The effects of globalisation on Western European jobs: curse or blessing?

1. Introduction*

Much of the Western European debate on globalisation has focused on the risk that increased competition from foreign workers with low wages will cause job losses. This could occur because of import competition, offshoring of production or labour immigration. The fears in the public debate stand in stark contrast to the attitudes of most economists, who tend instead to stress the long-run welfare gains from increased international integration. These accrue because trade allows specialisation in production. According to "old" trade theory, the basis is comparative advantages based on differences in endowments of production factors or in technology. According to "new" trade theory, specialisation is instead based on economies of scale. Alternatively, mobility of production factors allows them to be used more efficiently.

Traditional theory more or less defined away the risk that the opening up of trade could lead to unemployment. The standard assumption has been that flexible prices and wages guarantee full employment in the long run. This can be seen as a shortcut to capture the notion that equilibrium unemployment, that is the average unemployment over the business cycle, is mainly determined by labour market institutions and is not to any large extent affected by the volume of trade.

However, the sanguine attitude of traditional theory towards the employment effects of increased trade with low-wage economies has also been challenged. It has become a standard argument that unemployment will arise to the extent that wage rigidities prevent wages and prices from adjusting to changed trade patterns. This has been claimed to be a contributing factor to the high unemployment, especially among low-skilled workers, in many European countries. According to this argument, the fall in demand for low-skilled labour associated with competition from low-wage economies has caused the relative wage of this group to fall in the US and other Anglo-Saxon countries, whereas the effect on the relative wage has in contrast been marginal in most of Western Europe with the consequence that employment has instead fallen.

It is true, of course, that if globalisation leads to a fall in demand for labour as a whole or for certain types of labour in advanced economies, employment will suffer in the presence of rigidities that prevent downward wage adjustments. But to gauge the long-run effects, it is crucial to analyse how the wage rigidities themselves may change in response to globalisation. This chapter argues that globalisation in itself tends to weaken these rigidities. It is possible that globalisation could promote labour market flexibility to such an extent that employment rises in the long run. If so, globalisation will not be a curse for employment in Western Europe; it could instead turn out to be a blessing.

Possible positive employment effects do not imply that economic policy-makers should not respond to globalisation pressures. To the extent that positive employment effects come about, it may be because globalisation raises wage inequality and shifts the functional income distribution in favour of capital. So, an important task of economic policy is to try to allocate the gains from globalisation in a "fair way" and ensure that groups that might otherwise lose out (or receive only small gains) also share the benefits. It may be this, rather than preventing employment losses, that is the main challenge to economic policy from globalisation. But if so, redistribution policies must be pursued in such a way that they support – and do not counteract – the general objective of raising employment. This speaks strongly against policies such as rises in unemployment benefits and the imposition of minimum wages. Measures such as retraining schemes, government support to displaced workers

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through severance pay, wage insurance and employment tax credits are more promising but should be pursued with caution.

The chapter is structured as follows. Section 2 gives a brief overview of globalisation trends. Section 3 summarises the theoretical arguments for why globalisation may cause unemployment in the presence of wage rigidities. Section 4 identifies possible mechanisms through which globalisation might loosen these wage rigidities and instead be beneficial for employment. Section 5 surveys existing research on the effects of globalisation on the relative demand for low-skilled versus high-skilled labour in advanced economies. Section 6 focuses instead on the effects of globalisation on overall labour demand and employment: the section both reviews existing research and adds new empirical evidence. Finally, Section 7 discusses appropriate policies to deal with the labour market effects of globalisation.

2. Globalisation trends – an empirical overview

Global market integration takes place via three channels: (1) trade in goods and services, (2) capital mobility and (3) labour mobility.

2.1 Trade integration

Figure 3.1 displays trade-to-GDP ratios (exports + imports as percentages of GDP) for OECD and EU15 countries since 1960.[1] These numbers are averages of trade ratios at the individual country level and therefore reflect trade flows within the EU15 and the OECD as well as between these areas and the rest of the world. There have been strong upward trends for both areas. The main explanation of the lower figure for the OECD is the large influence of the US, which as a large country is naturally characterised by a low trade-to-GDP ratio. While for the EU15 as a whole total trade as a percentage of GDP increased from 39 to 74 percent between 1960 and 2005, the ratio for the OECD increased from 20 to 48 percent. The trade expansion over the last fifteen years has been much faster than over the preceding fifteen years.

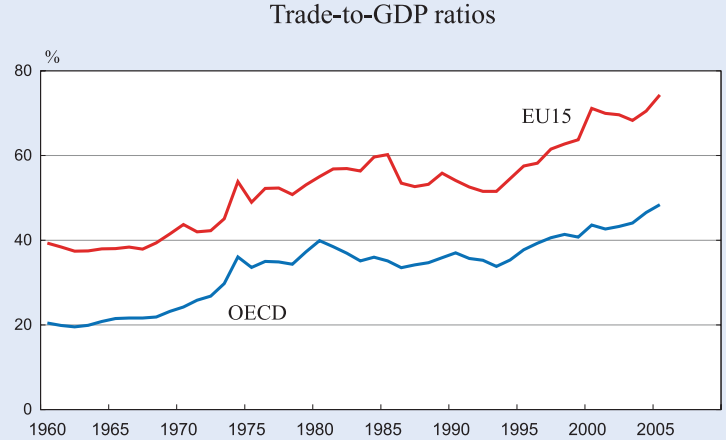
Table 3.1 gives an overview of trade developments country by country. As can be seen, the trade expansion has been a universal phenomenon, encompassing all the countries shown.

The globalisation debate in advanced economies has focused on the increased trade with low-wage countries in particular. To illustrate this, we show trade with non-OECD countries excluding OPEC members in Figure 3.2. As can be seen, the trade with low-wage economies as a percentage of GDP is still small, 8–9 percent for both EU15 and the whole OECD area. But the trade ratios have been increasing at a rapid pace since the late 1980s.

Table 3.2 shows imports from low-wage countries as a percentage of GDP for individual OECD countries. The dependence on low-wage imports has increased for all countries except Norway. In Europe, the increases in imports were particularly large in the Netherlands, Belgium, Ireland and Finland.

Although trade with low-wage economies only makes up a small fraction of the total trade of advanced economies, these trade flows have grown much faster than overall trade. Figure 3.3 shows that the share of imports from low-wage economies in total imports increased from 13 to 19 percent for the EU15 between 1988 and 2004. For the OECD as a whole this ratio

Figure 3.1



Note: The trade-to-GDP ratio is defined as exports + imports of goods and services as a percentage of GDP. The aggregate ratios in the diagram are weighted country-specific ratios as explained in footnote 1.
Source: World Development Indicators.

[1] The calculations have been done by weighting country-specific trade-to-GDP ratios by the countries' shares in aggregate GDP for the whole area. The OECD aggregate does not include the Czech Republic, Hungary, Iceland, Mexico, Poland, Slovakia and Turkey, as we want to focus on high-income countries.

Table 3.1

Trade-to-GDP ratios[a)]

	1960	1980	2000	2005
Austria	48	74	92	101
Belgium	78	119	169	172
Denmark	63	66	82	93
Finland	44	66	76	74
France	26	43	56	53
Germany		52	67	75
Greece	24	51	58	49
Ireland	65	106	176	151[b)]
Italy	26	46	56	52
Luxembourg	177	196	291	294
Netherlands	92	104	130	134
Portugal	36	60	75	66
Spain	15	32	62	56
Sweden	45	60	89	90
UK	42	52	58	56
EU15	**39**	**55**	**71**	**74**
Australia	29	33	46	40[b)]
Canada		55	87	73[b)]
Japan	21	28	20	24
Korea	16	73	87	83
New Zealand		60	72	59
Norway	73	80	77	73
Switzerland	53	73	88	85[b)]
US	10	21	26	25[b)]
OECD	**20**	**40**	**44**	**48**

Note: [a)] See Figure 3.1. – [b)] The figure refers to 2004.

Source: World Development Indicators.

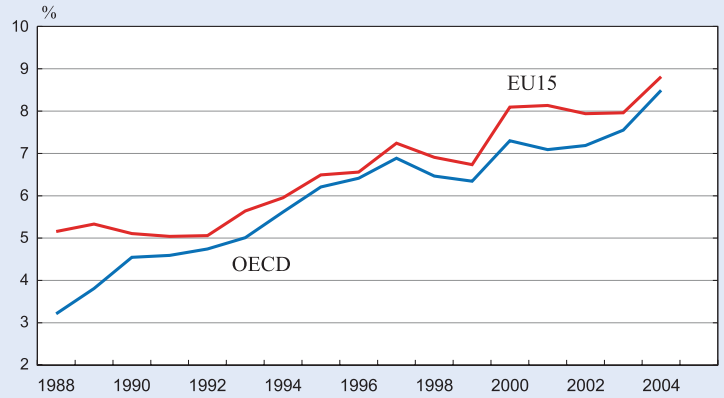
approached 29 percent in 2004, reflecting mainly the larger share of imports from non-OECD countries in total imports in Japan and the US than in Western European countries. This can be seen in Table 3.3.

Among the low-wage countries, China stands out as it has integrated into the world economy at a particularly high pace. According to the United Nations' COMTRADE data, the share of OECD imports from China in total imports from outside the OECD jumped from 0.7 percent in 1980 to nearly 10 percent in 2005.[2]

Through improvements in communication and transport technology, firms are now better able than before to manage complex production processes around the globe such that parts of the value added chain can be moved abroad. This phenomenon has attracted a lot of attention in the trade literature as well as in the public debate since the 1990s. The concept of *international outsourcing* and *offshoring* are widely used to characterise this process. The terminology varies, however. International outsourcing is sometimes defined as a firm's imports of intermediary inputs from foreign non-affiliated production locations and *offshoring* as a firm's imports of intermediary inputs from foreign in-house production locations. Unless stated otherwise, we shall here let international outsourcing denote the imports of intermediary inputs from abroad in general independently of whether the source is an affiliated or a non-affiliated production location. Offshoring will denote imports from an affiliated production location only. Figures 3.4a and 3.4b show that the share of intermediate imports in total output increased for most countries between 1995 and 2000. This is true for both materials and services.

Figure 3.2

Trade-to-GDP ratios vis-à-vis low-wage economies



Note: Low-wage economies are defined as non-OECD, non-OPEC countries. See also Figure 3.1.

Source: OECD STAN Bilateral Trade Database; calculations by the EEAG.

2.2 Capital mobility

Capital mobility is another important channel for international market integration. We focus first on foreign direct investment (FDI), which can be divided into horizontal and vertical FDI. While the former takes place mainly between countries at similar levels of development

[2] See Figure 3.2 in OECD (2007).

Table 3.2
Imports from low-wage countries as a percentage of GDP

	1990	2000	2004
Austria		3.4	4.2
Belgium	5.7	10.6	10.5
Denmark	2.4	3.4	4.0
Finland	3.3	6.3	7.9
France	2.4	3.6	3.7
Germany	2.9	4.4	4.7
Greece	2.8	4.6	4.9
Ireland	2.0	7.1	5.2
Italy	2.5	3.9	4.1
Netherlands	5.6	8.7	11.1
Portugal	3.4	3.2	3.3
Spain	2.0	4.1	4.3
Sweden	1.9	3.3	3.4
UK	2.6	4.3	4.4
EU15	**2.7**	**4.5**	**4.9**
Australia	2.3	5.4	6.2
Canada	1.5	3.4	4.1
Japan	2.4	3.4	4.6
Korea	0.0	10.9	12.1
New Zealand	2.8	5.7	6.2
Norway	3.6	3.1	3.2
Switzerland	2.4	3.6	2.5
US	2.2	3.8	4.4
OECD	**2.4**	**4.1**	**4.8**

Note: See Figure 3.2.

Source: OECD STAN Bilateral Trade Database.

Table 3.3
Imports from low-wage countries as a percentage of total imports

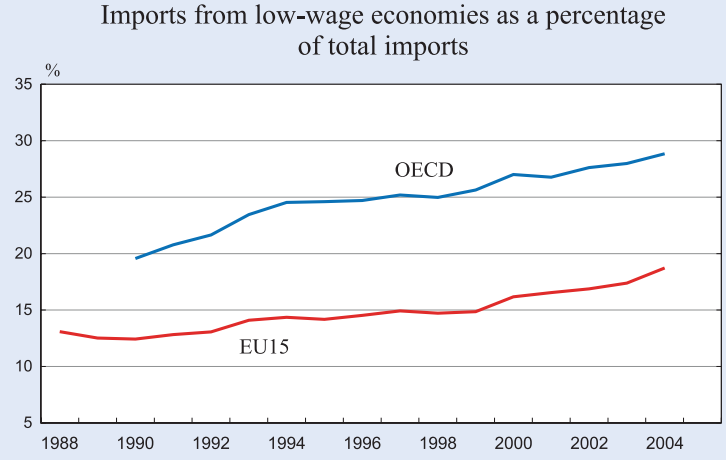
	1990	2000	2004
Austria		9.4	11.0
Belgium	9.4	14.1	13.1
Denmark	9.7	12.3	14.6
Finland	16.4	22.4	29.2
France	12.4	15.5	17.7
Germany	13.8	16.6	18.2
Greece	11.8	17.1	19.5
Ireland	4.5	13.4	15.3
Italy	15.4	17.5	20.0
Netherlands	12.2	18.3	26.1
Portugal	9.5	8.6	10.6
Spain	11.5	14.9	17.2
Sweden	8.3	10.2	11.9
UK	11.6	18.1	20.6
EU15	**12.4**	**16.2**	**18.7**
Australia	18.4	31.0	37.6
Canada	7.4	10.0	14.6
Japan	31.8	42.2	46.6
Korea	0.0	31.3	36.7
New Zealand	13.0	21.0	26.8
Norway	15.3	14.7	16.9
Switzerland	7.9	10.3	8.3
US	24.4	29.8	33.7
OECD	**19.6**	**27.0**	**28.8**

Note: See Figure 3.2.

Source: OECD STAN Bilateral Trade Database.

and serves to access foreign markets by moving production closer to consumers, firms to a large extent engage in vertical foreign direct investments to exploit the advantage of low wages in emerging economies in the production of labour-intensive intermediate goods. Figure 3.5 and Table 3.4 show a dramatic increase in FDI from advanced countries.

Figure 3.3



Note: Low-wage economies are defined as non-OECD, non-OPEC countries. See also Figure 3.1.

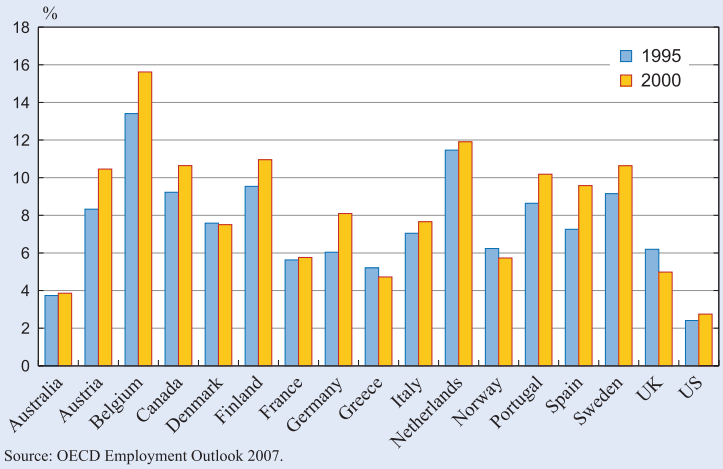
Source: OECD STAN Bilateral Trade Database; calculations by the EEAG.

