Lecture 3: **Intermediate macroeconomics, autumn 2012**

Lars Calmfors

Literature: ***Mankiw, Chapter 6***
Swedish Fiscal Policy 2012, Chapter 5

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Topics

- Causes of unemployment
- Unemployment and labour market flows
- Current labour market developments
- Youth unemployment
- Real wage rigidity
- Minimum wages
- Efficiency wages
- Collective agreements and trade unions
- Swedish labour market reforms

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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 (5–10 years)
  - Functioning of the labour market and equilibrium (structural) employment

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Causes of unemployment

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

- **Cyclical unemployment**

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

- **equilibrium rate of unemployment: rate of unemployment around which the economy fluctuates**
- **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 (caused by the time it takes for workers to find a new job)**

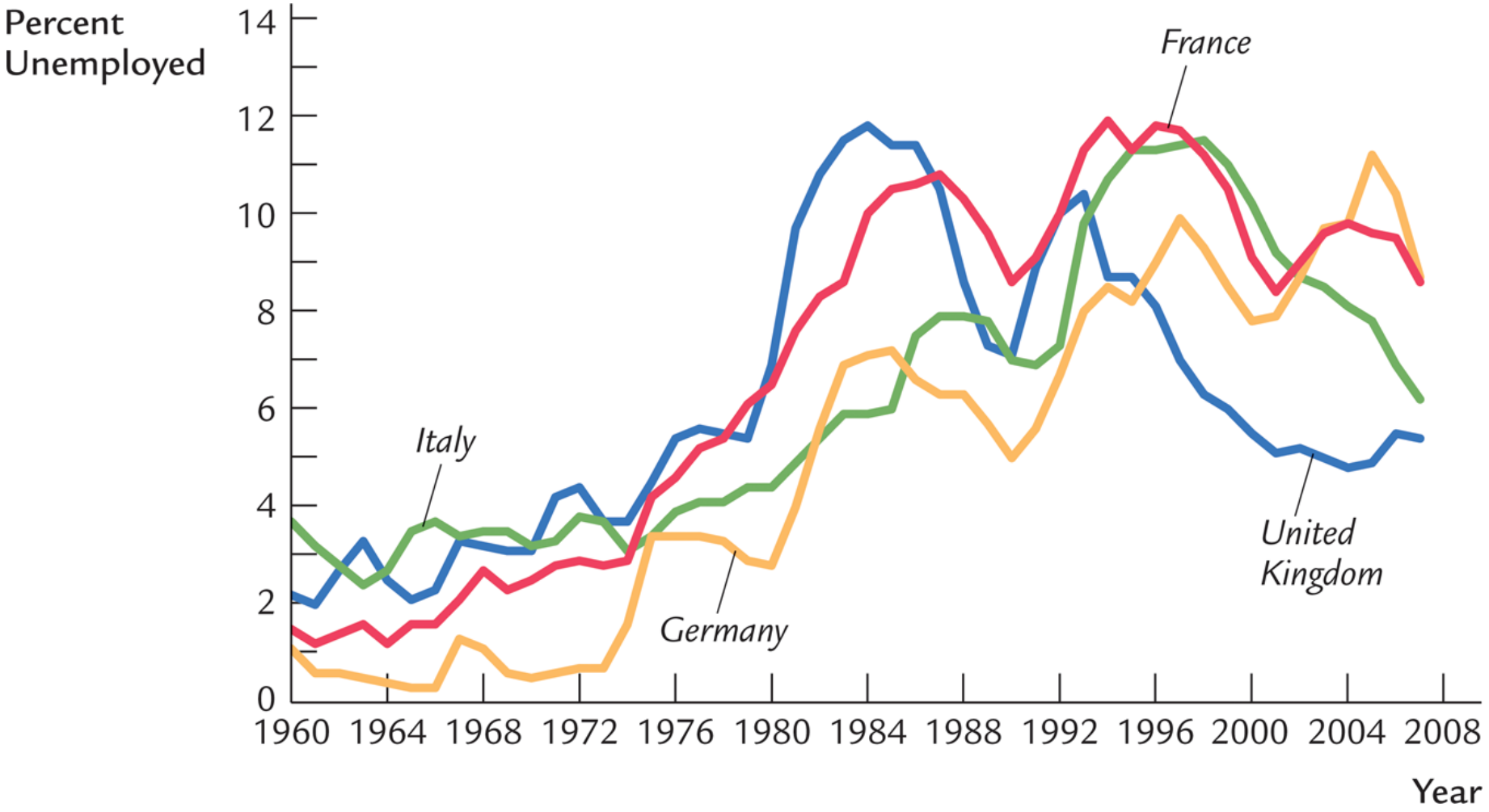
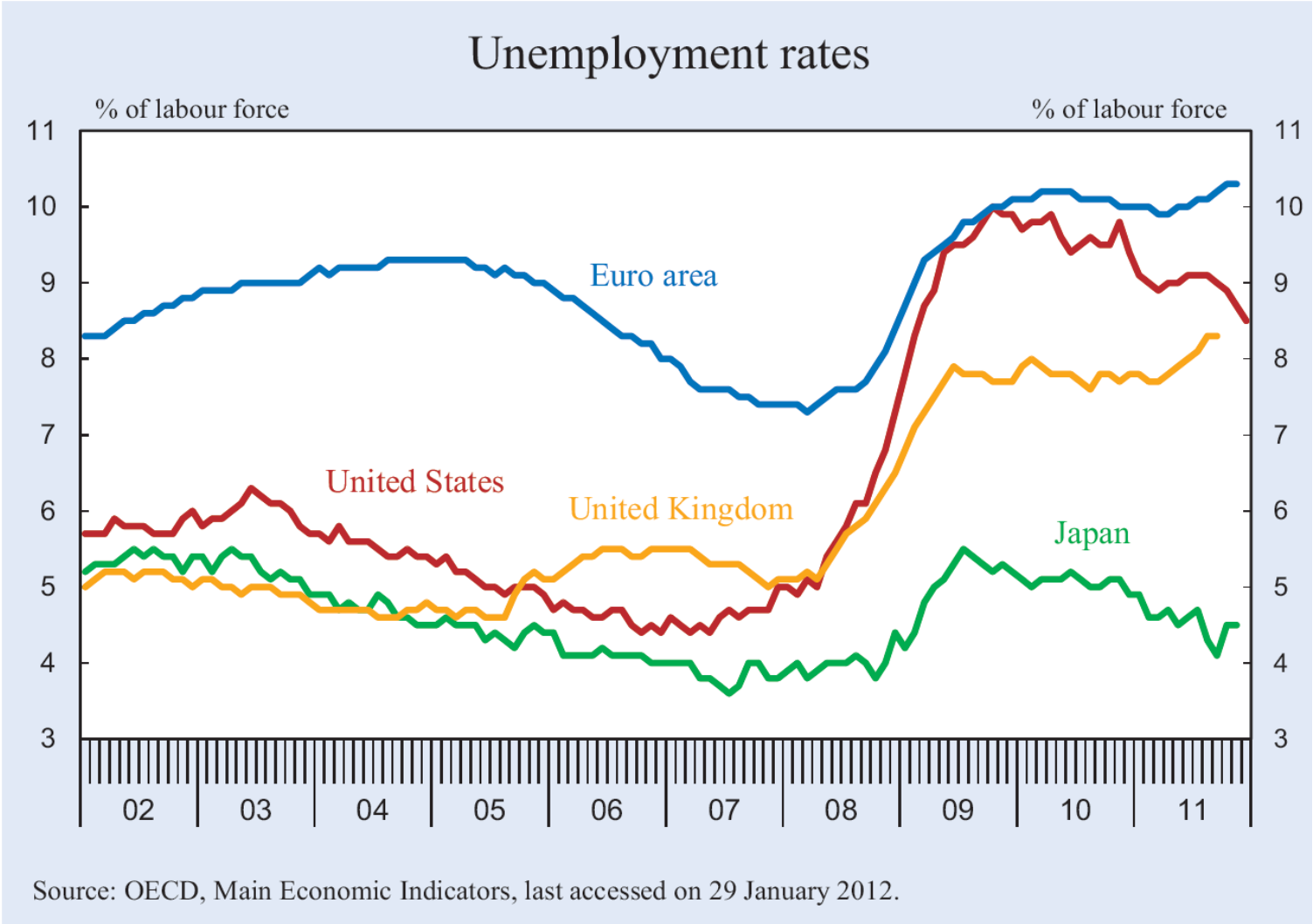


Figure 6-4: Unemployment in Europe

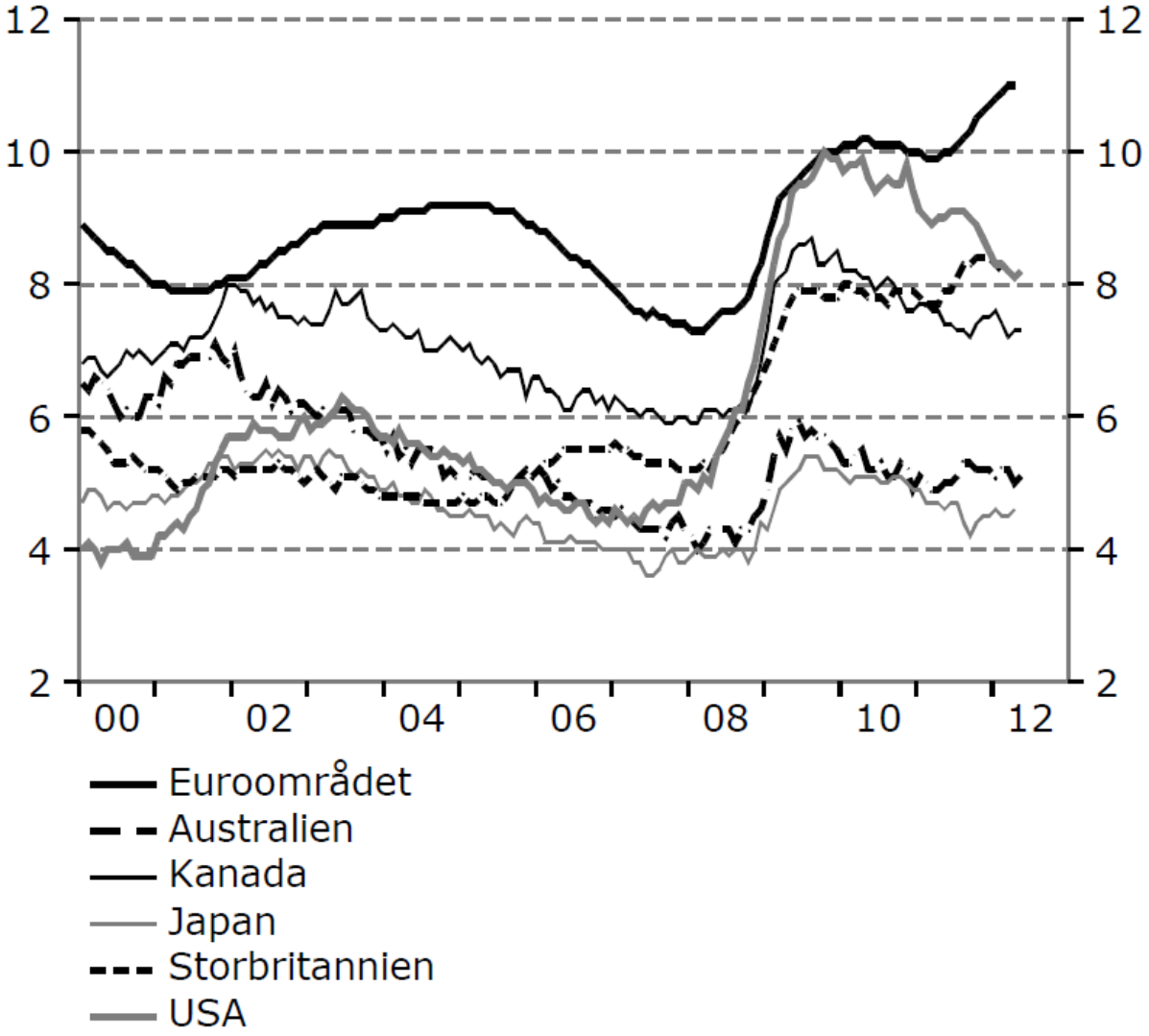
Figure 1.6



Source: OECD, Main Economic Indicators, last accessed on 29 January 2012.

