Lecture 3: **Intermediate macroeconomics, autumn 2008**

Lars Calmfors

Determinants of growth

- Long run (20-30 years)
  - Total factor productivity growth
  - Capital stock growth
- Short run (year to year)
  - aggregate demand and degree of resource utilisation
- Medium term (10 years)
  - Functioning of the labour market and equilibrium employment

Table 4.12

Hours worked

	Average annual hours worked per person of working age, 2005[a]	Rank	Average annual hours worked per employed person, 2005	Rank	Revised annual hours worked per employed person, 2002[b]	Rank
Denmark	1171	9	1551	16	1410	13
Finland	1133	13	1666	11	1491	9
Sweden	1166	10	1587	15	1349	14
Average Scandinavian countries	**1158**	-	**1601**	-	**1417**	-
Austria	1122	14	1636	13	1497	8
Belgium	936	20	1534	18	1451	12
France	956	18	1535	17	1467	11
Germany	940	19	1435	19	1480	10
Greece	1238	6	2053	2	1816	1
Ireland	1099	15	1638	12	1585	5
Italy	1030	16	1791	6	1533	7
Netherlands	984	17	1367	20	1223	15
Portugal	1137	12	1685	9	1688	2
Spain	1141	11	1775	7	1639	3
Euro area except Finland	**1043**	-	**1645**	-	**1538**	
Switzerland	1258	5	1629	14	1586	4
UK	1214	8	1672	10	1546	6
US	1290	4	1804	5	-	-
Australia	1297	3	1811	3	-	-
New Zealand	1350	2	1809	4	-	-
Average Anglo-Saxon countries	**1288**	-	**1774**	-	-	-
Japan	1230	7	1775	7	-	-
South Korea	1525	1	2394	1	-	-

Notes: [a] Average annual hours worked per person of working age have been calculated as hours per employed person times the employment rate. Hours worked per employed person for Korea and Switzerland are for 2004, employment rates for Sweden and the Netherlands are for 2004. – [b] Absences due to sickness and parental leave have been counted twice to adjust for underreporting by respondents in labour force surveys.

Source: For average annual hours worked per person of working age and average annual hours worked per employed person: OECD (2006c). For revised annual hours worked per employed person: OECD (2004a).

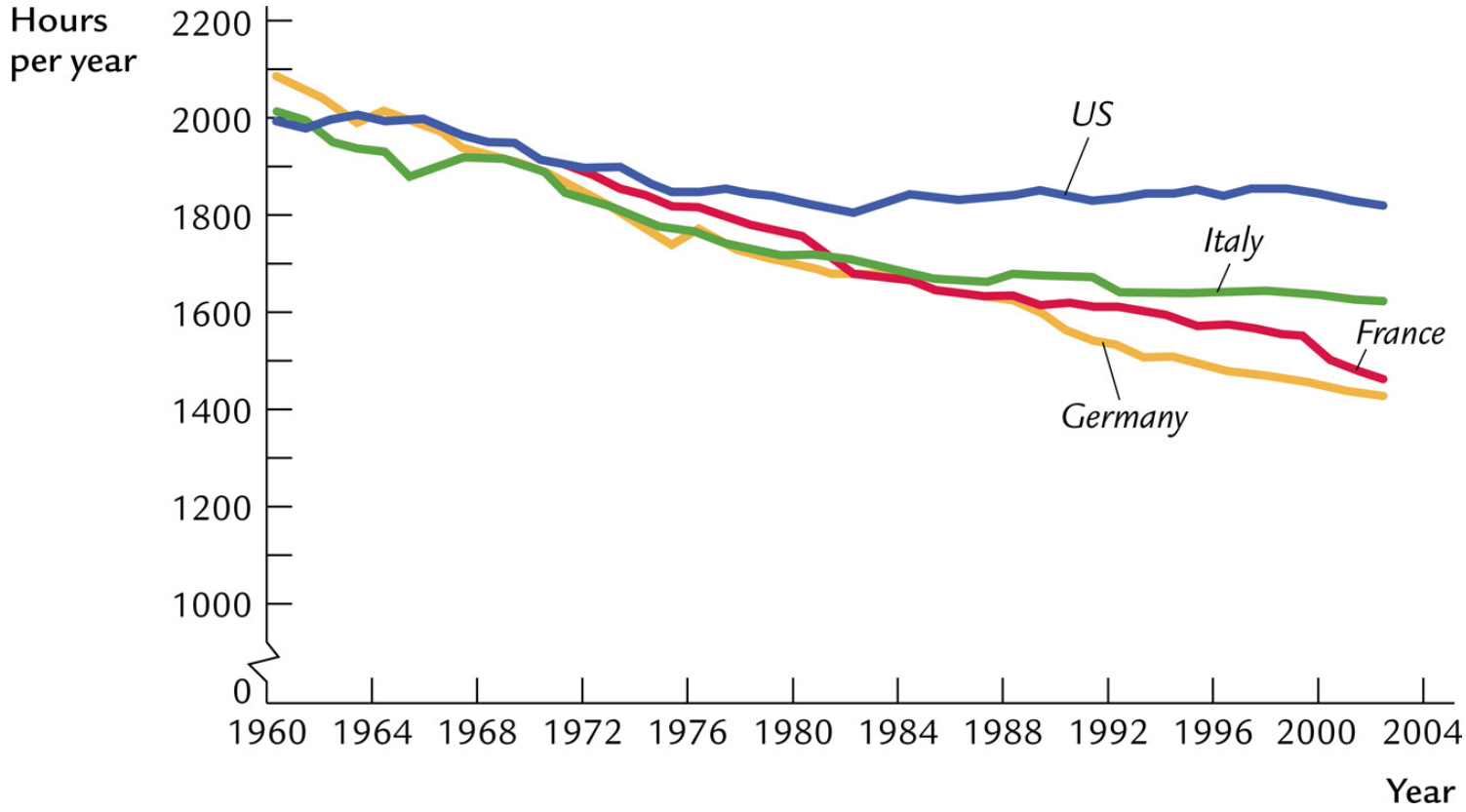


Figure 6-5: Annual Hours Worked per Employed Person

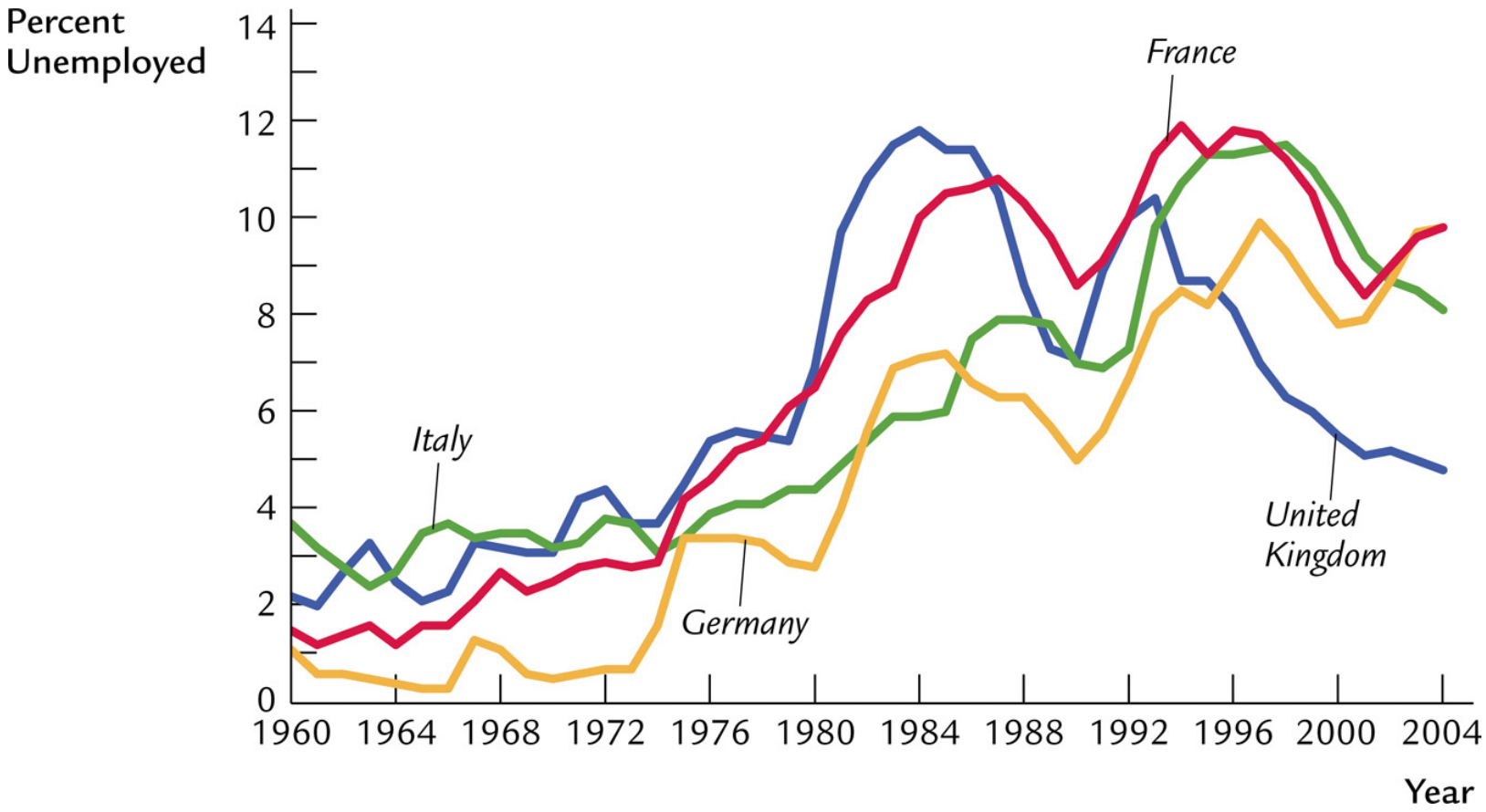
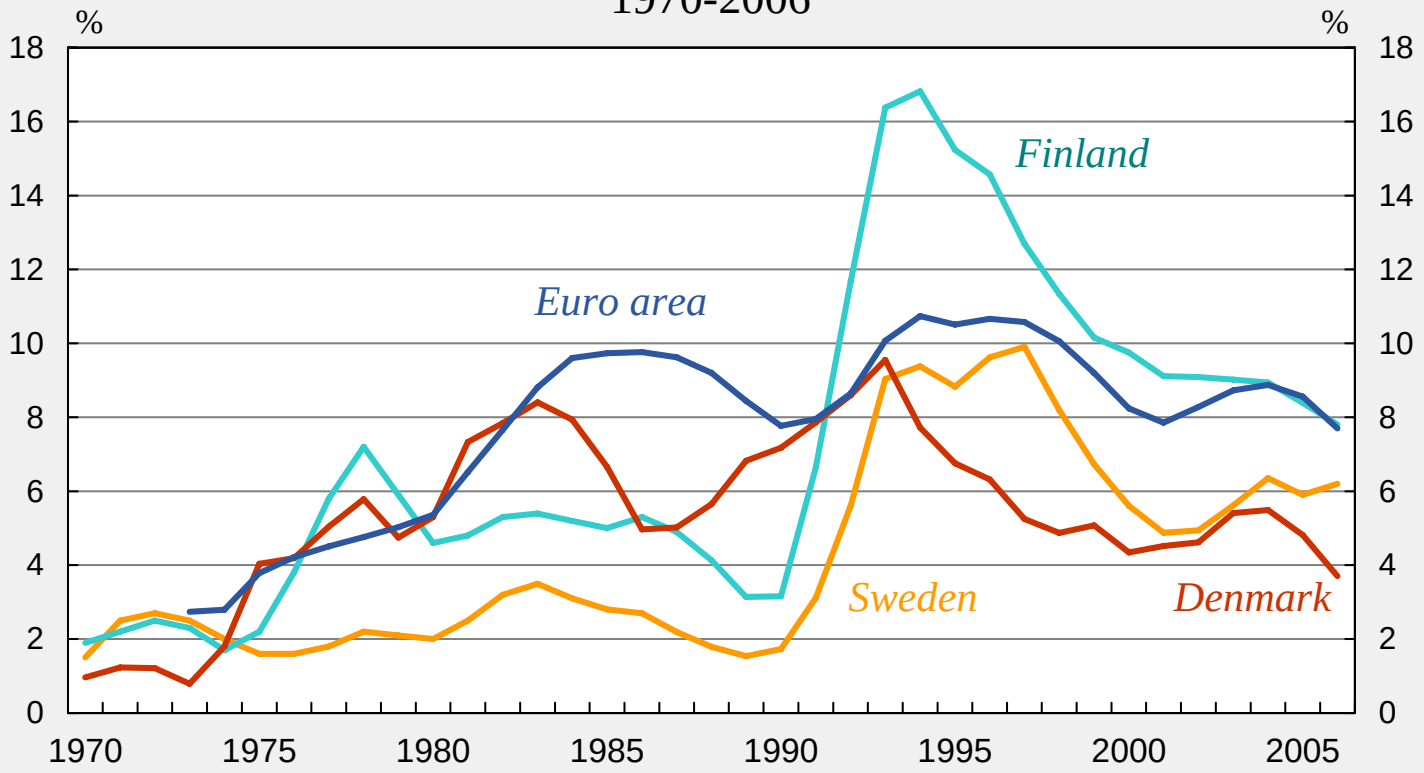