For the EU15 the ratio of total outward FDI stock to domestic GDP jumped from 6 to 40 percent between 1980 and 2005.[3] The OECD figure reached 27 percent in 2005. Among individual countries, the Netherlands stand out as their ratio more than quadrupled from 24 percent to more than 100 percent between 1980 and 2005; larger countries like the US or Japan show much smaller increases.

Distinguishing again between advanced and low-wage countries, one finds a similar pattern as with international trade. Low-wage economies only play a minor role as recipients of

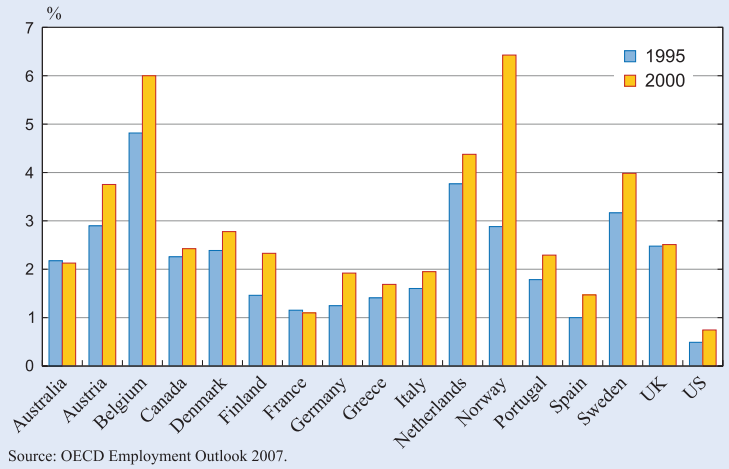
[3] The percentages in Figure 3.5 have been calculated in a similar way as in Figure 3.1. See footnote 1.

Figure 3.4a



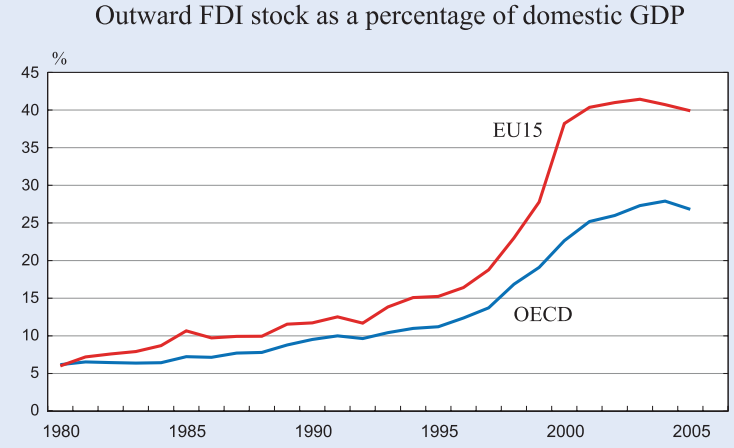
Source: OECD Employment Outlook 2007.

Figure 3.4b



Source: OECD Employment Outlook 2007.

Figure 3.5



Note: The aggregate figures in the diagram are weighted country-specific figures as explained in footnote 1.

Source: UNCTAD FDI database.

FDI from advanced economies (see Table 3.5). Relative to the GDP of advanced countries, outward FDI stock in low-wage economies made up no more than a small percentage in 2000 if one excludes outliers such as Switzerland and the Netherlands. For most advanced countries, the share of low-wage economies in total outward FDI stock is below 15 percent (the exceptions are Austria with 38.9 percent, the US with 31.1 percent, Canada with 25.2 percent and Switzerland with 22.3 percent). It is noteworthy, however, that the share of the outward FDI stock in low-wage economies rose for most advanced economies between 1995 and 2000.

Although the amount of FDI can be used as an indicator of capital market integration, the measure says nothing about the extent to which the world capital stock has been reallocated from advanced to low-wage economies. Ideally, one would like to see how the distribution of the world capital stock has changed over recent decades. Capital stock data, especially in low-wage economies, are, however, notoriously unreliable.

It is clear though that the allocation of investment has changed substantially over time. Figure 3.6a shows that low-wage economies still account for less than 30 percent of total global capital formation, but this fraction increased by more than 10 percentage points between 1970 and 2005. As can be seen in Figure 3.6b, the rising share of low-wage economies in world investment can to a large extent be attributed to increasing investment in China.

Table 3.4
Outward FDI stock as a percentage of domestic GDP

	1980	1990	2000	2005
Austria	0.7	2.9	12.8	21.9
Belgium and Luxembourg	4.8	19.4	72.5	
Denmark	3.0	5.5	46.2	45.5
Finland	1.4	8.2	43.5	38.5
France	3.5	9.0	33.5	40.5
Germany	4.8	9.1	29.0	34.6
Greece		3.4	5.4	6.0
Ireland		36.4	29.4	59.0
Italy	1.6	5.5	16.8	16.6
Netherlands	23.6	36.3	82.4	102.6
Portugal	1.7	1.3	18.4	24.2
Spain	0.8	3.0	28.9	33.8
Sweden	2.8	21.1	51.4	56.5
UK	15.0	23.2	62.4	56.2
EU15	**6.0**	**11.7**	**38.2**	**39.9**
Australia	3.0	9.8	22.0	22.5
Canada	8.9	14.8	33.3	35.3
Japan	1.8	6.6	5.9	8.5
Korea	0.2	0.9	5.2	4.6
New Zealand	2.3	14.7	16.3	10.2
Norway	0.9	9.4	217.2	123.3
Switzerland	19.4	28.0	93.4	107.4
United States	7.8	7.5	13.5	16.4
OECD	**6.2**	**9.5**	**22.6**	**26.8**

Note: The aggregate figures are weighted country-specific figures as explained in footnote 1.

Source: UNCTAD FDI Database.

2.3 Labour mobility

Migration of labour represents a third channel of globalisation. Table 3.6 shows the stocks of foreign-born population as a percentage of total population in various countries. The table gives a picture of increases everywhere. The largest shares of foreign-born population in Europe are in Switzerland (23.8 percent) and Austria (13.5 percent), which are countries that have always relied on large inflows of foreign labour. But it is also to be noted that the percentages of foreign-born population in Germany (12.9), Sweden (12.4) and Belgium (12.1) more or less match that of the US (12.9), a traditional immigration country.

Table 3.7 shows instead gross yearly inflows of foreign citizens as a percentage of total population. The EU15 average in 2005 was 0.7 percent. The European countries that stand out with the largest inflows are Spain (1.6 percent), Switzerland (1.3 percent), Austria (1.2 percent) and Ireland (1.2 percent). Here, too, there is an increasing trend for most countries.

Table 3.5
Outward FDI stock in low-wage countries

	Percentage of GDP		Percentage of total stock	
	1995	2000	1995	2000
Austria	1.7	4.9	34.1	38.9
Finland	0.8	2.6	7.3	6.1
France	0.5	1.9	4.3	5.6
Germany	1.4	4.0	13.3	14.3
Italy	0.3	0.6	4.0	4.2
Netherlands	6.6	11.5	16.5	14.7
Sweden	0.5	4.9	1.9	9.5
UK	4.9	5.3	17.8	8.3
Australia	2.1	2.4	14.9	10.5
Canada	4.0	8.4	20.0	25.2
Norway	1.7	3.9	10.9	15.3
Switzerland	9.0	20.5	20.4	22.3
US	2.7	4.2	29.1	31.1

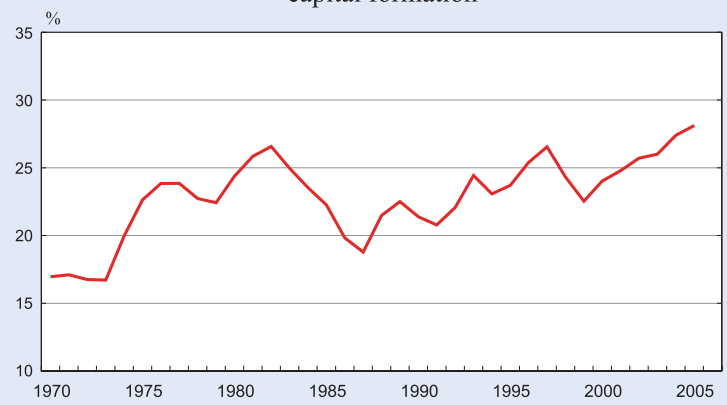
Note: See Figure 3.2.

Source: UNCTAD FDI Database.

3. Globalisation and unemployment

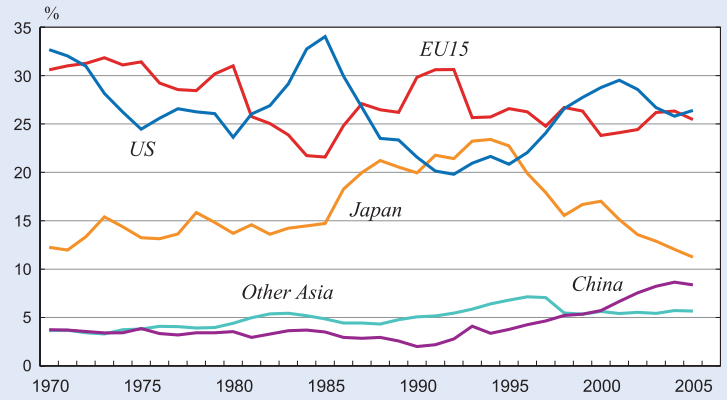
The standard framework of economists to analyse the effects of trade integration with low-wage economies is the so-called *Heckscher-Ohlin model* of trade. In the simplest versions of the model, the basic assumptions are that there are two production factors, two goods with different relative factor requirements in production and two regions with different relative factor endowments. Sometimes capital and labour are seen as the two production factors, with advanced countries having a larger stock of capital relative to labour than low-wage economies. Sometimes the focus is instead on high-skilled and low-skilled labour as the two factors of production, with a larger relative supply of high-skilled labour (human capital) in advanced than in low-

Figure 3.6a



Note: Low-wage economies are defined as non-OECD, non-OPEC countries.
Source: UNCTAD FDI database; calculations by the EEAG.

Figure 3.6b



Note: "Other Asia" includes all South, East and South-East Asian countries according to the UNCTAD definition except China and Korea.
Source: UNCTAD FDI database; calculations by the EEAG.

wage economies. Below we will denote the sector using capital/skilled labour more intensively the *capital-intensive* sector and the other sector the *labour-intensive* one.

In the absence of trade, relative goods prices differ between advanced economies (the North) and low-wage economies (the South): the relative price of the capital-intensive good is lower in the North than in the South. The opening up of trade between the two regions equalises goods prices: the relative price of the capital-intensive good increases in the North, whereas the reverse development occurs in the South. In the North, there is an incentive to move production factors to the capital-intensive sector. Hence, output in this section expands, whereas output in the labour-intensive sector contracts. In the South, the reverse development takes place. As a result, the North will export the capital-intensive good and import the labour-intensive good. In the North, there is an increase in the relative demand for the production factor used intensively in the expanding sector: capital or skilled labour. The explanation is that more additional capital (or skilled labour) is demanded from the expanding capital-intensive sector than is released from the contracting labour-intensive sector, at the same time as the increase in demand for the other production factor from the expanding sector is smaller than the fall in demand in the contracting sector. If factor supplies are given and markets clear – as is assumed in traditional trade models – the relative reward of the factor used intensively in the expanding sector must rise: the return to capital rises relative to the wage or the relative wage of skilled labour rises. Reverse developments occur in the South. The changes in the relative factor price are larger than the changes in the relative price. The association between an increase (decrease) in the relative price of a good and the increase (decrease) in the relative reward for the factor used intensively in the production of that good is usually labelled the *Stolper-Samuelson effect.*

Overall, the expansion of trade results in welfare gains for both regions because production factors can be used more efficiently when each region can expand the production in which it has a comparative advantage due to the differences in factor endowments. But the convergence of factor prices between the North and the South also implies changes in the income distribution. Although the opening up of trade creates aggregate gains in both regions, there are, according to the Heckscher-Ohlin model, both winners and losers. The existence of aggregate gains means, however, that in principle the winners can compensate the losers by means of monetary transfers, so that all

Table 3.6
Stock of foreign-born population as a percentage of total population

	1996	2000	2005
Austria		10.5	13.5
Belgium	9.8	10.3	12.1
Denmark	5.1	5.8	6.5
Finland	2.1	2.6	3.4
France		7.3[a)]	
Germany	11.9	12.5	12.9[a)]
Greece		10.3[b)]	
Ireland	6.9	8.7	11.0
Italy		2.5[b)]	
Netherlands	9.2	10.1	10.6
Norway	5.6	6.8	8.2
Portugal	5.4	5.1	6.3
Spain		5.3[b)]	
Sweden	10.7	11.3	12.4
Switzerland	21.3	21.9	23.8
UK	7.1	7.9	9.7
Australia	23.3	23.0	23.8
Canada	17.4	18.1	19.1
New Zealand	16.2	17.2	19.4
US	10.3	11.0	12.9

Notes: [a)] 2003. – [b)] 2001.

Source: OECD International Migration Outlook 2007.

agents in a region can be made better off than if it had remained in autarky.

While the Heckscher-Ohlin framework focuses on trade as the explanation of factor price convergence, capital and labour movements have similar effects. When it can, capital moves from high-wage to low-wage countries, decreasing labour demand in the former and increasing it in the latter. Labour, in turn, migrates from low-wage to high-wage countries, increasing labour supply there and reducing it in the low-wage countries.

The Heckscher-Ohlin story has been invoked as an explanation of both rising wage inequality and a falling labour share in advanced economies. Figure 3.7 shows how the relative earnings of high-skilled versus low-skilled labour – measured as the ratio between the earnings of the 90th and the 10th percentile of the earnings distribution – have increased strongly in the US and the UK over the last decades. There have also been increases – although smaller – in Germany, the Netherlands and Sweden. The two exceptions to this pattern in the diagram are Finland and France: in Finland the wage gap has remained more or less unchanged, whereas it has narrowed somewhat in France. Figure 3.8 shows how the aggregate income shares of labour and of employees in advanced economies have declined since 1980.

3.1 Trade and rigid wages

It has become a standard reasoning that globalisation causes unemployment in Western Europe because rigidities prevent wages from adjusting. The argument was first developed by Krugman (1995) on the basis of earlier work by Brecher (1974). More recent examples include, for example, Davis (1998), Landmann and Pflüger (1998), Sinn (2003, 2005a, 2006), EEAG (2005), Calmfors (2006) and Seidel (2007).