Diagram 60 Arbetslöshet

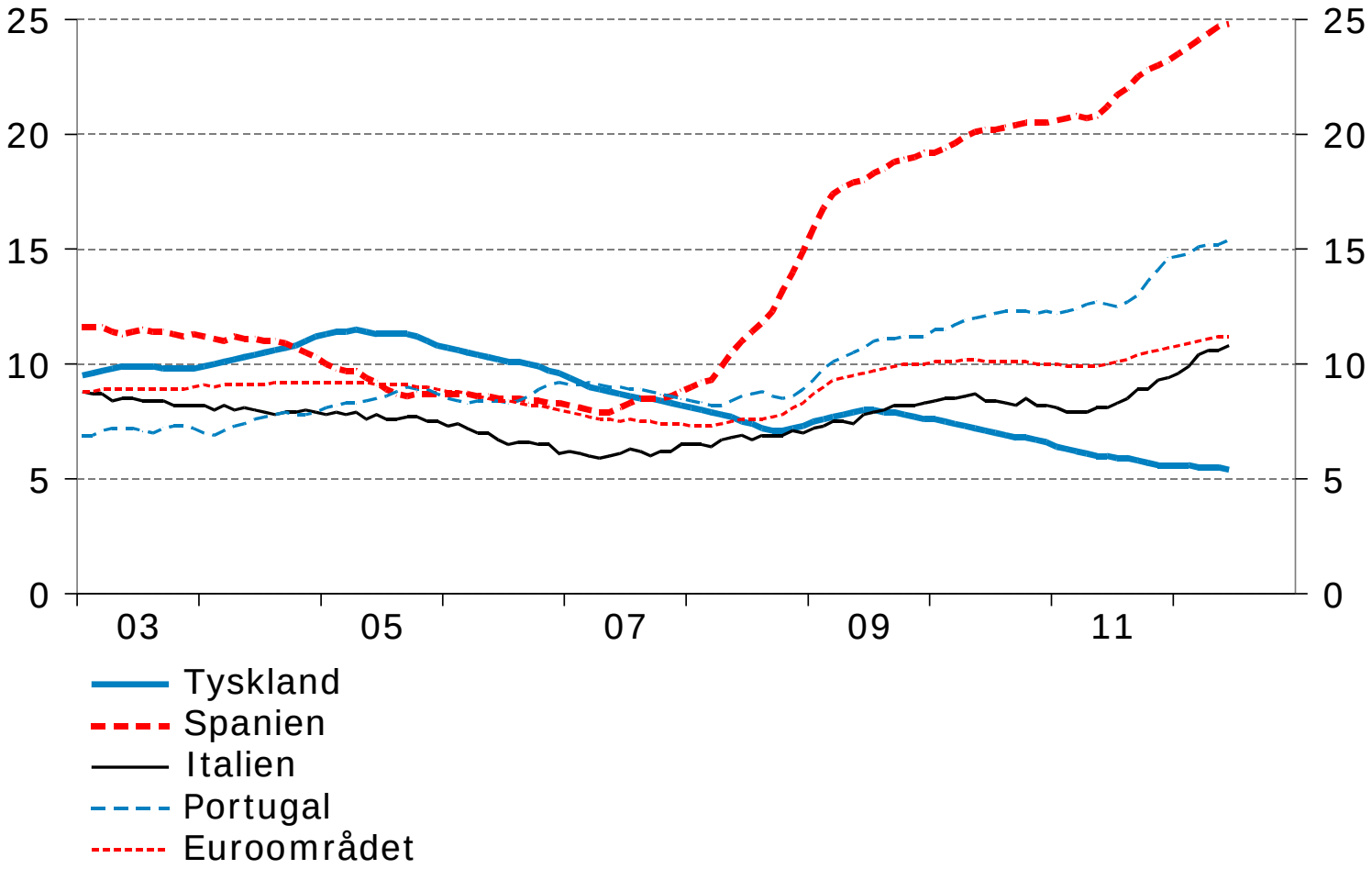
Procent av arbetskraften, säsongsrensade månadsvärden



Källor: Macrobond och Konjunkturinstitutet.

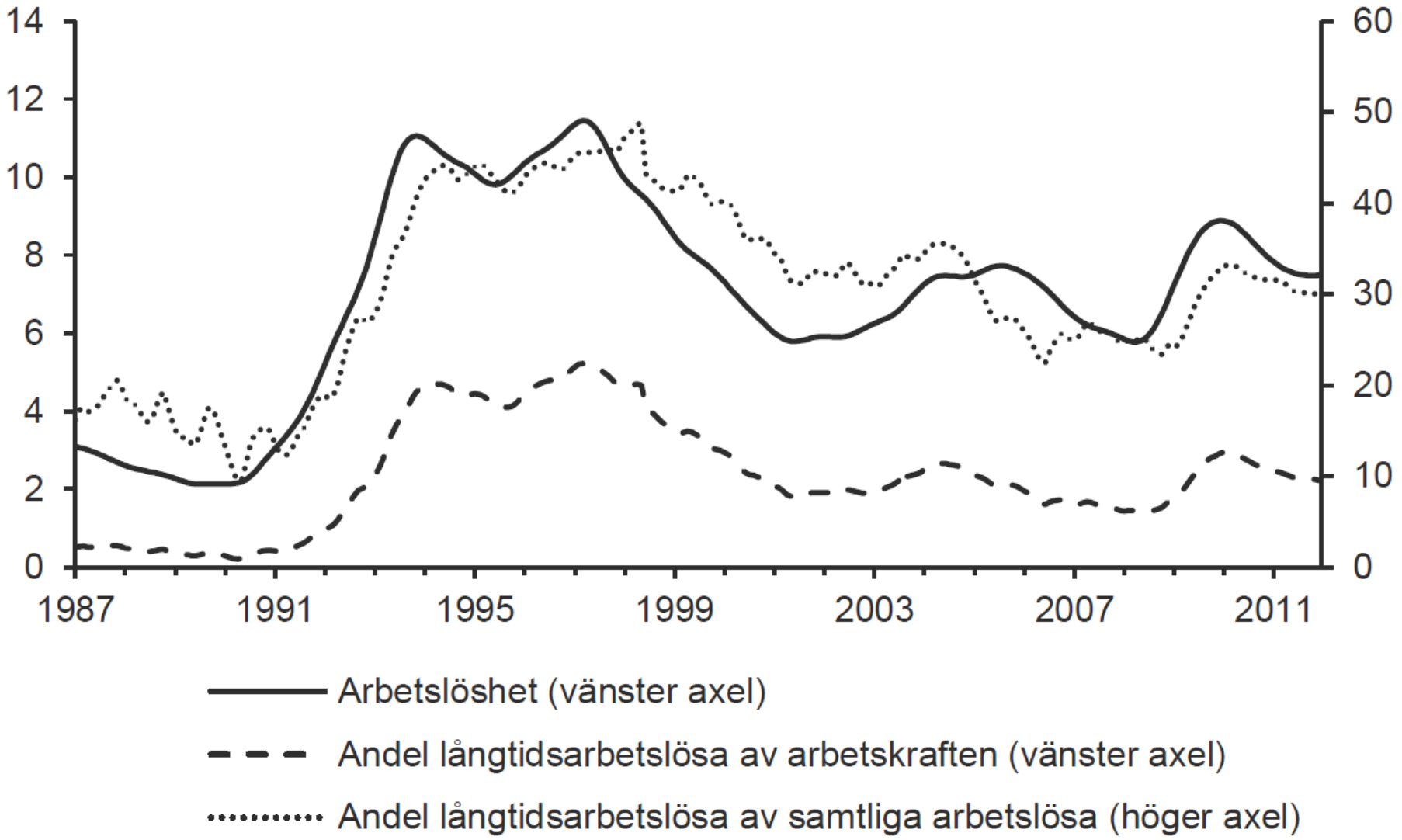
Arbetslöshet i valda länder

Procent av arbetskraften, säsongsrensade månadsvärden



Figur 5.8 Arbetslöshet och långtidsarbetslöshet

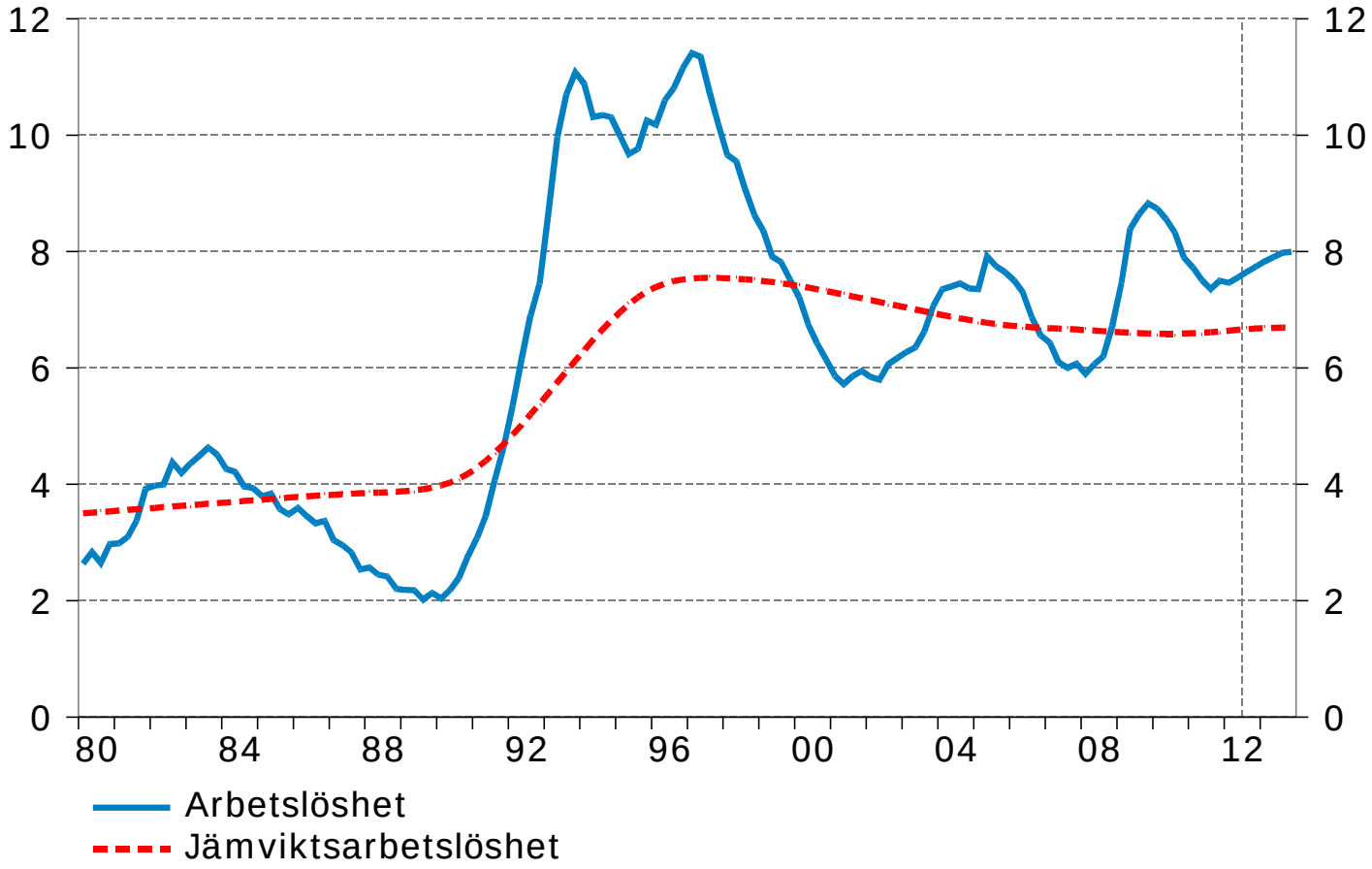
16-64 år, procent



Källa: SCB.

