

ERM annual report 2016: Globalisation slowdown? Recent evidence of offshoring and reshoring in Europe



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Executive summary

Introduction

The 2016 European Restructuring Monitor (ERM) report provides evidence of the employment impact of recent restructuring activity in Europe, based on the European Union Labour Force Survey (EU-LFS) and the ERM events database.

Employment growth in the EU28 has been accelerating since 2013, and 3.5 million net new jobs were added in the 12 months to the first quarter of 2016. This rate of employment growth (1.6% per annum) has not been seen since 2007–2008. In line with the EU-LFS data, the ERM now shows for the first time since 2008 that announced job creation was greater than announced job destruction. The report provides details on sectors creating and losing jobs, with some focus on the retail trade, the eastward shift of motor vehicle manufacture in Europe, and the employment impact of mergers in financial services.

The thematic focus of this year's report is on recent trends in both the offshoring and the reshoring activity of companies in Europe.

Policy context

The impact of globalisation on employment has become highly prominent in the political debate in both Europe and the United States. Facts and figures on this phenomenon are essential for evidence-based political discourse and as a basis for policy initiatives. The European Union conducts all international trade policy on behalf of the Member States. It is in this context that the most specific restructuring policy instrument at EU level, the European Globalisation Adjustment Fund (EGF), was established in 2006. The EGF provides support to workers who lose their jobs as a result of major structural changes in world trade patterns due to globalisation – for example, when a large company shuts down or production is moved outside the EU, or as a result of the global economic and financial crisis.

Key findings

Just as the negative effects of globalisation on employment take centre stage of the political debate, it is surprising to observe that the rapid rise of globalisation, which was so striking in the two decades preceding the recession of 2008, has since abated significantly. Recent data show that the global rebound of growth was not accompanied by a corresponding increase in international trade and that some indicators of activity in global value chains have declined.

The ERM captures announced job loss due to the offshoring of jobs to other countries both within and outside the EU. According to the ERM data, this has never been a large source of job loss, despite dire predictions that a very large number of jobs in Europe and elsewhere

in the developed world were potentially offshorable. Between 2003 and 2007, offshoring accounted for 7% of all announced job loss in the ERM. This declined to 4% in the depths of the recession (2008–2010) and continued to decline to under 3% in 2015–2016.

In manufacturing, the largest sector by far exposed to offshoring, the annual number of offshoring cases reported after 2010 is less than half of that reported prior to the crisis. The share of restructuring job loss in manufacturing accounted for by offshoring has declined from 12% to 8%. Fears expressed at the turn of the century of possible future huge job loss in Europe due to offshoring in the service sectors have simply not materialised. Offshoring in services and other sectors has remained well below that of manufacturing and has continually declined. In 2016, offshoring continued to be dominated by the manufacturing sector.

There is evidence of a shift of the locus of offshoring from western to eastern Europe. Offshoring has become an increasingly important aspect of restructuring in the 13 Member States that joined the EU in or after 2004 (the EU13). While the share of manufacturing job loss attributable to offshoring has halved in the pre-2004 Member States (the EU15), from 14% to 7% between 2003–2007 and 2015–2016, it has increased by a factor of four in the EU13 (from 4% to 15%). From the EU13, the main destinations of offshoring are to near Europe, North Africa as well as Asian countries including, but by no means confined to, China. The main motivation would appear to be lower labour costs.

Three manufacturing subsectors account for around 60% of offshoring job losses: production of motor vehicles, electronics (such as televisions, computers and mobile phones) and electrical products (such as domestic appliances). While the large Member States – France, Germany and the UK – as well as Sweden dominate in terms of absolute offshoring job losses, the share of offshoring activity is relatively much higher in some smaller EU15 Member States (Austria, Denmark, Ireland and Portugal), where it accounts for over 20% of restructuring job losses (compared to less than 10% in the large Member States).

The reshoring of previously offshored jobs has generated some interest in recent years. No Member State has any systematic measure of how many jobs are involved. However, it appears to be a relatively minor phenomenon. While there may have been some signs of an increase in reshoring in the early days of the recession, there is no indication that it has continued to rise. Some representative evidence from German manufacturing shows that the most important reason given for reshoring was to obtain a higher degree of operational flexibility. Quality was the next most cited reason, followed by capacity. The report contains many examples of cases from European countries that report these reasons but

also some with more emphasis on shifts in the relative wage and transport costs between Europe and abroad.

Conclusions

There is emerging evidence that the pace of globalisation has abated. Other research has shown a significant decline in the trade elasticity of growth and some indication of lower activity in global value chains. This year's ERM annual report adds another piece of evidence going in the same direction. Both the number of offshoring cases and the associated job losses are, even as the global economy has picked up, appreciably below the pre-crisis levels and continue to decline. While global uncertainties may still dampen offshoring investment, it may also be the case

that the two decades that preceded the crisis of 2008 were exceptional periods in the history of globalisation. The sudden large entry of many countries with very limited trade and foreign direct investment, most notably China and the eastern European states, into the world trading system was a one-off event. Since then, the pace of globalisation has slowed down.

The last decade has seen increased interest in the reshoring of economic activity previously offshored. Data on reshoring to Europe is much more limited than that of offshoring, which is captured by the ERM. However, a more systematic measurement of the employment implications of reshoring to Europe will be available with the first reporting of data from the recently initiated European Reshoring Monitor (<http://reshoring.eurofound.europa.eu>) in 2017.

Introduction

The European Restructuring Monitor (ERM) deals with the labour market adjustment to structural change. It includes the restructuring events database, a key tool in monitoring the employment implications of structural change.¹

Created in 2002, this database has recorded more than 21,000 restructuring cases to date. Since 2011, the ERM has also provided a database on national public support instruments for restructuring, which can help companies and workers to anticipate and manage restructuring.² The database currently provides information on almost 400 national schemes. Furthermore, since 2013, the ERM database on restructuring-related legislation has given an overview of national regulations related to, for example, definitions of collective dismissal, dismissal procedures, and information and consultation requirements in restructuring.³ The latter two qualitative databases are updated every two years.

Chapter 1 of this report presents the recent salient trends in employment using the European Union Labour Force Survey (EU-LFS). It complements and exemplifies some of these trends with the announced job loss data from the ERM. Even though unemployment remains unacceptably high, EU employment levels have finally recovered to where they were before the global financial crisis. Per annum employment growth of 1.5%–1.6% in the most recent data is similar to that of the pre-crisis expansion. In addition, the increasing full-time share of employment growth confirms the increasing confidence in employers' hiring decisions. The sectors in which employment was particularly badly affected during the crisis – construction and manufacturing – have begun to stabilise or grow modestly. Within manufacturing, in particular, employment has grown quite significantly in some high-tech sectors, notably the motor vehicle sector. This resilience is related in part at least to a significant and ongoing transfer of productive activity from western to eastern Europe, as evidence from the ERM confirms.

The ERM also highlights how intensive restructuring activity can be in some sectors where overall employment shifts have been relatively muted. The retail sector has experienced many major chain bankruptcies since Woolworths collapsed in 2008, culminating in over 30,000 job losses in the closures of British Home Stores, V&D and Marinopoulos in 2016. At the same time, US online retailer Amazon has been the single company responsible for most cases of announced job creation since 2014.

The main sources of employment growth have been private services as the secular shift to services continues. The fastest-growing sector has been IT and information services, where the ERM demonstrates a strong regional clustering of business expansion since 2014, concentrated in the Kraków–Wrocław corridor in Poland and around the capital city zones of Dublin and Bucharest.

The remaining chapters of the report examine the highly topical issue of whether, after decades of ever-increasing globalisation, we may be observing its structural slowdown (Hoekman, 2016). Globalisation has significant implications for restructuring. Perhaps the most specific European-level restructuring tool in this context is the European Globalisation Adjustment Fund, which was initiated to mitigate the effects of job losses in companies that suffered from the negative effects of international competition.

International trade declined sharply at the start of the recession (in fact, evidence of a slowdown pre-dates 2008), as would have been expected, but more notably, it has not recovered apace with the global rebound in gross domestic product (GDP). There is much discussion in academic and policy circles about whether it is purely a cyclical phenomenon or whether more structural long-term forces are at work. Moreover, globalisation is not just a matter of trade. A prominent feature of recent international economic developments was the increased inclusion of foreign establishments in the value chains of European companies. Both deregulation (including, most notably, China's entry into the World Trade Organization and the accession of several central and eastern European countries into the European Union) and information and communication (ICT) technologies facilitated this development. Since the 1990s, offshoring (when a company moves some part of its activity to another country) has been one prominent aspect of the international intertwining of supply chains and has raised much concern about employment prospects in Europe and other parts of the developed world (see, for example, Blinder, 2006).

Chapter 2 uses the ERM to present recent evidence of the employment implications of offshoring. Despite concerns about massive levels of job loss due to the practice in the future, there is a consensus in the research literature so far that it has accounted for a relatively small share of job destruction in developed economies, with estimates of between 1% and 10%, depending on how it is measured. One of the main findings from the analysis of ERM restructuring events data is that the offshoring share of job loss and the number of cases of companies offshoring started to decline after the global financial crisis and has yet to recover. In manufacturing, for example, which is by far the largest sector exposed to offshoring, the annual number of offshoring cases reported after 2010 is less than half of that reported prior to the crisis. The share of restructuring job loss in manufacturing accounted for by offshoring has declined from 12% to 8%. In services, the offshoring share of job loss is much lower and has also declined post crisis.

1 <http://www.eurofound.europa.eu/observatories/emcc/erm/factsheets>

2 <http://www.eurofound.europa.eu/observatories/emcc/erm/support-instrument>

3 <http://www.eurofound.europa.eu/observatories/emcc/erm/legislation>

There is also evidence of a shift of the locus of offshoring from western to eastern Europe. While the EU13 (those Member States that joined the EU since 2004) is the major destination for offshored jobs within the EU, primarily from the higher-GDP, pre-2004 Member States (the EU15), offshoring has become an increasingly important dimension of restructuring in the newer Member States themselves. Here the destination countries are near Europe, North Africa and Asian countries, including, but by no means confined to, China. The main motivation for transferring activity is cost, especially lower labour costs.

Most of the offshoring appears to be motivated by the search for lower labour costs, as the vast majority of cases are from relatively high-labour-cost to low-labour-cost countries. Three manufacturing subsectors account for around 60% of offshoring job losses: production of motor vehicles, electronics (such as computers and mobile phones) and electrical products (such as domestic electrical goods). While the large Member States dominate in terms of absolute offshoring job losses (France, Germany and the UK but also Sweden), the share of offshoring activity is relatively much higher in some smaller EU15 Member States (Austria, Denmark, Ireland and Portugal), where it accounts for over 20% of restructuring job losses (compared to less than 10% in the large Member States). The share of manufacturing job loss attributable to offshoring has halved in the EU15 (from 14% in 2003–2007 to 7% in 2015–2016), while it has increased by a factor of four in the EU13.

Perhaps the most striking finding of this analysis is that there appears to have been a decline in offshoring activity from the EU manufacturing sector dating back to the onset of the global financial crisis. The average annual number of offshoring cases reported to the ERM has more than halved between the pre-crisis and post-crisis periods, and the level of resulting job losses has declined even more sharply. There are many potential factors behind this decline, but one explanation is that the ‘offshoring calculation’ – in terms of cost differentials, available offshoring destinations and so on – was uniquely favourable, especially for western European businesses, in the period from 1990 to 2007 and that the easy gains from offshoring were largely reaped by European businesses in that pre-crisis period.

Offshoring to foreign locations entails a significant investment for a company. Given the severity of the recession and its global reach, it is not surprising that the level of offshoring activity and related job losses declined. Companies were more reluctant to commit to risky investments in a context of business uncertainty. What is more difficult to explain, however, is that there is no indication that the recovery of GDP growth has led to a new wave of offshoring activity. As noted above, there has been a similar slowdown in international trade. The literature suggests that the major increase in trade in the decades up to the recession of 2008 may to some extent have been a one-off event attributable to the entry of eastern Europe and China into the market economy and that this would not lead to a sustained growth of trade in

the long term. Similar factors may lie behind the lower rate of offshoring in the last decade.

Indeed, the last decade has seen much more interest in the return of economic activity to the country from which it had been offshored (reshoring). Data on the reshoring of economic activity back to Europe is much more limited than that of offshoring, which is captured by the ERM. However, a more systematic measurement of the employment implications of reshoring to Europe will be available with the first reporting of data from the recently initiated European Reshoring Monitor in 2017.⁴ This is part of a pilot project, the Future of Manufacturing in Europe, delegated by the European Commission to Eurofound. The methodology will be similar to that of the ERM in that it will be based on media sources. Unlike the ERM, however, it does not have a threshold for the employment effects in order to be a valid case for entry into the dataset (the ERM threshold is an announced loss or creation of at least 100 jobs, or an employment impact affecting at least 10% of a workforce of more than 250 people).

Chapter 3 presents recent evidence on reshoring. The information is somewhat fragmented, even if surveys from Germany and the UK do provide some more representative trends. Most evidence is based on the collection of cases. Probably the firmest evidence is from Germany, where up to 2007, only 2% of the surveyed companies reported reshoring. This figure increased marginally at the start of the recession, but the most recent data show a return to the pre-crisis level. Reshoring was most prominent in the electrical equipment industry. In the German survey, the most important reason given for reshoring was to obtain a higher degree of operational flexibility and more control over the quality of manufacture. Quality was the reason cited the next most often, followed by capacity. Similar results were found for UK companies, but more emphasis was placed on shifts in the relative wage costs and increased transport costs. A highly ranked factor reported in Italian surveys was the importance of the ‘Made in Italy’ label.

Information on the number of jobs that may have been created in Europe as result of reshoring is extremely sparse. It would appear, however, that the positive effects are minor. The German data, for example, show that cases of offshoring are appreciably more frequent than reshoring – among manufacturing sectors, it is between 3 and 10 times more frequent. The European Reshoring Monitor will provide a somewhat better figure, but a scan of the data collected so far appears to confirm the modest employment impact.

Overall, the evidence on offshoring and reshoring indicates a more modest global relocation of economic activity than in the public perception of these phenomena. Despite concerns about an impending wave of offshoring, prevalent at the start of the century, offshoring was always a relatively minor source of job loss in large-scale restructurings, and it has declined appreciably since the recession of 2008. Moreover, speculation that major offshoring in service sectors was a credible scenario, due largely to the

4 See the project website at <http://reshoring.eurofound.europa.eu>

enabling role of advances in ICT, has not materialised; the manufacturing sector continues to dominate offshoring cases. While the ERM may not fully capture the phenomenon, the fact that offshoring is particularly prominent in larger companies may suggest that the ERM captures the extent of offshoring better than the other types of restructuring, where the 100-job-loss threshold is a more relevant limitation. Finally, while the basis for an estimation of the employment effects of reshoring is rather weak, the available evidence is that it is a minor phenomenon.