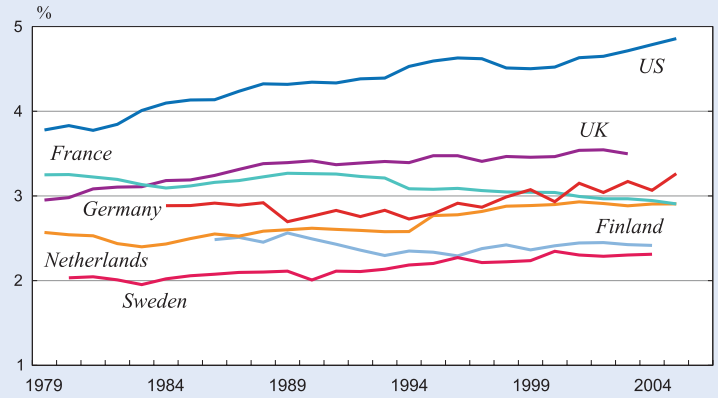
Krugman's argument was developed within the Heckscher-Ohlin framework described above. He focused on low-skilled versus high-skilled labour. The argument is simply that if the fall in relative demand for unskilled labour in the North is not allowed to reduce the relative wage of this group, then unem-

Table 3.7
Gross inflow of foreign citizens as a percentage of total population

	1992	1996	2000	2005
Austria			0.8	1.2
Belgium	0.5	0.5	0.6	0.7
Denmark	0.3	0.5	0.4	0.3
Finland	0.2	0.1	0.2	0.2
France		0.1	0.2	0.2
Germany	1.5	0.9	0.8	0.7
Ireland		0.6	0.7	1.2
Italy			0.5	0.5
Netherlands	0.1	0.1	0.1	0.0
Portugal		0.0	0.2	0.3
Spain			0.8	1.6
Sweden	0.5	0.3	0.5	0.6
UK	0.3	0.4	0.6	0.8
EU15			0.5	0.7
Australia	0.6	1.3	1.8	2.2
Canada	1.1	1.4	1.6	1.6
Japan	0.2	0.2	0.3	0.3
New Zealand	0.7	1.1	1.0	1.3
Norway	0.4	0.4	0.6	0.7
Switzerland	1.6	1.1	1.2	1.3
US	0.4	0.3	0.7	0.8
OECD			0.6	0.7

Source: OECD International Migration Outlook 2007.

Figure 3.7



Note: Earnings inequality is measured as the earnings ratio between the 90th and the 10th percentile of the earnings distribution.
Source: OECD.

ployment of unskilled workers must emerge. Because of this, the opening up of trade does not result in overall welfare gains for the North; instead welfare falls as compared to the pre-trade situation.

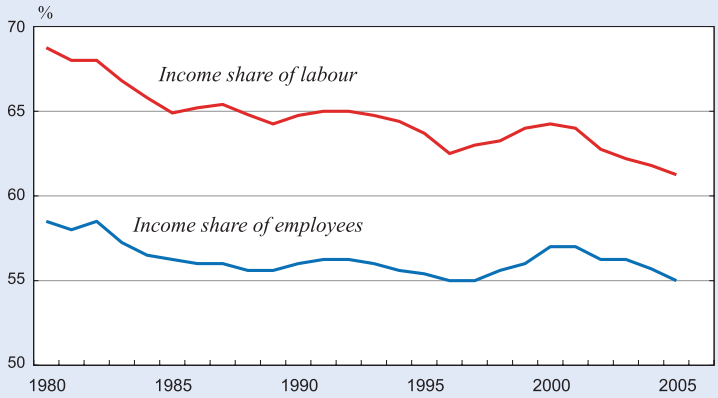
The lack of downward relative wage adjustment for unskilled workers could be the consequence of several types of rigidities. It could be the *relative wage* itself that is rigid. It could be the *real wage* in terms of the CPI (or any other combination of the prices of the two goods in the model) that is rigid. Or it could be the *money wage* that is rigid downwards (provided there is no or only very low inflation).

If the North is large enough, the rigid relative wage there locks the world relative price after trade has opened at the pre-trade level in the North. This means a larger expansion of the output of the labour-intensive good in the South than if wages were flexible. The North cuts down more on the production of labour-intensive goods than in the flexible-wage case, at the same time as it expands the production of the skill-intensive good more.[4] Both the North's exports of the skill-intensive good and its imports of the labour-intensive good will be larger than if wages were flexible. The wage rigidity thus causes both *overspecialisation* and *over-expansion* of trade.

With flexible wages, the North also specialises in the skill-intensive good, but less so because declining wages for the unskilled keep a larger fraction of the labour-intensive sector alive. With a rigid relative wage, too large a part of the labour-intensive sector is lost, and too much skilled labour is driven into the skill-intensive sector, where, however, the unskilled set free cannot be fully reemployed. The upshot is that exports from a skill-abundant country with rigid wages need not be a sign of high competitiveness. Instead, it might just reflect a "pathological export boom" enabled by an overly large shrinkage of the labour-intensive sector.[5]

According to the Krugman argument, globalisation may have caused more wage inequality in the US and other Anglo-Saxon countries, where wages are flexible, but unemployment in European economies, where wages are rigid. A similar argument can be made for labour in general if one thinks instead in terms of the North and the South having different relative endowments of capital and

Figure 3.8



Note: a) The income share of employees is the ratio of employees' labour compensation to value added. b) The income share of labour is the ratio of labour compensation of employees and "non-employee" workers to value added. c) Advanced economies include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Portugal, Spain, Sweden, the UK, and the US, weighted using series on GDP in US dollars from the World Economic Outlook database.
Source: IMF, World Economic Outlook, October 2007.

[4] This is an application of the so-called *Rybczinsky theorem*. According to that, a fall in the employment of a production factor causes a reduction in the output of the good that is intensive in the use of this factor and an increase in the output of the other good.
[5] For an extensive analysis see Sinn (2005a, 2006). The overexpansion of trade was first mentioned by Srinivasan (1995) in a comment to Krugman (1995).

labour. With an abundance of capital relative to labour in the North, trade then implies specialisation there in capital-intensive goods and a fall in the overall demand for labour. With downward real wage rigidity or money wage rigidity (in the case of very low inflation), an analogous reasoning to that above implies an increase in unemployment of all categories of workers.[6]

The risk that globalisation would cause unemployment because of wage rigidities obviously depends on the specific form of wage rigidity and on the speed with which trade integration occurs. If it is the real wage that is rigid downwards, risks are reduced to the extent that there is ongoing productivity growth that tends to raise the demand for labour: a relative shift in factor demand from labour to capital does not then have to involve any cut in real wages, to which there may be strong resistance.[7] If the downward rigidity refers to nominal wages, the risk that this rigidity will bite is smaller not only to the extent that productivity growth is higher but also the higher is inflation, since both higher productivity growth and higher inflation imply higher nominal wage growth. Conversely, a slowing of productivity growth, as has occurred in many European countries in recent years (see Chapter 3 in EEAG 2006), might exacerbate the problems. In general, the risks that either real or nominal wage rigidity will bite are smaller, the slower the pace of trade integration. Relative wage rigidity is a much larger problem than real wage rigidity: if labour demand shifts from low-skilled to high-skilled labour because of trade integration at the same time as there is general (factor-neutral) productivity growth, the latter cannot prevent unemployment from arising among the low-skilled if their wages increase to the same extent as the wages of the high-skilled.

3.2 Capital movements and unemployment

As discussed above, trade and factor mobility can be substitutes for each other. So, it is not surprising that the argument of globalisation causing unemployment under wage rigidities could just as well be phrased in terms of capital movements (see EEAG 2005; Seidel 2005, 2007; or Calmfors 2006).

Think about two economies (again the North and the South) with different capital-labour ratios. The two regions produce the same internationally traded good. The return to capital is lower in the capital-abundant North than in the labour-abundant South, whereas the reverse applies to the real wage. Opening up for free capital movements leads to a reallocation of the world capital stock in the long run, so that the returns to capital are equalised between the two regions by capital flows from the North to the South. In the process, labour demand falls in the North. With flexible wages, the result of capital reallocation and the fall in labour demand in the North is a reduction in the real wage there. There is, however, an overall income gain for the region because the gain to capital owners of higher returns outweighs the wage losses for labour.[8]

But if there is instead downward wage rigidity, unemployment emerges in the North. This prevents an increase in the return to capital there. If the North is large enough, its fixed real wage locks the factor returns in the world economy to the pre-capital-mobility levels in the North. This can only happen with a larger outflow of capital to the South than with wage flexibility, raising the marginal product of labour, and thus the real wage, more in that region than in the flexible-wage case. So, in this model framework, wage rigidity in the North again causes larger structural changes than would otherwise be the case. And again the wage rigidity implies that the potential aggregate income gains in the North never materialise. Instead, globalisation reduces aggregate income in this region: the income of capital owners remains unchanged, whereas total labour income falls when employment falls.

The above reasoning is, of course, too simplistic because it assumes that the wage does not respond to the unemployment emerging during the globalisation process. This is at odds with received wage-setting theory, which usually posits a wage-setting relationship according to which the wage is sensitive to the level of unemployment (see, for example, EEAG 2004, 2005). Taking this into account, one should expect the unemployment emerging in the process to gradually exert some moderating influence on wages. This will in turn reduce the rise in unemployment, but the main conclusion remains that with imperfectly flexible wages the shifts in labour demand associated with globalisation raise equilibrium unemployment under the assumptions made above.

[6] It is more far-fetched to think of a rigid relative wage in terms of the return to capital

[7] Such downward real wage rigidity has been documented by, for example, Dickens (2005) and Holden and Wulfsberg (2007).

[8] The implication is thus that, relative to a counterfactual where capital cannot move and everything else is held equal, the region's Gross National Income (GNI) rises, while its Gross National Product falls as capital is being relocated elsewhere.

3.3 Unemployment and labour migration

Immigration has similar implications for factor price convergence as trade specialisation and capital movements, because people migrate from low-wage to high-wage countries, increasing the scarcity price of labour in the former and reducing it in the latter. Ideally, also such factor movements create aggregate welfare gains for all nations involved. The nation from where labour emigrates gains because its workers obtain higher wages in the host country than what they were able to contribute to GDP at home. The nation to where the workers immigrate gains, because the immigrants typically make a contribution to GDP that is higher than the wage they receive, since part of that contribution accrues to complementary factors such as capital.

Also immigration can significantly change the income distribution. Those who offer labour services that are complements to what the immigrants offer gain, but those who offer substitute services lose. However, the losses are not aggregate losses, as they are counterbalanced by gains elsewhere in the economy. The lower the wages of domestic substitute workers fall, the larger are the gains for those who buy their services.

Again wage rigidities and unemployment in the host country modify the analysis substantially. If wages do not fall despite immigration, employers have no incentive to create additional jobs, and the immigration hence causes unemployment. If wage rigidities and unemployment stem from high union wages or legally imposed minimum wages, the immigrants may be able to get some of the jobs, crowding out nationals to the extent they succeed. However, as their chances of taking over the jobs of nationals are limited, migration itself will be limited.

If wage rigidities and unemployment instead stem from high welfare replacement payments that are not dependent on wages, the wage replacement payments act as minimum wages for domestic residents, but not for the immigrants, as the latter typically are not eligible to these benefits before they have worked. Then, as shown in Sinn (2005b), immigrants are likely to underbid domestic residents in the labour market and crowd out domestic residents from jobs to a very large extent. As domestic residents – whose reservation wages are higher because of the possibility of receiving welfare – remain the marginal suppliers in the labour market, they continue to determine the market-clearing wage and prevent the creation of additional jobs. Immigration will then cause unemployment among domestic residents, but this unemployment will not discourage immigration.

3.4 Unemployment and increased "turbulence"

Another important channel through which globalisation could increase unemployment is through faster structural change ("increased turbulence"). It is a common view that the pace of structural transformation has increased over time and that globalisation in all its forms is an important explanation, even if there is no consensus on this.[9] Ljungqvist and Sargent (2006) have emphasised how such increased turbulence could result in higher unemployment. They associate faster structural change with a more rapid loss of human capital (skills needed in new jobs) among the unemployed. This reduces the wage they could get on a new job and hence raises the *effective* replacement rate of unemployment insurance (the ratio of unemployment benefits to the wage on a new job) if unemployment benefits are tied to earlier wages, as is the case in most countries. The consequence is that unemployed workers' reservation wages become very high, which reduces job creation and hence raises unemployment. This may in particular be the case with stringent employment protection regulation, the costs of which will not be shifted back on to employees if effective replacement rates are high.

4. Six arguments why globalisation could be good for Western European employment

The preceding section has set out the arguments for why globalisation in conjunction with labour market rigidities may cause unemployment in Western Europe. This will certainly be the case to the extent that an unchanged employment level requires wage adjustments that are not allowed to take place. Unemployment then substitutes for wage reductions as an adjustment mechanism. However, one should not take the amount of wage rigidity as given. Instead, the extent of trade integration and international factor mobility may be important determinants of the degree of labour market rigidity, particularly in the long run. So, a crucial question is to what degree globalisation could help relax labour

[9] See the short summary of empirical evidence in Ljungqvist and Sargent (2006). See also Blanchard (2006), OECD (2007) and WTO-ILO (2007).

market rigidities and in this way mitigate adverse employment effects or possibly even contribute to higher employment.

This section analyses several mechanisms through which globalisation might in fact promote high employment by reducing market imperfections. These mechanisms include:

1. Scale effects due to the cost savings associated with international outsourcing
2. Lower price mark-ups because of stronger international competition
3. Increased sensitivity of labour demand to wages
4. A stronger bargaining position of employers vis-à-vis unions
5. Institutional changes in the labour market
6. Terms-of-trade gains for advanced economies

4.1 Cost-saving effects of international outsourcing

As discussed in Section 2.1, a prominent feature of globalisation is the strong trend towards outsourcing production to low-wage economies. Initially, the debate on international outsourcing mainly emphasised the potential threat to employment in advanced economies from the substitution of imports of intermediary products for domestic labour. But recently, the discussion has come to focus more on the cost-saving and productivity-increasing effects of outsourcing.

Work by Grossman and Rossi-Hansberg (2006a,b) has emphasised how the production process can be seen as a set of *tasks* performed by workers. International outsourcing represents trade in such tasks, of which some are more easily tradable than others.[10] Improvements in both physical transportation and electronic communication have reduced the costs of outsourcing tasks. When more tasks are outsourced abroad, foreign labour is substituted for domestic labour. This effect tends to reduce domestic labour demand. But at the same time, the possibility to outsource tasks allows firms to deepen the division of labour; the associated cost savings imply a positive *scale* effect raising the demand for local labour to perform the tasks that are less suitable to outsource abroad. The outsourcing of tasks therefore affects labour demand in a similar way as labour-augmenting technological progress.