Figure 6-1: Unemployment in Europe

Fig. 4.6

Standardised unemployment rates, percentages of labour force

1970-2006



Note: For Denmark and the euro area, standardised unemployment rates for earlier years have been constructed from non-standardised unemployment rates by adjusting these for differences in overlapping five-year averages. The 2006 unemployment figures have been obtained by adjusting non-standardised figures from OECD (2006d), for differences in overlapping five-year average between non-standardised and standardised series.

Sources: OECD Economic Outlook Database, OECD (2006c) and OECD (2006d).

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Table 4.10

Employment rates, percentages of population in various age and gender groups, 2005

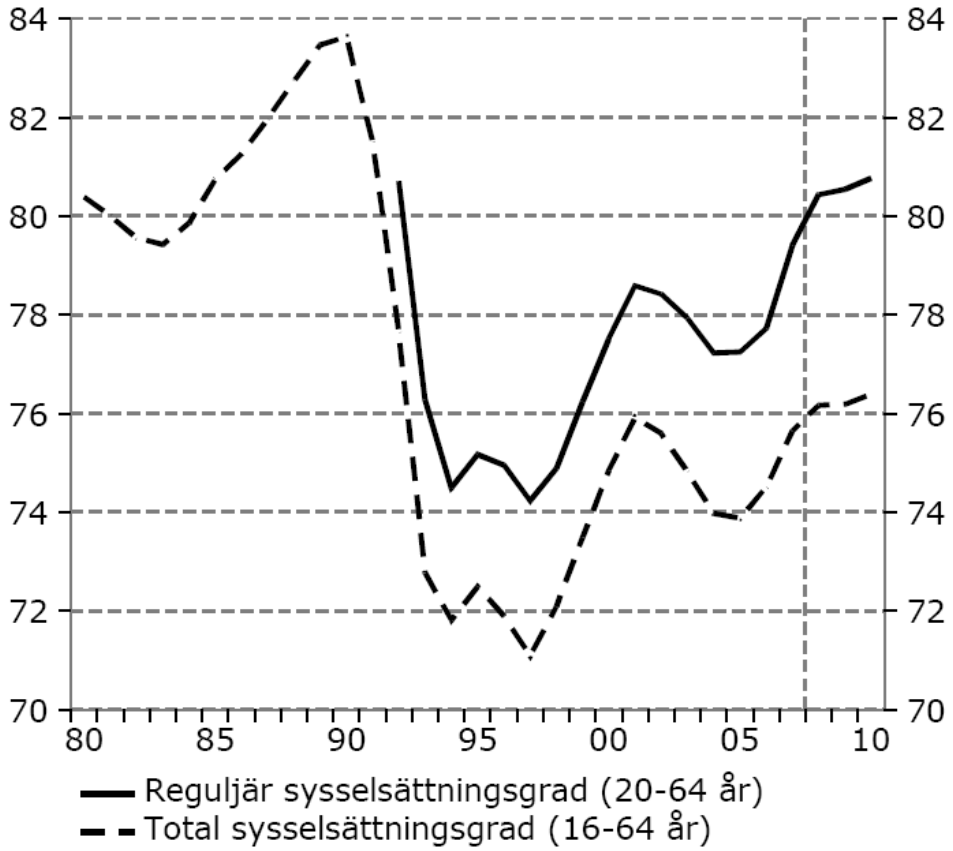
	Total 15–64	Men 15–64	Women 15–64	Total 15–24	Total 25–54	Total 55–64
Denmark	75.5	80.1	70.8	62.0	83.9	59.8
Finland	68.0	69.4	66.5	39.2	81.7	52.6
Sweden[a]	73.5	75.0	71.8	51.5	82.9	69.5
Average Scandinavian countries	**72.3**	**74.8**	**62.7**	**50.9**	**82.8**	**60.6**
Austria	68.6	75.4	62.0	53.1	82.6	31.8
Belgium	61.0	67.7	54.1	26.6	78.3	32.1
France	62.3	67.8	56.9	26.0	79.6	40.7
Germany	65.5	71.4	59.6	42.6	77.4	45.5
Greece	60.3	74.5	46.2	25.3	74.3	41.6
Ireland	67.1	76.2	58.0	46.3	78.0	51.7
Italy	57.5	69.7	45.3	25.5	72.2	31.4
Netherlands[a]	72.0	78.8	65.0	63.6	81.5	44.8
Portugal	67.5	73.4	61.7	36.1	80.8	50.5
Spain	64.3	76.4	51.9	41.9	74.7	43.1
Average euro area except Finland	**63.4**	**71.7**	**55.2**	**36.2**	**76.9**	**41.0**
Switzerland	77.2	83.9	70.4	59.9	85.1	65.0
UK	72.6	78.6	66.8	58.1	81.1	56.8
US	71.5	77.6	65.6	53.9	79.3	60.8
Australia	71.6	78.5	64.7	63.6	78.8	53.7
New Zealand	74.6	81.5	68.0	56.9	82.0	69.7
Average Anglo-Saxon countries	**72.6**	**79.1**	**66.3**	**58.1**	**80.3**	**60.3**
Japan	69.3	80.4	58.1	40.9	79.0	63.9
South Korea	63.7	75.0	52.5	29.9	73.4	58.7

Note: [a] 2004.

Sources: OECD LFS Database and OECD (2006c).