In conclusion, it should be underlined that reshoring and offshoring is a rather limited measure of the impact of

global competitive forces on employment in Europe. Three decades ago, China–EU trade was practically non-existent, but today China is the major source of EU imports by far and a rapidly growing destination of EU exports. EU imports from China are mainly in the sectors of machinery and equipment, footwear and clothing, furniture and lamps, and toys. EU exports to China are predominantly in machinery and equipment, motor vehicles, aircraft and chemicals. While it is very difficult to trace the impact of this trade on the shifting structure of production in Europe, it is undoubtedly a highly significant factor and will account for much of the reallocation of employment throughout Europe.

1 Recent labour market and restructuring trends

Introduction

In this chapter, data from two sources – the EU-LFS and the ERM – are used to cast some light on recent labour market and restructuring developments in the EU. The EU-LFS is the standard data source for the main aggregate indicators of labour market performance, such as employment levels and rates, unemployment rates and shares of part-time work. The ERM tracks large-scale restructuring cases as reported in the press and media. The advantage of the ERM restructuring factsheets is that they relate to restructuring announcements in specific companies, with more detailed and concrete information about individual cases and some insights into the behaviour of the restructuring companies. As approximately 1,500 new cases are added to the database every year, trends in restructuring activity across cases can be identified, for example the decline in offshoring from EU Member States after the global financial crisis (Eurofound, 2013). The approach of the current analysis is to foreground the main labour market trends, notably as regards shifts in the sectoral composition of employment, using the EU-LFS and then to illustrate some of the trends identified with the ERM restructuring data and cases.

For official labour market data, the analysis relies on the EU-LFS going back to the beginning of the first quarter (Q1) of 2008 and up to Q1 2016 in order to more clearly identify structural shifts in employment. Only in 2016 had aggregate EU employment recovered to levels last observed before the global financial crisis, so the timeframe encompasses something like a complete business cycle, including recession and recovery periods. More recent (2015–2016) individual ERM restructuring case examples illustrate some of the main emerging themes, such as shifts of motor vehicle production from western to eastern Europe and more intensive recent restructuring in the retail sector. This dataset is also used to highlight broader trends in

restructuring activity over a longer period going back over 10 years.

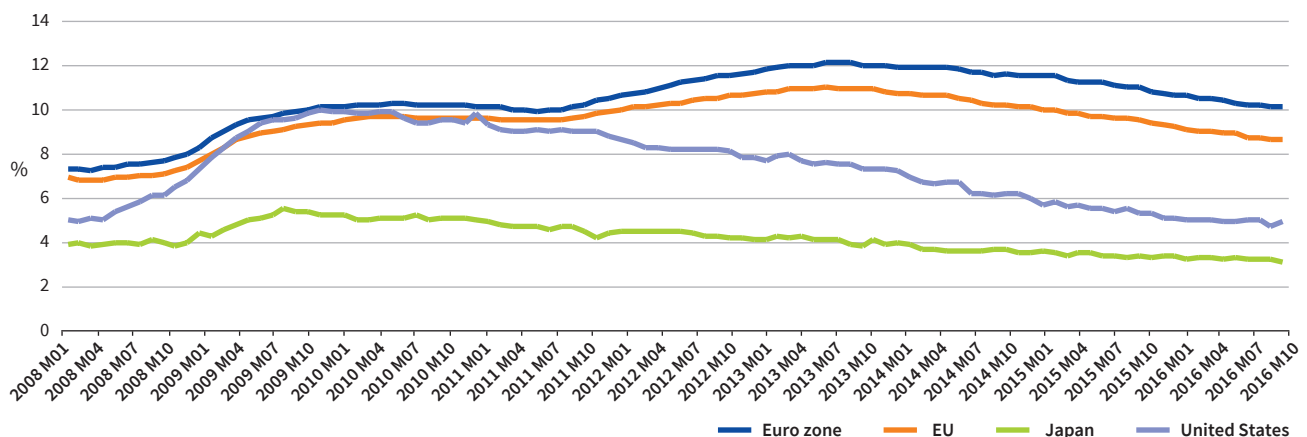
Background and general trends

Labour market conditions are improving. Employment growth in the EU28 has been accelerating since 2013, and 3.5 million net new jobs were added in the 12 months to Q1 2016. This rate of employment growth (1.6% per annum) has not been seen since 2007–2008. The average EU unemployment rate has fallen to 8.6%, although an increasing differential between it and the euro zone rate (10.1% as of June 2016, according to Eurostat) confirms that the recovery has been slower in the single-currency zone. According to the most recent unemployment data (Q1 2016), only 1 of the 28 Member States, Austria, recorded a year-on-year increase in its unemployment rate, and that was from a low level.

The recovery to pre-crisis employment levels involves different trajectories across Member States. In the UK and Germany, employment has increased significantly since 2008 despite the slump, adding some 2 million and 2.8 million net new jobs, respectively. In Spain, on the other hand, there are 2.8 million fewer people in employment in Q1 2016 compared to Q1 2008, notwithstanding strong growth since 2014, which has seen some one million net new jobs created and the unemployment rate falling below 20% (as of June 2016). In Greece, there are one million fewer people in employment in 2016 compared to before the crisis – a wrenching 21% contraction of the workforce.

When compared internationally, the post-2013 recovery in EU labour markets is less impressive. It has taken eight years to achieve in aggregate what the US labour market achieved in less than five years (in other words, return to pre-crisis employment headcounts). Unemployment remains very high by comparison with both Japan and

Figure 1: Unemployment rates in the euro zone, the EU, Japan and the US, 2008–2016



Note: M stands for 'month'.

Source: Eurostat

the United States, as Figure 1 demonstrates. Since 2011, the divergence in unemployment rates between the euro zone countries and the US has grown from less than one percentage point to over five percentage points.

One important and unheralded area in which EU labour markets have proven more resilient is level of participation. In the US in particular, a major public policy concern has been the post-crisis decline in participation, as people of working age have dropped out of the labour market altogether and are no longer seeking work ('discouraged workers'). This has been much less of a concern in Europe, where participation rates were stable during the crisis slump years (2008–2011) and have steadily risen since then, from 71.0% to 72.9% in 2008 to 2015 in the EU28; by comparison, the US rates fell from 75.3% to 72.6% in the same period. In Germany and the UK, participation rates were almost five percentage points higher than in the US in 2015. So while people of working age are more likely to be unemployed in the EU, they are more likely to be inactive and out of the labour market altogether in the US.

Beyond the headline indicators of employment levels and rates, the composition of employment has altered since 2008. Shares of EU aggregate employment have changed considerably by country as a result of the divergent effects of the crisis at national level, as already noted. The gender employment gap has closed further, as women tended to work in relatively sheltered sectors (health and education), while men were overrepresented in more exposed sectors (construction and manufacturing). These sectoral shifts also meant that the impacts fell heaviest on blue-collar and low-skilled workers.

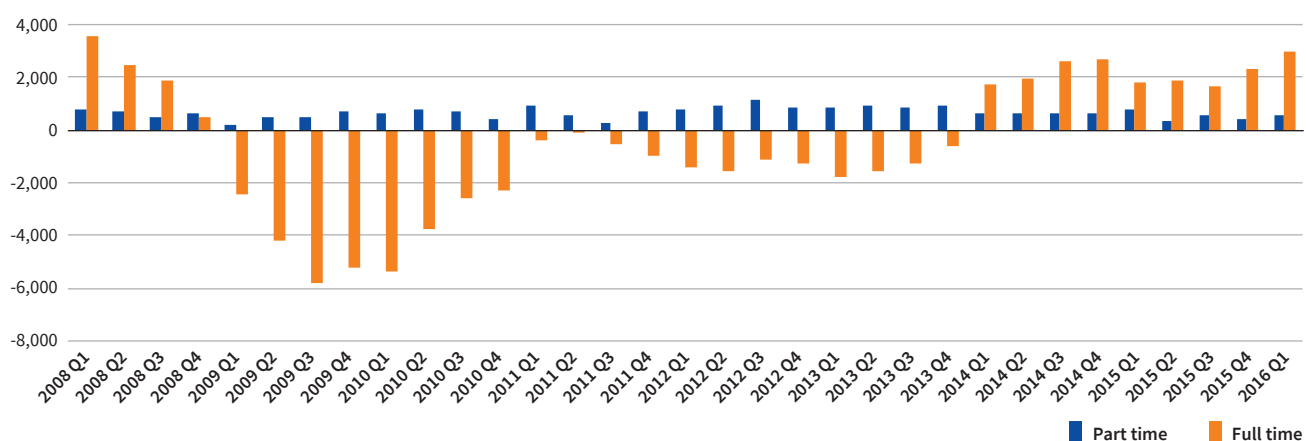
But the two most important shifts have been in terms of working time (full time and part time) and the age composition of employment. Younger workers represent

a much-reduced share of the workforce and older workers (55 years and older, and increasingly 65 years and older) represent a greater share. This has happened because young people were more vulnerable to job loss during the crisis and have also found it difficult to access jobs in a context of depressed demand in its wake. Older workers, by contrast, have been more likely to remain in work for a combination of pull and push reasons, such as relatively greater employment protections based on tenure, restricted early retirement possibilities, increasing pension age thresholds, less generous pension entitlements, wealth asset reduction during the crisis, improved work capability and longevity. In Q1 2016, those aged over 50 accounted for over 31% of EU employment (compared to 25% in Q1 2008), while those aged 15–24 accounted for only 8% (compared to 10% in Q1 2008).

The other major shift has been from full-time to part-time employment. Part-time employment has grown by some five million between 2008 and 2016, while full-time employment has contracted by almost the same amount. As Figure 2 shows, part-time employment was largely impervious to the crisis and has continued to grow by on average 600,000 jobs per year, with only modest variation year to year. By contrast, the stock of full-time employment suffered the full impact of the crisis. It contracted every quarter from late 2008 until late 2013 and particularly sharply in the core crisis period.

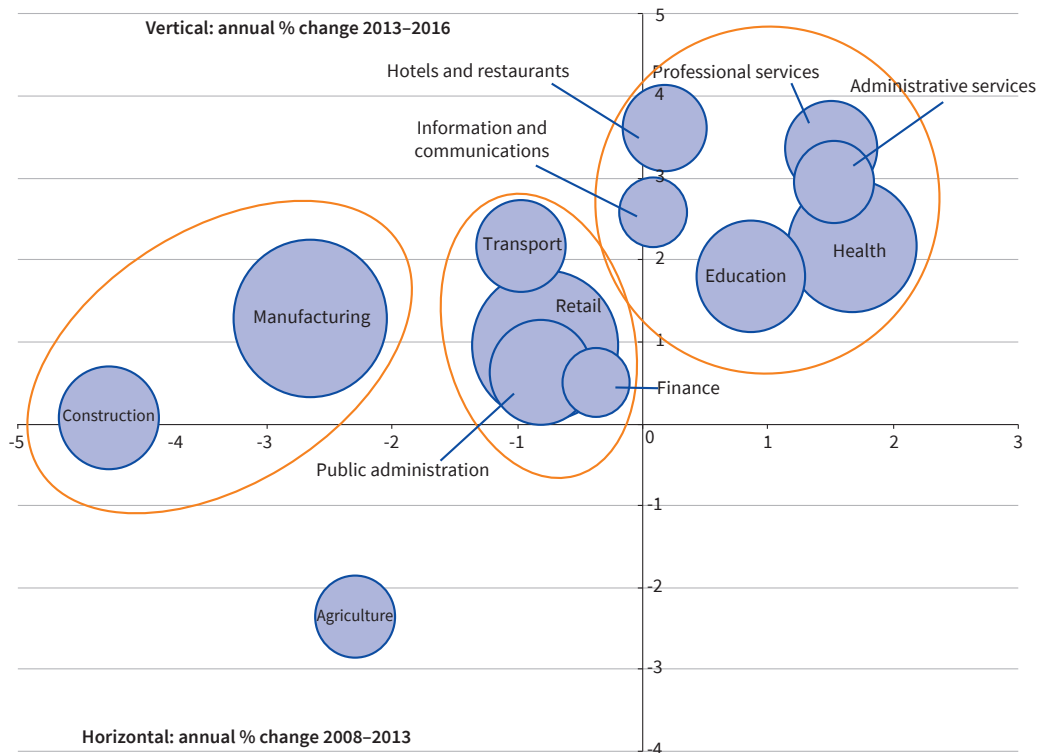
In some ways, the most dependable indicator of employer confidence is their decision to hire a full-time (and permanent) worker. The recent recovery starting in 2013 coincides with a period in which net full-time employment has begun to grow again in the EU. More recently, in 2015–2016, levels of full-time employment have expanded much more sharply compared to part-time levels. These are positive signals.

Figure 2: Part-time and full-time employment growth (in thousands) in the EU, quarterly year on year, Q1 2008–Q1 2015



Source: EU-LFS (authors' elaboration)

Figure 3: EU employment growth per annum by sector, comparing 2008–2013 with 2013–2016



Note: Selected sectors. Q1 data in each year. Bubble areas are scaled to sector employment in 2016 (for example, manufacturing = 33 million; hotels and restaurants = 10 million). See Annex 2 for precise employment estimates.

Source: EU-LFS (authors' elaboration)

Sectoral employment shifts

The crisis and post-crisis periods have also affected the composition of employment by sector. Figure 3 compares sectoral employment growth rates in the post-crisis employment contraction (2008–2013) and the more recent period of recovery (2013–2016).

Four clusters can be identified:

- **Agriculture:** This sector sustained continuing secular employment decline of just over 2% per annum in both periods. Most of these losses (about 1.4 million out of a total 2 million decline in headcount) occurred in just three countries – Romania, Poland and Portugal – each with relatively high shares of agricultural employment.
- **Manufacturing and construction:** These sectors contracted sharply in the crisis and post-crisis periods, but employment levels have stabilised in construction and have risen modestly in manufacturing since 2013.
- **Stagnant or slow-growing service sectors:** Such sectors exist both in the private sector (retail, transport and finance) and public sector (public administration).
- **Structurally growing, generally high-skill, service sectors:** Employment in these sectors grew during the crisis, and growth has strengthened since 2013.

The most important of these in terms of overall employment are the predominantly state-funded sectors of health and education, although there is widespread evidence of an increasing private share of employment in these sectors, notably in the health sector (Eurofound, 2015). There has also been sustained employment growth in the broad categories of professional services (legal, computing and information technology (IT), accounting, engineering and management consultancy) as well as administrative services (employment, security, travel and building maintenance). These sectors tend to be labour intensive and require higher skills. In addition, most work comprises tasks that are not trivial enough to automate and thereby replace with technology. Of note, employment growth has been faster in private services than predominantly state-funded services since 2013, partly as a consequence of fiscal consolidation and public spending restrictions during and following the euro zone crisis of 2011–2013. Nonetheless, given their size, the health and education sectors in particular have contributed to the recovery in employment headcount.