If one embeds this analysis in a standard Hechscher-Ohlin trade framework, it is no longer clear that outsourcing of tasks must reduce domestic labour demand.[11] On the one hand, the efficiency gain from outsourcing labour services causes an increase in the relative supply of the labour-intensive good, which depresses its relative price. This tends to reduce labour demand in the domestic economy in the way discussed above. But on the other hand, the net "productivity" effect of outsourcing tends to raise labour demand.[12]

If one takes the Grossman and Rossi-Hansberg analysis at face value, it leads to the important policy conclusion that it is counter productive for a single country – like Belgium or even France or Germany – to try to protect employment through national measures to restrict international outsourcing of tasks. If this is done by a country in isolation, it has only a marginal effect on the prices of goods traded in the world market as long as other advanced countries continue to outsource. The main effect is instead to eliminate the cost-savings effect which exerts a positive influence on domestic employment.[13]

Empirical knowledge on the cost-saving effects of both international outsourcing and outsourcing in general is still scant. Görzig and Stephan (2002) found that outsourcing of materials is positively correlated with profits for German manufacturing firms, whereas the relationship appears to be negative for services. Kimura (2002) did not find any evidence of positive profit effects of outsourcing in Japanese manufacturing firms. A study of outsourcing in electronics subsectors in Ireland by Görg and Hanley (2004) found that large firms benefit from the outsourcing of both material and service inputs, while this is not the case for small plants. A likely explanation of these differences is that transactions costs are smaller for large than for small plants. Amiti and Wei (2005b) studied international outsourcing in US manufacturing firms

[10] See also Feenstra and Hanson (1996a,b), Levy and Murnane (2004) or Feenstra (2007).

[11] See the introduction to Section 3 and Section 3.1. Grossman and Rossi-Hansberg focus their analysis on high-skilled and low-skilled labour, but the analysis can just as well be recast in terms of capital and labour.

[12] A similar cost-saving effect, tending to raise employment, has been analysed by Mitra and Ranjan (2007) in a model where unemployment arises because of search frictions.

[13] The sharp conclusions from the Heckscher-Ohlin trade model derive from the equality of the number of production factors and the number of goods. With more production factors than goods, there would also be an additional "labour supply effect" from outsourcing, reducing the wage that would equate labour demand and supply in the same way as if there had been an increase in domestic labour supply. In general, one could not tell whether or not this labour supply effect outweighs the productivity effect for a single economy. However, Grossman and Rossi-Hansberg (2006a,b) argue that this has been the case for the US.

and concluded that more than ten percent of productivity growth over the 1995–2001 period could be attributed to such outsourcing of services and another five percent to the outsourcing of material inputs. On the basis of a back-of-the-envelope calculation, Grossman and Rossi-Hansberg (2006a) argued that the cost-savings effect they emphasise in their theoretical analysis was an important factor behind the increase in US wages between 1998 and 2004.

Although it is still an open question to what extent international outsourcing results in cost savings, the basic hypothesis must be that rational firms engage in it because it is profitable.

A wider question is whether international trade in general, including final goods, raises productivity growth. One would expect this to be the case, as more competition is likely to raise the incentives for efficiency improvements. A common result in empirical growth studies is also that larger trade openness is associated with higher growth.[14] Recent theoretical research has emphasised that falling trade costs are likely to raise within-sector productivity growth because larger export opportunities stimulate the entry of new firms and in this way "drive down the *ex post* profitability of producers, and therefore push up the minimum level of productivity firms need in order to survive".[15] This leads to relative growth of high-productivity firms within industries.[16] It is theoretically possible that these productivity gains are large enough to ensure that real wage gains are consistent with full employment also for production factors that are used intensively in comparative-disadvantage sectors (such as unskilled labour).[17]

The conclusion is that the cost-saving effects of international outsourcing and trade might reduce significantly the risk that trade with low-wage economies in combination with wage rigidities will cause unemployment. The evaluation depends to a large extent on the type of wage rigidity. If downward rigidity of the real or the nominal wage is the problem, the probability that such rigidities bite is lowered.[18] It may very well be that productivity growth is high enough that all *real* (and nominal) wages can increase without causing unemployment, even though the *relative* wage of low-skilled may have to fall.[19] But to the extent that relative wage rigidity is a binding constraint and that international outsourcing contributes to general cost savings for all types of labour, rather than primarily for unskilled labour, the unemployment risks associated with globalisation are larger.

4.2 Lower price mark-ups because of increased competitive pressures

Another positive employment effect of globalisation could arise because increased trade in general, including trade with low-wage economies, implies stronger competitive pressures in the markets for products and services. More exactly, stronger competition raises product demand elasticities, that is the sensitivity of product demand to price changes. Basic price theory teaches that firms with market power restrict output and employment by raising prices above marginal costs. Price mark-ups are higher the lower are product demand elasticities. Hence, to the extent that stronger international competition raises product demand elasticities, firms are forced to reduce their price mark-ups. This tends to increase the demand for output and thus also the labour demanded by producers. One can think of the effect as an outward shift of the labour demand schedule, which tends to raise both employment and the real wage: an increase in nominal wages relative to prices, that is an increase in the real wage, is the flip side of a reduction in prices relative to nominal wages.[20]

There exists a large empirical literature trying to explain differences in unemployment in panel data for OECD countries (that is to explain variation both across countries and within countries over time) by differences in labour market institutions in a wide sense: generosity of unemployment benefits, union density, coverage of collective agreements, the degree of coordination of wage bargaining and tax wedges.[21] It has become increasingly common to add variables capturing the extent of product market regulation to such regressions including labour market

[14] A frequently quoted study is Frankel and Rose (2000). See also Frankel and Romer (1996) and OECD (2005).
[15] Bernard et al. (2007).
[16] Bernard and Jensen (2004) found that a very substantial part of productivity growth in US manufacturing is explained by higher growth for high-productivity exporters than for lower-productivity firms producing only for the domestic market.
[17] Bernard et al. (2007). See also Mélitz (2003).
[18] The wage regressions in Box 1.2 of Chapter 1 provide some support for this hypothesis, as they indicate that a rise in productivity growth is only partially reflected in higher wage growth.

[19] See Feenstra (2007) for similar conclusions regarding real wage growth and relative wage developments in the US.
[20] See, for example, Layard et al. (1991) or Nickell (1999). The "labour demand schedule" showing the relationship between employment and the real wage under monopolistic competition is usually denoted the "price-setting schedule". A seminal theoretical contribution, showing that equilibrium unemployment is decreasing in the degree of product market competition in a model with bargaining about both the wage and employment, is Blanchard and Giavazzi (2003).
[21] The standard procedure is to control for the cyclical situation. See also Section 6.2 below.

institutions. A number of studies have found product market deregulations to exert a significant unemployment-decreasing effect. The studies include, for example, Bertola et al. (2001), Nicoletti and Scarpetta (2005), Griffith et al. (2006) and Bassanini and Duval (2006).[22] This research has found that reductions in product market regulations have contributed to lower unemployment in Western Europe over the last 10–15 years. Reductions in both tariff rates and regulatory barriers to trade have constituted an important part of these deregulations. A number of studies have also provided support for the hypothesis that increased foreign competition has been an important factor behind lower price-cost make-ups (see, for example, Kee and Hoekman 2003 or Boulhol et al. 2006).

4.3 Increased sensitivity of employment to wages

A mechanism that partly overlaps with the effect of increased competition in product markets is that globalisation likely increases the sensitivity of employment to wage changes, that is the elasticity of labour demand.

First, an increase in the elasticity of product demand, following from increased competition in product markets, also increases the derived elasticity of labour demand. The explanation is that a wage increase is partly passed on to prices and therefore leads to a larger reduction in product demand, and hence output, the higher is the product demand elasticity. This is translated into a larger fall in labour demand.

Second, the establishment of international production networks associated with globalisation offers firms larger possibilities of substituting intermediary inputs produced by foreign labour for domestic labour through international outsourcing. This also raises the elasticity of labour demand. Third, increased possibilities of moving final goods production abroad work in the same direction.

According to the theory of trade unions and collective bargaining, an increased labour demand elasticity promotes real wage restraint and in this way also higher employment. The explanation is that a higher sensitivity of employment to wages increases the costs to unions of raising wages in the form of larger employment losses.[23] Under some commonly used assumptions, collective bargaining results in the real wage being set as a mark-up over the unemployment benefit: with a higher labour demand elasticity this mark-up is reduced.

A recent theoretical analysis stressing the links between outsourcing and the elasticity of labour demand is Koskela and Stenbacka (2007). They model international outsourcing as a substitute to domestic low-skilled labour and show how it raises the elasticity of labour demand for this category of workers. In contrast, international outsourcing works as a complement to high-skilled labour. According to their analysis, international outsourcing leads to lower wages for low-skilled labour and higher wages for high-skilled labour. As a consequence, employment *increases* for the low-skilled but falls for the high-skilled. If the proportion of low-skilled in the labour force is high enough, aggregate equilibrium unemployment in the economy falls.

Empirical research on the link between various aspects of international integration and labour demand elasticities is summarised in OECD (2007). Several studies, but not all, have found that globalisation tends to raise labour demand elasticities. The support is stronger for manufacturing than for services. On the basis of data from eleven OECD countries and 20 industries, the OECD study reports new evidence for a substantial increase in sectoral labour demand elasticities over the last twenty years (of the order of magnitude from 0.2 to 0.5).[24] The study also finds a positive relationship between the size of the labour demand elasticity in different industries and the intensity of outsourcing.

It follows from our analysis that increased product market competition not only decreases firms' price mark-ups (as discussed in Section 4.2) but also increases labour demand elasticities (as discussed in this section). Both effects tend to raise employment: the first effect because it shifts the employment-real wage relationship outwards, the second because it lowers the real wage along a given employment-real wage relationship. For this reason, one should expect a stronger positive employment effect from increased competition in product markets the larger is the bargaining power of unions. The explanation is that increased product market competition then serves to a larger extent to reduce monopoly

[22] See also Schiantarelli (2005) for a survey of the empirical literature on product market regulations and labour markets.
[23] See, for example, Layard et al. (1991), Nickell and Layard (1999) or Calmfors and Holmlund (2000).
[24] The estimated elasticities are constant-output ones.

power in the labour market as well (in addition to reducing monopoly power in product markets). A similar conclusion is drawn by Ebell and Haefke (2006), who argue that employment effects of product market deregulations are almost non-existent if employees bargain individually with their employer, whereas the employment effects may be substantial under collective bargaining.[25] The hypothesis that product market deregulation produces larger employment gains the larger the bargaining power of unions has received empirical support in, for example, Nicoletti and Scarpetta (2005) and Griffith et al. (2006).[26]

4.4 An improved bargaining position of employers vis-à-vis unions

A higher labour demand elasticity gives unions incentives to demand lower wages. Yet another effect of globalisation is that it may improve the relative bargaining strength of employers vis-à-vis unions. Then, the outcome of wage negotiations is closer to the bargaining goals of employers and they will be able to appropriate a larger share of the rents from production.

It is a commonplace to assume that the outcome of bargaining depends on the fall-back positions, that is the alternative outcomes in case there is no agreement, of the parties. The stronger is the fall-back position of a party, the more favourable will be the outcome for the party. In the case of wage bargaining, there are two possible interpretations of the fall-back positions of unions and employers. One is in terms of a *permanent* closing down of production, that is a permanent break-up of the relationship between the employer and the employees. The other interpretation is in terms of the pay-offs during a *temporary* labour market conflict – a strike or a lock-out – until agreement is reached.

Globalisation clearly improves the relative bargaining position of the employer if disagreement leads to a permanent closing down of activities, as this will hurt the employer less in terms of lost profits the larger are the possibilities of moving production abroad. The outcome is theoretically less clear with the temporary-conflict interpretation. On the one hand, larger access to own units abroad producing final goods or the possibility to substitute more of intermediary inputs from abroad for domestic labour implies a smaller profit loss during a temporary labour market conflict. On the other hand, the vertical breaking-up of production into different complementary stages, some of which are performed abroad, could mean that the costs for domestic labour relative to the profit loss for firms of production disruptions become smaller (fewer workers on strike might prevent any final output from being produced). Also, to the extent that globalisation is associated with increased competition, it might become easier for customers to switch to other suppliers during a labour market conflict, making it more costly to the employer.[27]

An improved bargaining position of employers tends to reduce wages. This should have a positive impact on employment.[28] So far, research on how the bargaining power of unions is affected by globalisation is very limited. But the available evidence does suggest that greater exposure to foreign competition reduces the share of the surplus from production obtained by employees. In a study of five EU countries (Belgium, France, Germany, Italy and the UK), Dumont et al. (2006) found that both stronger import competition and more production facilities abroad reduce the bargaining power of labour. Similarly, stronger import competition (from other advanced economies though not from low-wage economies!) has been a major cause of the reduction in bargaining strength of employees in the UK from the mid–1990s, according to a study by Boulhol et al. (2006). Earlier, Kramarz (2003) found that stronger

[25] The absence of substantial employment effects of product market deregulation under individual bargaining is explained by an incentive of firms to *overhire* in this case. When employees bargain individually, their bargaining strength depends on the profit loss they can inflict on the employer if bargaining breaks down. This loss is larger, the higher is the marginal revenue product of the employee. Hence, since the marginal revenue product is decreasing in employment, the firm has an incentive to hire employees beyond the point at which the marginal revenue product equals the wage: doing this, the bargained wage of *all* employees falls. Because the marginal revenue product is more steeply decreasing the higher is the monopoly power of the firm, increased product market competition reduces overhiring at the same time as it weakens the incentive to restrict output and employment to prop up prices. In their model, Ebell and Haefke find these two effects to more or less cancel out.

[26] Note that the two effects of increased product market competition discussed above tend to offset each other for real wages. This is a possible explanation of why we found no direct effects of product market regulation or globalisation variables on wage growth in the regressions in Box 1.2 of Chapter 1. Griffith et al. (2006) find, however, that increased competition produces real wage gains.

[27] But costs to employees could also increase to the extent that there is a long-run loss of market shares resulting in employment reductions.

[28] The conclusion presupposes that the employer has "the right to manage", that is to determine employment unilaterally in a profit-maximising way after the wage has been bargained with the trade union. Rodrik (1997) has instead analysed an increase in the fall-back level of profits in a so-called efficient bargaining model, which assumes that firms and unions bargain over both the wage and employment. In that setting, the union and the employer will agree on such a high level of employment that the marginal product of labour falls short of the wage rate. Employees share the rents from production with the employer through both a higher wage than in alternative employment and "overemployment". Under these conditions, an increase in the fall-back level of profits causes a reduction in both wages and employment. However, the right-to-manage assumption is a more realistic characterisation of how collective bargaining actually occurs than the efficient-bargaining assumption, since bargaining over employment is unusual.

import competition had reduced the bargaining power of labour in French firms.

4.5 Changes in labour market institutions

Yet another effect of globalisation may be to trigger changes in fundamental labour market institutions. This could come about either as endogenous responses in the labour market or as a result of changes in government regulation.

Ebell and Haefke (2006) have analysed how an increase in competitive pressures could lead to de-unionisation.[29] The key effect driving their results is that under collective bargaining, the rents accruing to the unions depend on the firms' profits, whereas under individual bargaining the rents that can be extracted by the individual only depend on the cost to the firm of replacing her/him.