Diagram 127 Sysselsättningsgrad

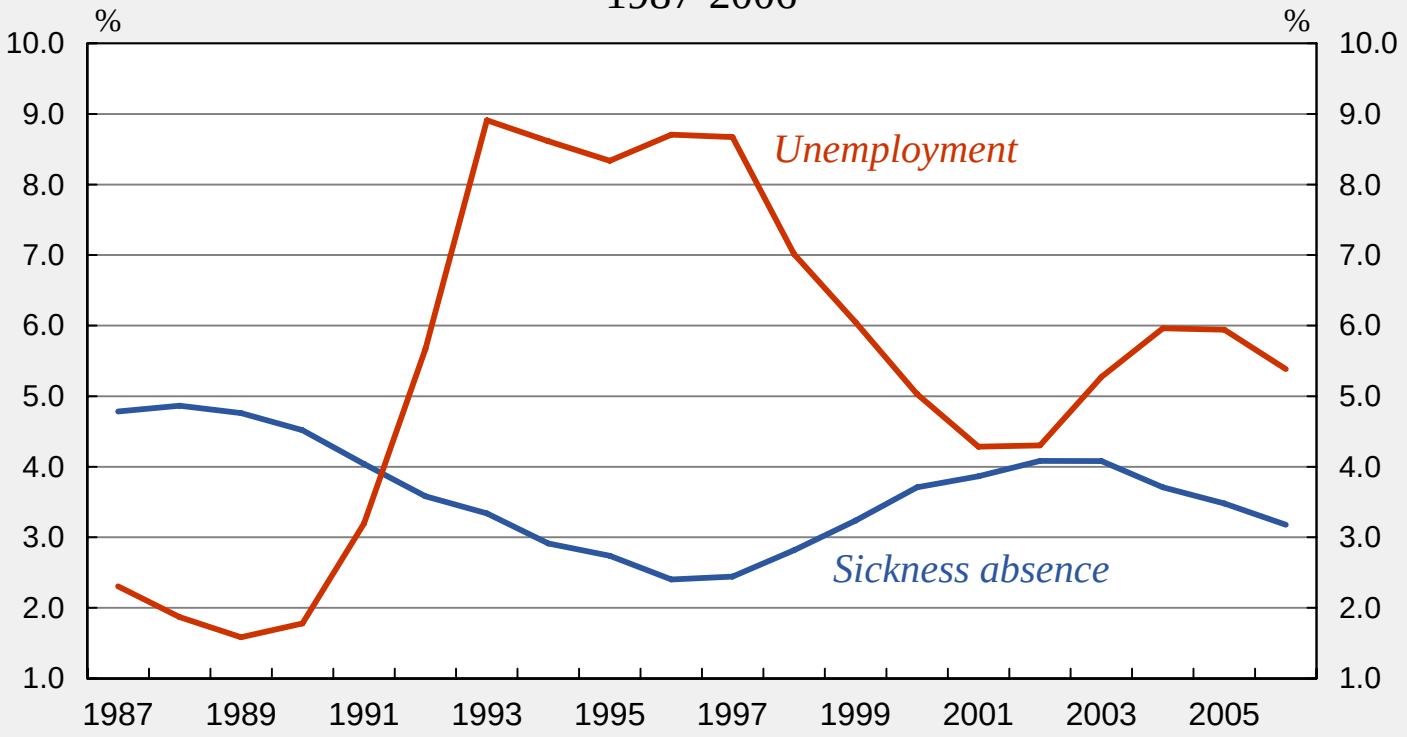
Andel sysselsatta i procent av befolkningen i respektive åldersgrupp



Källor: SCB och Konjunkturinstitutet.

Fig. 4.13

Sickness absence and unemployment in Sweden
1987-2006



Note: Sickness absence is measured as a percentage of the employed. Unemployment is measured as a percentage of the labour force.

Sources: Konjunkturinstitutet, Stockholm and SCB, Stockholm.

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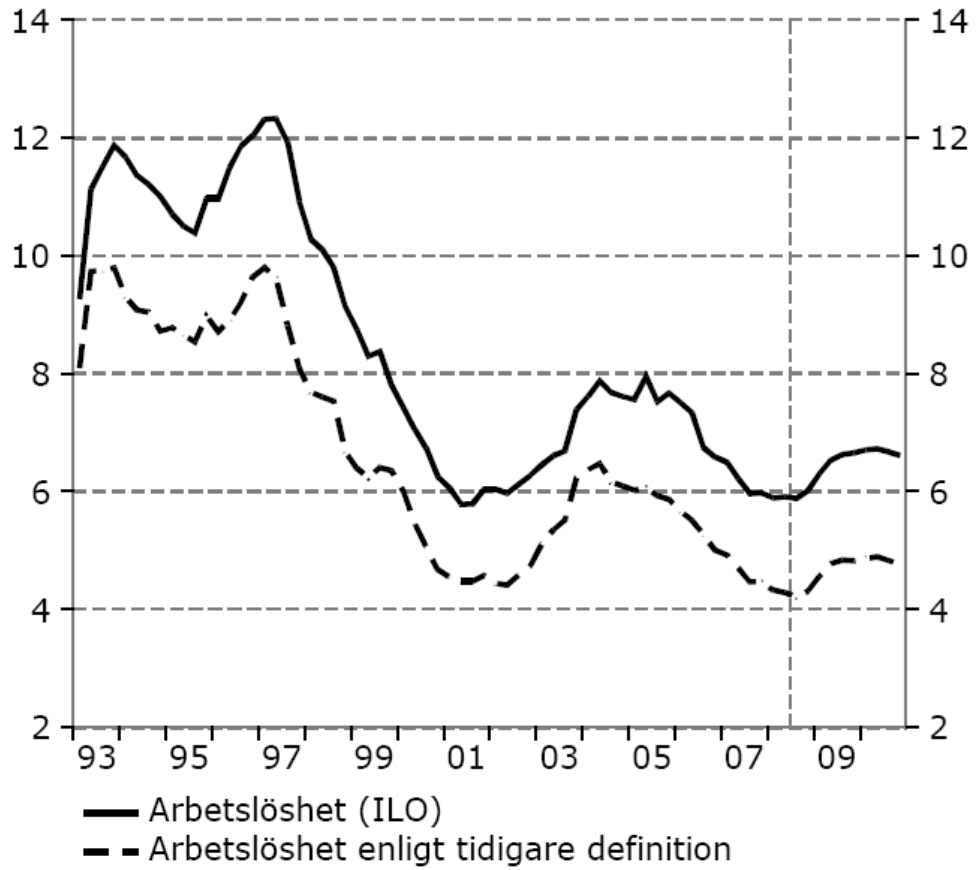
Diagram 134 Arbetslöshet

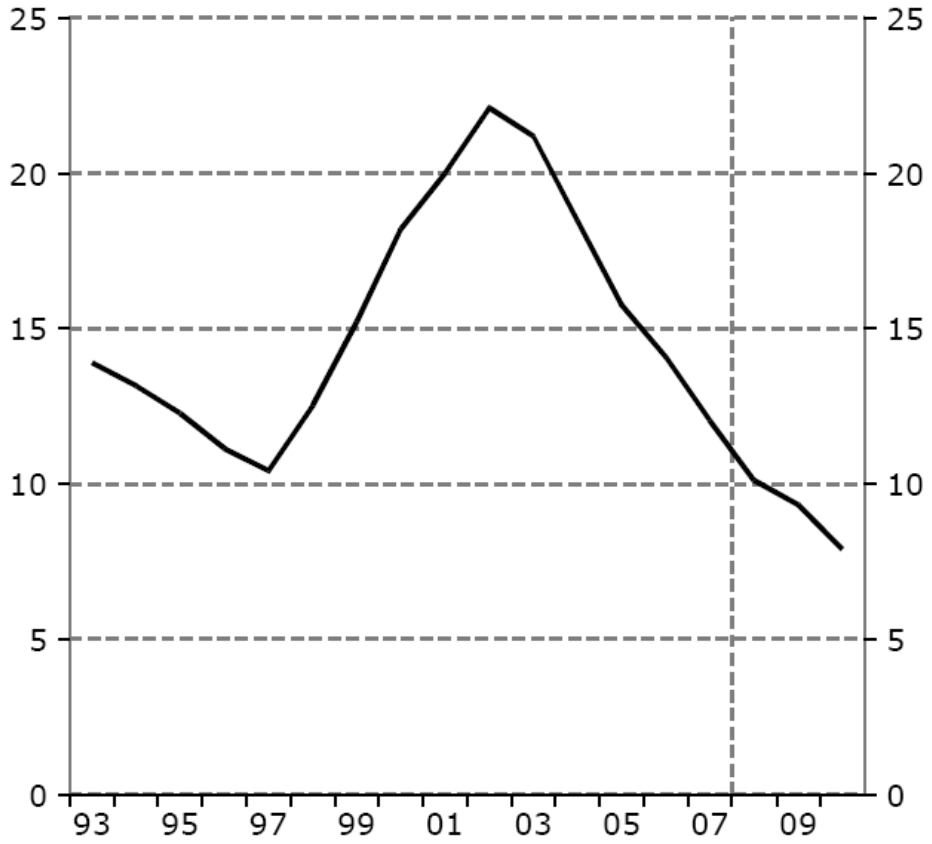
Procent av olika mått på arbetskraften, säsongrensade kvartalsvärden



Källor: SCB och Konjunkturinstitutet.

Diagram 183 Antal sjukpenningdagar per sysselsatt

Antal dagar

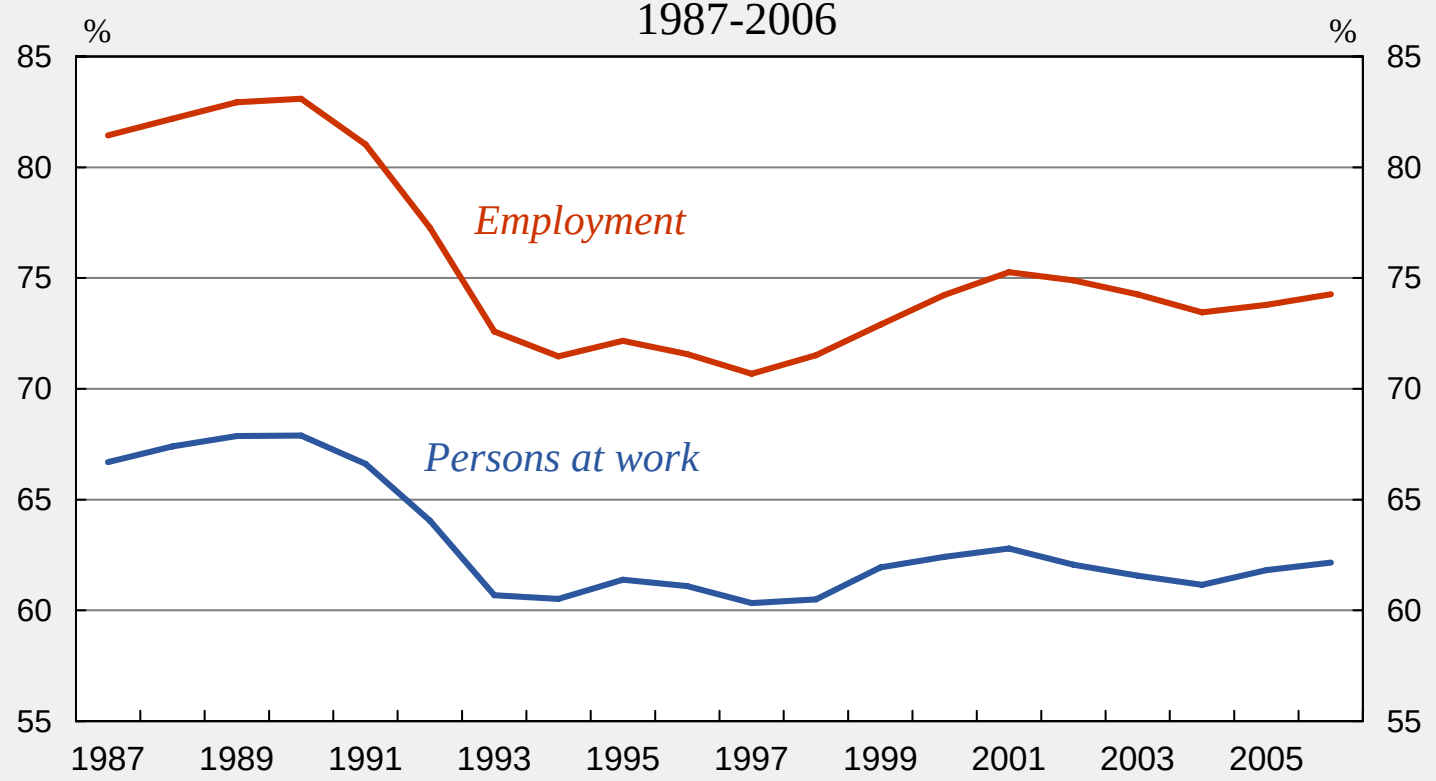


Källor: Försäkringskassan, SCB och Konjunktur-institutet.