Table 1a shows, by Member State, the top six sectors in which employment declined most in the period from Q1 2008 to Q1 2016 (Table 2a further down shows the top six sectors in which employment grew in that period).

Table 1a: Top six employment-losing sectors, by Member State, 2008–2016

NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)
Austria		Belgium		Bulgaria		Cyprus		Czech Republic		Germany		Denmark	
46	-24.2	64	-52.4	41	-69.5	41	-14.6	43	-106.1	96	-221.9	41	-43.9
41	-20.1	29	-31.4	1	-57.5	97	-4.7	46	-32.1	78	-221.3	84	-27.7
45	-15.8	84	-28.4	14	-54.7	43	-4.5	49	-29.1	1	-182.9	43	-22.2
1	-13.4	97	-24.4	85	-42.0	64	-4.0	33	-19.6	25	-164.6	47	-18.3
42	-12.7	1	-23.2	84	-35.5	1	-2.1	13	-17.0	65	-113.8	49	-15.9
64	-12.6	20	-21.8	43	-27.7	79	-1.9	88	-15.0	61	-95.1	28	-14.8
Estonia		Croatia		Finland		France		Greece		Hungary		Ireland	
41	-18.8	1	-77.2	46	-18.4	97	-316.9	43	-147.6	47	-33.0	41	-64.2
43	-10.3	41	-32.6	26	-14.6	84	-255.6	41	-106.6	43	-18.1	43	-58.9
46	-8.0	46	-19.3	17	-14.4	43	-163.4	1	-66.2	45	-13.8	46	-20.2
10	-5.8	47	-10.2	1	-12.8	29	-103.3	46	-65.2	71	-12.2	47	-20.2
85	-5.3	10	-9.0	84	-9.0	28	-50.1	47	-59.4	26	-11.6	25	-9.3
14	-4.8	14	-9.0	16	-8.4	94	-45.8	84	-52.3	27	-11.5	1	-7.7
Italy		Lithuania		Luxembourg		Latvia		Malta		Netherlands		Poland	
41	-323.6	41	-44.9	41	-2.7	41	-49.0	55	-2.6	69	-135.9	1	-439.8
46	-309.2	47	-23.3	45	-2.5	47	-24.5	41	-2.0	84	-81.0	14	-102.9
43	-151.0	43	-16.5	22	-2.1	84	-24.3	30	-2.0	1	-68.1	43	-71.1
33	-122.5	14	-14.7	51	-2.0	46	-18.3	27	-1.0	41	-65.1	46	-66.1
84	-118.6	35	-10.2	46	-1.4	1	-12.6	26	-1.0	43	-51.9	37	-44.3
14	-94.6	16	-8.3	10	-1.4	42	-10.0	61	-0.9	88	-45.7	13	-31.7
Portugal		Romania		Sweden		Slovenia		Slovakia		Spain		UK	
1	-274.6	1	-681.0	25	-24.1	1	-32.8	41	-24.2	41	-1104.5	43	-1336.1
41	-209.8	14	-103.1	87	-18.7	14	-8.7	1	-17.8	43	-460.1	84	-222.3
97	-66.2	43	-67.1	72	-16.2	84	-6.9	14	-17.4	25	-159.4	64	-187.9
43	-59.6	16	-53.2	28	-14.7	16	-6.6	27	-12.5	47	-158.4	69	-178.1
56	-48.8	24	-47.2	29	-12.5	49	-5.8	26	-12.3	23	-124.5	52	-166.8
84	-48.6	35	-42.0	16	-8.8	20	-5.7	65	-11.9	97	-124.3	47	-134.1

Table 1b: Summary of employment-losing sectors by number of occurrences in the Member State listings

NACE code	Sector	Total no. of occurrences
41	Construction	17
43	Specialised construction activities	17
1	Agriculture	16
84	Public administration, defence and social security	12
46	Wholesale except motor vehicles	11
14	Manufacture: clothing	9
47	Retail except motor vehicles	9
16	Manufacture: wood products	5
97	Domestic services	5
25	Manufacture: fabricated metal products	4
26	Manufacture: computer, electronic and optical	4
64	Financial services except insurance/pensions	4

Notes: See Annex 1 for a full sector listing and a guide to sectors corresponding to NACE codes. A large 'unspecified' sector is omitted from ranking lists for France, Luxembourg and the Netherlands. Regarding the UK, losses in NACE 43 are exaggerated following reclassification within construction sectors NACE 41–43.

Source: EU-LFS (authors' elaboration)

The construction sector figures prominently in the list of top job-loss sectors across the Member States. It has shed some four million jobs since Q1 2008 and has only very recently begun to grow again at aggregate level. This is a labour-intensive and cycle-sensitive sector, so it is perhaps surprising that there was not an earlier bounce in employment.

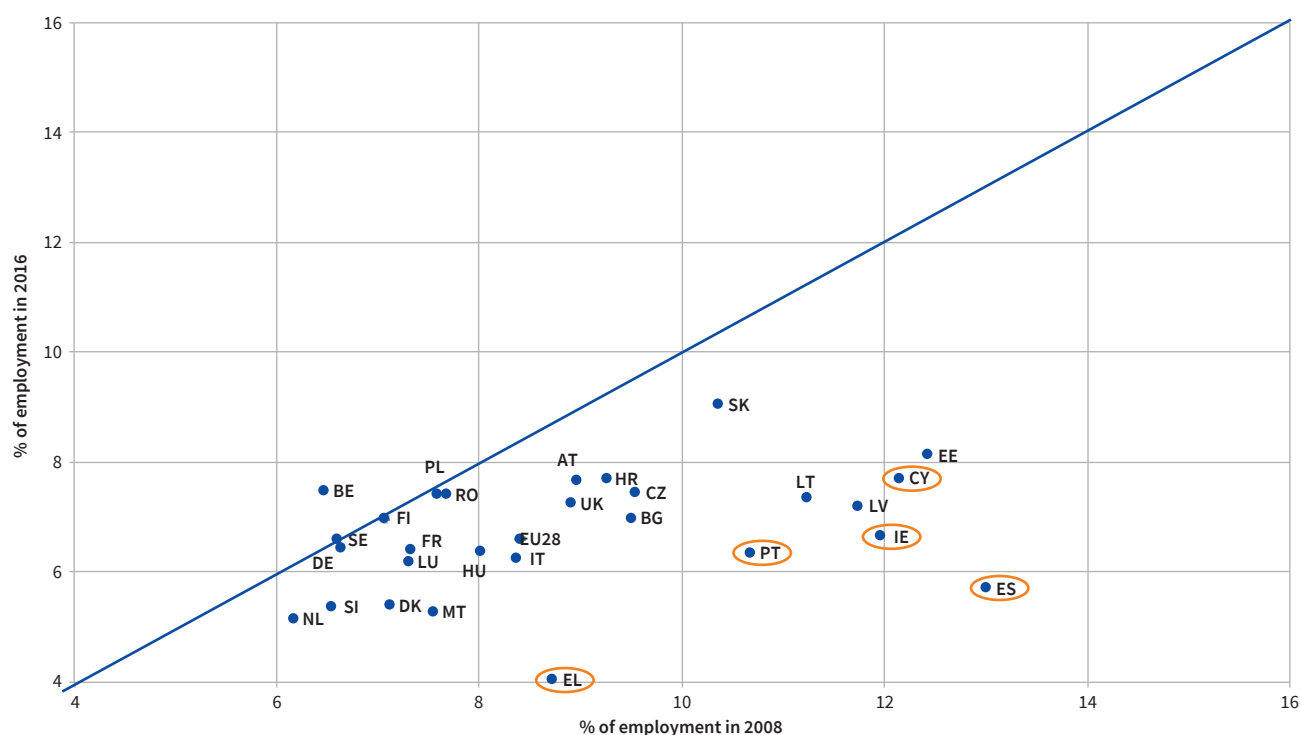
One probable explanation is that the scale of the pre-crisis boom in certain Member States was so great and so unsustainable that there has been a negative adjustment to more customary, durable levels of employment in the sector. This is borne out by Figure 4, which shows the employment shares of construction by country in 2008, at or just after the height of the pre-crisis construction boom in those countries that had one, and in 2016. There has been a decline in the share of employment in nearly all Member States, but the decline has been markedly greater where the pre-crisis construction share was greater. Spain is the most extreme case, with over 1.6 million construction job losses, where its share of employment has declined from 13% to 6%. However, sharp drops were experienced in all countries where the construction sector had grown to account for over 8%–10% of total employment, including the Baltic states, Cyprus and Ireland. In all Member States where unemployment rose most sharply after the global financial

crisis, a common factor was the bursting of a real estate bubble and the resulting destruction of construction sector employment. As such boom–busts were also a significant proximate cause of financial sector collapses, with knock-on consequences for state finances, these are also the Member States that were compelled to rely on external funding assistance in the post-crisis period from the European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM).⁵ A high construction employment share compared to the country average over time or against the EU average has been an important manifestation of unsustainable credit conditions and misallocation of capital, with the destructive economic consequences witnessed in some Member States.

As an aside, it is perhaps surprising to note that the construction share of employment has risen since 2008 in only one Member State, Belgium.

Other sectors that figure prominently in the country top six lists of job loss include retail, agriculture, various manufacturing subsectors as well as public administration. There has been significant rationalisation in the competitive and low-margin retail sector, as evidenced in the level of restructuring activity recorded in the ERM. This has resulted in the consolidation of retail activity in larger units but also the disappearance of many high street retail jobs altogether.

Figure 4: Employment share of construction in 2008 and 2016, by Member State



Note: Euro zone EFSF and ESM aid recipient countries are circled.

Source: EU-LFS (authors' elaboration)

5 For more information, see <http://www.consilium.europa.eu/en/policies/financial-assistance-eurozone-members/>

Box 1: Retail – Major chain collapses

Based on EU-LFS data, the large retail sector in the EU was characterised as one of a group of slow-growth service sectors. The sector accounts for some 31 million workers, or around 15% of the EU workforce, but has contracted since 2008 (losing 400,000 workers). This apparent stagnation evidenced in the aggregate net employment shifts conceals high levels of restructuring activity at company level that the ERM shows and can help to explain.

After manufacturing, retail accounts for the highest number of restructuring cases in the overall ERM database (over 1,200) and for around one in six announced job gains and job losses reported during 2015–2016. A distinctive feature of restructuring in the sector is the relatively high share of job loss attributable to bankruptcy or closure, indicative of relatively unconstrained, competitive market forces. It is the only sector in which bankruptcy accounts for over half of all announced job losses. A combination of high levels of competition (especially from online retailers), changing consumer taste, narrow margins and increasing cross-border market penetration have been some of the factors cited in a series of collapses in the first half of 2016.

In three cases alone, over 30,000 jobs were lost. The troubled Dutch department store and chain **V&D** closed with the loss of at least 8,000 jobs after being declared bankrupt on the last day of 2015. The 128-year-old chain had around 250 outlets nationally. Some of the stores continued to operate until February 2016, but attempts to salvage the company through third-party intervention were unsuccessful. Subsequently, Canadian company HBC (Hudson's Bay Company) announced it would take over some 20 of the former V&D sites starting in summer 2017. This could involve up to 2,500 new jobs being created.

In June 2016, the UK chain **British Home Stores (BHS)** also declared bankruptcy, with the likely loss of 11,000 jobs. The company, which operated 160 stores across the UK, had entered administration in April 2016, but, again, no buyer was found for the heavily indebted business. The first store closures were initiated in July 2016, with over 1,000 redundancies implemented at the time of writing.

A UK parliamentary enquiry was called into the closure of BHS and into the company's huge pension deficit (over GBP 500 million) at the time of its bankruptcy (€580 million as at 11 November 2016). The company was part of the Arcadia Group from 2000 to 2015, producing dividends of around GBP 580 million (€674 million) in that period for Arcadia Group's owner, UK retail magnate Sir Philip Green and family. In 2015, it was sold for a minimal consideration to a company called Retail Acquisitions. The case has raised debate about corporate governance in the company and also on policy issues in relation to securing pension funds for the benefit of company workers – which is especially important in older companies like BHS (founded in 1928) – and the administration process, which shop workers' trade union USDAW insist is too geared towards the interest of company creditors and insufficiently so towards the interests of the company itself and its workforce.

Finally, in late June 2016, **Marinopoulos**, one of the largest supermarket chains in Greece, with over 400 outlets, filed for bankruptcy. Though the business continued operating under administrative protection from creditors, 13,000 employees faced the prospect of redundancy in the heavily indebted company. In 1999, the family-owned business entered a 50–50 joint venture with the French Carrefour Group, becoming the largest retail presence in Greece. This was reported to be a profitable business operation until 2012, when Carrefour decided to withdraw from the partnership due to the economic slump associated with the Greek debt crisis.

Counterbalancing these job losses in established, traditional retailers, and also recorded by the ERM, is the international expansion of low-cost retailers with significant new job creation. For example, German group **Aldi** announced 8,000 new jobs in 2015 as it prepares to almost double its store total in the UK.

Perhaps more importantly, there has been a notable expansion of its European workforce by the world's largest online retailer, **Amazon** – an indication of the structural shift from high street, more labour-intensive retail provision to online sales. Amazon created 10,000 new jobs in its European operations in 2015 and announced a further 3,000 in 2016. It now employs over 40,000 people in the EU, and around one-third of these are in the UK. It is responsible for 4 of the 10 largest retail ERM job creation cases recorded in 2015–2016.

At the same time that the US company has embarked on a large expansion of its warehouse 'fulfilment centres' in the EU, it has also begun to roll out a new generation of robots that are increasingly performing the work of and replacing the need for human 'pickers and packers'. It is reported that over 30,000 Kiva robots are currently in deployment worldwide in Amazon units. Such developments can only add to the commercial pressures already felt by more traditional 'bricks and mortar' retailers.

Services dominate the job-gaining sector lists (Table 2). Health and education – two big, predominantly state-funded sectors – are amongst the top-growing sectors in over half of the Member States. In Portugal, where three of the top six growing sectors are health-related (NACE

86–88), the health service announced in February 2015 the recruitment of 2,000 nursing professionals and more than 1,900 specialised doctors. This was the biggest single announced expansion in the sector recorded on the ERM since 2015.