Arbetslöshet och jämviktsarbetslöshet

Procent av arbetskraften, säsongsrensade kvartalsvärden



Models of the labour market

1. Search models: labour market flows.
2. Models of structural unemployment and real wage rigidity. Causes of real wage rigidity:
   - Minimum-wage laws
   - Labour unions
   - Efficiency wages

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Search models of the labour market

- Labour-force dynamics
- Workers who are separated from their jobs search for a new position
- Job search typically takes time and causes frictional unemployment
- Unemployment may be voluntary

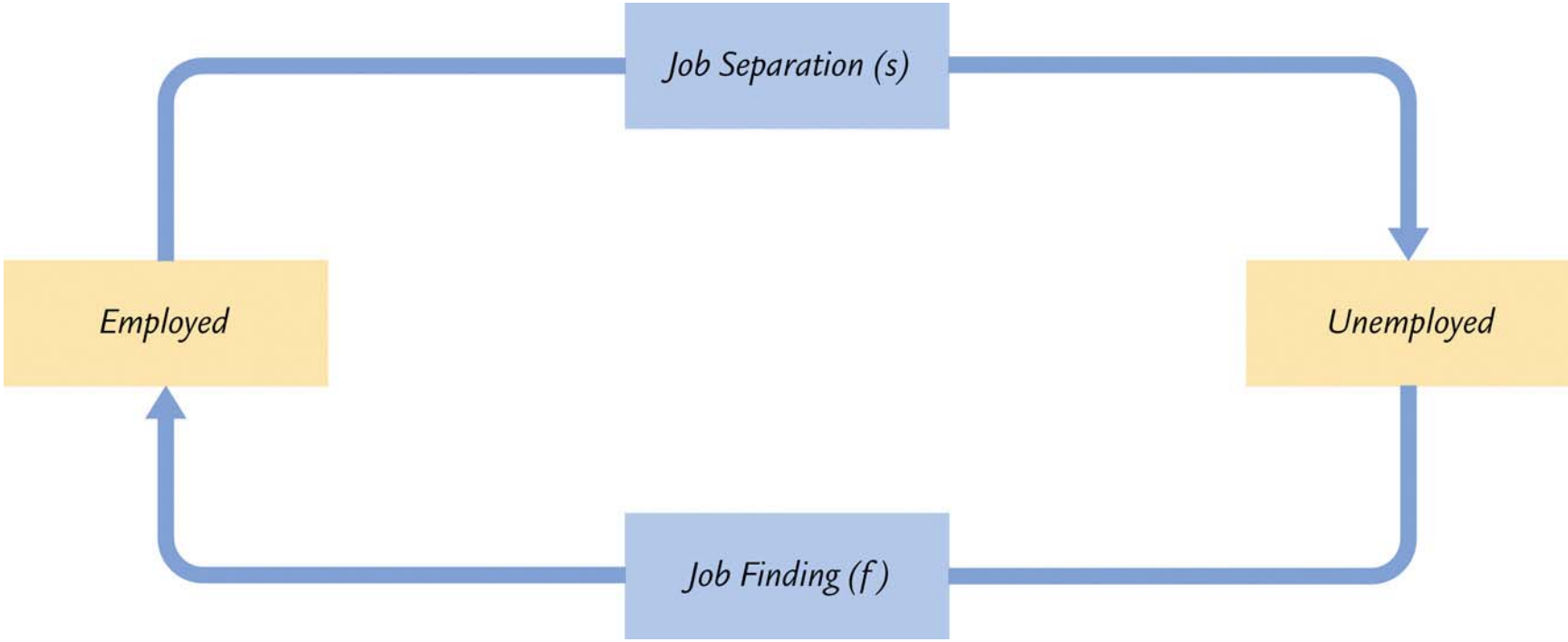


Figure 6-2: The Transitions Between Employment and Unemployment

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**

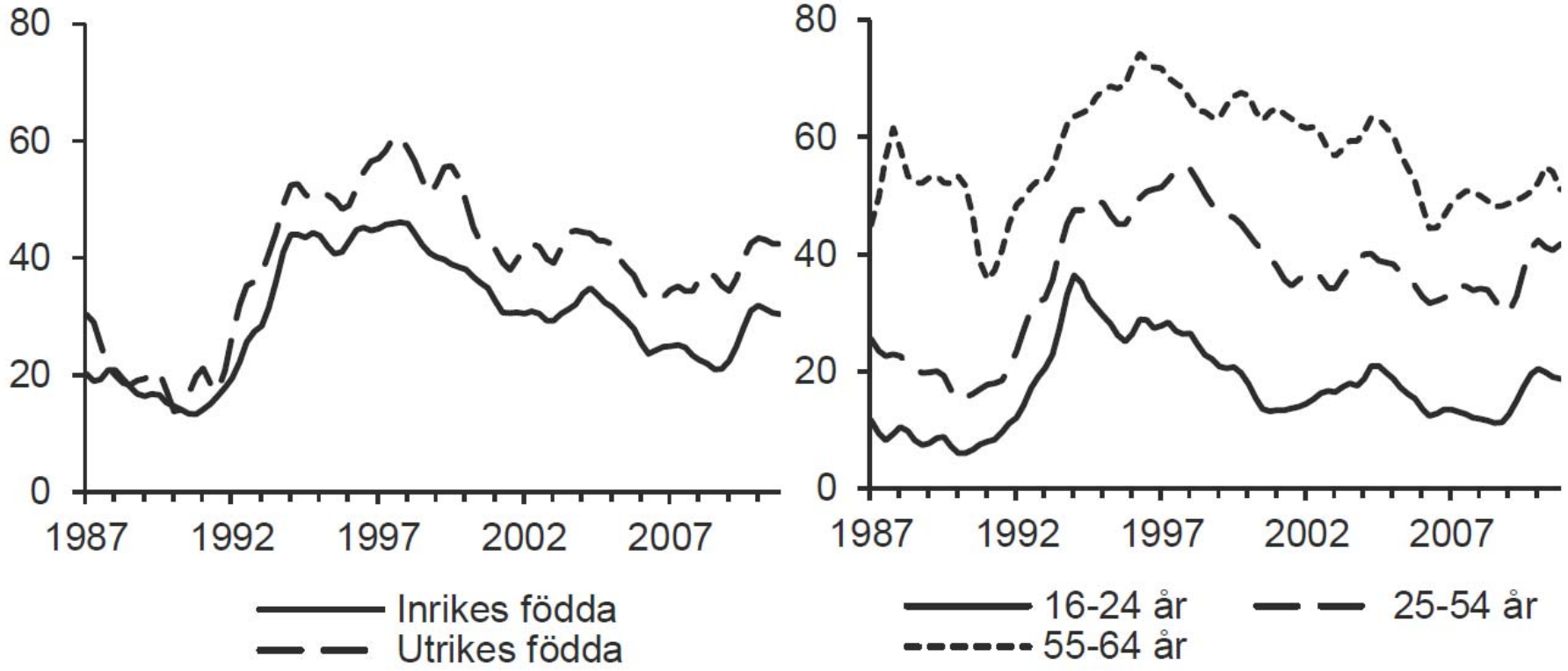
– persistence (hysteresis)

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)**

Figur 5.10 Andelen långtidsarbetslösa

Kvartalsdata, procent



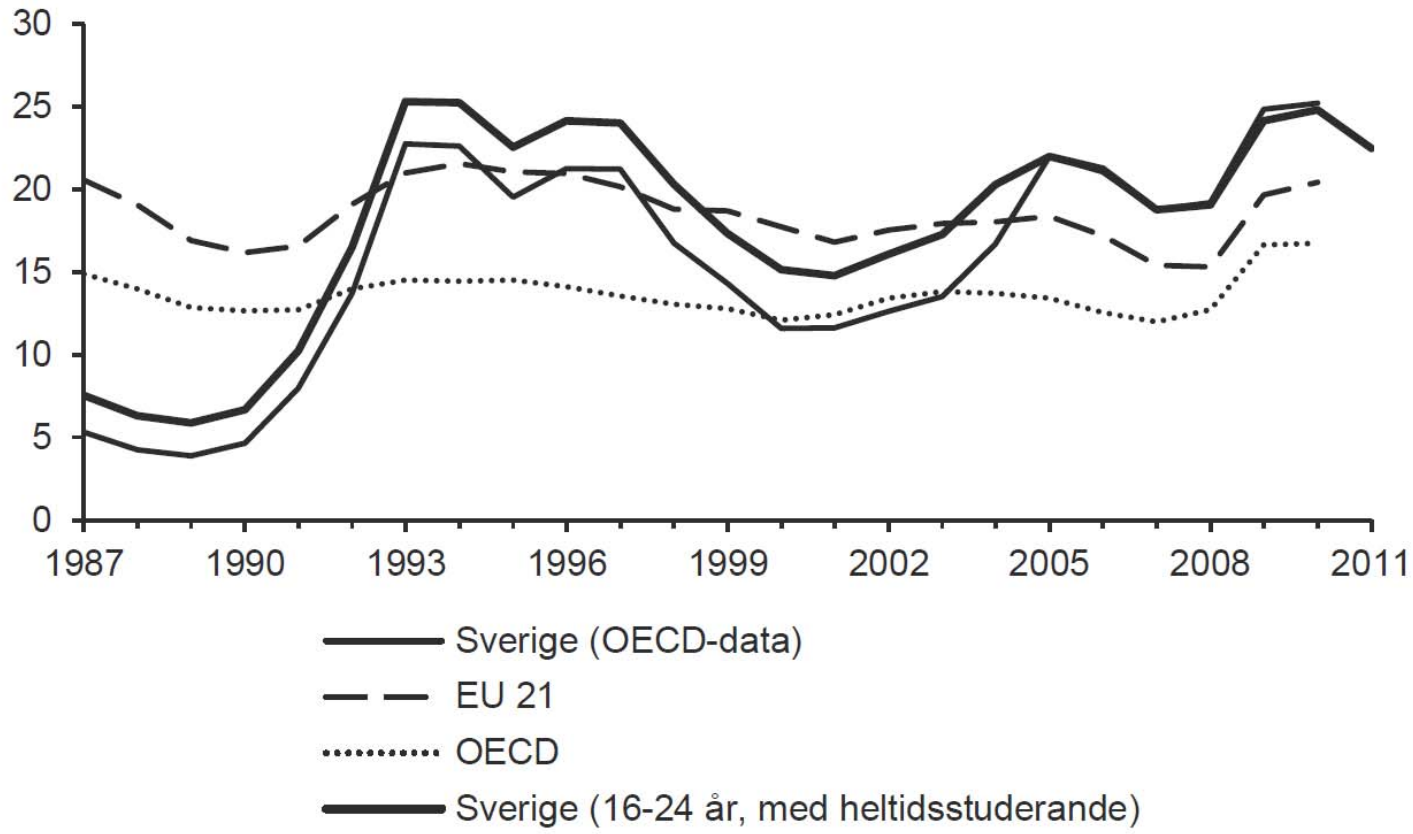
Anm: Figurerna visar andelen långtidsarbetslösa i förhållande till samtliga arbetslösa i vardera kategorin.
Källa: Zetterberg (2011).