Fig. 4.14

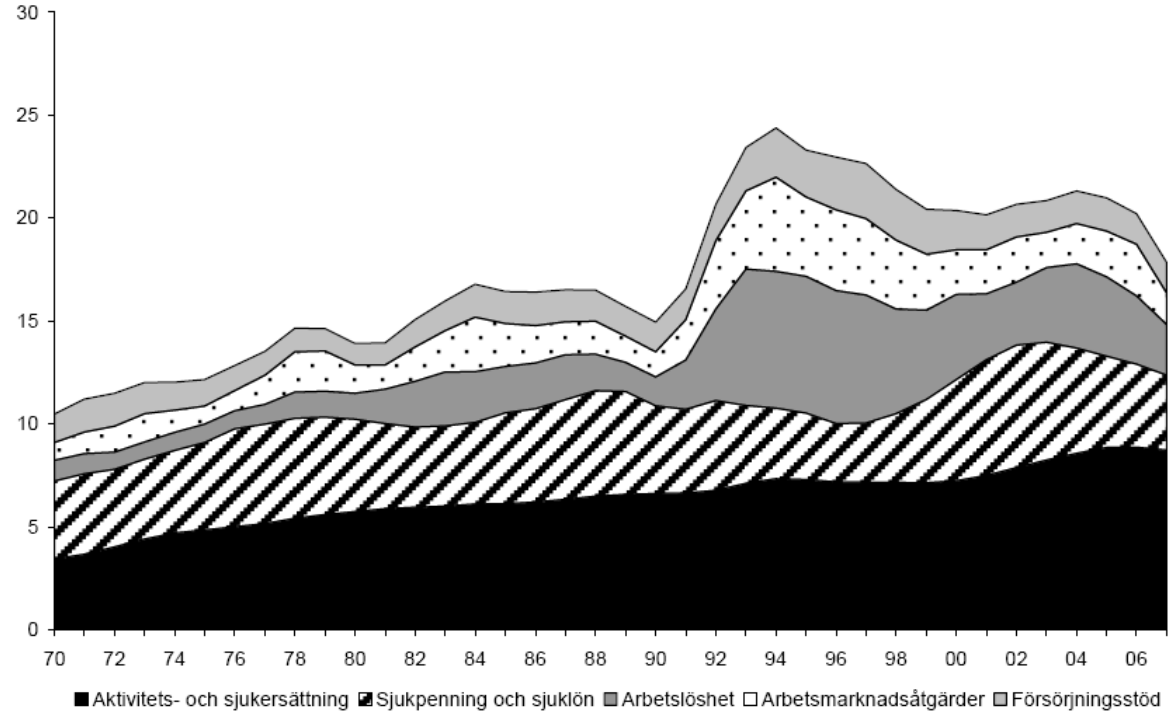
Persons at work and in employment as percentages of working-age population in Sweden

1987-2006



Sources: Konjunkturinstitutet, Stockholm and SCB, Stockholm.

Figur 6.1 Andel personer med ersättning från trygghetssystem (procent av antalet folkbokförda 20-64 år)



Anm: Figuren anger helårsekvivalenter. Det betyder t ex att två personer som varit halvtidssjukskrivna under ett helt år summerar till en sjukskriven person.
Källa: Finansdepartementet.

Causes of unemployment

1. **Insufficient demand – the Keynesian view**

- **Cyclical unemployment**

2. **A badly functioning labour market – the neoclassical view**

- **equilibrium rate of unemployment**
- **natural rate of unemployment**
- **NAIRU (non-accelerating inflation rate of unemployment), i.e. the unemployment rate consistent with stable inflation**
- **NAWRU (non-accelerating wage rate of unemployment), i.e. the unemployment rate consistent with stable nominal wage growth**
- **structural unemployment**
- **frictional unemployment**

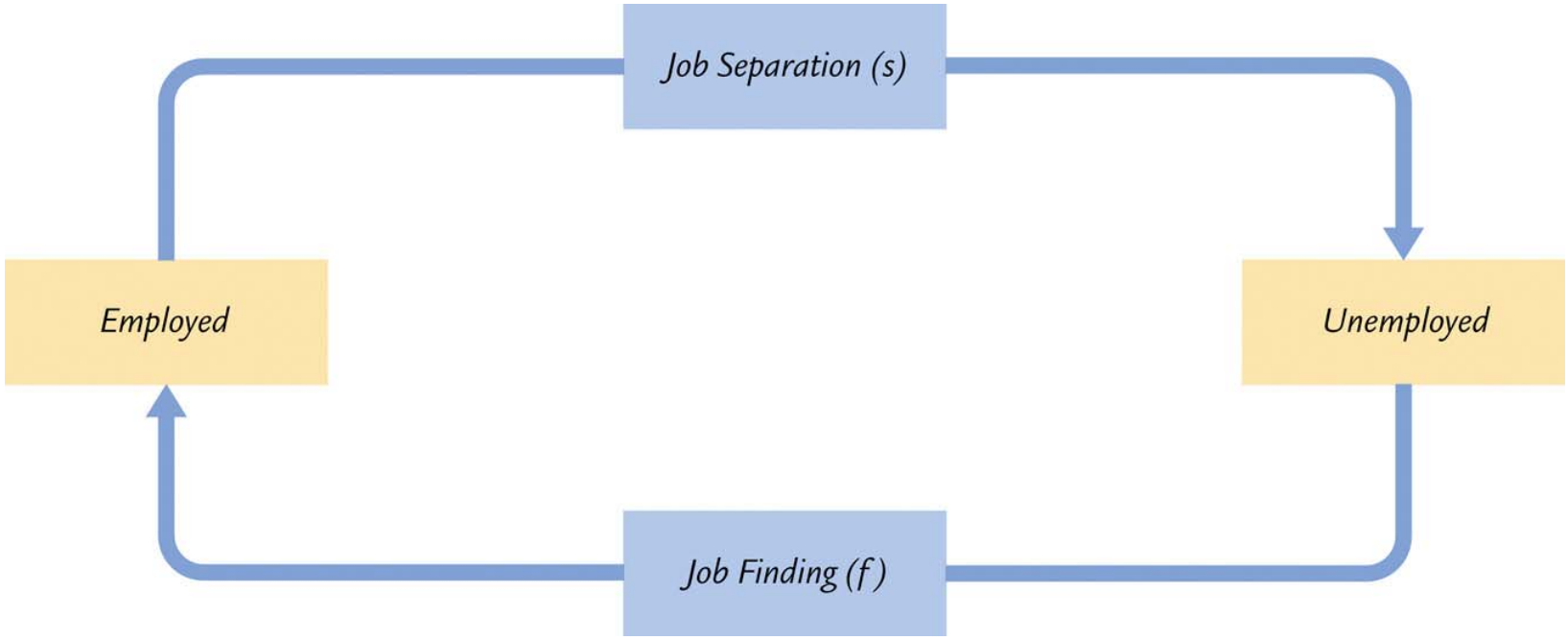


Figure 6-2: The Transitions Between Employment and Unemployment

Unemployment and labour market flows

***U* = the number of unemployed**

***E* = the number of employed**

***L* = labour force**

***s* = probability of separation (the fraction of the employed separated from their jobs)**

***f* = probability of job finding (the fraction of the unemployed who find a job)**

Steady state

- **Constant employment and constant unemployment from period to period**

Inflow into employment = Outflow from employment

Outflow from unemployment = Inflow into unemployment

$$fU = sE$$

$$f \cdot U = s \cdot (L - U)$$

$$f \cdot U/L = s \cdot (1 - U/L)$$

$$U/L = s/(s + f)$$

Unemployment rate = probability of separation/ (probability of separation + probability of job finding)

$U/L = s/(s + f)$

$s = 0{,}01,\ f = 0{,}20 \Rightarrow U/L = 0{,}01/0{,}21 \approx 0{,}05$

Unemployment rises if the outlow from employment (*s*) increases or the outflow from unemployment (*f*) decreases

$s = 0{,}02,\ f = 0{,}20 \Rightarrow U/L = 0{,}02/0{,}22 \approx 0{,}09$

$s = 0{,}01,\ f = 0{,}10 \Rightarrow U/L = 0{,}01/0{,}11 \approx 0{,}09$

***f* could fall because the fraction of long-term unemployed increases and because their job finding probability is lower than that of short-term unemployed**