Table 2a: Top six employment-gaining sectors, by Member State, 2008–2016

NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)	NACE code	Job loss (000s)
Austria		Belgium		Bulgaria		Cyprus		Czech Rep		Germany		Denmark	
85	62.8	88	68.8	62	19.8	56	4.0	29	70.3	85	401.5	85	48.3
62	31.4	81	55.0	80	18.3	69	3.5	85	40.4	46	368.4	81	28.3
86	28.5	43	51.2	69	18.0	86	2.5	86	35.8	81	356.1	78	18.7
88	24.9	85	37.7	47	16.1	66	2.1	62	34.7	86	340.2	56	18.6
87	24.7	87	31.8	81	14.6	85	1.6	98	32.5	87	292.4	21	17.8
27	23.4	78	31.0	29	10.0	52	1.1	71	31.8	28	265.3	42	14.6
Estonia		Croatia		Finland		France		Greece		Hungary		Ireland	
62	14.0	85	28.3	86	17.2	88	390.0	56	11.2	84	174.1	62	16.9
86	7.3	86	13.8	87	13.3	86	236.5	58	10.2	29	72.9	85	14.2
84	4.2	69	10.2	93	9.6	85	186.7	65	8.5	1	40.4	86	12.0
61	3.5	45	9.3	62	9.0	70	144.0	82	7.0	56	32.1	88	10.7
60	3.3	96	9.1	81	6.2	56	131.3	62	4.1	88	25.9	56	8.0
82	2.8	62	9.1	74	6.0	47	114.2	93	3.8	81	25.5	21	5.8
Italy		Lithuania		Luxembourg		Latvia		Malta		Netherlands		Poland	
97	378.4	49	14.4	64	9.6	68	17.1	85	5.9	70	91.6	84	100.4
56	167.5	46	12.9	69	5.2	50	6.0	47	3.7	78	78.0	47	99.1
81	100.5	78	9.3	85	4.4	96	5.6	86	3.4	46	73.4	45	84.7
10	92.0	84	8.0	43	3.6	64	4.4	64	2.8	81	50.8	86	84.3
87	77.5	70	6.8	88	3.4	87	3.9	84	2.5	74	28.1	41	69.5
86	72.7	71	6.1	86	2.5	65	3.9	56	2.4	33	25.1	62	67.9
Portugal		Romania		Sweden		Slovenia		Slovakia		Spain		UK	
86	58.5	45	57.6	85	69.6	29	11.9	84	61.0	86	152.6	85	665.6
85	55.9	29	52.2	84	68.7	56	7.1	29	36.3	85	119.2	41	652.9
87	47.4	69	51.6	70	49.4	86	6.8	62	23.8	62	65.7	87	493.2
62	26.1	49	48.3	88	40.7	47	5.2	88	23.4	87	63.3	56	309.5
82	21.3	80	45.5	71	33.3	87	5.1	47	21.1	93	62.1	81	295.2
88	16.8	97	36.9	62	26.2	21	4.8	81	11.1	56	53.3	70	285.7

Table 2b: Summary of employment-gaining sectors by number of occurrences in the Member State listings

NACE code	Sector	Total no. of occurrences
86	Health	16
85	Education	15
62	Computer programming, consultancy, etc.	13
56	Food and beverage services	11
81	Building services and landscaping	10
87	Residential care	10
88	Social work	9
84	Public administration, defence and social security	7
29	Manufacture: motor vehicles	6
47	Retail except motor vehicles	6
69	Legal and accounting activities	5
70	Head office, management consultancy activities	5
78	Employment activities	4
21	Manufacture: pharmaceuticals	3
45	Wholesale/retail of motor vehicles, etc.	3
46	Wholesale except motor vehicles	3
64	Financial services except insurance/pensions	3
71	Architectural and engineering activities	3
82	Office and business support activities	3
93	Sports and recreation	3

Notes: See Annex 1 for full sector listing and a guide to sectors corresponding to NACE codes. A large 'unspecified' sector is omitted from ranking lists for France, Luxembourg and the Netherlands. Regarding the UK, gains in NACE 41 are exaggerated following reclassification of employment within construction sectors NACE 41–43.

Source: EU-LFS (authors' elaboration)

Both health and education are labour intensive, relatively high skilled and tend to be expanding structurally in developed economies. This has occurred for a variety of reasons. In relation to health, demographic ageing leads to greater demand for provision. Also, the share of health services in overall consumption expands as societies become better off. Finally, health provision, like education, is still largely dependent on human interaction, resulting in limited potential productivity gains from technological advances of the type that have made agriculture and manufacturing much more productive with a much reduced workforce (Baumol, 1993). Developments in telemedicine (or the emergence of online education, including ‘massive online open courses’, or MOOCs) may alter this assessment in the near future, but much healthcare provision remains largely traditional, human-interactive and labour intensive.

Demographic ageing is even more directly responsible for the growth of employment in residential care, which is among the fastest-growing sectors, and may also have contributed to growth in social work.

Computer programming and consultancy is a core knowledge-intensive services sector and appears in the list of top-growing sectors in nearly half the Member States. It has been the fastest-growing sector in employment terms – despite its relatively small share of overall employment – in Bulgaria, Estonia and Ireland. This is reflected in the ERM, where the overwhelming majority of recent restructuring cases in the sector (NACE 62) have been of business expansion (119 out of a total of 135 cases since January 2015). It is also the sector with the highest ratio of restructuring job gains to job losses (over six gained for every one lost). Two countries, Poland and Ireland, account for over half of the business expansions reported by the ERM in 2015–2016, with 47 cases and 20 cases, respectively. Common features of the computer and IT sector cases in the two countries are that they involve a high share of skilled, graduate-level jobs (programmers, IT consultants, business analysts, engineers, and marketing and sales specialists), are the result of foreign direct investment by multinationals based in other countries, and are geographically concentrated in specific areas of each country.

The capital region around Dublin attracts the lion’s share of the business expansions in the sector in Ireland. The biggest cases most recently have been those of US multinationals **Amazon**, with 500 new jobs announced in May 2016 (Dublin is Amazon’s technical hub in Europe), and **Oracle**, with 450 new sales jobs in cloud computing announced in January 2016. In Poland, most expansion cases are based in the geographical triangle formed by Wrocław, Kraków and Katowice in the south-west of the country. Wrocław in particular has benefitted from some of the biggest recent employment-generating investments. Dutch enterprise software company **Unit4** announced the opening of an R&D centre in March 2015 (700 jobs), Swiss bank **UBS** announced a new shared services centre in the

city (600 jobs) in January 2016, while **IBM** and **Infor** each announced 500 new jobs in April 2016 in, respectively, shared services and cloud computing services. The job profiles for these new or expanding facilities in Poland tend to emphasise language capabilities in addition to technical expertise, reflecting the fact that the facilities serve diverse national markets either in Europe or the Europe, Middle East and Africa (EMEA) zone.

Since the onset of the crisis in 2008, the largest declines in employment have taken place in manufacturing (-3.7 million jobs), construction (-3.9 million jobs) and agriculture (-2 million jobs). In terms of balancing gains, six sectors have recorded net employment growth of over 1 million jobs: residential care and social work activities (+1.9 million), health services (+1.3 million), education (+1.6 million), administrative and support services (+1.4 million), high-level professional services, such as legal, accounting and engineering services, (+1.2 million) and accommodation and food services (+1 million). These are all service sectors and the majority of service sectors continued to add employment. There were some notable exceptions, however, including core government functions (public administration and defence), which suffered a 2% decline, and the telecommunications sector, which has shed almost a quarter of its pre-crisis employment. Growth was fastest in IT and information services (+31%), other professional, scientific and technical activities (+27%) as well as residential care and social work activities (23%).

Within the manufacturing sector, three clusters can be identified. Employment losses have been most severe (more than 25% of total employment) in basic, low-tech subsectors such as textiles, clothing and leather; wood, paper and printing; as well as, more recently, coke and petroleum products, where the collapse of oil prices since Q1 2014 (from over USD 100 a barrel to USD 45 a barrel in mid-2016) has led to much internal restructuring in the sector. More modest employment losses (10%–16%) have been recorded in the production of rubber and plastic goods as well as basic metals, computers and electrical goods.

Finally, the remaining predominantly high-tech manufacturing sectors (motor vehicles, machinery and pharmaceuticals) have recovered the employment losses experienced at the outset of the crisis and have posted marginal positive employment gains over the period 2008–2016. As is clear from Table 2 above, motor vehicle manufacturing employment gains have been concentrated in central and eastern Europe; it has been one of the top two growing sectors for employment in the Czech Republic, Hungary, Romania, Slovakia and Slovenia since 2008. This follows extensive investment before and after EU accession by predominantly large EU motor vehicle manufacturers exploiting lower wage costs, developed skill bases and, in some cases, existing infrastructure in the more industrialised regions of the former Eastern Bloc countries of the Soviet Union.

Box 2: Manufacturing – Motor vehicle employment moves east

As already indicated, employment shifts have been highly differentiated across manufacturing subsectors. Some traditional, low-tech sectors such as wood, paper, textiles and clothing continue to contract rapidly in terms of employment headcount. High-tech sectors such as pharmaceuticals have added employment. However, the most important high-tech sectors – motor vehicle and transport equipment manufacture – have recovered the job losses experienced during the global financial crisis and now employ some 150,000 more workers than in 2008. ERM restructuring cases in the sector have recorded two job gains for every one job lost since the beginning of 2014. Most new employment in the sector is concentrated in eastern Europe, as existing, mainly western European, multinationals nearshore production to lower-cost facilities in the Czech Republic, Poland and Romania in particular.

As Figure 5 confirms, the largest net restructuring losses in the motor vehicle sector have all been in older, EU15 Member States. Net gains at country level have been confined to eastern Europe. Nonetheless, the two largest cases of announced job creation in 2015–2016 were in Germany, the powerhouse of the European motor vehicle sector. In 2015, luxury marques **BMW** and **Audi** announced 5,000 and 4,000 new jobs, respectively, in their German operations, as well as several thousand further new jobs in international units. BMW was seeking specialists in the areas of alternative power units, light construction and IT. Audi, which belongs to the Volkswagen Group, employs approximately 80,000 people worldwide and grew its workforce by nearly 6,000 in 2014. By 2019, it plans to invest €24 billion in new technologies for production as well as in the construction of new production plants worldwide.

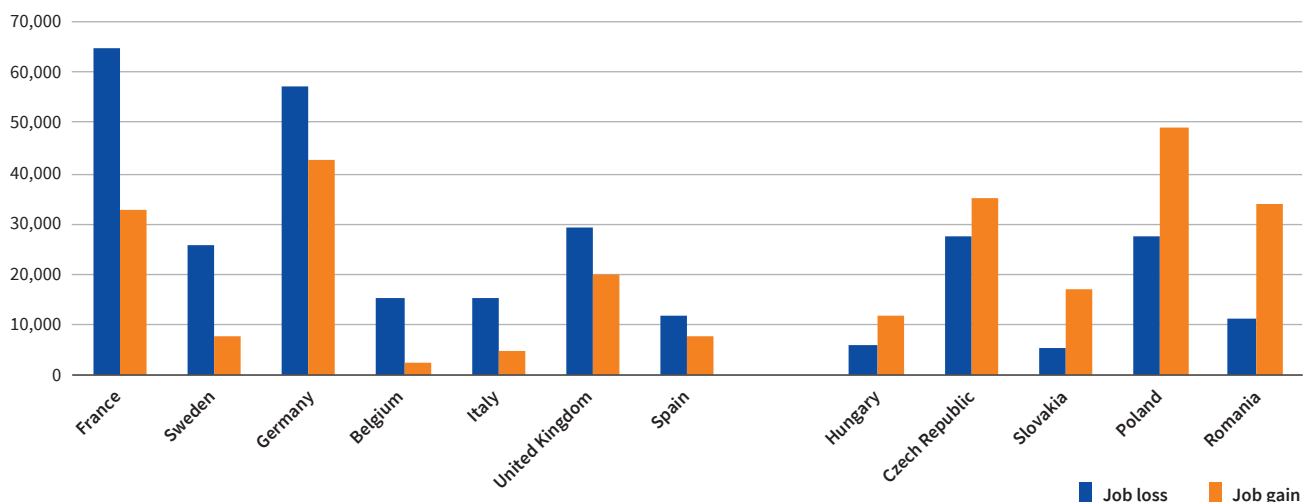
In March 2016, car manufacturer **Skoda Auto** (another subsidiary of the Volkswagen Group) announced that it would add 2,000 new jobs at its Kvasiny plant in the Czech

Republic during 2016 due to the launch of two new sport utility vehicles (Skoda SUV and Seat SUV). The site already employs 5,000 staff. A new **Volkswagen Poznan** site, operational in late 2016 at Września, should employ 1,500 staff producing the Crafter van.

It is not just car manufacturers that have shifted eastwards, but also the related supply chain. In February 2016, the French car parts manufacturer **Faurecia**, which produces car components for most of the major marques operating in the EU, announced the creation of 1,000 jobs at a new, sixth Slovakian plant at Lozorno. In May 2016, the company began production of car upholstery at a new Romanian plant near Râmnicu Vâlcea following an investment of €12 million. This plant, the company's fourth in Romania, will employ 1,600 people.

Overall, since January 2015, 24 of the 33 cases of announced large-scale job creation (involving at least 500 new jobs) in the motor vehicle and transport equipment sectors have related to facilities in eastern Europe.

Figure 5: Announced job losses and job gains in large-scale restructurings in motor vehicle and transport equipment manufacturing (NACE 29 and 30), 2008–2016, by country



Source: ERM

Box 3: Food and beverages – Small employment declines

The food and beverage sector is the one low-tech manufacturing sector in which employment declines have been marginal. Considerations such as the importance of proximity to market and perishable raw materials make offshoring much less feasible in this sector and serve as a buffer to employment.

The broad trend in sectoral employment since 2008 has been the continuation of secular patterns of ongoing shrinkage of manufacturing and primary sector employment, combined with employment expansion in most service sectors.

Further restructuring evidence from the ERM

The analysis so far is mainly based on extractions of EU-LFS data made in mid-July 2016.⁶ While the EU-LFS is the most reliable source of information on employment levels and shifts in Europe, there is no survey-based source of representative data on the employment impacts of restructuring activity at the company or establishment level. For this reason, Eurofound’s ERM events database is an important source of complementary data. It monitors the announced employment impacts of large-scale restructuring events in European countries, covering both job creation and destruction. Based on media reports across all EU28 countries as well as Norway, it is the single best publicly available source of EU data on the employment impacts of large-scale organisational restructuring.