Employees in a firm face a choice whether to bargain for wages collectively or individually. Under collective bargaining, they are able to appropriate a given share of the surplus from production. The lower the degree of competition, the larger is the surplus from production in a monopolistically competitive firm and hence the higher is the wage that is negotiated under collective bargaining. Under individual bargaining, the wage depends positively on the marginal value of a worker, as this determines the output loss to the firm of not being able to reach an agreement with an individual worker (and thus the bargaining power of the worker). In equilibrium, the marginal value of a worker must equal the cost of hiring the worker. The higher the degree of competition, the more vacancies are opened by firms. This implies higher hiring costs and thus also a higher marginal value of a worker. Hence, the wage under individual bargaining is higher, the higher is the degree of competition. It follows that workers may prefer collective bargaining when competition is low and individual bargaining when competition is high. An increase in import competition could therefore induce deunionisation, that is move an economy from collective to individual bargaining.[30]

Alternatively, globalisation pressures could lead to changes in government regulation. A set of legislated rules (including generous unemployment benefits, rules allowing unions wide scope for strike action, favourable conditions for union membership and high tax wedges) all contribute to pushing up wages and reducing the return to capital. But if employers to a larger extent can move production abroad to low-cost locations, then such "regulation" becomes much less effective in securing high wages, as the domestic rents to be shared by employees are reduced and the employment costs are increased. Boulhol (2007) has analysed how such an increase in capital mobility creates political incentives to reduce regulation. These incentives are particularly strong if costs of international trade fall at the same time, because this makes it more profitable for firms to relocate abroad and supply also the domestic market from that location.

4.6 Terms-of-trade effects

A final aspect on the employment effects of globalisation follows from the substantial improvement for advanced economies over the last ten years in the non-oil terms of trade, that is the price of exports relative to the price of non-oil imports. This development is shown in Figure 3.9. Terms-of-trade changes can influence wages and employment because they drive a wedge between the real product wage (the nominal wage deflated by the producer price index) and the real consumption wage (the nominal wage deflated by the CPI).

An improvement in the terms of trade raises the producer price index relative to the CPI. Hence, the real consumption wage can rise at the same time as the real product wage falls. Because it is the real product wage that determines employment, such an improvement in the terms of trade makes it possible to increase both employment and consumption possibilities of employed workers at the same time. This effect has been demonstrated to be empirically important for employment determination in Sweden by Lindblad and Sellin (2007). Also, in the wage regressions in Box 1.2 of Chapter 1, we found no significant impact of a terms-of-trade change on nominal wage growth (holding the rate of CPI inflation constant): the implication is that an improvement in the terms of trade is fully translated into a reduction in the real product wage.

A related argument focuses on how *ongoing changes* in the terms of trade affect the interaction between inflation and nominal wage rigidity. The reasoning is based on the analysis by Akerlof et al. (1996) of

[29] See also footnote 25 in Section 4.3.
[30] The reason why employment becomes higher under individual than under collective bargaining in the Ebell-Haefke analysis despite higher wages is the tendency to overhiring in the former case, as discussed in footnote 35.

Box 3.1
Political repercussions from labour market integration: the case of Germany

Germany provides an interesting case study of the political forces that can be set to work by increased integration between regions. Burda (2000) argued that the globalisation shock may help the countries of Western Europe to overcome their rigidities, leading to a wave of reforms that will eventually make gains from trade possible. He saw EU eastern enlargement as a "Trojan horse", through which the vested interests of unions and firms can be weakened. Examining German unification, Burda found evidence for the interrelation between unemployment and the rigidity of labour market institutions. In eastern Germany, the adoption of western German wage agreements led to a collapse of employment. However, the high rates of unemployment in turn triggered a landslide decline in union membership, nearly eliminating union power in the eastern part of the country. Similarly, Schöb and Wildasin (2007) presume that migration is a fundamental determinant of labour market institutions. In their model, wage rigidities are endogenously determined by the degree of labour market integration among regions. Their analysis shows that the east-west integration of labour markets can be conducive to the development of more flexible labour markets.

However, the German experiences also show that employment-promoting labour-market reforms are not the only possible outcome of increased international integration. The downward pressure on wages resulting from globalisation and the forces of factor price equalisation could also cause demands on the government to provide more protection. This seems currently to be the case in Germany where the vast majority of the population now appears to be in favour of a rollback of Chancellor Schröder's Agenda 2010, a reform that made the German labour market more flexible. The Agenda 2010 reforms abolished Germany's second-tier unemployment assistance scheme (*Arbeitslosenhilfe*), which guaranteed unlimited unemployment benefits at about 55 percent of the previous wage, if necessary until retirement. One million people in the west and one million people in the east lost this support. Long-term unemployed now only receive the so-called *Arbeitslosengeld II*. This is basically the same as Germany's pre-existing Social Aid, a benefit available to any needy person with a level unrelated to the previous wage and employment history, with the exception that by reducing the transfer withdrawal rate from 100 to 80 percent, the government now effectively subsidises about 1.1 million full-time jobs in the low-wage segment. The Schröder government moreover cut the period during which ordinary unemployment benefits can be received for persons under 55 years of age from up to 32 to 12 months, in the case of older people above 57 years of age from 32 to 18 months.

The reforms of the Schröder government appear to have been very successful in terms of creating more employment. While job growth was on average 1.6 percent in 2006, the employment of older workers (above 50 years of age) increased by 4.9 percent. Moreover, for the first time since 1970 German unemployment fell below its rising trend. There has been a number of booms and stagnation periods since 1970, but the current boom is the first where unemployment did not rise relative to the previous boom. In the winter 2007/2008, German employment in full-time equivalents was about as high as it was towards the end of the last boom in the winter 2001/2002, and the forecasts predict that it will even increase beyond that level in 2008.

Despite this success, Germany's labour market reforms have caused substantial opposition. The reforms nearly split the Social Democratic Party (SPD) and were the main factor behind the electoral success of the new left-wing party "Die Linke", led by Oskar Lafontaine.

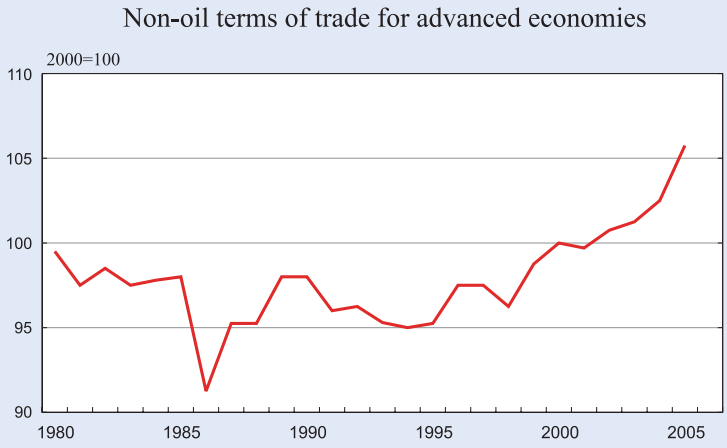
In view of the increasing opposition, the coalition government of CDU/CSU and SPD waived substantial elements of the Agenda 2010 reforms. The first move was to prolong the eligibility period for elderly unemployed from 18 to 24 months. Then, in December 2007, the government imposed high minimum wages – ranging from about eight to ten euros per hour – in the postal sector through the extension by law (*Allgemeinverbindlichkeitserklärung*) of the collective agreement encompassing the earlier state monopoly *Deutsche Post* to all firms in the sector. The coalition government moreover decided to apply the minimum wage procedure used in the postal sector to a number of other sectors that will yet have to be specified. The SPD has even announced that it wants to legislate a national minimum wage of 7.50 euros.

The German minimum wage discussion was originally motivated by the desire to protect Deutsche Post, which would lose the last parts of its monopoly position by 1 January 2008, from foreign and domestic low-wage competitors. However, this discussion has triggered a new national debate about inequality and globalisation. Surveys show that currently more than two thirds of the German population are in favour of legal minimum wages.

Both the extension of the unemployment benefit period for elderly workers and the imposition of minimum wages will make the labour market more rigid, not more flexible. This reduces the hope that Germany could successfully cope with the forces of globalisation in the foreseeable future.

how low inflation together with downward nominal wage rigidity may cause unemployment. The mechanism is that there are always some firms in the economy that are exposed to adverse shocks and would need to reduce their real product wages to defend employment. If there is a binding restriction that nominal wages cannot be cut, more of such real wage adjustments are prevented the lower is inflation (as this decreases the possibilities of reducing real wages through price increases instead). Hence,

Figure 3.9



Note: The non-oil terms of trade show the price of export relative to import goods ignoring oil. Advanced economies include Canada, France, Germany, Italy, Japan, the UK and the US.
Source: IMF, World Economic Outlook, October 2007.

at very low inflation, a further fall in inflation may be associated with higher unemployment (a negatively sloped Phillips curve). Now, if central banks are successful at achieving their inflation targets – as they have been over the last decade – ongoing terms-of-trade improvements relax the Akerlof et al. constraint on the adjustment of real product wages. This follows because a given rate of CPI inflation is associated with higher price increases for domestic output, the larger the rate of improvement in the terms of trade.[31]

The improvements in the non-oil terms of trade for advanced economies over the last decade have been a natural consequence of the gradual increase in the relative supply of labour-intensive goods associated with the integration of low-wage economies into the world trading system. But one should not expect this trend to continue indefinitely and it might very well be reversed as the emerging economies upgrade the capital and skill intensity of their output.

5. Relative labour demand and globalisation

Section 3 gave the theoretical arguments for why globalisation could cause unemployment in advanced economies with rigid labour markets. Section 4 analysed instead how globalisation could help relax these rigidities, which would instead promote employment. So, ultimately the employment effects of globalisation are an empirical issue. This section surveys the empirical research on relative labour demand effects, whereas Section 6 instead looks at effects on total employment.

There is little doubt that relative demand for low-skilled labour has declined in most OECD countries. But there is an ongoing debate on the extent to which this depends on increased trade integration with low-wage economies. Another possible explanation – in fact the one favoured by most economists – is that the relative-demand shift is mainly due to skill-biased technological change. The argument is that technological advances embodied in new capital (robots, computers, telecom equipment etc.) substitute for low-skilled workers, as simple tasks can be replaced this way. In contrast, these advances serve as complements to high-skilled workers, thereby enhancing their productivity. It is easy to understand the reason for the competing explanations as the reduction in demand for low-skilled labour coincided both with rising low-wage imports and with rapid computerisation of workplaces.

5.1 Trade and relative wages

Most of the research on the trade effects on the relative demand for unskilled versus skilled labour has concerned the US. The focus has been to explain the increased skill wage premium in this country (see Figure 3.7 in Section 3). The literature has produced (at least) three major approaches: factor content analysis, price equations and studies of within-industry versus between-industry factor proportions.[32]

Factor content analysis

The idea here is that trade in goods is disguised trade in production factors. A country that exports skill-intensive goods in exchange for low-skill-intensive imports in fact exports skilled labour in exchange for low-skilled labour. Thereby, international goods transactions change the relative demand for labour. The methodology is to multiply input coefficients for different skill types with export and import volumes. Comparing the demands for various types of labour calculated in this way with the amount of labour that

[31] This argument is due to Rogoff (2007).

[32] For reviews, see, for instance, Richardson (1995), Freeman (1995) or Wood (1998).

would be necessary to produce the imports domestically provides measures of the changes in factor demands. Using estimates of the elasticity of substitution between high-skilled and low-skilled labour, one can compute the change in the relative wage necessary to accommodate the change in relative demand. Finally, one can divide this value by the total change in relative wages to get the percentage of relative wage change that can be explained by international trade.

There are quite a few empirical studies following this approach – the vast majority using US data for the 1970s and 1980s. Generally, the evidence speaks against a prominent role for international trade in explaining rising wage inequality. In a widely cited paper, Katz and Murphy (1992) find that international trade affected female high-school dropouts the most. However, relative demand did not fall by more than four percent for this group in 1979-85. For earlier periods and other groups, the authors calculate much lower figures. Borjas et al. (1997) claim that trade with less developed countries could only explain up to ten percent of the declining relative wage of high-school dropouts between 1980 and 1995.

Wood (1994, 1995, 1998) strongly opposes this view by arguing that factor content studies are downwardly biased for three reasons. *First,* the assumption that imports would be produced with the skill intensity used by domestic producers is implausible because developed countries have outsourced the most labour-intensive parts of the value chain. As a consequence, the reduction in demand for low-skilled labour due to international trade is underestimated. *Second,* technological change is interrelated with international trade. One reason is that the mere threat of low-wage competition creates incentives for firms to invest in new technology to reduce costs.[33] Another reason is that trade also functions as a transmission channel for technological progress.[34] Moreover, technological improvements in information and communication technologies are major factors behind the reductions in trade costs that are important explanations of the increases in the volume of trade. Hence, it is very difficult to disentangle the influence of skill-biased technological change from the influence of international trade. *Third,* standard factor content analysis might understate the impact of trade because it usually does not take trade in services into account.

[33] See also Borjas et al. (1997) and Rodrik (1997).
[34] See Coe and Helpman (1995) and Keller (2002, 2004).

In addition, Davis and Weinstein (2001) have argued that factor content analysis might be misleading as differences in technology between trade partners are not taken into account. The authors extend the standard Heckscher-Ohlin model in this regard and argue that the data then support the model predictions.

Stolper-Samuelson effects

A second approach uses the Stolper-Samuelson theorem suggesting a direct link between goods and factor prices (see the introduction to Section 3). In particular, the relative wage of low-skilled workers should decline if the prices of goods using low-skilled labour intensively fall relative to goods using high-skilled labour intensively. So, if relative price changes originating from trade with low-wage economies explained relative wage declines of unskilled labour in advanced economies, one should find that goods prices in import industries have declined relative to goods prices in export industries. Lawrence and Slaughter (1993) found for the US that the relative price of goods that use production labour (a proxy for unskilled labour) intensively *rose* slightly in the 1980s. Hence, the Stolper-Samuelson effect worked towards more, rather than less, wage equality during this period. Several other studies have also failed to find a relative price trend in the US consistent with a Stolper-Samuelson explanation of rising wage inequality.[35] Studies for Europe have come up with similar results.[36]

There are, however, several problems with price studies. Apart from the poor data quality, a common argument has been that changes in goods prices likely translate into relative wage effects only after a substantial time lag (Slaughter 1998). Wood (1998) also points out that even four-digit industry level data may still be too aggregated to detect the relevant price changes since international outsourcing of the most labour-intensive tasks is likely to occur also within industries defined at this level.

Changes in within-industry and between-industry factor proportions

A third approach uses another insight from standard trade theory. As low-wage competition should reduce relative wages of low-skilled labour, it should induce

[35] These studies include Bhagwati (1991) and Baldwin and Cain (1997). Leamer (1998) failed to find evidence in favour of a Stolper-Samuelson explanation of rising wage inequality for the 1980s, although he did so for the 1970s. Sachs and Shatz (1994) is one of the few studies that have found such results also for the 1980s.
[36] See Lawrence (1996), Neven and Wyplosz (1996) or Lücke (1997).

all industries to produce with *lower* skill intensity. In contrast, technological change that is biased towards skilled labour could bring about *higher* skill intensity in all industries.