– persistence – hysteresis

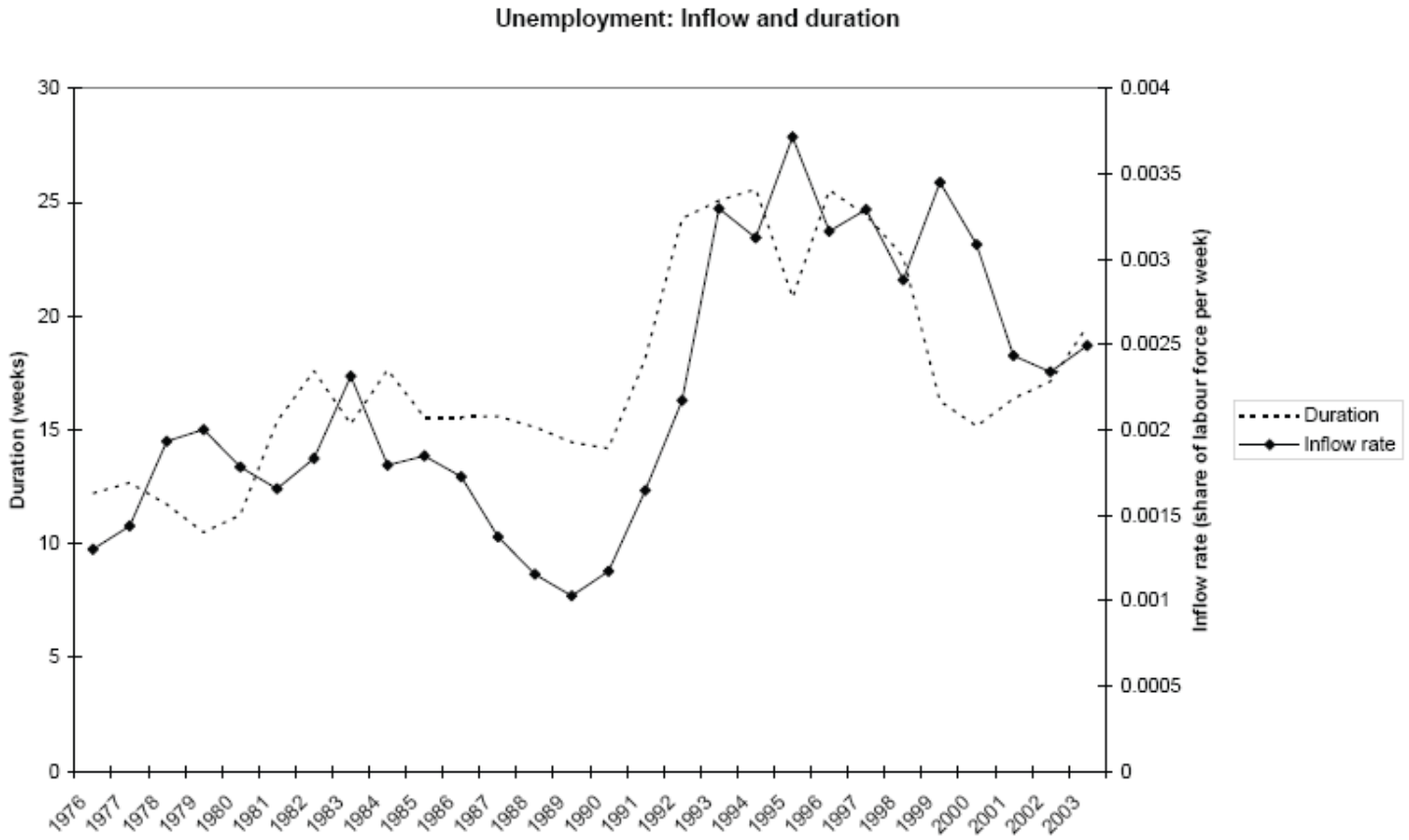


Figure 6 Inflow to unemployment (right-hand scale) and the duration of unemployment (left-hand scale), 1972-2002, 16-64 years.

Why are job-finding rates lower for the long-term unemployed

- **Discouraged worker effect**
- **Lower productivity because of cumulative loss of human capital during period of unemployment**
- **Statistical discrimination on the part of employers (on average the long-term unemployed are less productive)**

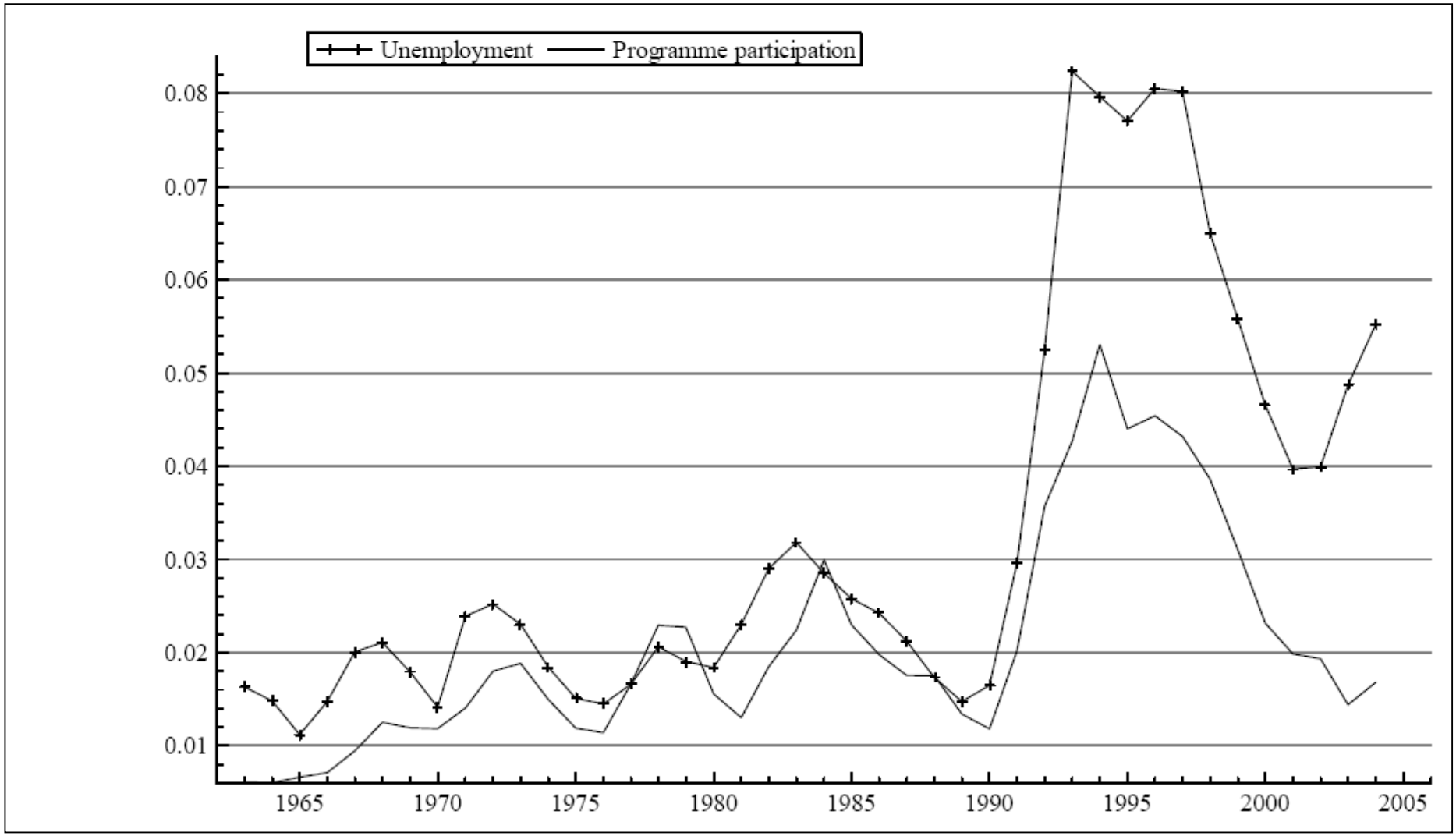


Figure 2: Unemployment and programme participation (1963-2004 (shares of labour force)

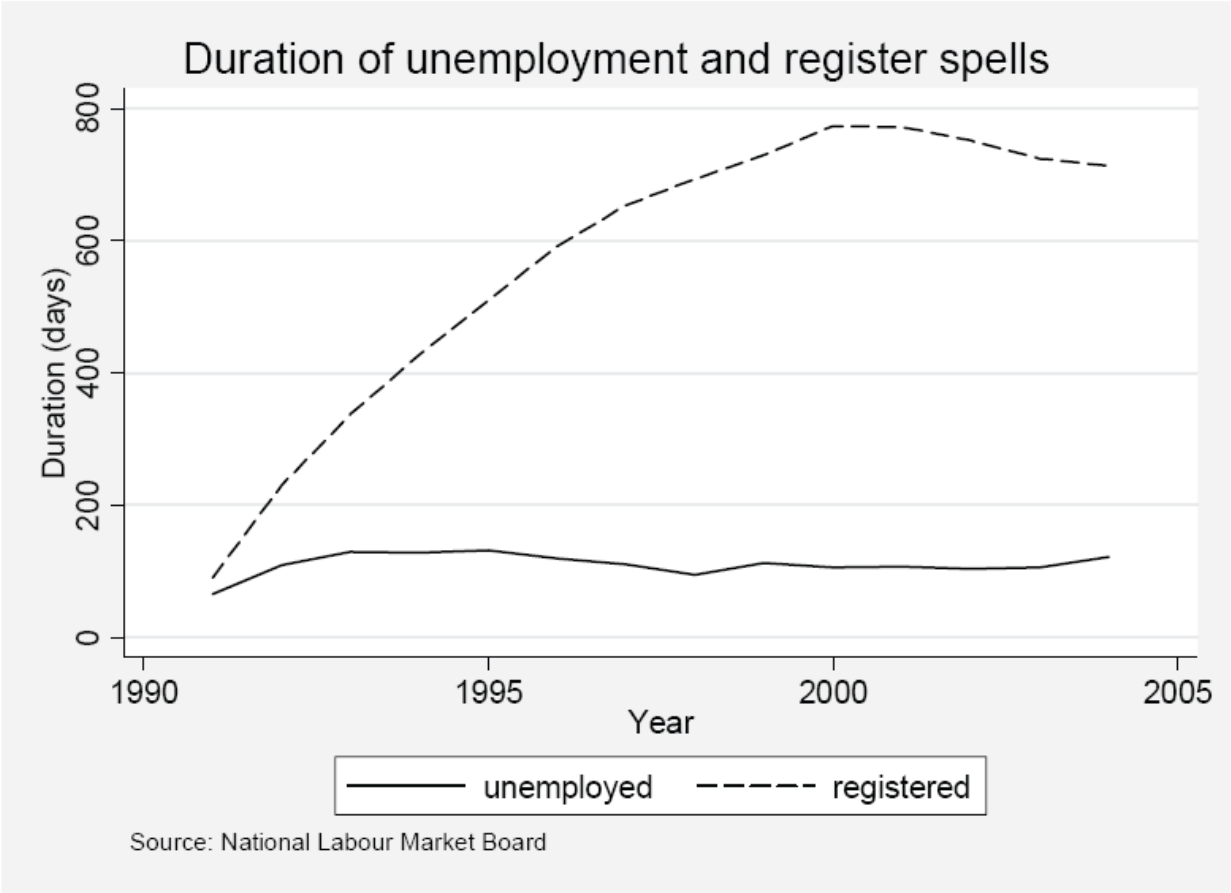


Figure 10: Duration of ongoing unemployment and register spells at the Public employment service, averages

