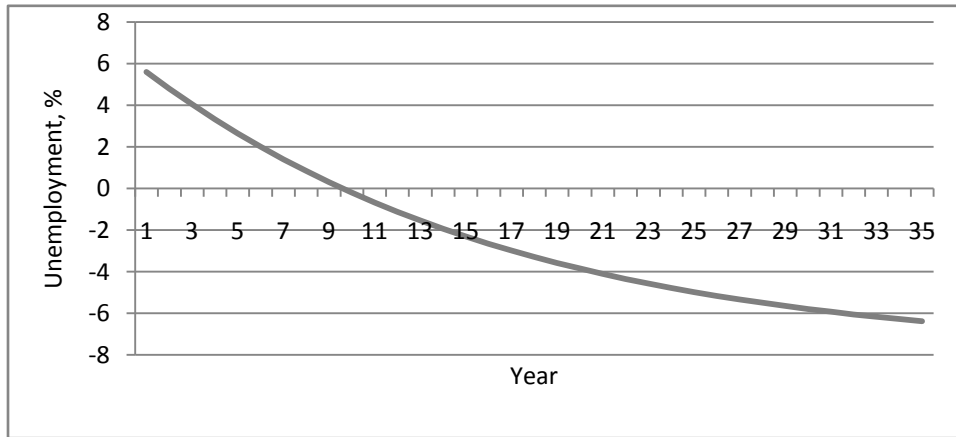
The cross-country studies examined in this thesis derive different results regarding the Flexicurity components' effect on unemployment. Therefore, in addition to our base case we look at two different scenarios with the highest respectively lowest parameter values from these studies. The chosen parameters are as follows:

Table 4. Parameter values for sensitivity analysis

Parameter	α	β	δ
High ²⁹	0,06	0,15	0,052
Low ³⁰	-0,001	0,0002	0,047

High respective low parameter values yields the following results when the ALMP-level is changed to Danish levels in period 1:

Figure 13. Effect on unemployment with high parameter values.



²⁹ α :Scarpetta (1996); β :Gaard (2005); δ :Zhou (2007)

³⁰ α :Zhou (2007); β :Zhou (2007); δ :Gaard (2005)

Figure 14. Effect on tax wedge with high parameter values.

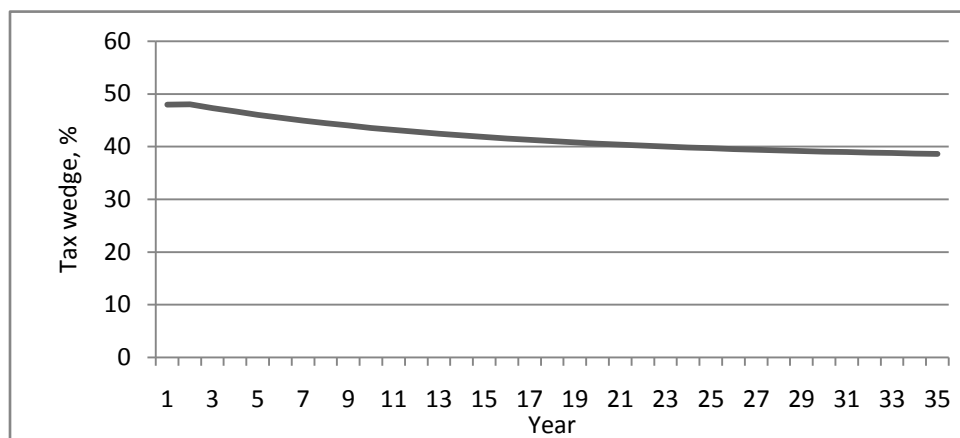


Figure 15. Effect on unemployment with low parameter values.

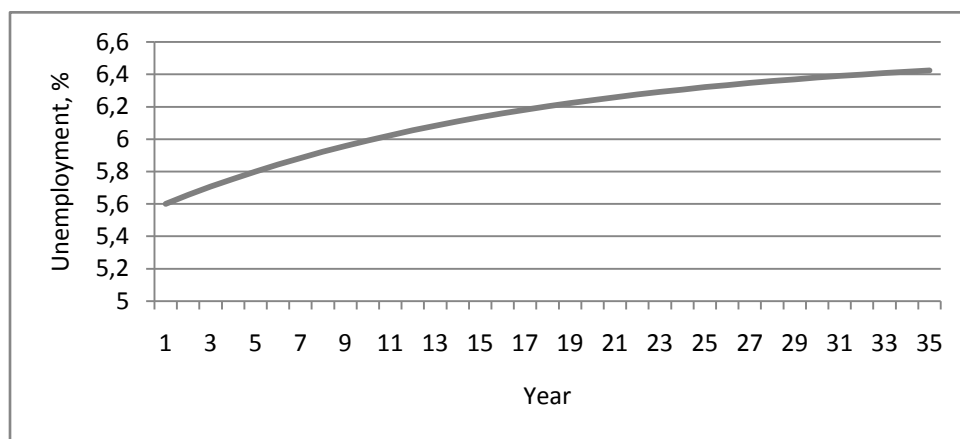


Figure 16. Effect on tax wedge with low parameter values.