Youth unemployment

- **Important issue in the political debate**
- **"One out of four young people is unemployed"**
- **Exaggerated picture of youth unemployment**
- **Youth unemployment in 2011 was 23 per cent of young people (15-24) in the labour force**
- **But only about half of young people are in the labour force, the majority of the rest study**
- **In terms of the population 15-24 years youth unemployment in 2011 was 12 per cent**
- **A large share of youth unemployment is made up of full-time "students" who are looking for a summer job or a job as a complement to full-time studies**
- **Excluding the young unemployed who mainly see themselves as students reduced youth unemployment in 2011 to 7 percent of the population 15-24 years**
- **Unemployment spells are much shorter for young people than for older people**
- **Less of "scarring effects" for young unemployed than for older unemployed**

Figur 5.2 Ungdomsarbetslöshet

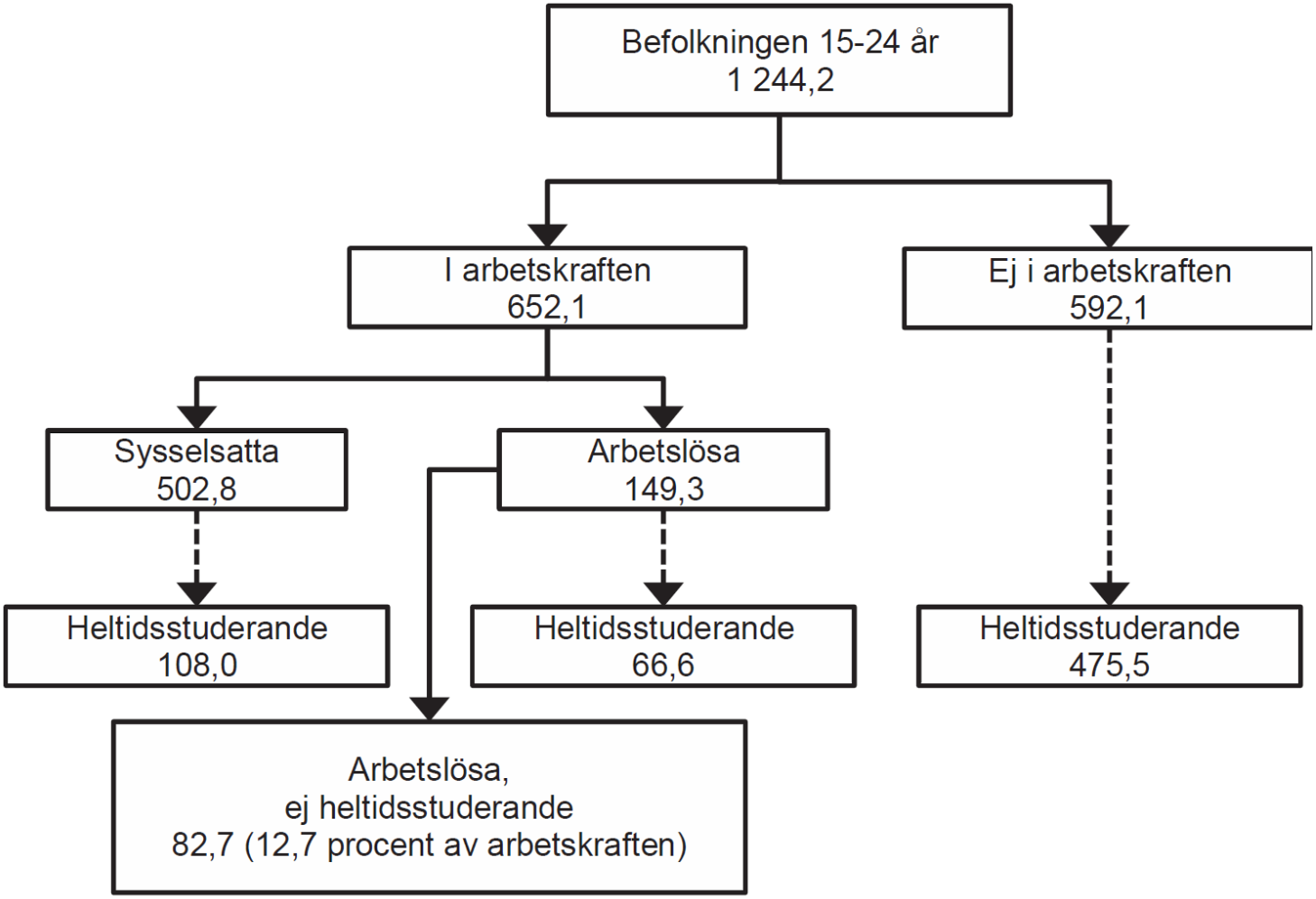
Procent, 15-24 år



Anm: Figuren visar andelen arbetslösa av den 15–24-åriga arbetskraften. Från och med 2005 följer Sverige ILO-definitionen av arbetslöshet där heltidsstuderande arbetssökande ska ingå. Generellt har länder i EU-21 och OECD under hela perioden följt denna konvention.
Källor: OECD och SCB.

Figur 5.3 Fördelningen av ungdomar 15-24 år, genomsnitt för 2011

Tusental



Anm: Antalet heltidsstuderande under kategorin ”Ej i arbetskraften” är beräknat utifrån flödesdata.
Källor: SCB och egna beräkningar.

Många unga studerar – men även många ”övriga”

Arbetskraftsstatus 2011, andel av befolkning, procent, årsgenomsnitt

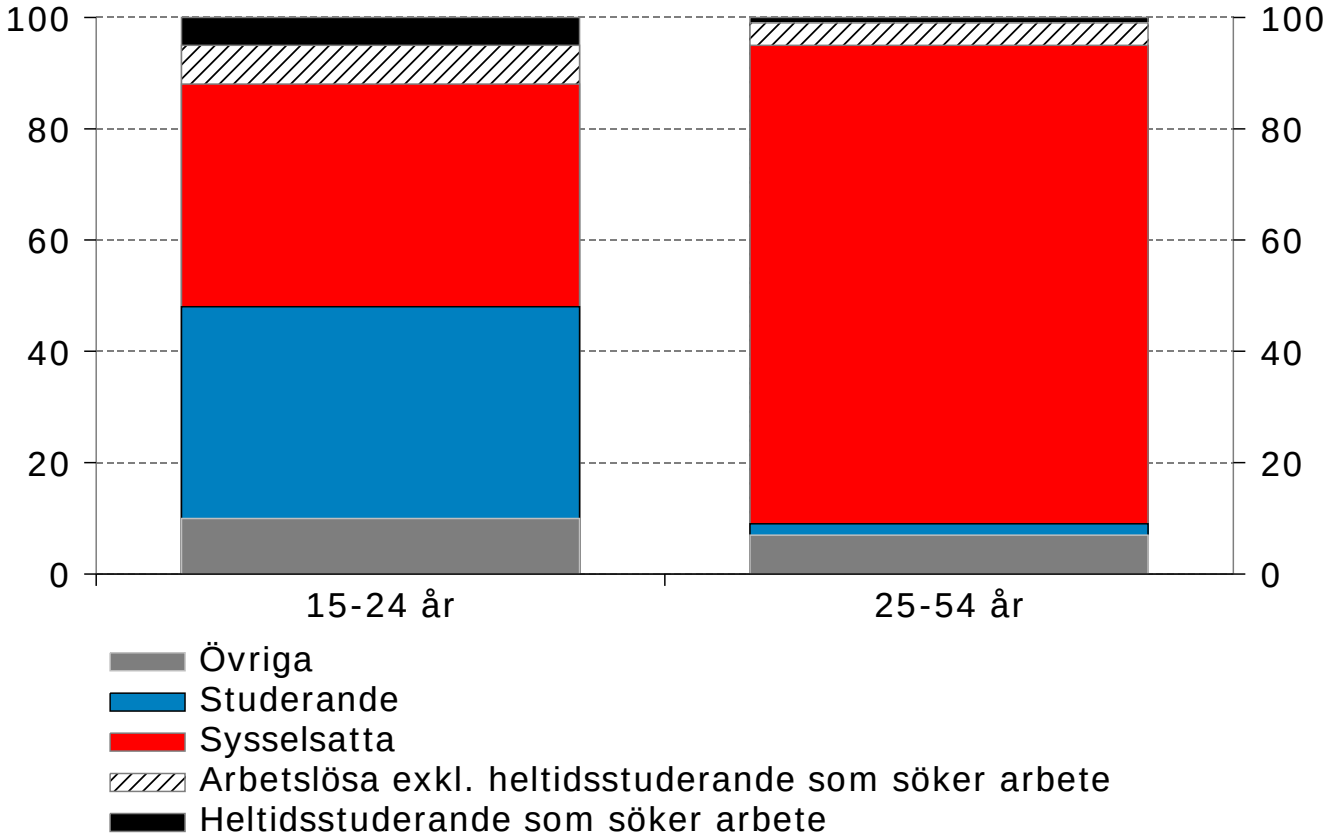
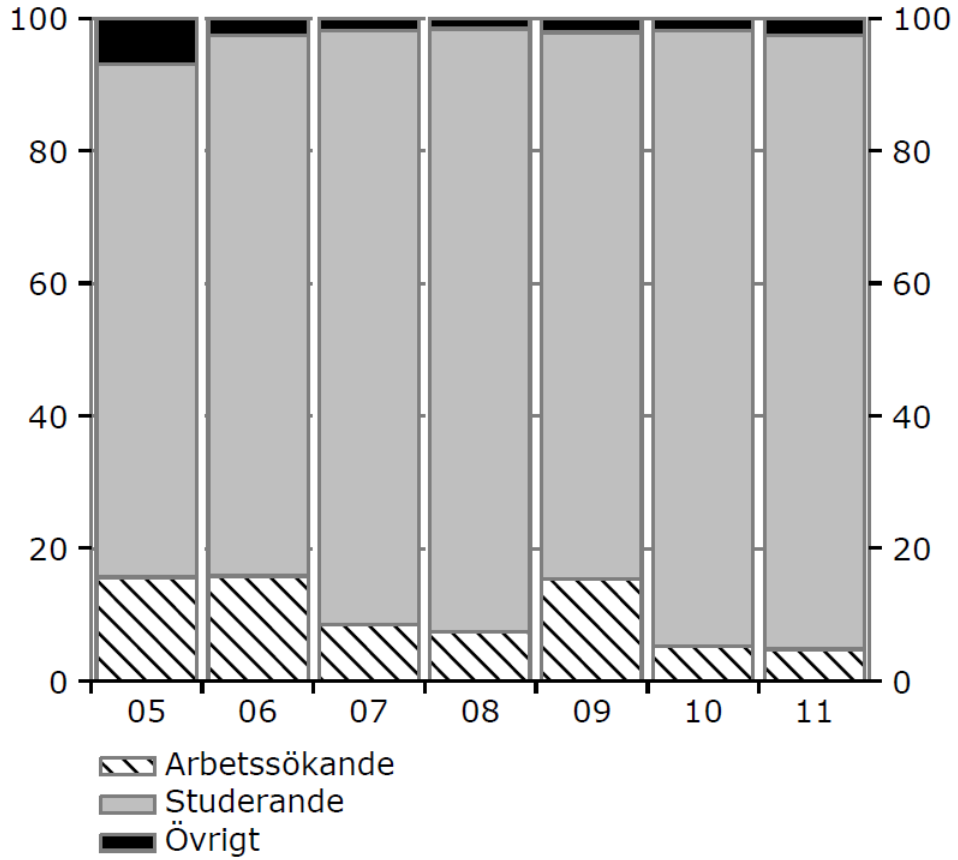


Diagram 170 Heltidsstuderande som söker arbete, 15–24 år

Procent, årsgenomsnitt

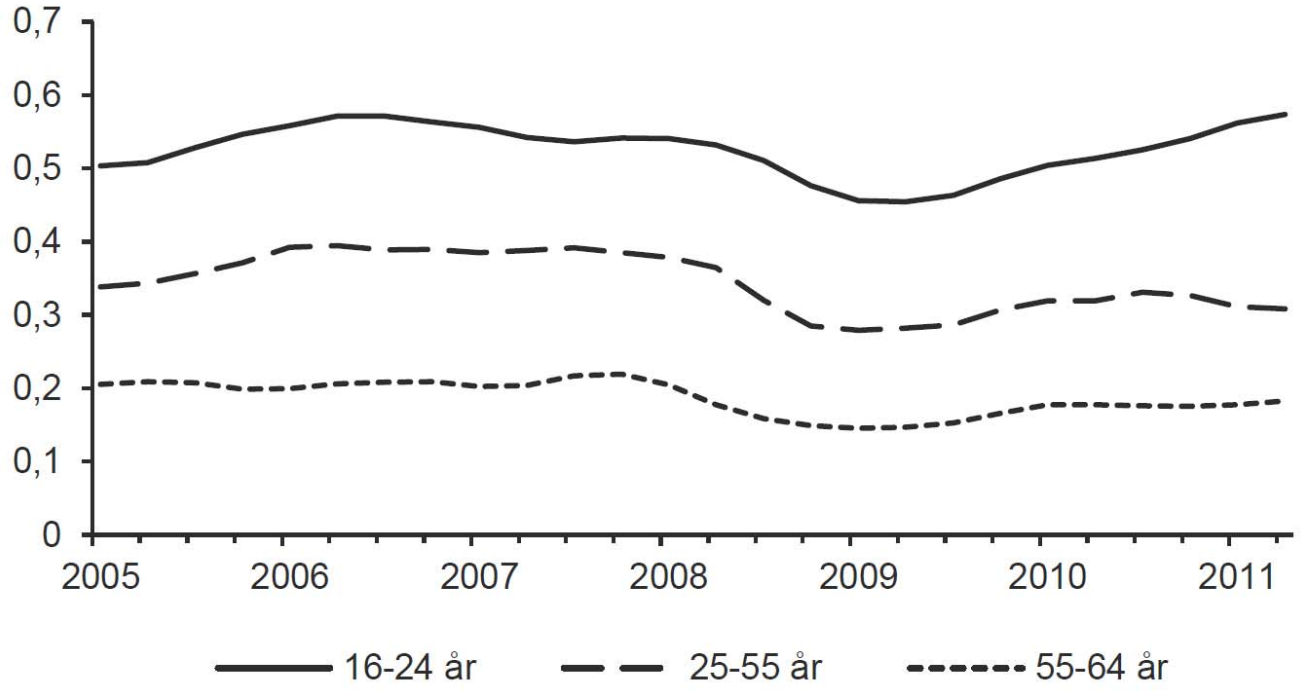


Anm. Heltidsstuderande som söker arbete har tillfrågats om de huvudsakligen betraktar sig som arbetssökande, studerande eller övrigt.