Unemployment insurance and unemployment

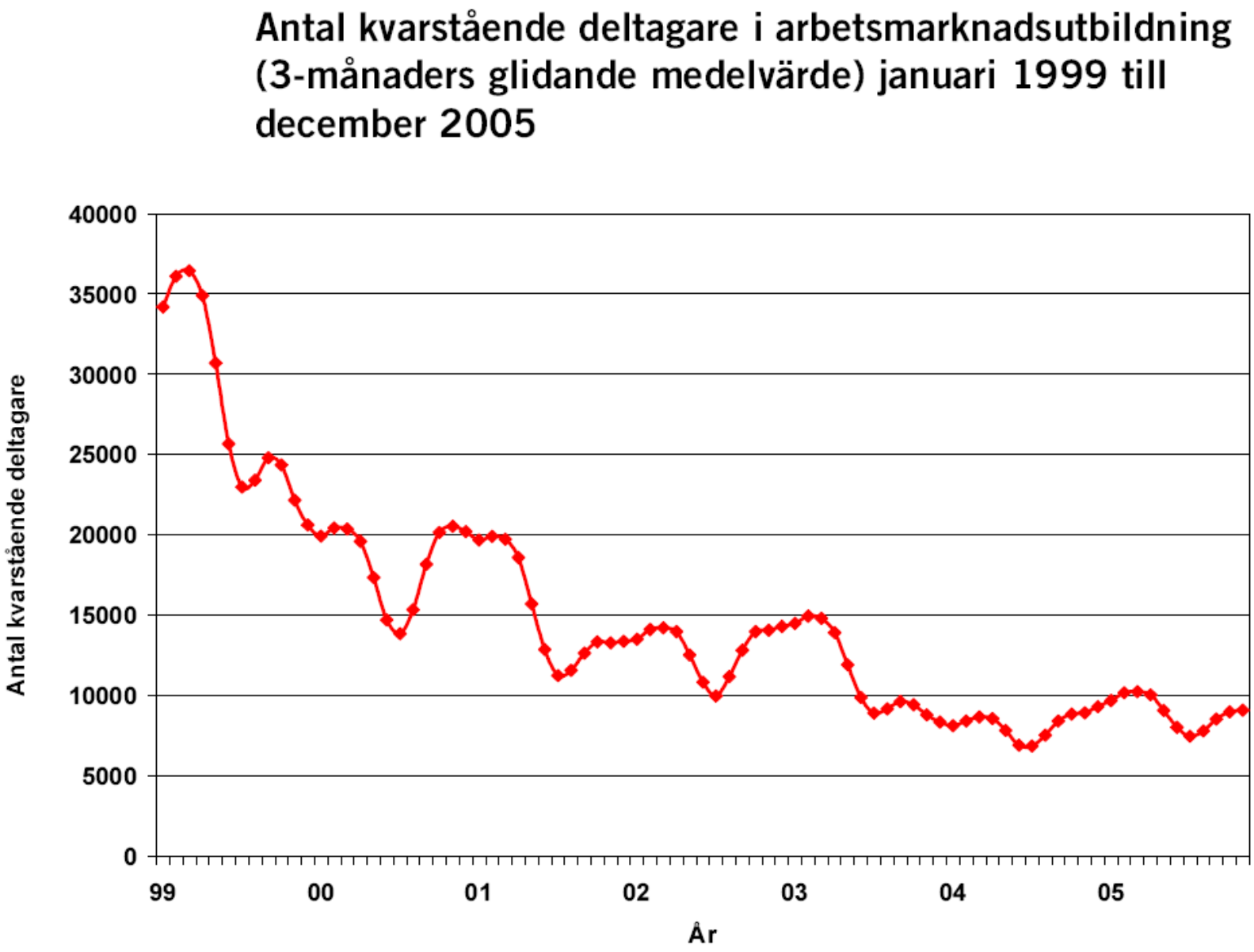
- **Increase in welfare from generous unemployment insurance because incomes are smoothed over time**
- **But generous unemployment insurance also raises equilibrium unemployment**
  - **weaker job search incentives**
  - **higher *reservation wages* on the part of the unemployed**
  - **productivity and thus also the wage may be low on a new job: this may result in a very high *effective replacement rate* (benefit relative to the wage on a new job)**
- **Ample empirical evidence that a more generous unemployment insurance causes longer duration of unemployment**
  - elasticity of 0.5
- **But the requirements on the unemployed are important**
  - **when must an unemployed be ready to change profession?**
  - **geographical search area?**
  - **sanctions if job offers are not accepted**

Active labour market policy in Sweden

- **Job brokering and job search assistance**
- **Labour market education**
- **Subsidised employment**

The efficiency of active labour market policy

- **Labour market education did not work well in the 1990s: no higher job-finding probabilities for participants than for openly unemployed**
  - **very large volumes**
  - **requalification for unemployment benefits**
  - **no expanding sectors**
- **Better results in recent years**
- **Some – but not all – types of subsidised employment have resulted in high job-finding probabilities**
- **Large crowding-out effects on regular employment of subsidised employment: often 60-70 %**
- **Results have been particularly bad for young people**
- **Programme participation appears to have reduced open unemployment at the same time as they have reduced regular employment**


Antal kvarstående deltagare i arbetsmarknadsutbildning (3-månaders glidande medelvärde) januari 1999 till december 2005
Antal kvarstående deltagare
40000
35000
30000
25000
20000
15000
10000
5000
0
99
00
01
02
03
04
05
År

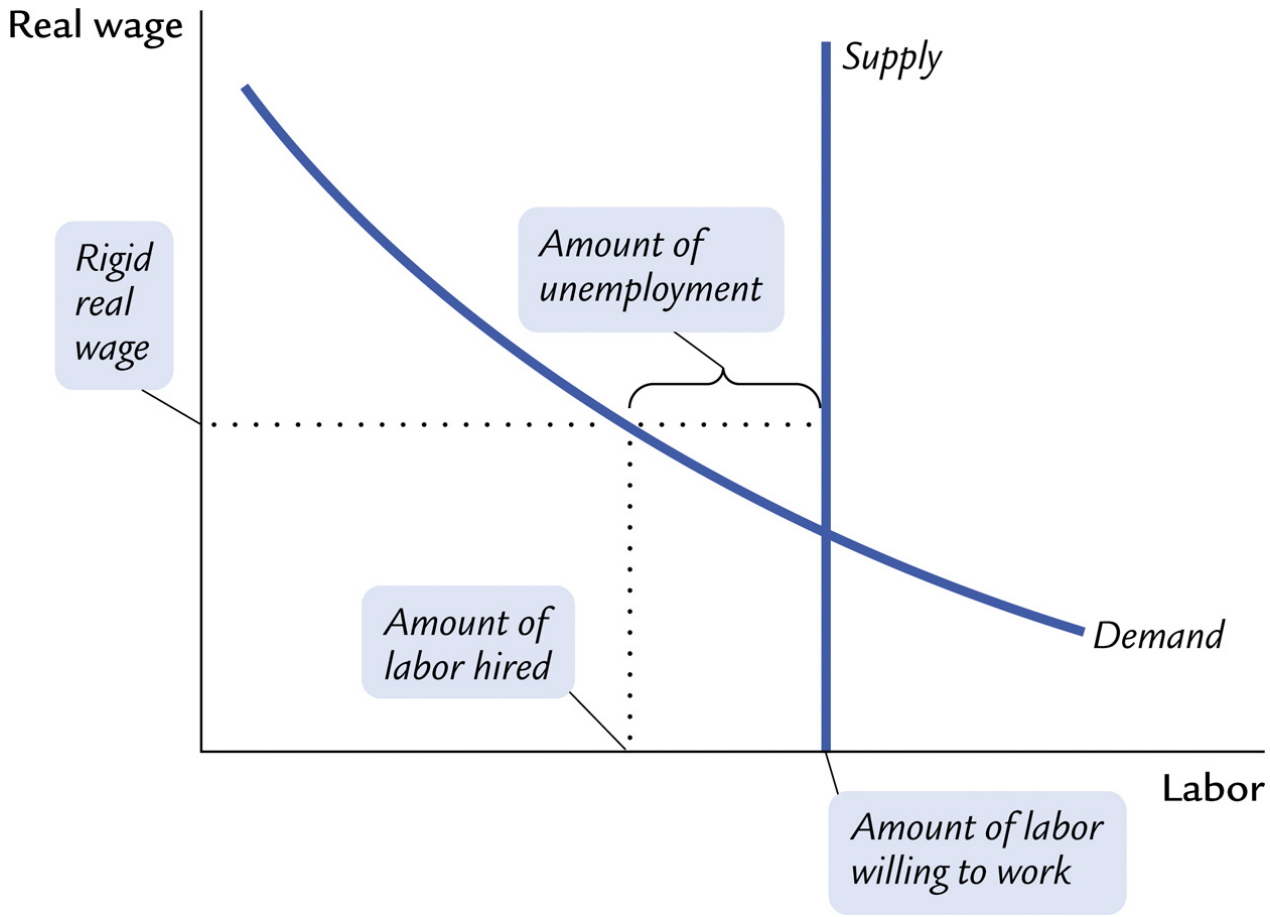


Figure 6-3: Real-Wage Rigidity Leads to Job Rationing

Causes of real-wage rigidity

1. **Legal minimum wages**
2. **Employers set high wages**
3. **Collective agreements**