Berman et al. (1998) and Autor et al. (1998) provide evidence that within-industry skill-upgrading is the dominant pattern in the US. On these grounds, they conclude that skill-biased technological change must be the main explanation of increased wage differentials between skilled and unskilled labour. Lawrence and Slaughter (1993) also found that US manufacturing firms employed more non-production workers relative to production workers – an outcome that is inconsistent with the predictions of the Heckscher-Ohlin trade model.

One shortcoming of this approach, however, is that results are very sensitive to the level of aggregation.

5.2 International outsourcing and offshoring

More recently, the trade versus technological change debate has continued in the literature on international outsourcing and offshoring. To reduce costs, firms have increasingly used the opportunity to import labour-intensive intermediate products – which they earlier produced themselves – from independent or affiliated firms in low-wage countries (see Section 2.1).

The literature tries to single out labour market effects by regressing the wage bill (cost) share or relative employment of low-skilled workers in industrialised countries on imports of intermediate goods. If firms relocate the parts of their value chain that are intensive in low skills to low-wage countries, this will exert downward pressure on relative demand for this type of labour, as was discussed in Section 3. This can show up in both relative wage and relative employment developments.

Imports of intermediary inputs

Quite a few studies have examined the impact of larger imports of intermediate goods on relative wages or relative employment of skilled versus unskilled labour. As discussed in Section 2.1, the terminology varies in the literature. Sometimes the term international outsourcing is used, sometimes the term offshoring. As above, we use the term international outsourcing as synonymous with increased imports of intermediate goods.

Feenstra and Hanson (1996a,b) started off the outsourcing literature arguing that the growth of imports of intermediary inputs over the period 1979–87 explains 15–50 percent of the increase in the wage share of non-production workers in the US. In a later study, Feenstra and Hanson (1999) developed a new estimation procedure to disentangle the effects of skill-biased technological change and outsourcing on wages. Using US data from 1979-1990, they concluded in their basic specification that the former explains about 35 percent of the increase in the relative wage of non-production workers, whereas the latter accounts for 15 percent. But in alternative specifications, they found that outsourcing can even explain up to 40 percent of the relative wage change. Anderton and Brenton (1999) found, using data from 1970–1986 for the textile and electronics industries in the UK, that imports from low-wage countries may account for up to 40 percent of the increase in skilled workers' wage share during that period. Likewise, in a more recent study, Hijzen et al. (2005) found a strong negative impact of international outsourcing on labour demand for low-skilled labour in UK manufacturing industries between 1984 and 1995.

Geishecker and Görg (2006) examined the German case and provided evidence that a one percentage point increase in international outsourcing (measured as the value of imported intermediate inputs relative to the industry's total output value) reduces the real wage for workers in the lowest skill categories by up to 1.5 percent, while it increases the real wage for high-skilled workers by up to 2.6 percent. The study is particularly interesting as it captures the 1990s – the decade in which outsourcing increased substantially due to the integration of Eastern Europe in the world economy. Studying German manufacturing firms between 1970 and 1993, Diehl (1999) showed that outsourcing of intermediate inputs can be regarded as substitutes for low-skilled labour.

Strauss-Kahn (2004) undertook a similar analysis for relative employment effects in the French manufacturing industry. Her results suggest that international outsourcing explained 10–15 percent of the decline in the share of unskilled workers in total manufacturing employment for the 1977–1985 period and 25 percent of the decline in the 1985–1993 period.

Ekholm and Hakkala (2005) distinguished between outsourcing to low-income and high-income countries for Sweden in 1995–2000. While imports of intermediate inputs from advanced economies has no sta-

tistically significant effect on cost shares, the finding was that outsourcing to low-wage countries tends to reduce the cost share of workers with an intermediate level of education.

Using 84 Canadian manufacturing industries over the 1981–1996 period, Yan (2006) provides evidence that international outsourcing increased demand for high-skilled workers. For small jurisdictions like Hong Kong, the nexus between outsourcing and wage changes seems to be stronger than for bigger countries. Between 1976 and 1996, Hsieh and Woo (1999) found that outsourcing to mainland China can explain up to 60 percent of the rise in the share of the non-production workers' wage bill.

More generally, Feenstra and Hanson (2004) argue that empirical results on relative labour demand effects are very sensitive to the specification of technology. With respect to US data, taking the share of IT investment in total investment as a proxy for skill-biased technological change attaches much higher explanatory power to this factor than outsourcing.[37] However, if instead the stock of IT equipment as a share of the total capital stock is used to capture technological change – which Feenstra and Hanson claim to be a superior measure – then outsourcing turns out to be the main determinant of the increase in the relative demand for non-production workers.

Foreign direct investment

A related literature looks at wage and employment effects of relocating economic activity to foreign affiliates (offshoring). Lawrence (1994) only found a rather weak link with regard to US multinationals between 1977 and 1989. Similarly, Slaughter (2000) also failed to find strong evidence looking at US multinationals between 1977 and 1994. In constrast, Head and Ries (2002) showed that the wage bill of skilled workers in multinational Japanese firms in the period 1965–1990 was positively correlated with the share of a firm's employment in low-wage countries. Moreover, additional foreign affiliate employment in Japanese multinational firms was associated with greater use of non-production relative to production labour at home.

In a well-know paper, Feenstra and Hanson (1997) argue that foreign direct investment may bring about rising wage inequality in both the low-wage and the high-wage country. The reason is that the offshored tasks are likely to be the ones requiring the least skills in the high-wage country at the same time as they are the ones requiring the most skills in the low-wage country. Empirically, Feenstra and Hanson find that FDI to Mexican maquiladoras (companies located close to the US-Mexican border) can account for 45 percent of the rise in the cost share of non-production workers in Mexico.

Becker et al. (2007) use data on German multinationals to investigate the relationship between offshoring and the workforce composition at the parent firm. While there is no statistically significant link between foreign activity and the share of blue- and white-collar jobs in the onshore wage bill, the study finds a statistically significant positive association between the degree of offshoring and the wage-bill share of workers with upper secondary education. However, the effect is very small.

5.3 What have we learnt about relative demand?

The upshot is that there is support for the hypothesis that globalisation has contributed to the fall in the relative demand for low-skilled labour in advanced countries. The support is stronger in recent studies of international outsourcing than in earlier studies of overall trade effects, which have often suggested that skill-biased technological change has been the by far most important factor. A fundamental problem, however, is that it is inherently difficult to disentangle the effects of increased trade with low-wage economies and technological change driven by adjustment to low-wage competition.

One must also keep in mind that most of the research on relative labour demand effects has concerned the US. There could be an important difference between Western Europe and the US insofar as Western Europe has been affected much more by the fall of the Iron Curtain. Because of the geographical proximity of Eastern Europe, the costs of trade between these countries and Western Europe are likely to have fallen to much lower levels than trade costs for the US.

Another crucial consideration concerns the delineation of groups affected in different ways by globalisation. A common argument is that the distinction between high-skilled and low-skilled labour is gradually losing relevance. This view has been articulated by, for example, Autor et al. (2003), Blinder (2006) and Baldwin (2006). The idea is that the characteristic

[37] See also Feenstra (2007).

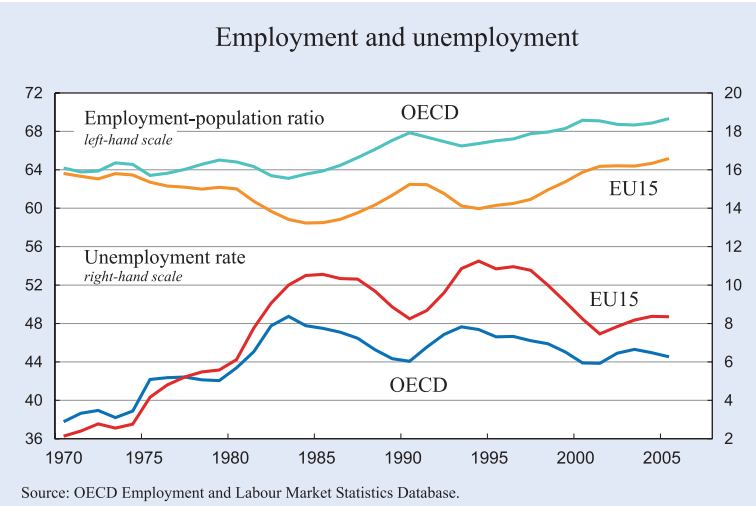
feature of globalisation is the unbundling of *tasks* in the production process. What tasks it is profitable to relocate abroad may have little to do with the skill contents. Instead it is rather a question of the character of the tasks: whether or not they are routine ones that require direct face-to-face interaction. This distinction is likely to cut through skill differences. Call-centre services are good candidates for international outsourcing, but taxi driving is not, although both tasks are low-skill. Software programming and medical interpretation of X-rays can be profitably outsourced to a low-wage country, whereas this is not the case for personal coaching of managers or psychiatric care. Hence, globalisation can entail large shifts in relative labour demand between groups that cannot be defined in terms of skill level.[38]

6. Globalisation and overall employment – empirical evidence

Section 2 documented the fast pace of globalisation over the last 10–15 years in terms of both trade and foreign direct investment. The section also documented how both trade with low-wage economies and foreign direct investment in them had grown much faster than the overall figures.

A first observation is that the recent period of intensive globalisation has coincided with a strong improvement in the employment situation in the EU15. Figure 3.10 shows how employment as a percentage of working-age population increased from around 60 percent in 1995 to around 65 percent in 2006 in the EU15. During the same period aggregate unemployment in the region fell from around 11 to 8 percent. These favourable labour market developments contrast starkly to the strong rise in unemployment and the weak employment developments between 1975 and 1995. This represents *prima facie* evidence that recent globalisation has not had strong adverse effects on aggregate employment in Western Europe: at least the effects have not been so strong that they have offset favourable influences on employment from other factors.

Figure 3.10



Source: OECD Employment and Labour Market Statistics Database.

This section reviews empirical evidence on the relationship between globalisation and overall employment. Section 6.1 surveys existing empirical studies. Section 6.2 reports new empirical results of our own.

6.1 Existing empirical studies

Although many studies exist on the effects of trade and outsourcing on relative demand for different categories of labour, there is an apparent lack of studies of the effects on total demand and employment. Instead, much of the discussion has come to rely on very crude business consultants' estimates of jobs lost or at risk due to international outsourcing. This is unfortunate as the estimates are usually derived from small surveys of a particular consultancy firm's clients and the actual sample data are almost always confidential.[39] Moreover, even at best the estimates are only partial-equilibrium as they likely do not capture positive employment effects due to cost savings or increased aggregate wage flexibility. Nor do such data cover any positive effects from export increases.

The econometric material available consists almost entirely of studies of labour demand equations, that is of how the relationship between total employment in a sector and the wage is affected by international outsourcing or overall import penetration. Since the estimations are conditional on wages, these studies do not capture the full general-equilibrium effects, taking possible wage reactions into account.

[38] Becker et al. (2007) also examine the relationship between the task composition in the parent firms of German multinationals and the degree of offshoring. The finding is that the proportion of non-routine and interactive tasks increases with offshoring, especially in the service sector.
[39] See Kirkegaard (2007).

A couple of recent studies have estimated the pure substitution effect of international outsourcing and offshoring. Using two-digit manufacturing data for seven EU countries for 1995–2000, Falk and Wolfmayr (2005) studied the association between, on the one hand, the change in sectoral employment and, on the other hand, international outsourcing, output and wages. Holding both output and wages constant, they found such outsourcing to be associated with substantial employment reductions. Similarly, using cross-section data from German and Swedish multinational enterprises Becker et al. (2005) found the wage gap to affiliate firms in Central and Eastern Europe to have a statistically significant negative relationship to employment in the parent firms in regressions where they controlled for sales.[40] The studies confirm the existence of negative substitution effects of international outsourcing/offshoring on domestic employment, but say nothing about the total effects as they do not include any scale effects (nor address the issue of wage adjustments in response to globalisation).

Amiti and Wei (2005a) studied the effect of outsourcing on total sectoral labour demand in the UK in 1995–2001. They estimated both conditional labour demand equations (controlling for output) capturing only the substitution effect and unconditional equations capturing both substitution and scale effects. For manufacturing sectors, they found no significant effects of material outsourcing on employment in any specifications, whereas service outsourcing often had a positive labour demand effect.[41] For service sectors, negative labour demand effects were sometimes found, but results were not very robust.

Amiti and Wei (2005b) is a similar analysis for the US for 1992–2000. This study found a negative association between outsourcing of services and sectoral manufacturing employment when decomposing the economy into 450 sectors, but no significant effects when aggregating sectors to only 96. The likely explanation of why the level of aggregation matters is that the substitution effects on employment are larger relative to the scale effects of cost savings, the more narrowly defined the sector is. Material outsourcing was not found to have any significant effect on employment except in a few cases (when the effect was positive). In contrast, there was a robust negative effect from import penetration in general (the overall import share in a sector). Results did not differ much between conditional and unconditional labour demand equations.

A recent OECD study (2007) uses a panel of sectors in a set of OECD countries 1987–2003, finding a negative association between overall import penetration and sectoral employment in both conditional and unconditional estimations. The effects of outsourcing are studied with cross-sectional data. Then the study finds a significant, negative association between employment and *narrow outsourcing* (imports of intermediate inputs from the same sector) if one controls for output. But there is no significant association between employment and *broad outsourcing* (imports of intermediate inputs from all sectors) if output is held constant. The unconditional effects of outsourcing when output is allowed to change, so that the positive scale effects of cheaper inputs are taken into account, are more favourable for employment: then there is no adverse effect from narrow outsourcing and a significant, positive effect from broad outsourcing. The probable explanation of the difference in results between narrow and broad outsourcing is similar to the explanation of why the level of aggregation matters in Amiti and Wei (2005b): substitution possibilities with domestic labour in a sector are larger if the imported inputs are produced in the own sector, whereas the cost-savings effects should be similar independent of whether the imported inputs originate from the own sector or other sectors.

Bentivogli and Pagano (1999) can be seen as an attempt to estimate general equilibrium effects of trade with low-wage economies on employment. They examined the employment effects of trade with the newly industrialised Asian economies in France, Germany, Italy and the UK in 1992–95, using data for different sectors and categories of employees. Although they found import penetration from Asian economies to have adverse employment effects in a couple of specifications, their overall result was that trade flows did not have a significant effect on European employment.

6.2 New empirical results

The survey of empirical studies in the preceding section casts doubt on the hypothesis that globalisation tends to reduce employment, as adverse employment effects are usually not found even when wage reac-

[40] The estimated employment effects were, however, quite small. This is in line with earlier results for the US by Brainard and Riker (2001) and for EU15 countries by Konings and Murphy (2001).
[41] Surprisingly enough, these positive employment effects were found mainly in the conditional estimations where output was controlled for.

tions are not taken into account. This section adds to the empirical research by reporting some results of our own that attempt to capture these effects as well. We first look at some simple correlations and then estimate regressions for unemployment and employment.