Källa: SCB.

Figur 5.5 Utflöde från arbetslöshet till jobb eller studier mellan kvartal

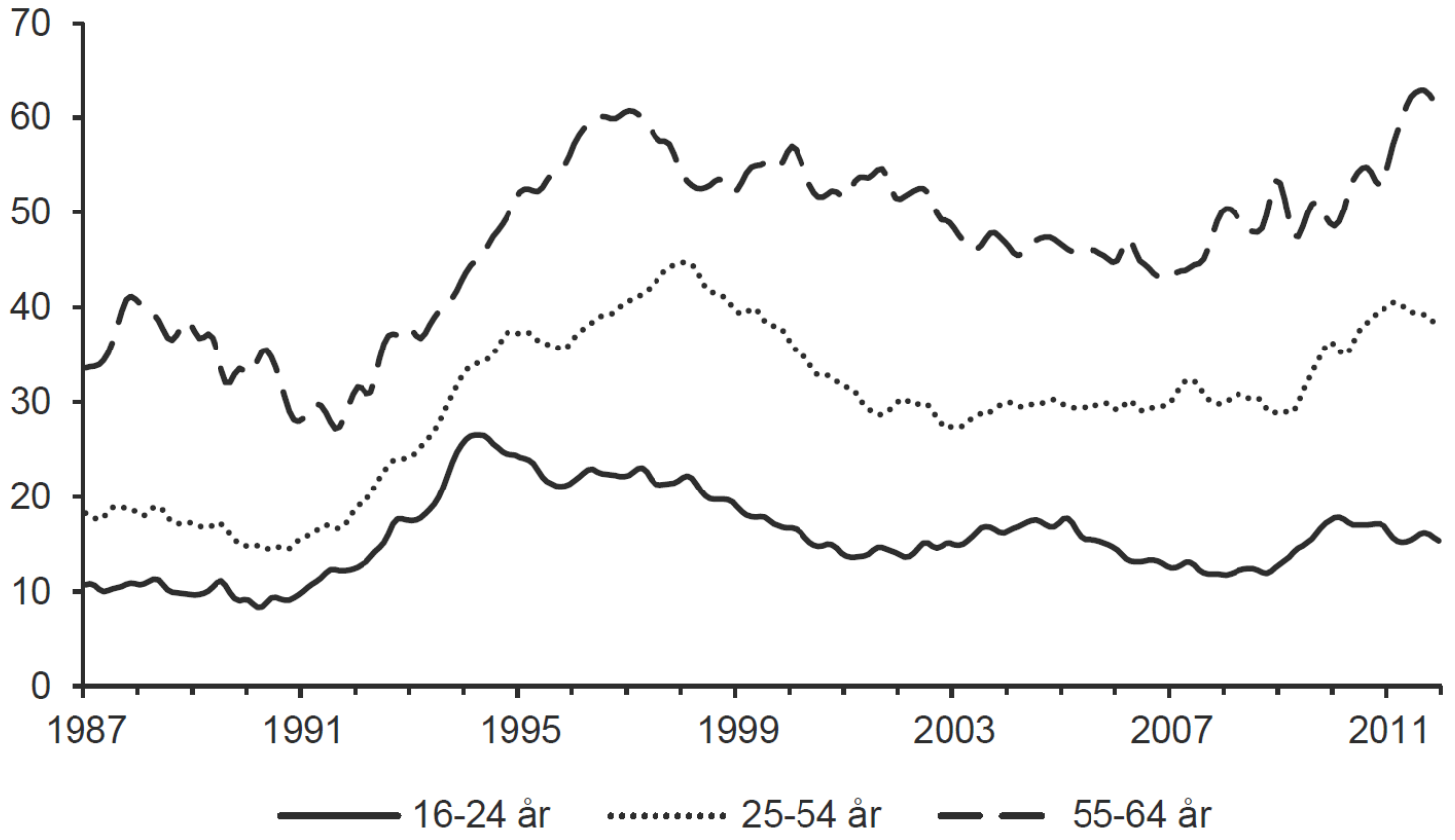
Andel av arbetslösa från arbetslöshet till sysselsättning eller utbildning



Anm: Kurvorna visar utflödet från arbetslöshet till sysselsättning eller till heltidsstudier utanför arbetskraften från ett kvartal till ett annat.
Källa: SCB.

Figur 5.9 Genomsnittlig arbetslöshetstid

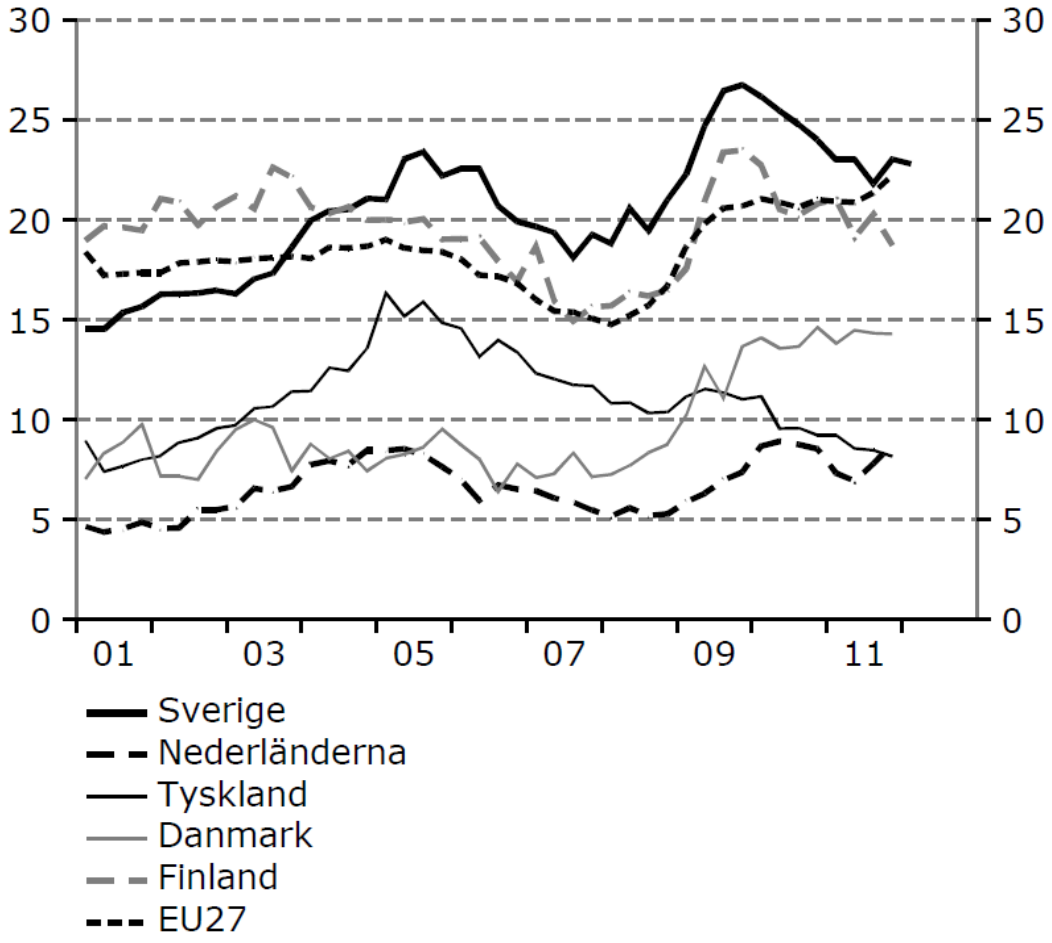
Veckor



Källa: SCB.

Diagram 174 Arbetslöshet som andel av arbetskraften, 15–24 år

Procent, säsongsrensade kvartalsvärden



Källor: Eurostat och Konjunkturinstitutet.

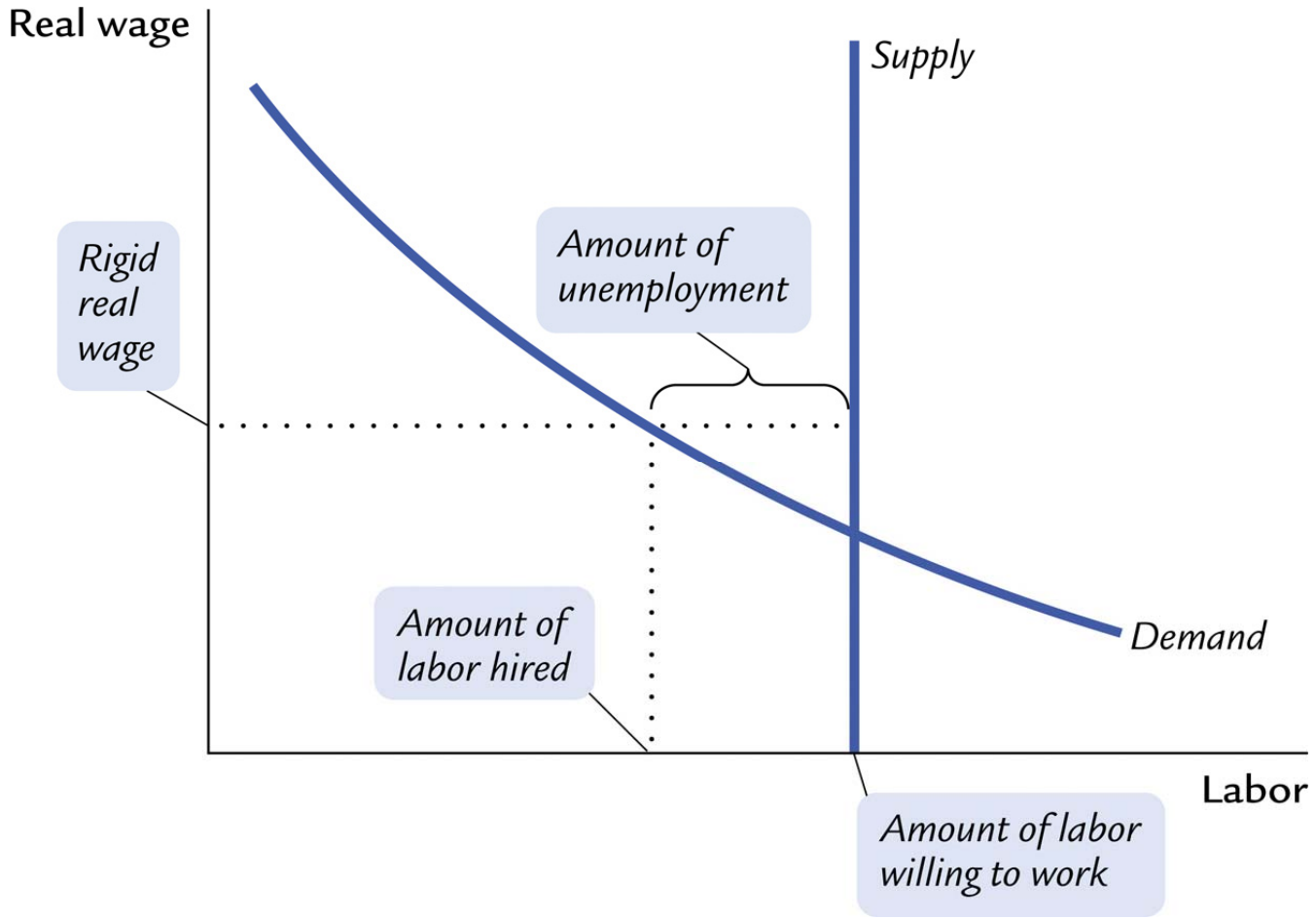


Figure 6-3: Real-Wage Rigidity Leads to Job Rationing

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)**

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**
  - **Calmfors-Driffill hump-shape hypothesis**
- **Sweden**
  - **industry bargaining**
  - **coordination through pattern bargaining with engineering sector (*Teknikföretagen*) as wage leader**
  - **high minimum wages in collective agreement**