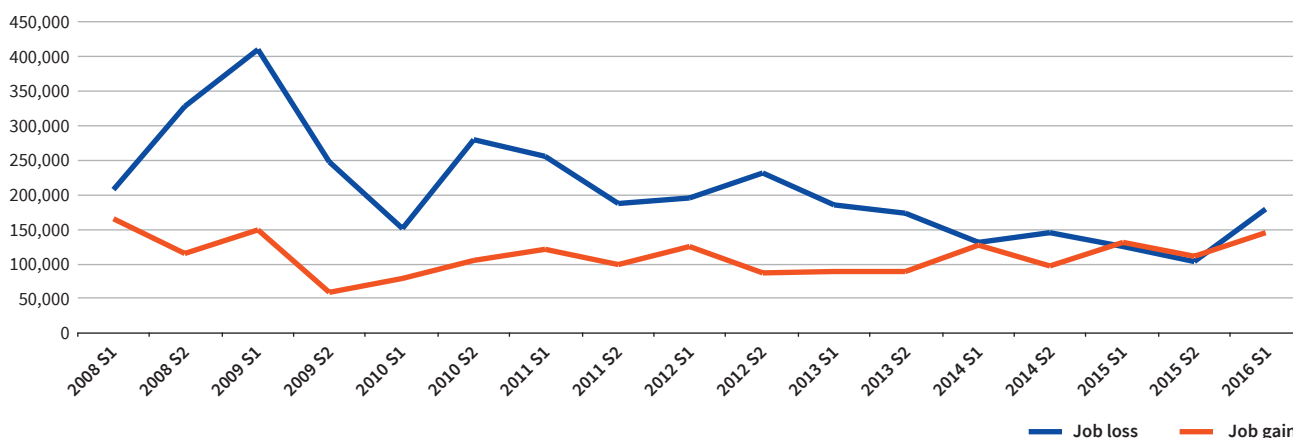
The ERM dataset comprises factsheets on over 20,000 individual restructuring events captured between 2002 and Q2 2016. Around 100–150 new cases are added each month by correspondents following screening of local media sources. The descriptive analysis that follows gives a summary of restructuring developments from 2015–2016 (up to the end of June 2016), with some data from earlier periods for comparison – broadly, the pre-crisis period up to 2007 inclusive, the peak crisis years 2008–2010 and the post-crisis period 2011–2014.

Between Q1 2015 and Q2 2016, the ERM recorded 1,974 cases of large-scale restructuring in the EU28 Member States as well as Norway and 76 cases of transnational restructuring. Excluding the transnational cases, there were somewhat more job creation cases than job loss cases (1,007 versus 939), although total announced job loss was greater than total announced job gains (407,000 versus 387,000). Some 28 restructuring cases involved announced job losses and job

Box 4: Criteria for inclusion in the ERM events database

The ERM defines job loss at restructuring in a similar way as the European Directive on Collective Redundancies (98/59/EC) does in that it refers to intended redundancies. However, the intended redundancies do not have to be notified to any public authority, but rather ‘announced’, as subsequently covered in media reports. The thresholds for cases to be included in the dataset are that cases should involve at least 100 announced jobs gained or lost or that cases affect at least 10% of the workforce in establishments employing at least 250 people. The data is collected via Eurofound’s network of European correspondents and edited and published daily on the Eurofound website. Unlike the directive, however, there is no stipulation regarding the time in which the intended job loss is to occur.

Figure 6: Announced restructuring job loss and job gain, by semester, 2008–2016



Note: S stands for ‘semester’

Source: ERM

6 EU-LFS data is subject to frequent revision, so results of later extractions may not match exactly.

Table 3: Share of announced restructuring job loss, by type of restructuring, 2002–2016

Period	Bankruptcy or closure %	Internal restructuring %	Merger or acquisition %	Offshoring %	Relocation or outsourcing %	Other %	Total %
2002–2007	15.0	71.9	4.2	5.6	2.9	0.4	100
2008–2010	20.0	71.4	3.2	3.2	0.8	1.4	100
2011–2014	20.8	71.8	3.2	2.8	1.2	0.1	100
2015–2016	23.8	66.4	5.5	2.5	1.6	0.3	100

Source: ERM

gains simultaneously. Figure 6 shows the trend in terms of aggregate job loss and job gain from the ERM dataset.

The main trends since the global financial crisis have been a decline in announced job loss and a gradual increase in announced job creation. The two time series have largely converged since 2014. At the peak of the crisis in 2009, announced job losses were as much as 250,000 higher per semester than announced job gains. The most recent increase in job loss in the first semester of 2016 is in significant part attributable to the bankruptcy and closure of major retail sector chains, as already noted. These cases have contributed to an increase in the share of bankruptcy-related restructuring in overall announced job

loss, which rose to 24% in 2015–2016 (Table 3). The catch-all restructuring category of ‘internal restructuring’ continues to account for around two-thirds of all announced job losses recorded in the ERM. Other forms of restructuring account for marginal shares of job loss, with the share attributable to offshoring continuing to decline (to 2.5% in 2015–2016 compared to over twice that in the pre-crisis period – see Chapter 2 for an in-depth discussion).

There has, however, been a recent increase in the share of job losses accounted for by corporate merger and acquisition activity, notably in the financial sector and in relation to Nokia’s acquisition of Alcatel-Lucent, concluded in early 2016.

Box 5: Financial services – Job loss following mergers

The broad financial services sector, like retail, can be characterised as stagnant or having low employment growth, based on EU-LFS employment estimates. Employment levels have declined marginally since 2008, but the specific subsector that encompasses retail and investment banking, NACE 64, has recorded significant employment decline over the same period (–330,000). This is in part explained by technological developments – the increasing ubiquity of self-service and online banking services reducing the need for many traditional cashier roles. An additional factor may be the increased level of corporate activity in banking that has resulted, for example, in many thousands of announced job losses in the ERM.

Of the more recent cases in 2015–2016, most involve rationalisation within a Member State, but there are also examples of divestments by large multinationals (the sale of **Barclays’** Spanish units to **CaixaBank**) as well as foreign acquisitions (the acquisition of **Bank Gospodarki** by **BNP Paribas**). Increased scale and the scope for cost savings via branch closures and job reductions appear to have been important factors in these mergers. Headcount reductions were mainly achieved via voluntary (incentivised) redundancies, early retirements and in some cases by means of internal transfer or relocation offers.

In May 2016, Italian cooperative banks **Banco Popolare (BP)** and **Banca Popolare di Milano (BPM)** announced 2,500 redundancies, to be implemented between 2016 and 2019. This follows a merger which was approved by their assemblies in October 2016. The deal will create Italy’s third largest bank by assets and will result in the closure of nearly 400 of the combined entity’s branches.

In Poland, it was announced that the headcount at **Bank BGZ** (Bank Gospodarki Zyrnosciowej) would shrink by up to 1,800 jobs as a result of the takeover by **BNP Paribas** in March 2015. In the same country, 1,000 job losses were announced in April 2015 as a result of the merger of **Alior** and **Meritum** banks.

Spanish bank **BBVA** announced plans in April 2015 to dismiss 1,600 employees following the acquisition of the Spanish bank **Catalunya Banc**. The bank said it would close 20% of Catalunya Banc’s branches. The final figure of agreed job cuts was somewhat lower (1,557) and was reported to include over 1,000 incentivised departures, 400 offers of relocation and less than 100 involuntary dismissals.

The employment consequences of the 2014 **CaixaBank** acquisition of the Spanish branches of UK-based **Barclays** became evident in early 2015. Initially, the company called for 1,120 job losses, with some possibilities of relocation for 200 workers within the group. Workers relocated in other companies within the CaixaBank group would receive severance pay equal to 20 days per year worked, up to a maximum of 12 months. Early retirement measures were available for workers older than 53. For the remainder, severance pay equal to 30 days per year worked, up to a maximum of 22 months was offered.

In February 2015, CaixaBank agreed with trade unions to reduce the number of dismissals from the 1,120 originally indicated to 975. Moreover, the company agreed to relocate 727 employees to other jobs, either internally within the group or externally by means of an outsourcing company. The remaining employees will be relocated externally by means of an outsourcing company. Employees who opted not to relocate had until the end of 2015 to join a voluntary redundancy scheme.

In the largest consolidation in the German banking sector for over six years, two big cooperative banks, **DZ Bank** and **WGZ Bank**, merged in November 2015 before announcing plans in February 2016 to cut about 700 jobs by 2019. The new bank, to be known as DZ, is the third biggest by assets in Germany and has 5,700 employees.

Manufacturing continues to be the sector that accounts for the highest share of announced job losses – and job gains – in the ERM restructuring events database. This is a consequence of the case size eligibility thresholds for inclusion in the database; large average establishment size means that manufacturers are overrepresented, accounting for just over half of all cases. The share of manufacturing in total restructuring job loss and job gain has, however, tended to decline over time, in line with the contracting share of manufacturing in aggregate employment. In 2015–2016, the sector accounted for 29% of announced job gains and announced job losses recorded in ERM restructuring cases (Figure 7). In both cases, this was a decline from a 41% share in the first years of operation of the database (2002–2007).

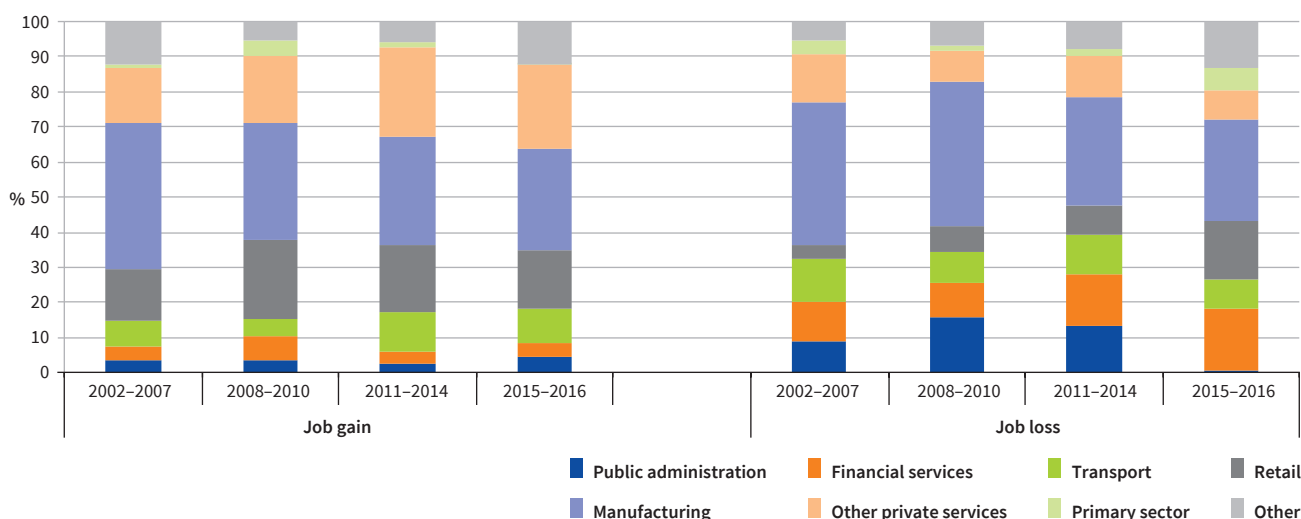
Other notable recent developments in terms of the sectoral distribution of restructuring employment losses are described below.

- **An increased share of retail sector job losses.** These are notably due to the disappearance of large retail chains, as already indicated, as well as to technological developments, such as reduced employment demand due to self-service and online shopping. An additional vector of change highlighted in the ERM has been a trend of management delayering in a number of large retail restructurings in the UK in the recent period. After carrying out pilots of three possible management structures, UK supermarket chain **Morrisons** announced in June 2014 that it would introduce a new management

structure, removing at least one level of store management, resulting in 2,600 redundancies. In 2015, the company cut 720 jobs from its headquarters in Bradford, again with the objective of simplifying management structures. In July 2014, **Asda**, one of the UK's 'big four' retail chains, announced that it was cutting 1,360 jobs from its middle management tier.

- **A sharp decline in the share of announced public administration job losses.** This sector had accounted for up to 15% of total restructuring job losses in the post-crisis period of fiscal consolidation. This declined to less than 1% in 2015–2016. Of course, public sector restructuring announcements tend to be very large scale and tend to be implemented over many years, so restructuring job losses announced many years ago are in some cases still being operationalised. But as economies have begun to recover and policy emphasis on fiscal retrenchment has lessened while that on sustaining the recovery has increased, this has been reflected in a reduced prominence of public sector restructuring in the ERM database. This in turn is reflected in employment levels, which have begun to rise again since 2013. There were just over 280,000 net new jobs in public administration in the EU28 in Q1 2016 compared to three years previously.
- **Growth in the financial services share of announced job loss.** This arises in part because of the corporate merger activity that has already been noted but also due to technology (notably online banking) reducing the need for high-street branches.

Figure 7: Share of announced job gain and job loss in large-scale restructurings, by broad sector, 2002–2016



Source: ERM

In terms of the sectoral distribution of announced job creation, the ERM restructuring data attest to the increasing share of services employment. The 'other private services' sector – a broad category comprising legal services, engineering, consultancy, media, hotels and restaurants, and other professional and administrative services – accounts for nearly one in four announced new jobs in recent years. The most important individual NACE division contributing to this growth (over 140,000

announced new jobs since 2008) has been IT and information services, which is relatively the fastest-growing sector in the EU, according to EU-LFS data (see Annex 2). As indicated previously, some countries and regions have tended to reap a disproportionate share of the employment gains in this sector, with Dublin in Ireland, Kraków and Wrocław in Poland, and Cluj-Napoca and Bucharest in Romania showing strong evidence of cluster growth in the IT sector.

2 Evidence of offshoring from the ERM

Introduction

Over the past three decades, trade has become increasingly globalised as emerging economies have expanded their share of world markets and a growing number of companies in developed economies have organised their production activities on a worldwide scale. A prominent feature of the process has been the relocation of parts of production, especially the more labour-intensive parts, to countries with low wages to reduce the costs of manufacture. This tendency was already apparent in the 1990s (see, for example, Brainard and Riker, 1997; Mucchielli and Saucier, 1997; Pennings and Sleuwaegen, 2000; Egger and Egger, 2003; and Navaretti and Falzoni, 2004).

The phenomenon has attracted a good deal of attention because of the loss of jobs involved in the developed countries concerned. Despite this and a number of high-profile examples of plants or factories being closed as a result of production being shifted, there is a lot of uncertainty about the size of the job losses attributable to such relocation. Data extracted from the ERM – which identifies the relocation of activities to other countries, termed ‘delocalisation’ or ‘offshoring’ – suggest that the jobs transferred amounted to around 10% of the total manufacturing jobs lost as a result of restructuring (see below). The overall offshoring share was lower (5%), reflecting the much lower incidence of services offshoring. Note, of course, that as with all ERM data, this refers to *announced* job loss. Nevertheless, the evidence from the ERM suggests that offshoring was not a major cause of the

job losses from large company restructuring in the EU in the years leading up to the financial and economic crisis, although the numbers involved were still significant.