Legal minimum wages

- **Not in Sweden**
- **France, the US and the UK**

Effects

- **Higher unemployment if the minimum wage exceeds the productivity of marginal groups**
- **This may affect particularly young people and immigrants (France)**
- **But a minimum wage could also raise employment (if it is held back by low supply)**

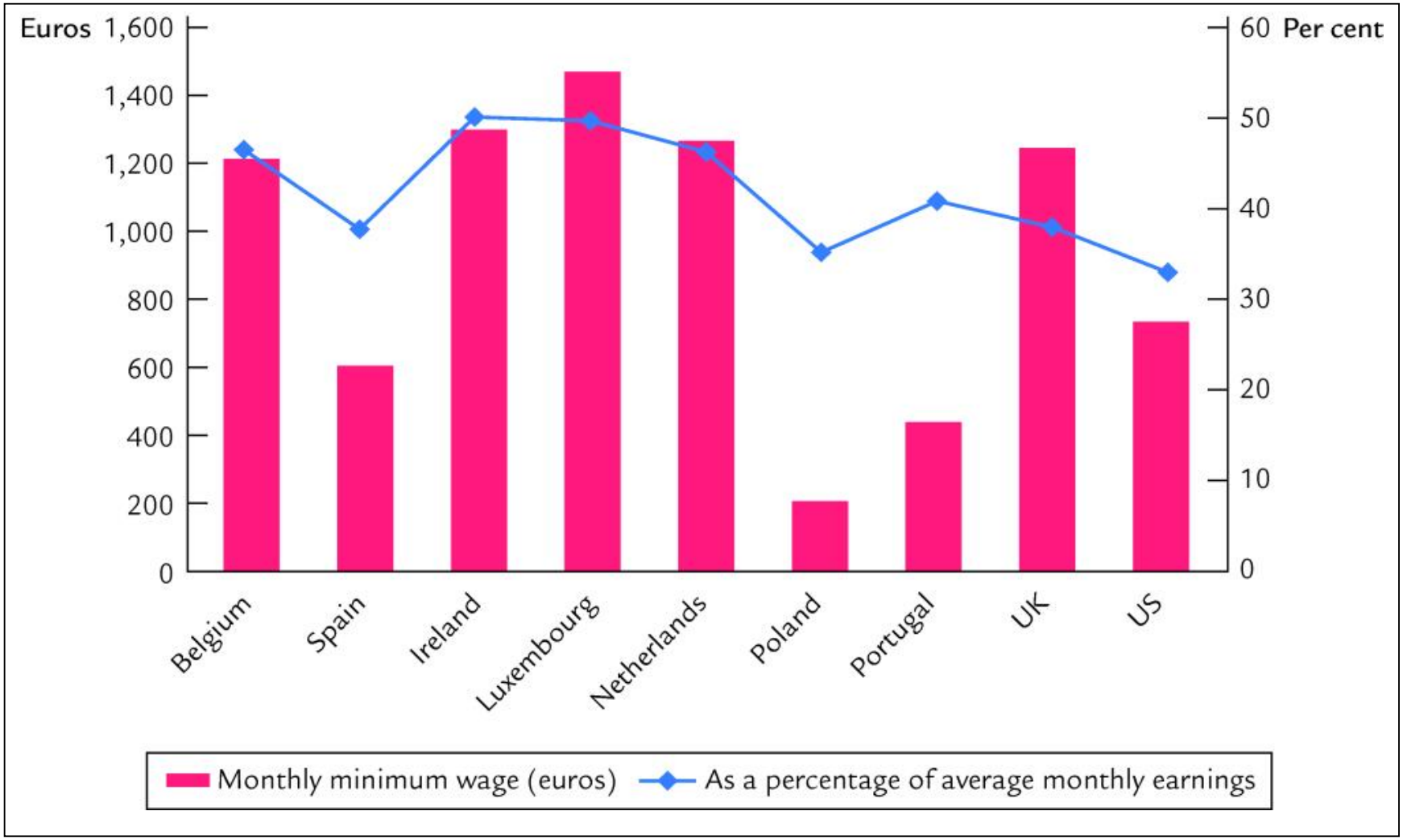


Figure 6-4: The Minimum Wage in the US and Eight European Countries 2005

Efficiency wages

It may be optimal for an employer to pay a higher wage than the market equilibrium wage

- **Higher wages increase the wage bill, which tends to reduce profits**
- **But there are also revenues from a higher wage for an employer**
  - **Reduced labour turnover and thus lower hiring costs**
  - **An incentive for the most productive labour to stay on**
  - **Higher work morale and thus productivity (the wage relative to reference wage determined by various norms is important)**

Collective agreements and trade unions

- **High union density and high coverage of collective agreements tend to raise wages and lower employment**
- **A high degree of coordination of wage negotiations promotes wage moderation and thus employment (Norway, Finland, the Netherlands, Ireland, Belgium and to some extent Sweden)**
  - total economy effects are considered
- **Decentralised wage bargaining to the level of the firm may also promote wage moderation (US, UK, New Zealand, Australia, most of the new EU members)**
  - **competitive pressures to hold back wages**
- **Industry bargaining without coordination may result in the highest real wages (Sweden in the 1980s and 1990s)**
  - **neither total economy considerations nor competitive pressures at the firm level**
- **Sweden**
  - **industry bargaining**
  - **coordination through ”Industrins samarbetsavtal”**
  - **high minimum wages in collective agreements**

TABLE 6-1

Percentage of Workers Covered by Collective Bargaining

Country	Percentage
United States	18
Japan	23
United Kingdom	35
Canada	38
Switzerland	53
New Zealand	67
Spain	68
Netherlands	71
Norway	75
Portugal	79
Australia	80
Sweden	83
Belgium	90
Germany	90
France	92
Finland	95
Austria	98

Source: Organization for Economic Cooperation and Development (OECD) Employment Outlook 2004, as reported in Alberto Alesina, Edward Glaeser and Bruce Sacerdote, 'Work and Leisure in the US and Europe: Why So Different?' *NBER Macroeconomics Annual 2005*. The UK figure is for autumn 2005 and is from the UK Department of Trade and Industry.