Simple cross-country correlations

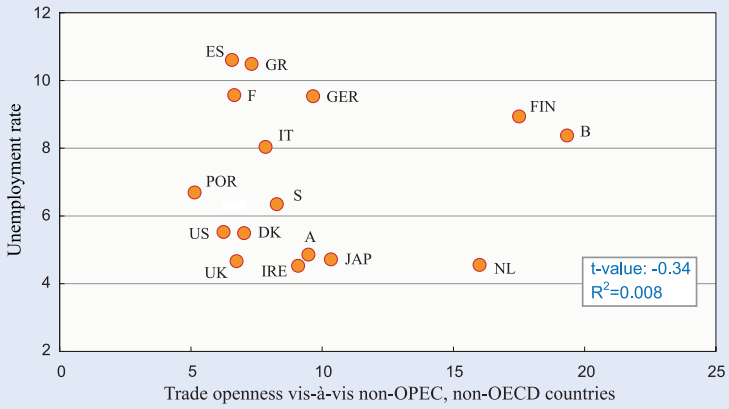
A couple of OECD studies have looked at simple cross-country correlations between trade openness and employment and concluded that there is no evident relationship (OECD 2005, 2007). This applies to levels of employment-population ratios and trade openness as well as to changes in these variables. However, if the main worry is that trade with low-wage economies and capital movements to them could threaten jobs in Western Europe, it is more relevant to look directly at these factors. This is done in Figures 3.11–3.16. Low-wage economies are defined as non-OECD countries excluding OPEC countries.

Figures 3.11–3.13 plot relationships in levels. Figure 3.11 shows the relationship between trade openness (exports plus imports relative to GDP of advanced countries) to low-wage economies and unemployment, whereas Figure 3.12 shows the relationship between the same measure of trade openness and the employment rate (the ratio of employment to working-age population). Figure 3.13 shows instead the relationship between the FDI stock owned by the various EU15 countries in low-wage economies (as a percentage of the GDP of the country of origin) and the employment rate. Figures 3.14–3.16 show the relationships between changes in the same variables over the 1994–2004 period.

None of the scatter plots shows a significant, adverse relationship between economic integration with low-wage economies and the employment indicator. In fact, the only significant relationship found is a *positive* correlation between the outward FDI stock in low-wage economies and the employment rate in the country of origin (Figure 3.13).

Figure 3.11

Trade openness to low-wage economies and unemployment, 2004



Note: Trade openness is defined as exports + imports as a percentage of GDP. Unemployment rates are standardised ones.

Sources: Trade data: OECD STAN Bilateral Database jointly with WDI GDP data; unemployment rate: OECD Main Economic Indicators.

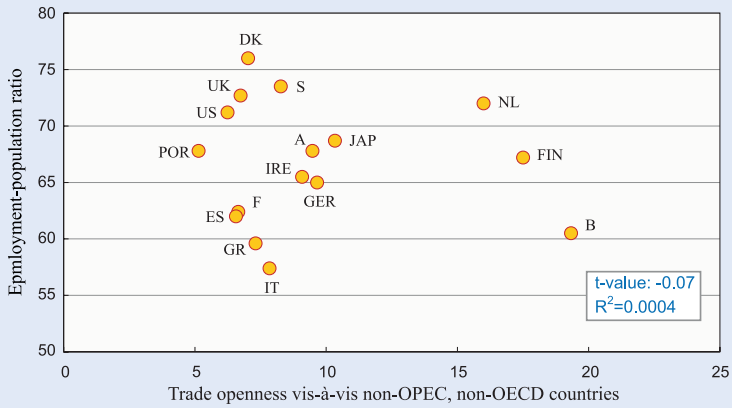
New regressions

It is customary to try to explain differences in unemployment or employment in panel data for OECD countries (that is variations both across countries and over time) by differences in a number of labour market institutions.[42] A recent such attempt is Bassanini and Duval (2006), whose results were also reported in OECD (2006). To further highlight the possible

[42] See also Section 4.2.

Figure 3.12

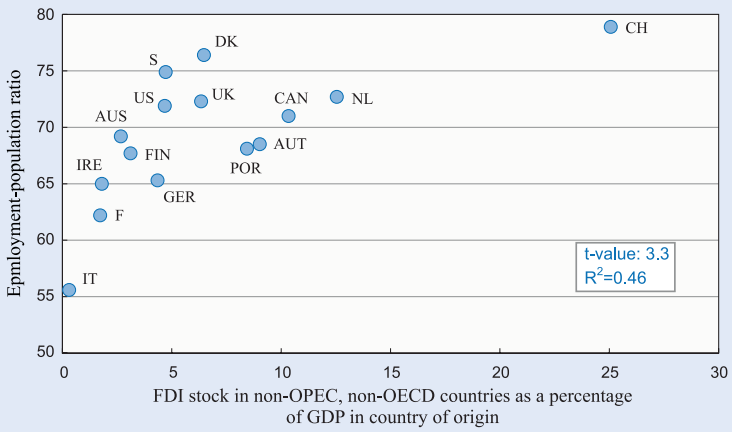
Trade openness to low-wage economies and employment, 2004



Note: Trade openness is defined as exports + imports as a percentage of GDP.

Sources: Trade data: OECD STAN Bilateral Database jointly with WDI GDP data; employment-population ratio: OECD Labour Force Statistics.

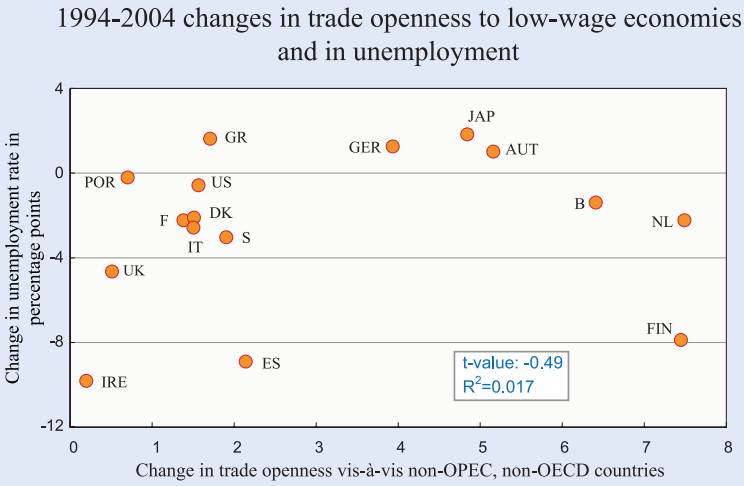
Figure 3.13



Sources: FDI and GDP data: UNCTAD FDI Database; employment-population ratio: OECD Labour Force Statistics.

(un)employment effects of globalisation, we have augmented the Bassanini-Duval regressions with variables capturing the degree of economic integration with low-wage economies (defined as non-OPEC, non-OECD economies). We have tried variables such as trade openness (exports + imports as a percentage of GDP), import dependence (imports as a percent of GDP) and outward stock of FDI as a percentage of domestic GDP. Such equations can be seen as a way of trying to capture the general equilibrium effects on (un)employment of integration with low-wage economies, controlling for both a number of institutional variables and the business cycle. The regressions should thus incorporate the effects of induced wage adjustments.[43]

Figure 3.14



Note: Trade openness is defined as exports + imports as a percentage of GDP. Unemployment rates are standardised ones.

Sources: Trade data: OECD STAN Bilateral Database jointly with WDI GDP data; unemployment rate: OECD Main Economic Indicators.

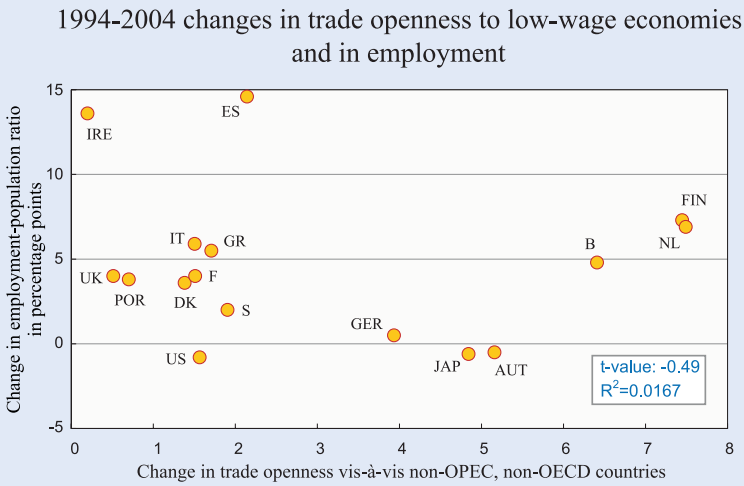
Table 3.8 shows unemployment regressions. The original Bassanini-Duval results with respect to labour market institutions and the cyclical situation of the economy remain more or less unchanged when various globalisation indicators are added: high replacement rates in unemployment insurance and high tax wedges tend to raise unemployment, whereas a high degree of coordination in wage bargaining (corporatism) and positive output gaps over the cycle tend to reduce unemployment. The only major difference to the original Bassanini-Duval regressions is that product market regulations, which tended to reduce unemployment there, are mostly insignificant in our regressions and that there is sometimes a negative, significant effect of union density but not of corporatism.

As can be seen, large trade with low-wage economies (measured either as trade openness or import dependence) has a significant unemployment-reducing effect in four of the five specifications where such a variable is included (in the fifth specification the low-wage trade variable is not significant). In two of the three regressions where it is included, the outward stock of foreign investment in low-wage economies has an insignificant effect on unemployment (but it has a positively significant effect in the third specification). When imports from low-wage economies and FDI stock in them are included in the same equation (column 7), both variables are insignificant.

Since the relative roles of globalisation and skill-biased technological change have been an issue in the analysis of relative demand for low-skilled versus high-skilled labour (see Section 5), we also experimented with including the share of ICT investment in total investment as a proxy for such technological change in the

[43] The regressions are not, however, so general-equilibrium that they take into account that the institutions themselves may change in response to globalisation (see Section 4.5). Similar regressions have been done by Köll (2007) with partly similar results.

Figure 3.15



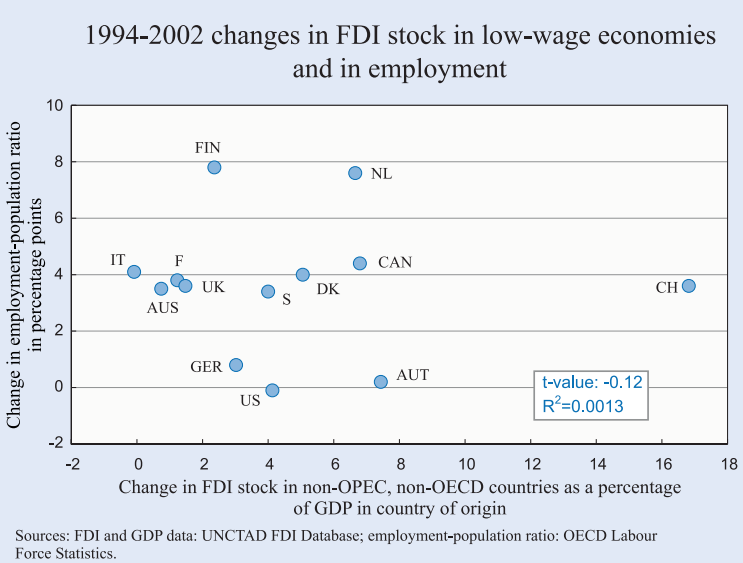
Note: Trade openness is defined as exports + imports as a percentage of GDP.

Sources: Trade data: OECD STAN Bilateral Database jointly with WDI GDP data; employment-population ratio: OECD Labour Force Statistics.

regressions. This affected the estimated coefficients of the globalisation variables only marginally. The main effect was to make the unemployment benefit and corporatism variables insignificant.

Table 3.9 shows regressions with the employment rate (the ratio between employment and working-age population) as the dependent variable. Of the Bassanini-Duval variables, the output gap is always significant here, too. The unemployment benefit replacement rate, the tax wedge and union density are sometimes significant, whereas the corporatism variable never is. The variables capturing trade with low-wage economies always have a significantly positive effect on employment. So has the outward FDI stock in low-wage economies.

Figure 3.16



Sources: FDI and GDP data: UNCTAD FDI Database; employment-population ratio: OECD Labour Force Statistics.

The exercise we have performed is a very crude one. For example, we have not taken account of the possibility that causation could run also in the reverse direction, that is from (un)employment to integration with low-wage economies and labour market institutions (simultaneity bias).[44] Still, our regressions provide no support for adverse employment effects of globalisation in advanced economies if we control for labour market institutions and the business cycle. If anything, our empirical analysis rather suggests positive employment effects.

7. What to do and what not to do

Our basic message is that we probably should not expect globalisation to have adverse effects on overall employment in Western Europe in the long run if one takes all effects into account. It is true that trade integration and factor mobility vis-à-vis low-wage economies are likely to cause unemployment if European labour markets remain rigid. But there is a good chance that globalisation will help reduce these rigidities. Politicians in some countries may try to swim against the tide and uphold or even strengthen regulations in the labour market, such as Germany is currently doing. But in the end, globalisation is likely to strengthen the incentives to deregulate. Therefore, the net result could be that employment is promoted.

If globalisation does not hurt employment, it will produce aggregate gains. There is a possibility that globalisation could eventually benefit almost everyone, although some will gain more than others. However, there is

[44] We did, however, some experimentation with interaction variables, that is if the value of one explanatory variable could affect the impact of another explanatory variable on (un)employment. For example, we examined the interaction between the replacement rate and the globalisation variables, but found no support for more adverse labour market effects with higher replacement rates.