During a period of fairly continuous growth and high rates of job creation, such job losses were much less a cause for concern than they became after the onset of the crisis. More recently, reports of companies shifting manufacturing activities back to Europe have appeared in the media and have attracted some attention, though less so in the EU than in the US. Such moves have prompted suggestions that the factors underlying the initial decisions to relocate production to the lower-cost countries concerned have changed so that it is no longer profitable to produce abroad instead of domestically. Or the initial decisions themselves may have been based on mistaken assumptions about the scale of the cost advantages to be gained.

The interest in this chapter is not only on the movement of production out of the EU to other parts of the world but also on shifts within the EU itself, particularly from the EU15 countries to the EU13. The shifts, however, have not all been in one direction. There are also cases of shifts between EU15 countries and from EU13 countries to the EU15, which are of special relevance since the motivating factor is unlikely to be a search for lower labour costs. Indeed, a number of the cases reported involve a shift of production back to the home country of the company concerned, which can therefore be regarded as instances of onshoring or reshoring.

Box 6: Details of data used in the analysis

The offshoring analysis in this chapter uses data from the ERM restructuring events database for EU Member States from Q1 2003 to Q2 2016 inclusive. It excludes earlier data, as the ERM became operational at different stages of 2002 in different Member States. Transnational restructuring cases (worldwide and in the EU) are also excluded, as many such cases involve double counting of employment losses – in other words, there should be relevant national cases of offshoring for the affected countries.

ERM data collection restricts national correspondents to selecting only one category of restructuring type for each case. The available options, in order of importance, are: internal restructuring (39% of all cases); business expansion (37%); bankruptcy or closure (together 15%); offshoring or delocalisation (4%); and merger or acquisition, relocation, outsourcing and other (together accounting for the remaining 5%). In reality, however, an individual restructuring case can involve a combination of different types of restructuring. For example, a company may close a factory as part of a broader group-wide restructuring in which production is offshored to South America. Such a case could be characterised as an internal restructuring (at company level), a closure (at establishment level) and an offshoring. To take account of this limitation of the data collection, keyword searches of the restructuring case narratives were carried out to identify cases of partial offshoring. Some cases identified as offshoring cases have been reclassified as ‘partial offshoring’, where it is clear from the text that not all employment losses were attributable to offshoring. A larger number of cases originally classified under another restructuring category have also been classified as partial offshoring, where the case narrative suggests that offshoring took place. Where the offshored job loss number is explicit from the text in these partial offshoring cases, the cited figure is used; otherwise, it is assumed that 50% of the total job losses cited are attributable to offshoring.

As regards the representativeness of the ERM estimate of the relative scale of offshoring, on the one hand, the companies may be reluctant to admit to shifting production to a cheaper location as the main reason for job losses. On the other hand, as these are often high-profile cases, the media may have a high propensity to report them. Moreover, it is sometimes difficult to draw a direct link between such losses and the transfer of production to other countries anyway, since a reduction in employment in one of a company's sites and an expansion in another might not be presented as being part of the same decision.

As noted already, the ERM records cases of restructuring job loss only where those cases involve 100 or more job losses or the reduction of at least 10% of the workforce at a particular site employing over 250 people. This leads to a bias in the form of an overrepresentation of sectors with large average establishment size, such as manufacturing and, within manufacturing, the heavy goods sectors, such as motor vehicle production. The analysis that follows focuses mainly on manufacturing offshoring, as this is the sector in which ERM coverage is likely to be most comprehensive.

Moreover, the cases in question have to be reported in the media and picked up by national correspondents, neither of which can be assumed to always happen. Accordingly, the information recorded in the ERM gives only a partial indication of the number of cases of offshoring by manufacturers in the EU and of the jobs shifted as a result. It may, nevertheless, give an insight into the changes in the phenomenon over time, the Member States in which it has been most important, the industries concerned, and the countries to which production has been relocated.

Scale of manufacturing offshoring

Between January 2003 and the end of June 2016, the ERM captured 912 cases of offshoring, including 105 cases of partial offshoring.

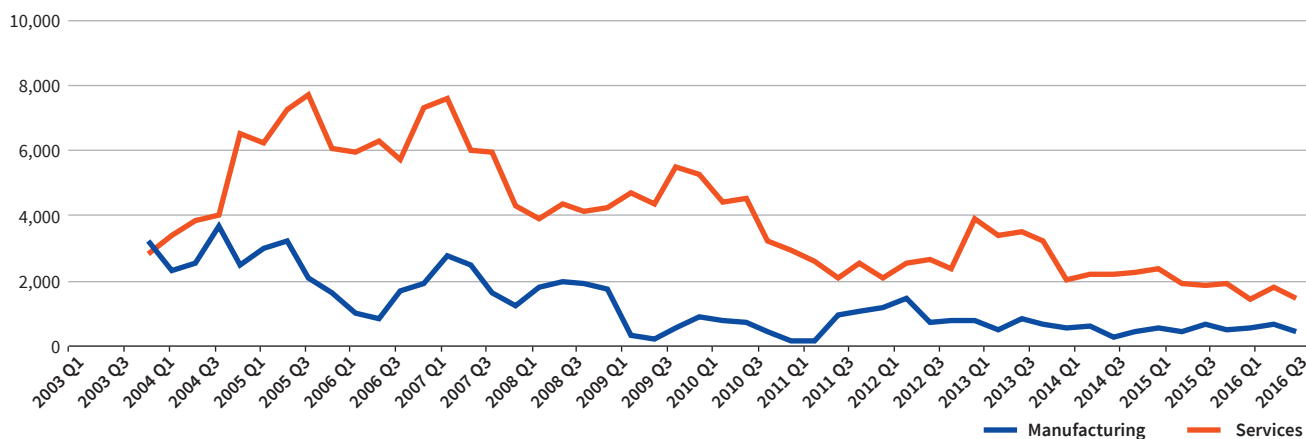
Manufacturing is the sector in which offshoring has been most likely to occur, accounting for over 82% of all offshoring cases in the ERM dataset. This chapter will focus mainly on this subset of manufacturing offshoring cases (n=752) where, given ERM case eligibility criteria, the data are likely to be more representative. During the period covered, just over 209,000 manufacturing jobs were offshored – the equivalent of around 15,500 per year. Together, these cases accounted for 11% of job loss cases and around 10% of all announced restructuring job loss in manufacturing. The broad catch-all category of internal restructuring and the category of bankruptcy or closure account for much larger shares of job loss. These estimates of the relatively modest offshoring share of restructuring

job loss are consistent with earlier findings for France and the US (Levine, 2012; Kirkegaard, 2007).

The ERM records a notable decrease in offshoring from the global financial crisis to date compared to the pre-recession period (Figure 8). There were 13 quarters between 2003 and 2010 with over 5,000 offshoring job losses in each quarter, but only 2 subsequently. This is reflected in an offshoring share of overall manufacturing job loss that fell from over 12% in 2003–2007 to 8% in 2015–2016. The decline in manufacturing offshoring has not coincided, according to ERM data, with a rise in services offshoring; if anything, the fall in job losses due to services offshoring has been even more marked than that for production jobs.

Other sources of offshoring data from developed economies support the idea that offshoring activity and related job loss have been in decline since 2008–2009. One US data source that enables an estimation of the jobs lost in the US to offshoring is the Bureau of Labor Statistics' (BLS) now discontinued series on extended mass lay-offs. It finds that

Figure 8: Announced offshoring job loss in manufacturing and services, 2003–2016



Note: Four-quarter moving average.

Source: ERM

less than 1% of the 100,000+ workers who were let go in extended mass lay-offs in Q3 2012 had their jobs moved to another country.⁷ Earlier estimates covering 2004–2005 based on the same source were in a range of 1.4%–4% of mass lay-offs, depending on whether captive offshoring (in-house) or offshore outsourcing were included (cited in Kirkegaard, 2007, p. 8). Earlier US estimates of the job loss from offshoring during the 2001 recession arrived at a 3% figure for net job loss (gross job gains minus gross job losses, both figures cited in Levine, 2012). French evidence comes to similar conclusions (Fontagné and d’Isanto, 2013). Estimates of job losses in France attributable to offshoring in the period 2009–2011 were 6,600 per year, of which 3,800 per year were in the manufacturing sector. These were much lower than previous estimates from the National Institute for Statistics and Economic Studies (Insee) of 13,500 annual job losses in the manufacturing sector alone in the earlier period 1995–2001 (Aubert and Sillard, 2005).⁸

What might be the reasons for such a decline? Two possible explanations are suggested. Firstly, major strategic decisions involving investment are more likely to be undertaken during periods of economic growth and more likely to be deferred during downturns. Offshoring involves significant costs in the domestic establishment (related to redundancy, mothballing facilities and so on) and can involve even greater costs in the destination country, especially if the offshoring requires investment in new facilities. As such, the declining level of offshoring since 2008 is consistent with normal corporate instincts in the conditions of economic uncertainty that have prevailed for much of the period.

The European Manufacturing Survey (cited in European Commission, 2012) provides supporting evidence of a slowdown in offshoring activity by European manufacturing companies between its 2005–2006 and 2009 waves. In six out of the seven countries, the share of companies offshoring in four major manufacturing sectors (motor vehicle and transport equipment, electrical, chemicals and machinery) had decreased in the post-crisis 2009 wave of data collection. The decrease was general across the selected sectors as well as company size classes. The European Commission analysis concluded that ‘firms focus on utilising their activities at home in times of (upcoming) economic crisis’.

A second potential explanation is that the peak offshoring period may have already passed by the time of the global financial crisis. Those companies wishing to offshore may have already largely taken advantage of production transfer possibilities to China or eastern Europe in the periods before the crisis. This second explanation would be more consistent with the fact that offshoring activity

appears to still be in decline three years into a more sustained economic recovery. In this reading, the main offshoring period (from the early 1990s to 2007) coincides with the one-off opportunity for western producers to take advantage of lower wage costs in what Richard Freeman referred to as the ‘great doubling’ – the opening and marketisation of the previously largely closed Chinese and former Eastern Bloc economies in the 1990s (Freeman, 2007). The ERM data offer some support for this hypothesis, but it can only be partial, as the ERM data series begins in 2002–2003, well after the beginning of this epochal shift.

There may well be other external circumstances contributing to a declining interest in offshoring by EU-based companies, such as eroding labour cost differentials between host and destination countries; the declining labour intensity of production; increased awareness of the costs of offshoring in terms of management complexity; quality control issues; and exposure to transport costs and delays. There are also benefits to not offshoring, such as synergies between R&D, product development and manufacture in a context of rapid product cycle changes.

Geographical distribution of offshoring

Most of the cases of offshoring identified in the ERM events database, as expected, occurred in EU15 countries, though the number in EU13⁹ Member States increased sharply during the global financial crisis before falling off somewhat subsequently. Over the years 2008–2016, around 20% of cases involved movements of production from the EU13 to other countries. Indeed, the number of cases reported in the Czech Republic was larger than in Belgium, the Netherlands or Spain over the same period.

The pattern of change in the number of cases varies across countries within the EU15 (Table 4). In the years 2003–2007, there was a relative concentration of cases in France, Germany and the UK (which together accounted for 39% of the total number reported). During the peak years of the global financial crisis and its aftermath (2008–2009), the number of cases reported in the UK remained high but declined sharply in France and Germany, while there was a marked increase in the number of cases in the Czech Republic, Denmark, Ireland and Sweden.

In 2010–14, the share of cases reported in the UK declined, as it did to an even greater extent in Ireland, but it remained relatively high in Sweden Member States, while in Germany, there was a surge of cases in 2010–2014, especially in the most recent period, 2015–2016. In Italy, too, the share of

7 The BLS mass lay-off statistics had advantages over the ERM as a tool of estimation. It is based on comprehensive administrative data of completed events rather than newspaper reports of restructurings. It also has similar limitations in terms of scope of coverage. It excludes smaller companies and focuses on larger lay-offs. The criterion for inclusion is that a company must have at least 50 employees and have let go at least 50 employees in lay-offs lasting at least one month. Though these case eligibility criteria differ from those of the ERM, the shared focus on the employment effects of larger-scale restructurings suggests that the BLS data may serve at least as a useful benchmark for the ERM’s estimations of the share of large-scale restructuring job loss accounted for by offshoring. For example, they will share a similar bias towards inclusion of manufacturing companies, where employment numbers are generally high.

8 The Insee analysis is based on identifying offshoring (delocalisation) cases using a combination of sector- and enterprise-level employment and trade data. Offshoring enterprises are those where there has been a reduction in employment levels of at least 25% and where there has been an increase in imports of goods or components formerly produced in France.

9 This chapter refers to the EU13 throughout, but ERM coverage of the 2004 and 2007 accession states commenced only in 2004–2005, and coverage of the newest Member State, Croatia, began only in 2013.

Table 4: Share of cases of offshoring in manufacturing per EU Member State, as a percentage of the total, 2003–2016

	2003–2007 %	2008–2009 %	2010–2014 %	2015–2016 %	2003–2016 %
UK	15.0	16.0	6.3	10.6	12.5
France	14.5	5.0	9.6	14.9	11.7
Sweden	8.7	8.4	16.4	6.4	10.6
Germany	9.0	5.9	11.5	23.4	10.1
Italy	5.5	4.2	9.1	2.1	6.1
Ireland	7.4	9.2	2.4	2.1	6.0
Denmark	5.5	8.4	4.3	6.4	5.7
Finland	6.1	1.7	5.3	6.4	5.2
Belgium	4.2	4.2	5.3	4.3	4.5
Netherlands	5.0	1.7	4.8	4.3	4.4
Austria	2.6	5.0	4.8	2.1	3.6
Spain	4.5	5.0	1.4	2.1	3.6
Portugal	5.3	0.8	1.4	2.1	3.3
Czech Republic	0.5	7.6	4.8	2.1	2.9
Hungary	2.1	0.8	3.4	0.0	2.1
Slovakia	0.5	5.9	1.4	4.3	1.9
Slovenia	1.3	1.7	1.9	0.0	1.5
Poland	0.8	2.5	1.4	0.0	1.2
Latvia	0.3	2.5	1.0	0.0	0.8
Estonia	0.0	0.8	1.4	2.1	0.7
Bulgaria	0.5	0.0	0.5	0.0	0.4
Malta	0.3	0.0	0.5	2.1	0.4
Romania	0.0	1.7	0.5	0.0	0.4
Lithuania	0.0	0.0	0.5	2.1	0.3
Luxembourg	0.3	0.8	0.0	0.0	0.3
Total	100	100	100	100	100
EU15	93.7	76.5	82.7	87.2	87.5
EU13	6.3	23.5	17.3	12.8	12.5
Total	100	100	100	100	100
Average number of cases per year					
EU28	76	60	42	31	56

Notes: The cases relate to those announced between 2003 and end of June 2016. The figures for the first six months of 2016 have been converted to an annual basis (in other words, multiplied by 2) so as to be comparable with those for the earlier periods.