Calmfors-Driffill hump-shape hypothesis

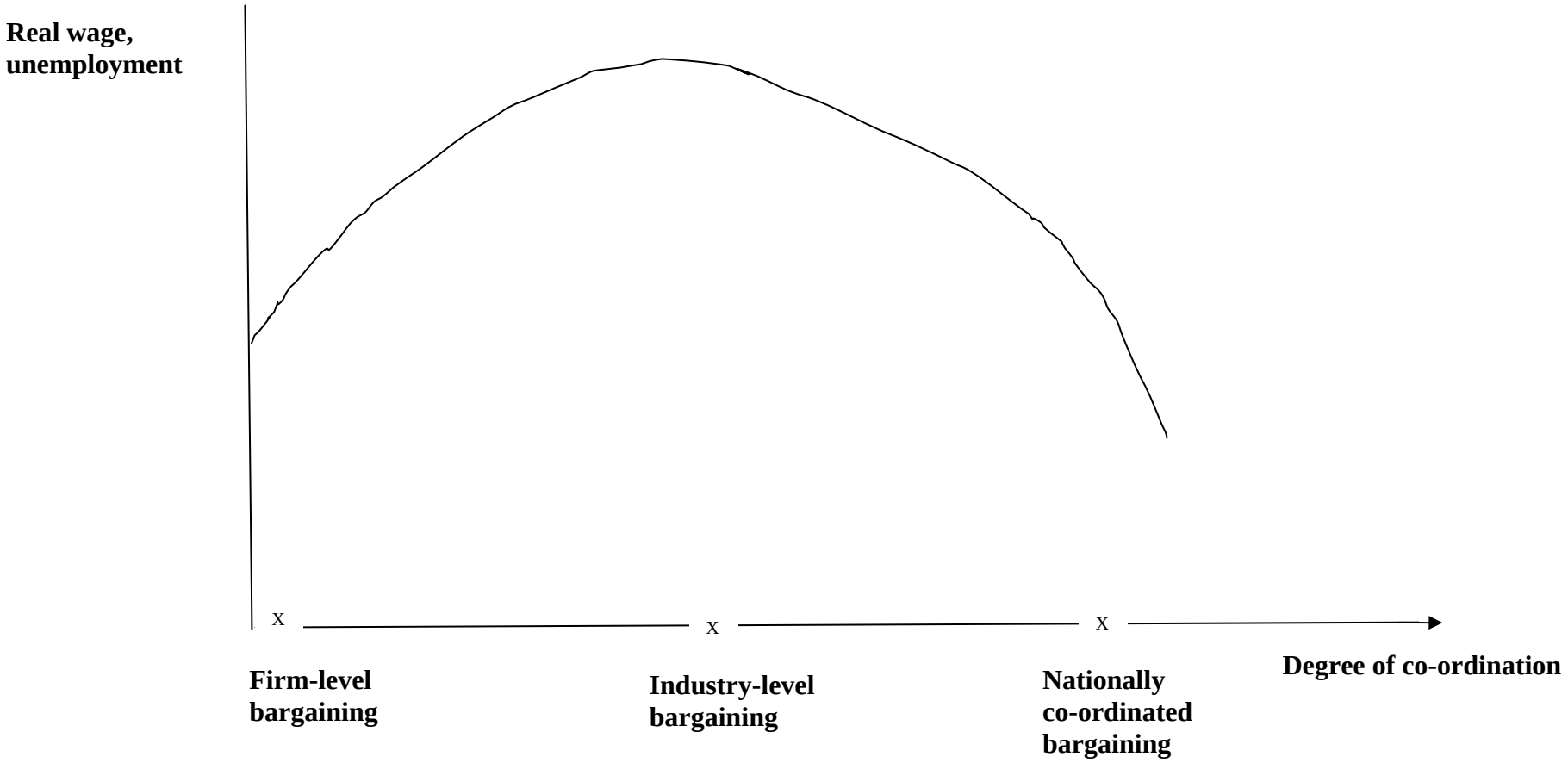


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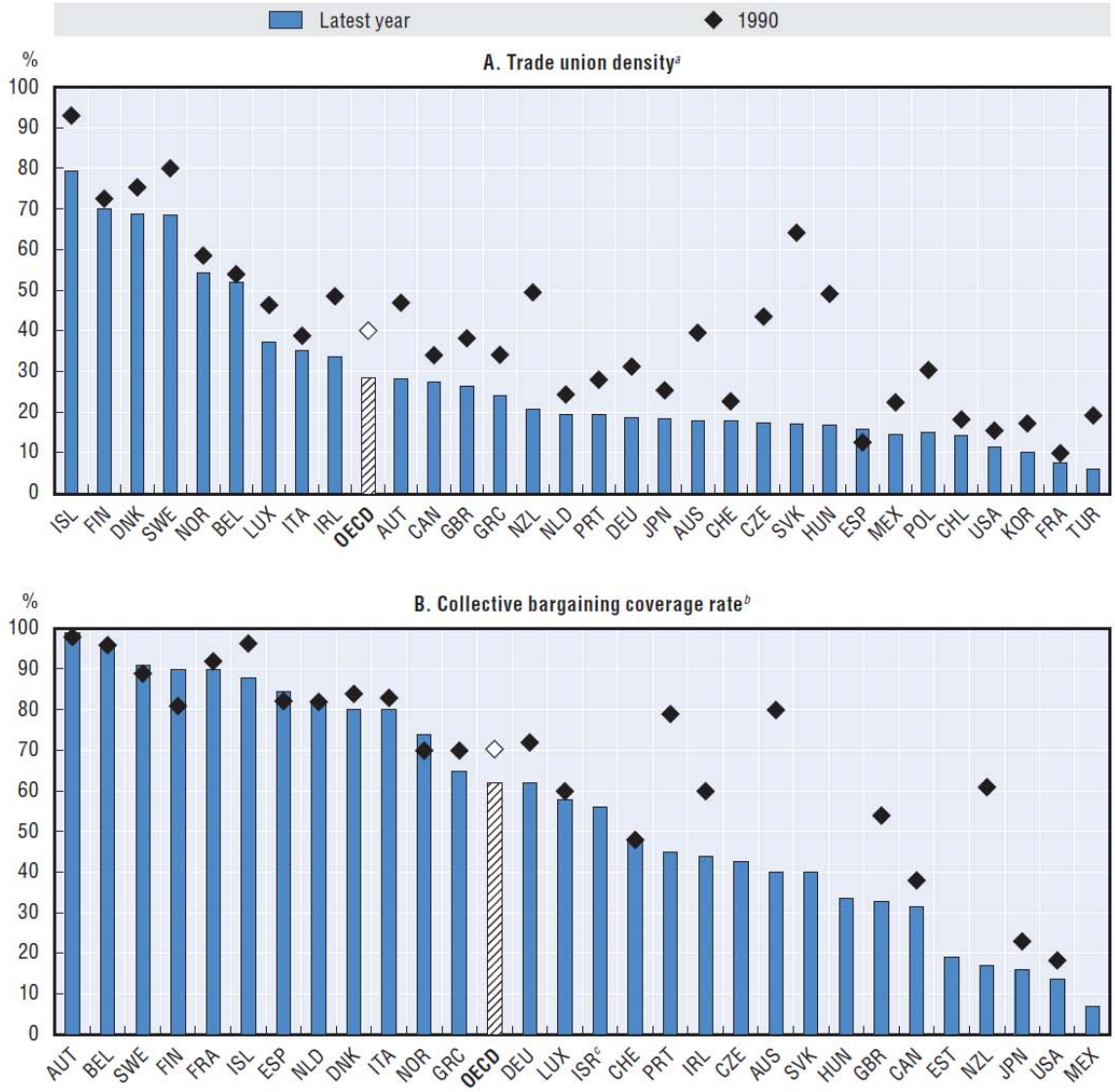
Figure 3.12. **Trade union density and collective bargaining coverage, 1990 and latest year**



Note: Trade union density refers to the number of trade union members as a percentage of wage and salary earners; the collective bargaining coverage rate refers to the number of workers covered by wage bargaining agreements as a proportion of all wage and salary earners (employees excluded from bargaining rights have been removed from both the numerator and denominator).

a) Data for the latest year refer to 2010 for: Australia, Austria, Canada, Estonia, Finland, Germany, Italy, Japan, Mexico, New Zealand, Poland, Portugal, Sweden, United Kingdom and United States; 2009 for Belgium, Chile, Czech Republic, Denmark, Ireland, Norway, Spain, Switzerland and Turkey; and 2008 for France, Greece, Hungary Luxembourg and Slovak Republic. Data refer to 1995 instead of 1990 for Czech Republic and Hungary; 1992 for Mexico; and 1994 for Slovak Republic.

b) Data for the latest year refer to 2009 for Austria, Canada, Czech Republic, Estonia, Germany, Italy, Portugal, Slovak Republic, United Kingdom and United States; 2008 for Belgium, France, Greece, Iceland, Ireland, Japan, Luxembourg, Mexico, Netherland, Norway, Spain, Sweden and Switzerland; and 2007 for Australia, Denmark, Finland and New Zealand. Data refer to 1991 instead of 1990 for Sweden and Switzerland; 1989 for Iceland. As data for Czech Republic, Hungary, Israel, Mexico and Slovak Republic are available for the latest year only, these countries are not included in the OECD average.

c) Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD Database on Trade Unions; Visser, J. (2011), "Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts", 1960-2010(ICTWSS), Version 3.0, May, *www.uva-aias.net/208.*

Table 3.1. **Structure of collective bargaining systems: Bargaining levels and co-ordination**

Second half of the 2000s, before the crisis

Dominant level*		Central (1)	Sectoral (2)	Extension	Derogations	Local (3)	Change in dominant level since 1990	Co-ordination type	
Central	BEL	xxx	xx	xxx	x	x		xxx	State-imposed
	IRL[b]	xxx	x	x	xx	xx		xxx	Tripartite
Sectoral	AUT		xxx	x		x		xxx	Pattern bargaining
	DEU		xxx	x	xxx	xx		xxx	Pattern bargaining
	ESP	x	xxx	xx	x	x		xxx	Inter-associational
	FIN		xxx	xx	x	x	2 → 1, 1 → 2, 3	xx	Intra-associational
	GRC[b]	x**	xxx	xx		x		xx	Inter-associational
	ITA[b]		xxx		x	x		xxx	Inter-associational
	NLD		xxx	xx	xx	x		xxx	Pattern bargaining
	NOR	x	xxx	x	x	x		xxx	Pattern bargaining
	PRT		xxx	xx		x		xx	Intra-associational
Company/establishement	AUS[a]		x			xxx	2 → 3		
	CAN		x			xxx			
	CZE		xx	xx		xxx		x	Intra-associational
	DNK		xx			xxx	2 → 3	xx	Pattern bargaining
	FRA	x	xx	xxx	x	xxx	2 → 3	x	Intra-associational
	GBR		x			xxx			
	HUN	x	x	x	x	xxx		x	Tripartite
	JPN					xxx		x	Intra-associational
	KOR		x			xxx			
	POL	x**	x		x	xxx			
	SVK		xx	x		xxx	1, 2 → 3	x	Intra-associational
	SWE		xx			xxx	2 → 3	xx	Pattern bargaining
	USA		x			xxx			

Note: x = low ; xx = medium ; xxx = high, qualifying the relative importance for bargaining levels and the importance of co-ordination. The table should be read by line, as it describes the relative importance of the various bargaining levels and of the extension of, and derogation from, sectoral agreements within each countries. It is not meant to provide an assessment of the relative importance of a given bargaining level across countries.

* 1 refers to central level of bargaining, 2 to sectoral and 3 to local.