Table 3.8

Unemployment regressions

Dependent variable: Unemployment rate	(1) 1988-2003	(2) 1988-2003	(3) 1988-2003	(4) 1988-2003	(5) 1988-2003	(6) 1990-2003	(7) 1990-2003
Average replacement rate	0.094*** (4.55)	0.079*** (3.70)	0.085** (2.36)	0.076*** (3.67)	0.079*** (3.67)	0.016 (0.45)	0.104*** (2.84)
Tax wedge	0.259*** (8.77)	0.252*** (8.55)	0.075* (1.68)	0.217*** (8.66)	0.251*** (8.34)	0.045 (1.17)	0.085 (1.61)
Union density	0.004 (0.16)	0.004 (0.16)	-0.298*** (3.94)	-0.002 (0.07)	0.004 (0.16)	-0.169** (2.23)	-0.329*** (3.82)
Employment protection	-0.319 (0.85)	-0.337 (0.91)	0.207 (0.48)	-0.565 (1.51)	-0.325 (0.82)	-0.194 (0.44)	0.306 (0.69)
Product market regulation	0.327 (1.28)	0.324 (1.29)	-0.055 (0.17)	0.473* (1.96)	0.322 (1.25)	0.461 (1.46)	-0.008 (0.02)
Corporatism	-2.280*** (4.89)	-2.290*** (4.93)	0.000 (0.000)	-1.945*** (4.39)	-2.288*** (4.90)	0.000 (0.000)	0.000 (0.000)
Output gap	-0.474*** (13.51)	-0.485*** (14.62)	-0.564*** (8.04)	-0.479*** (13.50)	-0.485*** (14.53)	-0.580*** (9.73)	-0.572*** (7.54)
Total trade openness				-0.071*** (6.00)			
Trade openness vis-à-vis low-wage economies	-0.255*** (3.41)			0.003 (0.04)			
Total imports relative to GDP					0.005 (0.13)		
Imports from low-wage economies relative to GDP		-0.501*** (4.59)			-0.509*** (3.97)		-0.083 (0.49)
Total outward FDI stock relative to GDP						-0.073*** (5.20)	
Outward FDI stock in low-wage economies relative to GDP			0.102 (0.52)			0.413** (2.45)	0.188 (1.02)
Observations	311	310	103	307	310	103	98
Time and country fixed effects	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	0.70	0.71	0.80	0.73	0.71	0.84	0.81

Notes: t-values are given in parentheses. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

also a fair amount of evidence that economic integration with low-wage economies reduces the relative demand for less-skilled workers and their relative compensation. So, it is also possible that there could be a large group of losers.

If a country as a whole gains from trade, the gainers can in principle always compensate the losers by transferring money to them while retaining positive net gains. In principle, for each episode of trade reform, one could compute who gains and who loses, and agree on a set of transfers that would build (unanimous) support for the reform. In practice, of course, such a process is very difficult, as it runs into the difficulty of precisely computing the gains and the losses and is subject to capture and renegotiation. Such once-and-for-all compensation schemes have been observed in the past in the context of trade liberalisations that affected one sector only. One example is the closing of the Spanish naval construction industry in the late 1970s. But when the reforms are broader and more far-reaching, computing costs becomes trickier. One also runs into the problem that the losers should be compensated for the total present discounted value of future losses, which may entail a large transfer and associated large increases in public debt or large changes in current taxes and transfers for other groups.

It makes more sense to recast the issue in the following way: are our labour market institutions and our welfare states designed well enough so that the gains from trade reform will be broadly shared? Or are they likely to breed opposition to these reforms?

Table 3.9

Employment regressions

Dependent variable: Employment-population ratio	(1) 1988-2003	(2) 1988-2003	(3) 1990-2003	(4) 1990-2003	(5) 1982-2003
Average replacement rate	-0.074* (1.85)	-0.048 (1.20)	0.021 (0.37)	0.026 (0.46)	-0.073* (1.71)
Tax wedge	-0.233*** (4.95)	-0.221*** (4.69)	-0.031 (0.32)	0.050 (0.48)	-0.243*** (5.25)
Union density	0.052 (1.30)	0.054 (1.35)	0.466** (2.44)	0.373* (1.87)	0.102** (2.05)
Employment protection	0.513 (1.00)	0.549 (1.08)	-0.170 (0.14)	-0.108 (0.09)	0.739 (1.24)
Product market regulation	-0.531 (1.22)	-0.498 (1.17)	-0.553 (0.71)	-0.981 (1.26)	-0.586 (1.30)
Corporatism	0.609 (0.77)	0.634 (0.81)	0.000 (0.000)	0.000 (0.000)	0.634 (0.77)
Output gap	0.394*** (7.54)	0.413*** (8.11)	0.301*** (2.93)	0.305*** (3.12)	0.395*** (6.60)
Total trade openness				-0.119** (2.23)	
Trade openness vis-à-vis low-wage economies	0.449*** (4.38)				0.525*** (3.77)
Imports from low-wage economies relative to GDP		0.901*** (5.95)			
Net outward FDI stock relative to GDP					-0.030* (1.76)
Outward FDI stock in low-wage economies relative to GDP			0.640** (2.08)	0.972*** (2.72)	
Observations	311	310	103	103	279
Time and country fixed effects	yes	yes	yes	yes	yes
Adjusted R-squared	0.63	0.65	0.66	0.67	0.62

Notes: t-values are given in parentheses. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

We argue that rigidities such as employment protection and wage constraints, by reducing the economy's capacity to relocate labour to the sectors in which it should specialise after opening up for more trade, are poorly equipped to compensate the losers. Proactive education and retraining policies look like obvious remedies but may be more difficult to implement than most people believe. We point out that the current design of unemployment and welfare benefits is inadequate. Finally, we discuss what policies might be most appropriate to ensure a fair sharing of the gains from globalisation without at the same time causing adverse effects on employment.

7.1 The risks from rigid employment protection

The gains from trade are associated with greater specialisation to some sectors at the expense of others. An economy exposed to more trade integration must relocate labour from the sectors where it has a comparative disadvantage to those where it has a comparative advantage. It is the role of the labour market to perform such reallocation. Rigid employment protection both reduces the speed of job losses in contracting sectors and makes employers in expanding sectors less willing to hire. Hence, the reallocation process becomes more sluggish. This reduces the gains from trade, and allocates the gains and losses from globalisation in an uneven way. Essentially, workers in the sectors that the country should abandon, instead of relocating to the more profitable sectors, have to experience a large fall in wages or become unemployed, depending on the wage formation mechanisms that prevail. Labour immobility therefore creates a constituency of workers who suffer from large wage losses and are unlikely to be compensated as consumers by the positive effects of cheaper imports. If instead workers in contracting sectors could freely look for a job in the expanding sectors, there would only be a

moderately depressing effect on wages for the relevant skill categories (including themselves) throughout the economy and opposition to trade would be lower.[45] Furthermore, it is now more likely that the workers are compensated as consumers by the availability of cheaper imports and as producers by the scale effects of trade that we discussed in Section 4.1.

For a country to adjust well to globalisation and to reach a consensus on it, flexible labour markets that make intersectoral job reallocation easy are important. Some countries, such as the UK, do not have many such barriers to mobility and have supported globalisation. Other countries, such as France, have numerous such barriers, due to strict employment protection legislation, barriers to entry, regulated professions, and so on. These countries have tried to oppose globalisation. That leads us to our first recommendation: make labour markets more flexible by eliminating barriers to intersectoral mobility!

It is well-known that the degree of employment protection does not seem to influence the overall employment level, a result that emerged also in our regressions in Section 6.2.[46] The explanation is that the effects on employment of reductions in both job creation and job destruction more or less cancel out. This is a likely reason for why low levels of employment protection are accepted in countries like the US, the UK, Ireland and Denmark: the increased risks of job loss are counterbalanced by increased rehiring probabilities in the case of unemployment. But at the same time, attempts to reduce employment protection in a country usually meet with fierce political resistance from employed insiders.

An interesting attempt to reform employment protection is the Austrian model of decoupling severance pay from the individual employer.[47] According to this model, the employer makes regular payments to a personalised account for each employee. Employees can draw on this account in the case of dismissal. The account is portable, that is it follows the employee when changing employer, so mobility does not entail a loss of accumulated rights to severance pay. Adopting a similar model in other EU countries with high levels of employment protection would seem a reasonable way of keeping (some) benefits from employment protection for insiders, at the same time as the adverse effects on restructuring and mobility would be reduced. Such reforms would also fit in with earlier proposals (for example in Chapter 2 of the 2004 EEAG report) of substituting more transparent systems of severance pay for uncertain, discretionary court decisions in particularly Southern European countries.

7.2 Wage rigidities and the welfare system

A common feature of the welfare system in most Western European countries is the high level of unemployment benefits. It is often claimed that generous unemployment insurance is necessary if wage earners are to accept the structural changes associated with globalisation. According to this argument, a more rapid pace of the globalisation process would motivate higher rather than lower unemployment benefits. This would also serve as a way of compensating the losers. However, such a policy would prevent the potential gains from globalisation from being realised. The reason is that generous unemployment benefits reduce the willingness of the unemployed to take up new jobs. As discussed in Section 3.4, the "turbulence" brought about by globalisation is likely to imply a faster reduction of the productivity of the unemployed on a new job and hence of the wage that employers would be willing to pay: the higher the benefit level, the more likely is the reservation wage of the unemployed to exceed the wage they can get on a new job. This risk is particularly large if benefits are indexed on previous wages.

There are strong arguments for high unemployment benefits during a limited period to help employees cope with adjustment costs when becoming unemployed. But generous unemployment benefits with a long duration are not an appropriate instrument in situations when labour needs to be reallocated between sectors and jobs. Such benefits compensate workers for being out of work but not for income losses that could be suffered when taking up a new job. In flexible labour markets, like those of the US and the UK, being out of a job is a smaller risk than in Continental Europe, because unemployment duration is much shorter. The real risk is then not joblessness but the wage losses associated with worker displacement. A number of studies have shown that these wage losses are substantial.[48] They reflect the devaluation of workers' firm- and sector-specific human capital associated with displacement.

[45] See Saint-Paul (2007) for a theoretical analysis.
[46] The relationship between employment protection and employment was discussed at some length in Chapter 3 of the 2007 EEAG report.
[47] See, for example, European Commission (2007).
[48] See, for example, Kletzer (2004) and OECD (2005).

A similar risk results from the minimum wage demands created by the subsistence minimum guarantees that the welfare state provides. Minimum wages and welfare payments impose a lower bound on the wage distribution. The result is unemployment among the less skilled strata of the population that results in part from an excessive shrinkage of the labour-intensive sectors of the economy. The labour-intensive sectors that are most exposed to international low-wage competition set capital, skilled labour and unskilled labour free which then have to move to other sectors of the economy. However, as those sectors operate in a more capital and skill-intensive way than the shrinking sectors, they cannot absorb all the unskilled workers. Unemployment, overspecialisation and sluggish growth result from this process if wages are prevented from adjusting.

7.3 Useful reforms

We suggest that one should rethink our welfare systems in light of the considerations above. The philosophy should be one of insuring people against losses in the market value of their human capital, rather than against their inability to transact in the labour market. That latter problem would be considerably alleviated by having more flexible labour markets, which globalisation itself is likely to contribute to. But more flexible labour markets would do nothing to insure workers against wage losses due to the obsolescence of part of their human capital.

It is not obvious how to design appropriate insurance schemes that could compensate the potential losers from the globalisation process. But it is easy to point to a number of possible components.

- Access to suitable *retraining* and *re-education* of displaced workers. This would appear to be the most natural policy intervention, as it seeks directly to address the reallocation problem.
- Government support to displaced workers through *severance pay.* The advantage of severance pay compared to unemployment benefits is that the money is paid upon separation and is thus independent of the subsequent job search activity. At the margin, the worker loses nothing from accepting a job offer, contrary to what happens with a system based on unemployment insurance. To prevent firms and workers from colluding to use such severance pay opportunistically by routinely laying off individual workers, it could be restricted to observable collective events such as plant closing, massive layoffs, loss of profitability in the sector where the firm is operating, or loss of jobs in the worker's occupation.
- A *wage insurance* such that upon taking a new job with a lower pay than the previous job the government will make up for part of the difference during a specified length of time. The subsidy would be paid to the displaced worker first upon receiving a wage in a new job. Hence, wage insurance would have no adverse effects on job search activity of the unemployed: on the contrary, it should stimulate it because it raises the pay-off from finding a job.
- *Employment income tax credits* to low-wage earners in general as suggested in, for example, EEAG (2002) of the type that are used extensively in the US and the UK. Since the tax credit only applies to income from work, this measure, too, strengthens the job-finding incentives of the unemployed.

All the measures suggested would help compensate potential losers from the globalisation process. Retraining/re-education, severance pay and wage insurance target those who are likely to be the biggest losers from restructuring: those who actually have to move to new jobs and who therefore may face large wage cuts. But these measures would not help compensate those who stay on in jobs meeting declining demand and who will also suffer wage losses (although smaller). This is, however, the case with employment income tax credits to the extent that globalisation implies a relative shift in demand from low-skilled to high-skilled, as this measure would encompass all those with low wages. Because such employment tax credits imply that government benefits are paid out under the condition of working rather than the reverse, the implicit minimum wage resulting from the present Western European welfare systems would be reduced. This would promote employment. For this reason, employment tax credits are a much more efficient way of compensating potential losers from the globalisation process than imposing legal minimum wages, which in most cases raise unemployment. However, employment tax credits for low-wage earners would not compensate those groups of high-skilled, who could also be exposed to declining demand, as discussed in Section 5.3. But one might consider this a smaller problem than if low-wage earners have to face lower wages.

Although all the policies suggested would be beneficial as part of a compensation package for losers in the globalisation process, they also have drawbacks. It is easy to get everyone to agree on the desirability of

retraining and re-education programmes. But in practice it has often proved difficult to get good results from such programmes. To some extent this may have been the consequence of too large programme volumes and by the use of such programmes as qualifying devices for unemployment benefits rather than as stepping stones to jobs.[49] But the difficulty of forecasting exactly what tasks are likely to be least exposed to competition from low-wage economies calls for caution. In a world where also some high-skilled tasks can be outsourced, higher education in general may not be a guarantee against large wage losses. It has often been pointed out that ability to adapt may be much more important than a high skill level (for example, Baldwin 2007), but it is far from clear how to teach such adaptability.

Special severance pay arrangements in the case of large collective events has the drawback that it would leave out many sources of job loss. It would also involve complex design issues. Presumably, it would have to imply a large amount of discretionary decision-making, which raises serious political-economy issues of how the system could become subject to lobbying from interest groups and used in an inequitable way.

Wage insurance has its drawbacks, too. It would be more practical to implement than a discretionary severance pay system, but may lead to mismatch as workers accept inappropriate jobs: wage insurance would weaken the allocative role of wages in transmitting proper signals about the relative social values of the different jobs that the worker could have.

The problem with general employment tax credits is that they must be phased out at higher income levels if they are to function as a compensation device for low-wage earners. This means that marginal tax rates increase in the phasing-out interval and reduce work incentives there. Available empirical evidence suggests that the employment gains at lower wage levels (because participation in the labour force increases and the number of employed persons rise – the extensive margin) are likely to outweigh the negative effect on hours worked for employees with incomes in the phasing-out interval (the intensive margin).[50] However, the latter effects tend to become larger the higher are marginal tax rates in that interval to begin with and the more compressed is the wage distribution.

There is a case for finding ways of compensating losers from the globalisation process and to try to ensure a fair sharing of the aggregate gains through measures such as the ones discussed. At the same time, pushing such attempts too far will entail large costs. It cannot be the task of governments to provide citizens with full insurance against all contingencies. The globalisation process would seem to justify some policy interventions to deal with its income distribution consequences, but one should be cautious not to put much higher requirements on government policy in this case than we want to do in other cases unless we can clearly motivate why.

[49] See, for example, Martin and Grubb (2001) and Calmfors et al. (2004). EEAG (2007) reports on results showing that the favourable results of recent Danish active labour market programmes are due more to the ex ante "threat" effects of being placed in them than to positive treatment effects.
[50] See, for example, Hoynes and Eissa (2006).

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