Source: ERM

cases, which had been relatively small in the first six years of the period, increased markedly from 2010 on before falling back again in 2015–2016.

There was, therefore, a change between the first and second halves of the period in the countries in which offshoring cases were concentrated. The countries with the highest share of offshoring cases reported in the ERM have been France, Germany, Sweden and the UK over both periods, but the share of the UK (as well as Ireland) has declined over time, while that of Germany in particular has increased.

Although there were more job losses from offshoring in the EU15 than in the EU13, the difference is much smaller than for the number of cases. Over the period 2003–2016, some 16% of job losses were in EU13 countries, but during the global financial crisis, the EU13 share was as high as 30% before falling off somewhat in subsequent years. This was attributable to surges in the offshoring share of job loss in the Czech Republic and Slovakia, in particular. Given that the principal destination of offshore production in these cases was either Romania or China, one can infer that the motivation was primarily cost reduction. This was explicitly

stated in cases such as **Avent Slovakia** and **AEES**. Avent Slovakia closed its medical clothing plant at Piešťany in May 2008, with 853 job losses, transferring production to China. The American private equity company Platinum Equity took over AEES, a producer of wiring harness systems for the car industry, from Alcoa in 2009 and proceeded to close the Stříbro (Czech Republic) site, with the loss of 733 jobs. The production was moved to Romania for cost reasons, according to the new owners.

The average number of jobs lost per offshoring case in the EU13 was larger than in the EU15. Perhaps unexpectedly, in terms of jobs losses, offshoring after 2010 has become a relatively more important cause of manufacturing employment job losses in the EU13 compared to the EU15 (see Table 5).

As in respect of case numbers, there was a shift in the relative concentration of offshoring in terms of job losses between the three biggest offshoring Member States – Germany, France and the UK – with the UK share tending to decline. These three countries account for nearly 40% of total offshoring job losses in manufacturing over the period covered.

Table 5: Share of jobs lost from offshoring in manufacturing per Member State, as a percentage of the total, 2003–2016

	2003–2007 %	2008–2009 %	2010–2014 %	2015–2016 %	2003–2016 %
UK	16.0	13.6	9.2	11.7	13.7
Germany	15.0	11.4	10.2	17.6	13.3
France	14.0	5.8	9.7	13.2	11.4
Ireland	7.2	10.8	1.5	1.5	6.2
Sweden	4.3	3.1	11.6	8.1	6.1
Italy	4.3	3.4	8.2	1.6	5.0
Belgium	4.9	2.3	7.1	3.4	4.9
Portugal	8.7	0.5	0.5	1.9	4.8
Denmark	4.3	6.3	3.5	5.3	4.5
Finland	4.8	1.6	3.6	3.9	3.9
Spain	4.9	3.6	0.9	2.8	3.5
Netherlands	4.2	0.7	3.2	6.9	3.4
Austria	1.7	7.0	4.3	1.3	3.3
Czech Republic	0.2	8.4	5.3	2.2	3.1
Hungary	1.5	1.7	7.4	0.0	3.0
Slovakia	0.9	9.6	1.6	7.3	2.9
Poland	0.7	4.2	4.1	0.0	2.2
Slovenia	1.5	1.3	2.2	0.0	1.6
Romania	0.0	1.6	4.1	0.0	1.4
Estonia	0.0	0.6	0.9	6.6	0.6
Latvia	0.1	2.4	0.3	0.0	0.6
Malta	0.5	0.0	0.2	1.6	0.4
Bulgaria	0.3	0.0	0.4	0.0	0.2
Lithuania	0.0	0.0	0.2	3.2	0.2
Luxembourg	0.2	0.2	0.0	0.0	0.1
Total	100	100	100	100	100
EU15	94.4	70.2	73.4	79.2	83.9
EU13	5.6	29.8	26.7	20.8	16.1
Total	100	100	100	100	100
Average number of jobs lost per year					
EU28	21,675	19,013	10,710	6,212	15,502

Note: The number of jobs lost relate to the minimum losses reported in the cases announced between 2003 and end-June 2016. The figures for the first six months of 2016 have been converted to an annual basis (in other words, multiplied by 2) so as to be comparable with those for the earlier period.

Source: ERM

From 2003 to the end of June 2016, offshoring accounted for around 10% of the total jobs lost from the restructuring of manufacturing companies recorded in the ERM. It was higher in the EU15 (11%) than in the EU13 (7%) (see Table 6). As indicated previously, its relative importance declined over the period, or more specifically, between 2003–2007, when it was responsible for over 12% of all job losses reported to the ERM, and 2015–2016, when it accounted for 8%. This overall decline conceals very different trends in the EU15 and the EU13. The share of manufacturing job loss attributable to offshoring has halved in the EU15 (from 14% to 7%), while it has increased by a factor of four in the EU13 (from 4% to 15%; see Table 6). This is a reflection in part of the dynamic nature of offshoring strategies. In many cases, firms that initially offshored from higher-cost western European locations to eastern Europe have subsequently offshored further afield to even lower-cost, non-EU destinations. An illustrative case in point is that of Finnish multinational Nokia. Having established a major mobile phone production facility in Bochum, Germany, in the late 1990s, the company

subsequently offshored this production to Cluj-Napoca, Romania, in 2008 before in turn closing this facility in 2011 as production was once again offshored, this time to lower-cost regions outside the EU, notably China.

Within the EU15, offshoring has been especially important as a source of job losses in smaller, less populous Member States such as Austria, Denmark, Ireland and Portugal. In each of those countries, it accounted for over 20% of manufacturing job losses in 2003–2016. In the larger Member States, the offshoring share of restructuring job loss lies in a narrow range between 7% in Germany and 10.5% in Italy; in each of these countries, the share declined in 2003–2007 and more recent periods. In the EU13 countries, there has been a notable rise in the share of offshoring job loss since 2010, notably in the Czech Republic, Hungary and Slovakia. The evidence suggests, therefore, that offshoring has become more important in the EU13 over the past few years.

Table 6: Share of job losses from offshoring relative to total job losses reported from restructuring in manufacturing, by Member State, 2003–2016

	2003–2007 %	2008–2009 %	2010–2014 %	2015–2016 %	2003–2016 %
Ireland	38.2	33.1	15.8	11.5	32.9
Portugal	38.7	2.5	3.7	31.2	26.0
Malta	34.5	0.0	100.0	50.0	22.9
Austria	20.7	26.8	24.6	5.7	22.9
Denmark	26.0	15.8	19.8	29.1	21.3
Slovakia	9.7	22.3	9.1	38.3	16.5
Latvia	7.0	28.3	6.6	0.0	16.1
Netherlands	19.2	2.8	13.5	17.5	14.5
Belgium	18.5	4.7	13.1	8.2	12.8
Estonia	0.0	8.7	20.0	56.0	12.8
Finland	18.4	5.6	8.1	6.9	11.9
Sweden	11.9	3.2	18.2	10.9	10.9
Italy	17.6	4.5	10.7	3.4	10.5
UK	12.3	8.2	9.0	6.2	10.3
Hungary	10.6	2.4	17.1	0.0	9.5
Luxembourg	11.0	11.1	0.0	0.0	9.2
Spain	14.0	9.1	1.9	6.9	9.1
France	12.3	3.8	6.4	10.2	8.7
Slovenia	17.4	3.1	8.8	0.0	8.3
Czech Republic	1.1	7.5	15.5	19.6	7.7
Germany	8.7	6.5	5.2	4.4	7.0
Bulgaria	20.4	0.0	5.4	0.0	4.8
Romania	0.0	2.6	11.8	0.0	3.5
Poland	1.5	2.8	6.4	0.0	3.2
Lithuania	0.0	0.0	21.9	100.0	2.3
Croatia	0.0	0.0	0.0	0.0	0.0
Cyprus	0.0	0.0	0.0	0.0	0.0
Greece	0.0	0.0	0.0	0.0	0.0
EU15	14.4	7.5	9.0	7.3	10.9
EU13	3.8	5.7	11.1	14.6	6.7
EU28	12.4	6.8	9.4	8.2	9.9

Notes: Restructuring at the global level (included under the category 'World' in the ERM events database), where sites are in a number of countries, both inside and outside the EU, is excluded because offshoring is rarely undertaken on this scale, and in any case it is difficult to distinguish the job losses in the EU from those elsewhere. Percentages are based on small counts (less than five manufacturing offshorings) in the following countries and are therefore less reliable: Bulgaria, Lithuania, Luxembourg, Malta and Romania.

Source: ERM

Industries most involved in offshoring

Offshoring has not been evenly distributed across industries within manufacturing. Instead, it has tended to be concentrated in a few of them and in the engineering industries in particular. Three subsectors – motor vehicles, electronics and electrical equipment – account for nearly 60% of all offshoring jobs lost. Of these, motor vehicle production (NACE 29) accounted for almost a quarter (just over 22%) of all job losses as a result of offshoring over the period 2003 to end of June 2016 and a somewhat greater share in the EU13 (25%) (Table 7).

In the EU15, the relative share of offshoring job losses in the motor vehicle sector has been stable or increasing over time, even as it has declined in other manufacturing sectors. In the EU13, it has accounted for an increased share of job loss since 2008. Not all of these cases have

been motivated purely by cost considerations. One of the largest offshorings in the sector was the decision of Fiat Poland to return production of its classic Panda model to Italy in December 2012. This resulted in the reduction of 1,450 jobs in the 5,000-strong workforce at Tychy.

The electrical equipment industry (NACE 27), which includes a diverse range of products, from domestic appliances to switchgear for electricity-generating stations to light bulbs, was the second largest source of job losses from offshoring over the period, accounting for around 18% of the total. While there was little variation in its relative importance over the 10 years in the EU15, there was significant fluctuation in the EU13, where it has become the subsector with the most offshoring job losses and in which EU13 offshoring job losses exceed those of the EU15 since 2010. In some cases, it is clear that this relates to the production of domestic appliances that had previously been offshored to EU13 countries

Table 7: Job losses from cases of offshoring, by sector within manufacturing, 2003–2016

Sector	2003–2007	2008–2009	2010–2014	2015–2016	2003–2016
Motor vehicles (NACE 29)					
EU15	22,903	4,801	9,351	1,175	38,230
EU13	600	3,903	3,807		8,310
EU28	23,503	8,704	13,158	1,175	46,540
Electrical equipment (NACE 27)					
EU15	17,346	4,418	4,623	1,102	27,489
EU13	1,836	1,537	5,207	1,011	9,591
EU28	19,182	5,955	9,830	2,113	37,080
Electronics (NACE 26)					
EU15	17,447	8,263	5,050	1,032	31,792
EU13		400	3,457		3,857
EU28	17,447	8,663	8,507	1,032	35,649
Textiles and clothing (NACE 13 and 14)					
EU15	5,014	889	597	246	6,746
EU13	2,037	2,142	300	300	4,779
EU28	7,051	3,031	897	546	11,525
Machinery and equipment (NACE 28)					
EU15	3,959	1,137	5,534	977	11,607
EU13		733	984	200	1,917
EU28	3,959	1,870	6,518	1,177	13,524
Chemicals and pharmaceuticals (NACE 20 and 21)					
EU15	6,194	1,975	1,067	293	9,529
EU13	124			278	402
EU28	6,318	1,975	1,067	571	9,931
Food and beverages (NACE 10 and 11)					
EU15	5,084	396	2,041	775	8,295
EU13	595	1,074	319		1,988
EU28	5,679	1,470	2,360	775	10,283
Total of above NACE sectors					
EU15	77,947	21,879	28,262	5,600	133,687
EU13	5,192	9,789	14,074	1,789	30,844
EU28	83,139	31,668	42,336	7,389	164,531
Other 14 NACE manufacturing sectors					
EU15	24,335	4,825	11,019	1,779	41,958
EU13	904	1,533	197	150	2,784
EU28	25,239	6,358	11,216	1,929	44,742

Source: ERM

before being offshored again elsewhere. For example, the local Slovakian subsidiary of Japanese Sumitomo, SEWS Slovakia, announced the dismissal of 398 workers at its Topolcany plant in July 2015 as production was offshored to Romania. Management attributed the decision to price competition and the difficulties of keeping production costs under control. Similarly, in October 2014, PKC, a Finnish producer of wiring systems, announced the closure of its factory in Sosnowiec, Poland, and the relocation of production to Serbia.

The electronics industry (NACE 26), which includes products such as televisions and mobile phones as well as computer equipment, is the third most important source of job losses from offshoring. In this subsector, the bulk of the job losses occurred in the period up to 2009 and occurred mainly in EU15 Member States.

These three industries were responsible for almost 60% of the overall number of jobs lost from offshoring in manufacturing in the EU between 2003 and 2016. Another

engineering subsector, machinery and equipment, has become a more important source of offshoring job losses in the more recent post-crisis period. Other manufacturing subsectors that have made a significant contribution to overall offshoring job losses include the textiles and clothing sectors and the chemicals and pharmaceuticals sectors. In both, the main offshoring activity occurred in the period up to or during the global financial crisis. Subsequent offshoring has been limited.

It is interesting that offshoring activity appears to have been more intense in industry sectors where employment levels have proven more resilient, such as motor vehicles (+4% since 2008; see Table 2b), and to have fallen off sharply in textiles and clothing in recent years despite overall employment levels in these sectors recording steep declines (–31% since 2008 in the EU28).

Two points can be made. The first is that there is no positive relationship between offshoring intensity and employment levels at the industry level. If anything, offshoring and the

geographical diversification of production appear to have been an important support to aggregate EU employment in a sector such as motor vehicle production where, as already noted, there has clearly been a sizeable intra-EU movement of production and employment.

Secondly, the dramatic declines in employment in sectors such as textiles and clothing since 2008 appear largely unrelated to offshoring. They arise principally out of the related but quite distinct phenomenon of international trade competition, where low-cost producers in non-EU countries take over markets formerly serviced by EU-based companies. More generally, offshoring accounts for only a relatively marginal share of trade-induced job losses in developed economies. In other words, the shift of certain industries such as textile production or shipbuilding out of Europe occurs mainly as a consequence of independent developments of company expansion and contraction in different countries over time, resulting from shifts in competitive advantage, and is only partially a result of offshoring per se.

Destination of offshored manufacturing production

Most of the cases of offshoring in manufacturing recorded in the ERM involve a shift of production to low-wage countries, though by no means all. Considering the EU15 countries first, over the period between 2003 and end of June 2016, just over 10% of the jobs lost from offshoring in manufacturing involved a shift of production to China, another 3% to India and around 9% to other Asian countries (Table 8). Asia as a whole, therefore, was the destination for cases of offshoring involving less than a quarter of the total jobs lost from this form of restructuring.¹⁰ The share of job losses from offshoring to Asia remained quite steady over the period covered.

Offshoring manufacturing to other countries outside the EU with low labour costs was on a much smaller scale.