** In Greece and Poland, the central level of bargaining serves only to fix the minimum wage.

a) Collective bargaining systems incurred significant changes in Greece, Ireland and Italy after the start of the global financial crisis; they are not included here as they are not relevant for the period under study in this chapter.

b) In Australia, "awards" passed by Fair Work Australia prevail at the sectoral level, which are not real collective "agreement", as trade union and employer organisations are simply consulted. They apply to the whole sector. Company level agreements cannot be overall less favourable than sectoral ones, but the various elements can be traded against one another (*e.g.* wage for working time).

Source: OECD Secretariat based on various sources detailed in Annex 3.A1.

Swedish labour market reforms 2007–2011

- **Introduction of Earned Income Tax Credit (EITC)**
- **Less generous unemployment insurance**
- **Less generous sickness insurance**
- **Tax deduction for household-related services (*RUT-avdrag*) and for repair and maintenance (*ROT-avdrag*)**
- **Lower employer contributions (payroll taxes) especially for young people**
- **More focus in active labour market programmes on job-search activities**

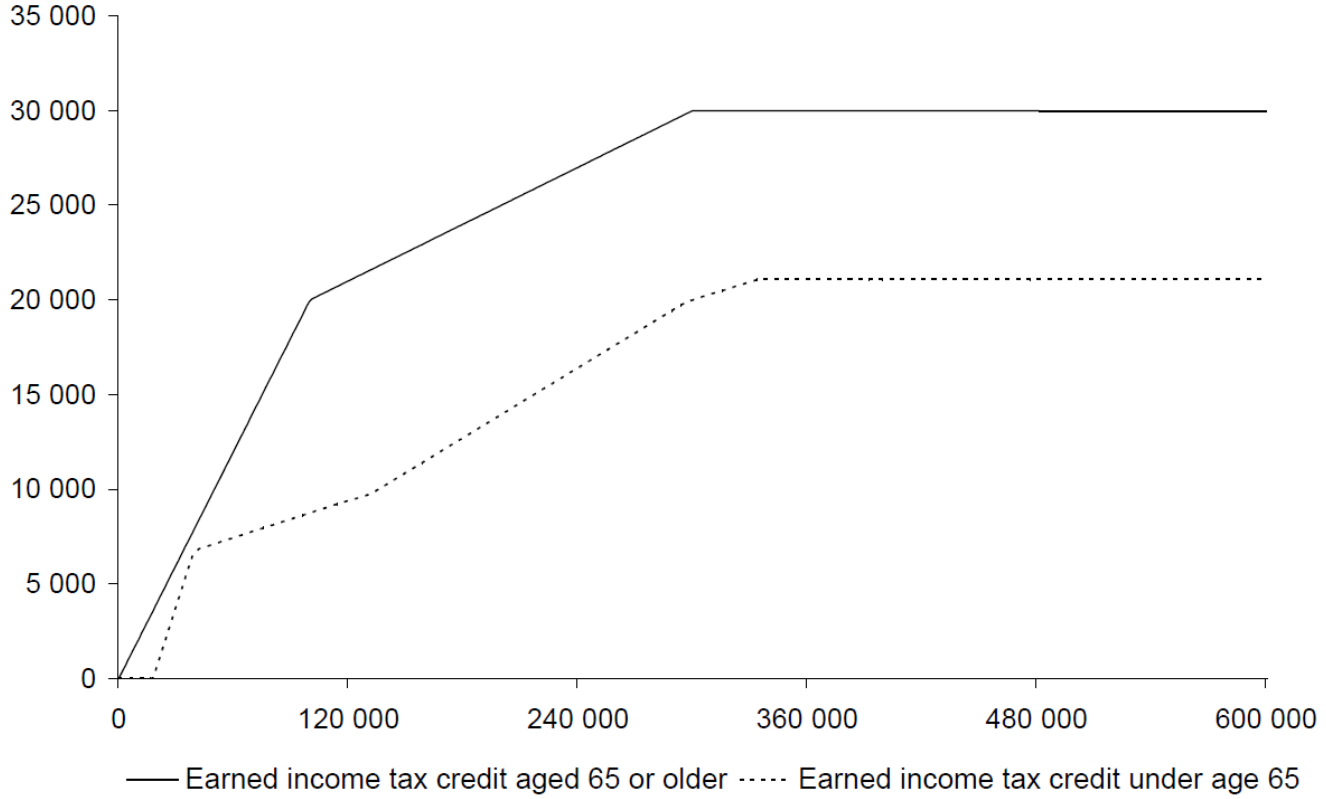
Aim of labour market reforms

- **Increase the return to work**
- **Lower replacement rate when not working**
  - **replacement rate = income from non-employment / income from employment**
- **EITC and less generous unemployment benefits**

Lower replacement rates raise equilibrium employment

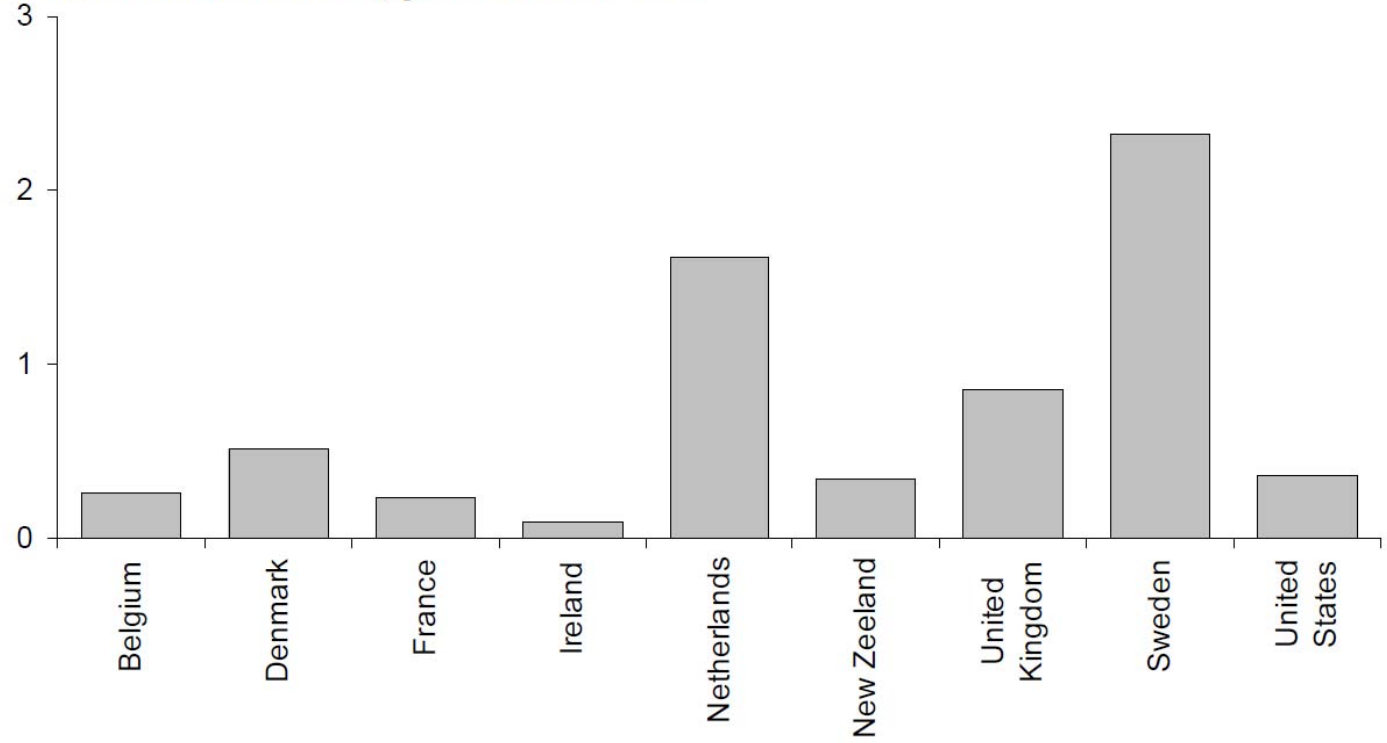
- **Larger labour-force participation from EITC**
- **Stronger job search incentives for non-employed**
- **Lower reservation wages (the lowest wages on a job that the non-employed accept)**
- **Lower wages in collective bargaining**
- **But less insurance for the unemployed**
- **Ample empirical evidence that lower replacement rates increase the job-finding rate – shorter unemployment duration**

Figure 7.6 Earned income tax credit and annual income for people under and over 65 years



Note: In the estimates, the assumption is that people over 65 have income other than earned income, for example, pensions, that exceeds SEK 40 000 a year and that people under 65 do not have any income other than earned income.
Source: Fiscal Policy Council calculations.

Figure 7.2 Direct budget cost of the earned income tax credit in selected countries, per cent of GDP



Note: The figure shows only the direct budget costs of the earned income tax credit. Not taken into account are the effects in the form of either reduced costs for other social benefits or increased tax revenue as a result of higher employment. The net costs of the credits are thus considerably less than the direct budget costs shown in Figure 7.2. The numbers refer to 2010 for Sweden, 2007 for the United Kingdom and the United States and 2008 for other countries.
Source: Fiscal Policy Council calculations.

Unemployment insurance in Sweden

- **Voluntary participation in unemployment insurance funds (”a-kassorna”) affiliated to trade unions gives income-related unemployment benefit**
- **Otherwise only fixed basic allowance (“grundbelopp”)**

Benefit levels for members in unemployment insurance funds

- **80 per cent replacement rate for 200 days**
- **70 per cent replacement rate for another 100 days (250 days for parents)**
- **After that 65 per cent replacement rate for ever in the job and development guarantee (“jobb- och utvecklingsgarantin”).**
- **Benefit ceiling: 680 SEK per day (15 000 SEK per month) – higher income than 18 700 SEK per month gives less than 80 per cent.**

Basic allowance (“grundbelopp”): 320 SEK per day

Table 11.1 Replacement rate after tax in 2006 and 2010 at one calendar year's unemployment according to monthly income and different factors' contribution to the change

Monthly pay	15 000	20 000	25 000	35 000	50 000
Replacement rate 2006	**82.3**	**81.8**	**71.3**	**51.8**	**39.9**
Replacement rate 2010	**73.1**	**68.7**	**56.5**	**42.6**	**33.4**
Change	**-9.2**	**-13.1**	**-14.8**	**-9.2**	**-6.5**
From 80 to 70 per cent	-1.9	-0.7	-	-	-
Reduced ceiling for 100 days	-	-1.7	-1.5	-1.1	-0.8
Earned income tax credit	-7.0	-6.5	-5.4	-3.2	-1.9
Raised income threshold for state tax	-	-	-	-0.6	-0.3
Price and wage increases	-0.1	-4.0	-7.0	-4.2	-2.9

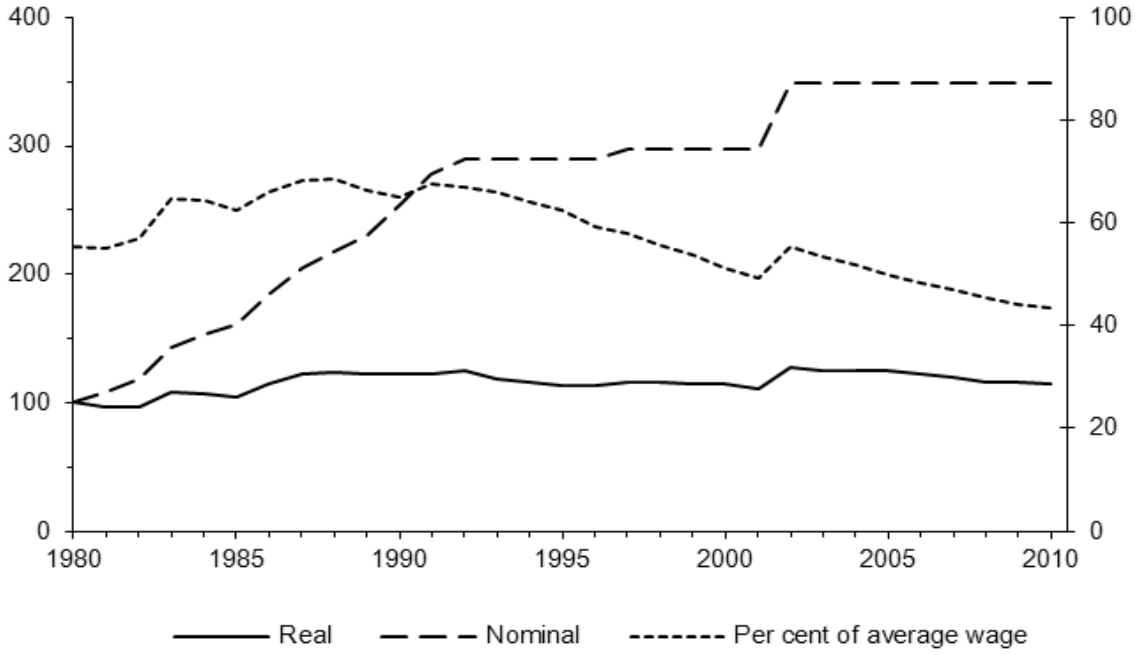
Note: The table shows an individual's total income for one year of unemployment as a percentage of income for one year of work. Rows 4-8 show various factors' contribution to the change in percentage points. All estimates assume that the person is between 25 and 64, is a member of an unemployment insurance fund and meets the terms for accrued work and has no income other than earned income or benefits from an unemployment insurance fund (supplementary insurance schemes are thus not included). The monthly pay reported refers to 2010. For 2006, the monthly pay in each income group is assumed to have been 12 per cent lower.
Source: Fiscal Policy Council estimates.