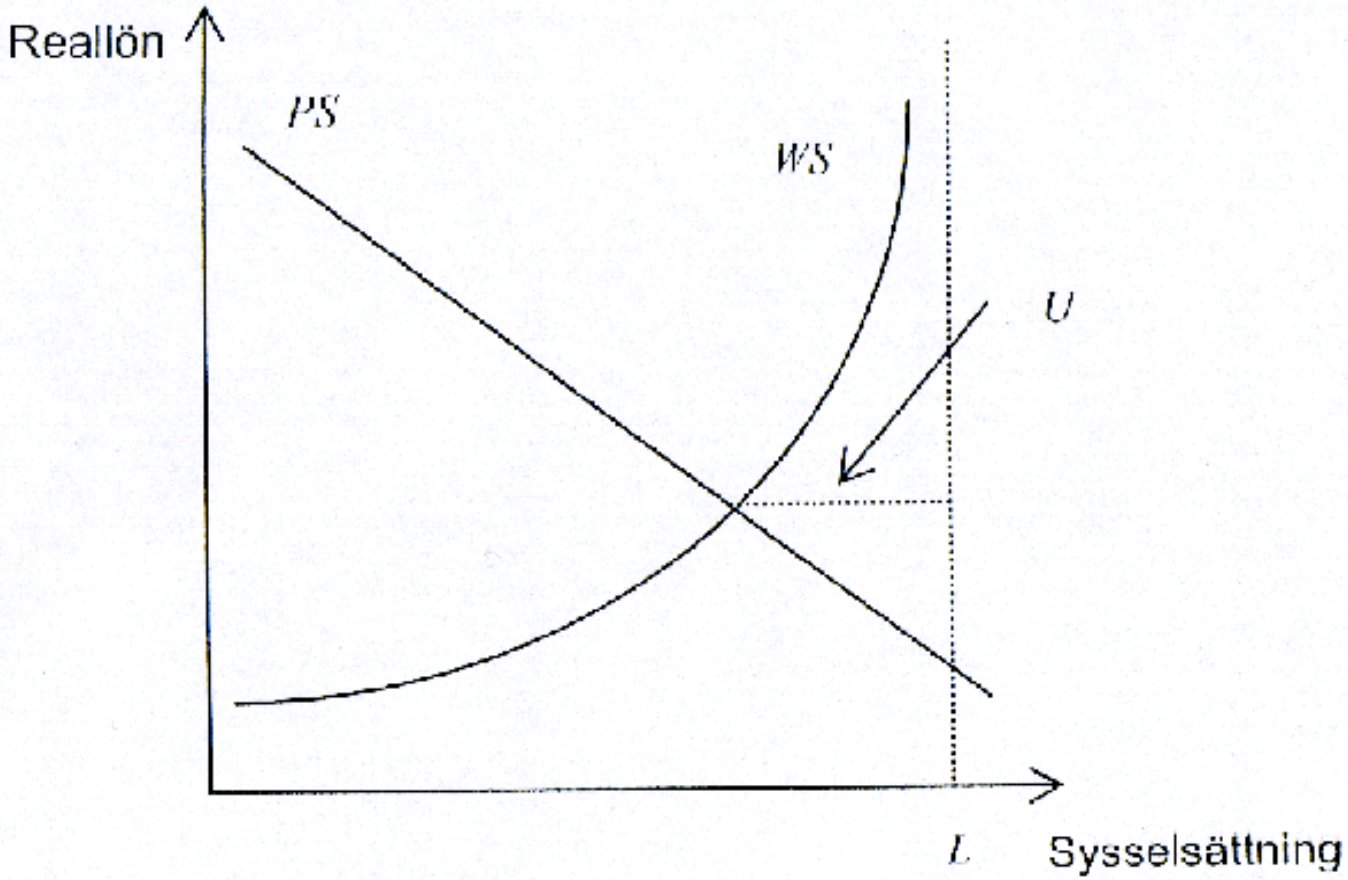
Table 3.2

Bargaining levels

Country	National guidelines	Inter-sectoral level	Sectoral level	Enterprise level
Old EU member states				
Austria	Pattern bargaining		XXX	X
Belgium	Centrally agreed guidelines for wage increases with the government 2003–04	XXX	X	X
Denmark	Pattern bargaining	XX	XX	X
Finland	Tripartite national pay agreement 2003–04	XXX	XX	X
France			X	XX
Germany	Pattern bargaining		XXX	X
Greece	National general collective agreement 2002–03	XX	XXX	X
Ireland	Tripartite national pay agreement 2003–04	XXX	X	X
Italy	Social pacts with government 1993 and 1998 setting guidelines for the wage-bargaining process		XX	X
Luxemburg			XX	XX
Netherlands	Centrally agreed ceiling for wage increases with government 2003; tripartite national wage freeze 2004–05	XX	XXX	X
Portugal			XXX	X
Spain	Centrally agreed guidelines for wage increases 2003	XX	XXX	X
Sweden	Intersectoral agreements setting guidelines for the wage-bargaining process; pattern bargaining		XXX	XX
UK			X	XXX
New EU member states				
Cyprus			XXX	X
Czech Republic	Tripartite national agreements on minimum wages		X	XXX
Estonia	Tripartite national agreements on minimum wages		X	XXX
Hungary	National guidelines for wage increases agreed with government and tripartite national agreements on minimum wages	X	XX	XXX
Latvia	Tripartite national agreements on minimum wages	X	X	XXX
Lithuania			X	XXX
Malta				XXX
Poland	National guidelines for wage increases agreed with government and tripartite national agreements on minimum wages		X	XXX
Slovakia	Tripartite national agreements on minimum wages		XX	X
Slovenia	Tripartite national pay bargains	XXX	XX	X
Other countries				
Australia	National wage awards for minimum wages	X	XX	XXX
Japan	Pattern bargaining			XXX
New Zealand			X	XXX
Norway	Pattern bargaining; tripartite agreement on guidelines for wage increases 2003	XX	XXX	X
Switzerland			X	XX
US				XXX

Notes: XXX = dominating level
XX = important, but not dominating, level
X = existing level

Sources: *Industrial Relations in the EU Member States and Candidate Countries (2002), Collective Bargaining Coverage and Extension Procedures* (2002), individual Eiroline country reports. For New Zealand: Bray and Walsh (1998).



Figur 1 Reallön och sysselsättning

Determination of equilibrium employment

- Intersection between wage-setting schedule and labour-demand (price-setting) schedule
- The wage-setting schedule shows the real wage that wage setters try to achieve in wage bargaining at various levels of employment
- The labour-demand schedule shows the employment desired by firms at various real wage levels
- Equilbrium employment rises if:
  - the wage-setting schedule is shifted downwards
  - the labour-demand schedule is shifted upwards

Determinants of equilibrium employment

- Unemployment benefit replacement rate/maximum unemployment benefit duration (WS)
- Tax wedge (income tax: WS; payroll tax: PS)
- Union density/coverage of collective agreements (WS)
- Degree of wage bargaining coordination (WS)
- ALMPs (WS, PS)
- Product market regulations (WS, PS)
- But not extent of employment protection

Tabell 24 Resursutnyttjande

Miljoner timmar respektive årlig procentuell förändring

	2007	2007	2008	2009	2010
Jämviktsarbetslöshet[1]		6,2	6,1	6,1	6,0
Faktisk arbetslöshet[2]		6,2	5,9	6,5	6,7
Potentiellt arbetade timmar	7 321	1,5	1,4	1,1	1,0
Faktiskt arbetade timmar	7 341	3,5	1,7	-0,2	0,7
Arbetsmarknadsgap[3]		**0,3**	**0,6**	**-0,7**	**-1,1**
Potentiell BNP	3 068	3,3	2,5	2,4	2,4
Faktisk BNP	3 079	2,9	1,4	1,6	3,0
BNP-gap[4]		**0,4**	**–0,8**	**–1,6**	**–1,0**

Anm. Beräkningarna är korrigerade för skillnaden i antal arbetsdagar mellan åren.

[1] Nivå i procent av den potentiella arbetskraften. [2] Nivå i procent av arbetskraften.
[3] Faktiskt arbetade timmars avvikelse i procent från potentiellt arbetade timmar.
[4] BNP:s avvikelse från potentiell BNP i procent av potentiell BNP.

Källor: SCB och Konjunkturinstitutet.

Recent labour market reforms in Sweden

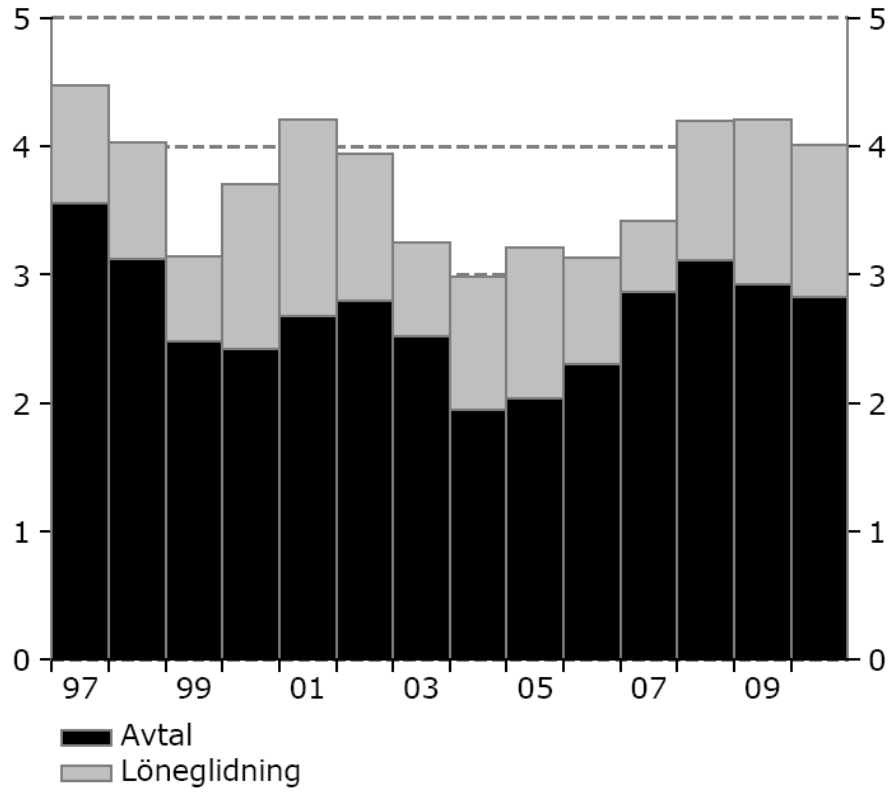
- Cuts in unemployment benefits
  - lower ceiling
  - gradual reduction over time from 80 to 65 %
  - faster reduction for young people
  - not eligibility through university studies
- Increase and differentiation of contributions to unemployment insurance
- Tougher search requirements for the unemployed
- Reforms of ALMPs
  - lower volumes
  - start-up jobs (nystartjobb) instead of ”anställningsstöd”
  - more competition and changes in organisation
- Employment income tax credits
- Lower payroll taxes for young people
- Income tax deductions for household-related services
- Reforms of sickness insurance
  - lower benefits
  - tougher requirements
  - earlier interventions

Swedish Fiscal Policy Council evaluation of the government's labour market reforms

- **Lower unemployment benefits and employment tax credit**
- **Effects come with a long lag**
- **Reduction of equilibrium unemployment by at least one percentage point**
  - **effects on both outflows from unemployment and wage levels**
  - **lower benefits: lower unemployment and lower labour supply**
  - **employment tax credit: lower unemployment and higher labour supply**
  - **net: larger effects on employment than on unemployment**
- **Higher and differentiated unemployment insurance contributions**
  - **differentiated contributions provide stronger incentives for wage restraint**
  - **but higher contributions (for the employed) counteract the employment tax credit**
  - **main effect: reduction in unemployment insurance fund membership**
  - **unsatisfactory protection for those with high unemployment risk who have left**
  - **those with low unemployment risk who have left no longer contribute to the financing**

Diagram 139 Timlön i näringslivet

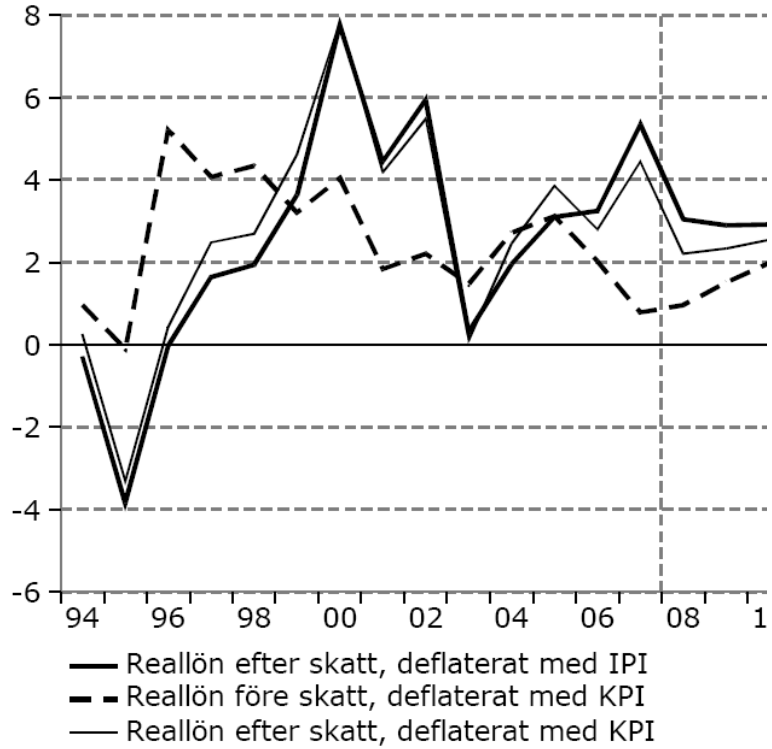
Årlig procentuell förändring



Källor: Medlingsinstitutet och Konjunktur-institutet.

Diagram 147 Reallön

Årlig procentuell förändring



Anm. IPI är implicitprisindex för hushållens konsumtionsutgifter.

Källor: SCB och Konjunkturinstitutet.