Table 11.3 Replacement rate after tax for the long-term unemployed with activity support according to monthly income and various factors' contribution to the change

Monthly pay	15 000	20 000	25 000	35 000	50 000
Replacement rate 2006	**82.3**	**81.8**	**69.5**	**50.5**	**38.9**
Replacement rate 2010	**62.5**	**62.0**	**56.5**	**42.6**	**33.4**
Change	**-19.8**	**-19.8**	**-13.0**	**-7.9**	**-5.5**
From 80 to 65 per cent	-12.5	-7.4	-	-	-
Reduced ceiling for 100 days.	-	-	-	-	-
Earned income tax credit	-6.0	-6.0	-5.4	-3.2	-1.9
Raised income threshold for state tax	-	-	-	-0.6	-0.3
Price and wage increases	+0.3	-0.2	-5.2	-4.2	-2.9

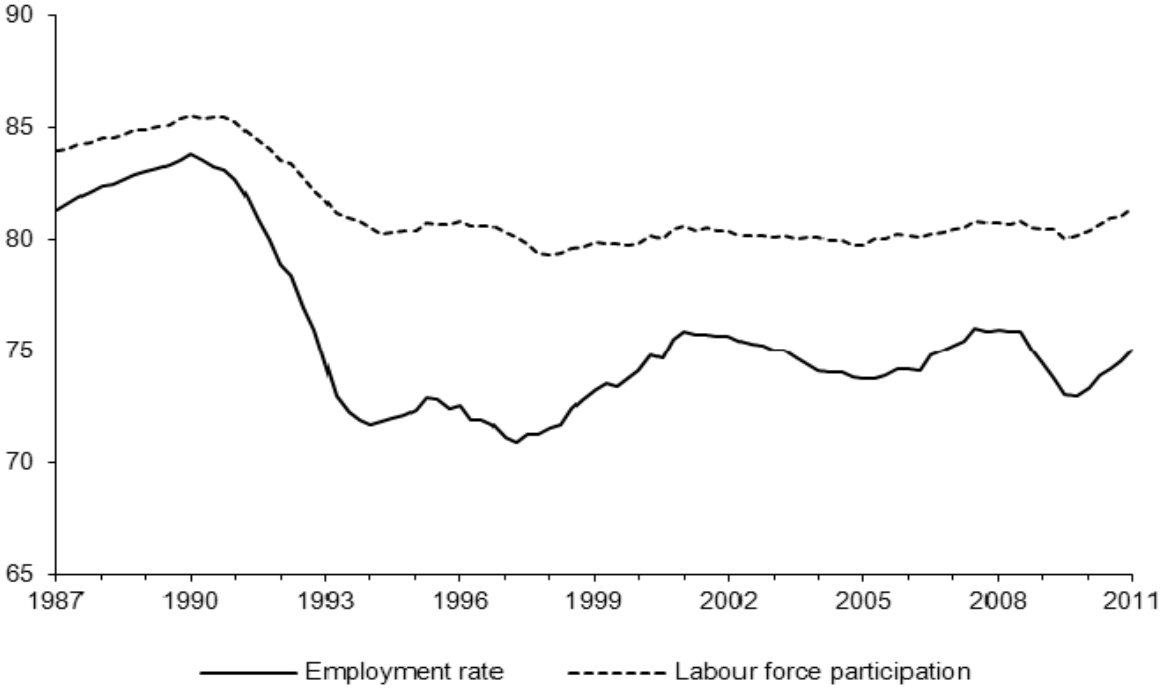
Note: The table shows the income for one year with activity support for people who have been unemployed at least 420 days as a per cent of the income from one year's work. Rows 4-8 show various factors' contribution to the change in percentage points. See also Table 11.1.
Source: Fiscal Policy Council estimates.

Figure 7.5 Maximum daily unemployment benefit



Note: Left axis (index 1980 = 100) shows how the maximum daily rate has developed in nominal and real terms respectively. The real ceiling has been calculated using the CPI as deflator. The right axis shows the maximum daily rate as a percentage of the average wage.
Sources: IAF and Statistics Sweden.

Figure 6.3 Labour force participation and employment, per cent of the population



Note: Chained, seasonally adjusted data, ages 16-64, the first quarter of 1987 - the first quarter of 2011, unemployment according to the ILO definition.
Source: Statistics Sweden, LFS.

Table 7.1 Change in equilibrium unemployment, labour force participation and employment rate according to the Ministry of Finance, percentage points

	Equilibrium unemployment	Labour force participation	Employment rate
Level 2006	**6.6**	**71**	**66**
Demography	0.4	-2.1	-2.2
Unchanged ceiling for unemployment benefits	-0.6	0.1	0.5
Structural reforms	-1.4	2.2	3.0
Previous structural reforms	0.0	0.1	0.1
Level 2020	**5.0**	**71**	**68**

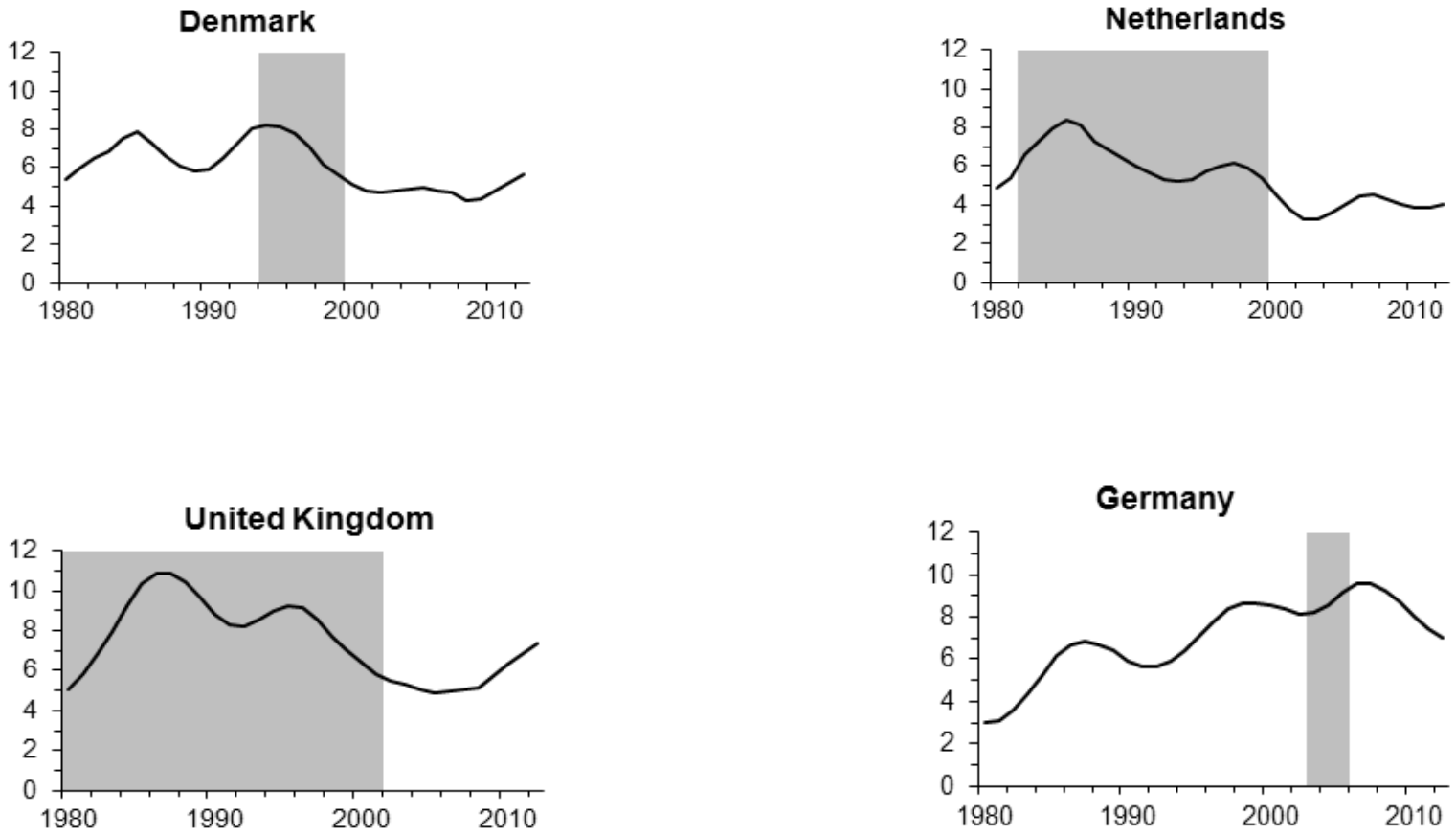
Note: Equilibrium unemployment is according to the ILO definition of unemployment for ages 15–74. Labour force participation and the employment rate (as a percentage of the population) refer to people aged 15-74.
Source: Ministry of Finance (2011b), Table 3.1.

Table 7.2 Long-term labour market effects of the Government's policy, per cent or percentage points

	Labour force	Employment	Equilibrium unemployment	Hours worked
Earned income tax credit	1.6	2.3	-0.6	2.9
Unemployment insurance	0.2	1.0	-0.7	1.0
Sickness insurance	0.9	0.4	0.4	0.5
RMI/Household services tax credit	0.2	0.4	-0.2	0.5
Reduced social security contributions	0.2	0.2	0.0	0.2
Labour market policy	0.1	0.3	-0.2	0.3
Income tax threshold	0.0	0.0	0.0	0.3
Total structural reforms	**3.1**	**4.6**	**-1.4**	**5.7**
Unchanged ceiling for unemployment benefits 2006-2011	0.1	0.8	-0.6	0.7
Total effect	**3.3**	**5.3**	**-1.9**	**6.4**

Note: Unemployment is according to the ILO definition. All variables refer to people aged 15-74. Percentage change in the labour force, employment and hours worked. Change in unemployment in percentage points.
Source: Ministry of Finance (2011b), Table 3.2.

Figure 7.1 Unemployment after major labour market reforms



Note: Five-year moving average, per cent of the labour force. The shading shows the periods when major labour market reforms were implemented.
Sources: European Commission and own judgements.

Studies of the effects of EITC

- **Natural experiments if only some groups receive EITC**
  - **– such studies in the US and the UK**
  - **– large effects (single parents)**
  - **– such studies not possible in Sweden except comparisons between 65+ and 65-**

- **Microsimulations**
  - **– Computed effects in models**
  - **– Participation rather than working time**
  - **– The government's calculations**
  - **– Critique from the Fiscal Policy Council**
  - **– Mechanisms: wages**

- **Recent study (Bennmarker–Calmfors–Larsson)**
  - **– Strong covariation between individual wage and after-tax replacement rate**
  - **– 2007-2009 reforms: 4 % wage reduction**

Cyclically dependent unemployment insurance

- **Proposal from the Swedish Fiscal Policy Council**
- **Higher benefit levels in recessions than in booms**
  - **insurance need higher in recession**
  - **adverse moral-hazard effects on incentives for job search matter less for employment in recessions when jobs are few**
- **Such rules in the US and Canada**
- **Negative response from government**
  - **fear that benefit levels cannot be lowered again.**