Relocation of production to the Americas accounted for less than 5% of the total jobs. The main low-labour-cost destination for manufacturers in the EU15 to relocate production to over this period was the EU13, which accounted for 45% of the jobs lost from offshoring. This proportion reached a peak around the onset of the crisis in 2008 and 2009 and became less important as a destination after 2010, but it still accounts for over a third of all offshoring job losses from EU15 Member States. As the EU13 share has decreased, that of other European but non-EU countries has increased, particularly Russia, the Balkan countries and Turkey.

Just under a fifth of the jobs lost from offshoring by EU15 manufacturers, however, were a result of relocating production to other EU15 countries, where in most cases access to low labour costs was not the main motivating factor, though rationalisation of production was in a number of cases. Moreover, the relative importance of other parts of the EU15 as a destination increased in particular from 2010 onwards, reaching 23% of the total losses from offshoring, much the same as the losses from moving production to Asia. This suggests, therefore, that labour costs might have become a less important determinant of the location of manufacturing in the past few years, though the job losses from offshoring production to countries with low – or at least lower – labour costs still made up over 70% of the total lost from the cases of offshoring reported by the ERM.

As indicated above, a significant proportion (20%–30%) of the jobs lost from offshoring in the EU has been in EU13 countries over the past 10 years. The production offshored, as in the EU15, has tended to go to low-labour-cost countries, in this case with even lower labour costs than in the EU13. China and Asia, at 26% and 36%, respectively, account for a much higher share of offshored jobs than the EU15 over the entire period (Table 9). Offshoring to other low-labour-cost countries outside the EU and to the Americas accounted for a further 19% of offshoring jobs lost.

Table 8: Share of jobs lost from offshoring in manufacturing in the EU15, by destination of the relocated production, 2005–2014

	2003–2007 %	2008–2009 %	2010–2016 %	2003–2016 %
EU15	17.4	13.4	22.9	18.2
EU13	46.7	53.9	35.2	44.8
Other or non-specified Europe	5.7	2.9	12.4	7.0
Other or non-specified Asia	9.7	4.5	10.8	9.1
China	10.2	12.5	8.7	10.2
India	1.6	5.0	2.9	2.5
Americas	5.4	4.3	4.0	4.9
Rest of world	3.3	3.5	3.2	3.3
Total	100.0	100.0	100.0	100.0

Note: Figures relate to destinations that are specified in the cases of offshoring included in the ERM, which is most of them in practice. Where more than one destination is mentioned, figures for jobs lost are divided proportionately between them.

Source: ERM events database

¹⁰ The ERM includes a category for the countries that production is offshored to. One of the options, 'various destinations', accounts for just over 20% of cases. In nearly all of these cases, however, it is possible to detect the destination countries in the additional 'free' information reported. The analysis here makes use of this additional information to give a more complete account of the countries concerned. In the end, the analysis excludes only 33 of the 752 manufacturing offshoring cases where it was not possible to specify the destination country.

Table 9: Share of jobs lost from offshoring in manufacturing in the EU13, by destination of the relocated production, 2005–2014

	2003–2007 %	2008–2009 %	2010–2016 %	2003–2016 %
EU15	17.8	11.6	11.5	12.7
EU13	29.4	33.3	31.8	31.9
Other or non-specified Europe	14.7	7.3	10.3	10.1
Other or non-specified Asia	10.5	0.0	10.1	6.9
China	13.9	31.2	27.4	26.2
India	0.0	0.0	6.8	3.3
Americas	3.7	3.1	1.1	2.2
Rest of world	9.9	13.4	1.0	6.8
Total	100.0	100.0	100.0	100.0

Note: Figures relate to destinations that are specified in the cases of offshoring included in the ERM, which are most cases in practice. Where more than one destination is mentioned, figures for jobs lost are divided proportionately between them.

Source: ERM events database

Again, however, a substantial proportion of job losses from offshoring from the EU13 – almost a third over the period as a whole – was a result of production being relocated to other EU13 countries. This leaves just over 15% of the jobs being lost a result of production shifts to higher-labour-cost countries in the EU15 as well as to the US and Canada. This proportion has declined somewhat since the crisis. Some of the relocation concerned involves reshoring, in the sense of companies moving production back to the home country, though a more systematic treatment of this phenomenon will be provided by the European Reshoring Monitor.

Where it is possible to identify cases of reshoring in the ERM, they suggest that the decision to relocate production away from the EU13 was part of an overall plan to reorganise the location of production. In some cases, this was motivated by increases in costs in the EU13, including transport costs, while in others it was motivated by a downturn in the market and the need to rationalise. They also suggest that reshoring is not confined to more recent years. For example, there is a case reported of a German company, **Format Tresorbau**, a manufacturer of safes, moving production from Poland back to Germany in 2005 because of rising transport costs and increasing wages

in Poland as well as the lower quality of output than in Germany. However, while 110 jobs were lost in Poland as a result of the decision, the company planned to take on only 36 new workers in Germany.

Nevertheless, as in the EU15, most of the job losses from offshoring in the EU13, even in the most recent years, are a consequence of production being shifted to low-wage countries, if more to countries in Asia than to other parts of the EU13. The reason given by the companies concerned for such moves is predominantly to take advantage of the even lower labour costs in the countries in question. In the case of relocation to other EU13 countries, many of the jobs that were moved went from higher-wage countries (such as the Czech Republic in particular, but also Hungary, Poland and Slovakia) to lower-wage ones, with Romania being the major destination. Consequently, Romania was effectively an alternative location to countries such as Serbia or Bosnia, Tunisia and other parts of North Africa or China and other parts of Asia, with the advantage of being closer and within the EU. There is also, of course, the wider advantage to the EU economy of keeping production inside the EU, although how long it is likely to prove possible to do so is open to question as incomes and wages rise.

Box 7: Brexit – Potential employment impacts

As of August 2016, no ERM restructuring case had explicitly related an announced job loss or job gain to the UK referendum decision to exit the EU (the so-called ‘Brexit’ of 23 June 2016). However, a number of announcements refer to Brexit as potentially affecting recruitment or redundancy decisions.

In the biggest case, in July 2016, **Lloyds Banking Group** announced plans to cut a further 3,000 jobs from its workforce and to close a further 200 branches in the UK. While the bank did not directly link the decision to Brexit, its chief executive commented that ‘following the EU referendum the outlook for the UK economy is uncertain and ... a deceleration of growth seems likely’. The explicit reason given for the job losses was the decline in branch transactions by 15% year on year as customers increasingly conduct banking transactions online. Lloyds, in which the UK government retains a 9% shareholding, has shed around 45,000 jobs in the UK since the global financial crisis. The latest round of cuts is to be implemented by the end of 2017.

Holiday provider **Lowcost Travel Group** entered administration in July 2016, causing the loss of all 451 jobs in Poland and Crawley (UK) as well as Switzerland and Majorca. The company cited Brexit and the strength of the euro against UK sterling as factors contributing to the collapse.

German multinational **Siemens** was reported to have softened its stance on the implications of Brexit for its future level of activity in the UK. Prior to the referendum, it had made a public statement encouraging a vote to remain in the EU on the basis 'that being part of the EU is good for UK jobs and prosperity, and we have concerns about the possible effects of a vote to leave'. It was also reported to be putting investment in the UK on hold pending the referendum outcome. Following the referendum, it announced plans to recruit an additional 100 workers at its plant in Hull in the UK. This will bring the workforce at the site to over 500. The manufacturing unit produces blades for wind turbines. Siemens also has a significant involvement in some of the UK's biggest ongoing or planned engineering projects: Thameslink, Crossrail and the HS2 high-speed rail project.

In August 2016, **I.T. Alliance Group** confirmed that it has seen a sharp increase in applications for skilled IT positions from non-British EU nationals following Britain's vote to leave the EU. A spokesman for the company, which announced plans to recruit 120 people to its UK and Irish operations, said that 'Brexit appears to have caused uncertainty and unease amongst a number of EU nationals working in the UK, even though these are highly skilled people who one would have expected that the UK would be keen to retain after Brexit. A significant number of candidates specifically referred to concerns around Brexit as a motivation to relocate to Ireland.'

Of course, the UK remains in the single market and will exit the EU formally only in late 2018 at the earliest. The effects of Brexit may only become evident in the next decade. The most immediate economic consequence of Brexit has been a 10% weakening of UK sterling against other major currencies, which has been a boost to UK exporters and manufacturers as well as the tourist industry. Those who advocated Brexit have taken comfort from relatively upbeat economic indicators in the UK after the referendum. Time will tell to what extent 'Project Optimism' has solid foundations.

Conclusion

The cases reported in the ERM demonstrate very clearly that there is a continuous search for lower costs of production in many industries, with companies shifting the location of production as necessary in order to minimise costs, even if it means moving from sites that were established relatively recently.

Nonetheless, offshoring accounts for a relatively minor share of overall job loss arising from large-scale restructurings in the manufacturing sector. Around 1 in 10 job losses results from activities being offshored, and the manufacturing sector still accounts for the vast majority of cases (over 82%) of offshoring from the EU. Despite predictions regarding the rise of service sector offshoring, in only one Member State – the UK – is the share of offshoring job losses greater in services than in manufacturing.

Three manufacturing subsectors account for around 60% of offshoring job losses: production of motor vehicles, electronics (computers and mobile phones) and electrical products (domestic appliances). While the large Member States dominate in terms of absolute offshoring job losses (France, Germany and the UK but also Sweden), the share of offshoring activity is relatively much higher in some smaller, EU15 Member States (Austria, Denmark, Ireland and Portugal), where it accounts for over 20% of restructuring job losses (compared to less than 10% in the large Member States).

Most offshoring in the EU is 'nearshoring' – the predominant destination of offshored activity has been the EU13 Member States. Europe as a whole, including non-EU countries, accounts for over half of offshored jobs, both from the old and the newer Member States. China accounts for around 10% of offshored job loss from the EU15 and a much higher 26% from the EU13. But the share of Asia, including China, as the destination responsible for offshoring job losses is comparable to that of the EU15, where presumably the motivation for the international transfer of production is unlikely to be costs.

The share of manufacturing job loss attributable to offshoring has halved in the EU15 (from 14% to 7% between 2003–2007 and 2015–2016), while it has increased by a factor of four in the EU13 in the same period.

Perhaps the most striking finding of this analysis is that there appears to have been a decline in offshoring activity from the EU manufacturing sector dating back to the onset of the global financial crisis. The average annual number of offshoring cases reported to the ERM has more than halved between the pre-crisis and post-crisis periods, and the level of resulting job losses has declined even more sharply. There are many potential factors behind this decline, but one explanation is that the 'offshoring calculation' – in terms of cost differentials, available offshoring destinations and so on – was uniquely favourable, especially for western European businesses, in the period 1990–2007 and that the easy gains from offshoring were largely reaped by European businesses in that pre-crisis period.

3 | Recent evidence of reshoring

Introduction

In recent years, there has been some indication of companies shifting manufacturing activities back to relatively high-wage economies, though less so in the EU than in the US. Such moves have prompted suggestions that the factors underlying the initial decisions to relocate production to the lower-cost countries concerned have changed so that it is no longer as profitable to produce abroad instead of domestically, or that the initial decisions themselves were based on misplaced assumptions about the scale of the cost advantages to be gained.

Prominent among the US cases have been large companies, including Apple (which contracted a Flextronics plant in Texas to assemble its new Mac Pro computer using domestically sourced parts) and General Electric (which moved manufacturing of washing machines, fridges and heaters back from China to a factory in Kentucky in 2012) as well as cases from Caterpillar, Ford, General Motors, NCR, Electrolux and Whirlpool. A survey conducted in 2013 by the Boston Consultancy Group found that over half of the US-based executives in manufacturing companies with sales of over USD 1 billion planned to reshore production to the US from China or were actively considering it. In addition, many small and medium-sized enterprises (SMEs) have also done so over the past two to three years. The substantial reduction in energy prices that the development of shale gas in the US has brought about seems to be a significant factor underlying the moves concerned.

Given the evidence available, however, and its limited nature, in particular, it is difficult to be sure what the scale of reshoring has been. At the beginning of 2013, the number of companies known to have brought production back to the US was put at well under 100, though many more might have done so quietly without wanting to attract publicity. In addition, most of the multinationals concerned have brought back only part of their production from abroad, and many of the biggest companies have still offshored much more of their production than they have reshored in the recent past (The Economist, 2013).

It is even more difficult to assess the scale of reshoring in Europe (see Kinkel and Maloca, 2009) or to identify the kinds of companies involved. Much of the evidence consists of cases of companies that have chosen to publicise their decision to bring production back to their home country. It is difficult to know how representative these are. Companies can be reluctant to release such information if it implies that they were mistaken in their initial decision to offshore activities in the first place, and larger companies may be hesitant to reveal too many details of their global strategy (Holz, 2009; Heise et al, 2005).

At the same time, the emergence of the issue as a policy concern of governments, with both the French and UK governments following the US example of introducing specific initiatives to support companies bringing production back,¹¹ means that there is an official incentive to publicise cases. The fact that it is possible to find more French or UK examples of reshoring than German ones is almost certainly due in large measure to the issue attracting more publicity in France and the UK, partly because of it being pushed strongly by the government in both countries. It does not necessarily mean, therefore, that the number of companies taking such action is actually higher in France and the UK than in Germany.

The analysis in this chapter takes the form of a review of recent evidence of reshoring. It focuses specifically on German and UK manufacturing companies moving production back from locations abroad to the domestic economy. The aim is to obtain an indication not only of the types of company involved, their typical size and the kinds of product they manufacture, but also the reasons for the decision to shift production, or parts of the production process, back to the countries in question.

Scale of reshoring to Germany and the UK

Germany

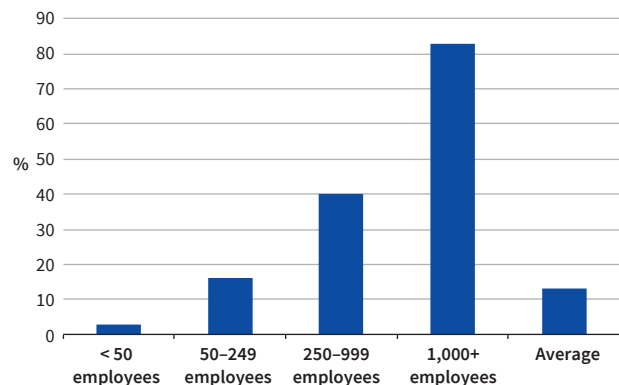
While there are no systematic and structured data available on reshoring activities in the EU as a whole, there are some data for Germany. As part of the European Manufacturing Survey (EMS)¹² conducted by the Fraunhofer Institute for Systems and Innovation Research (Fraunhofer ISI) on the diffusion of advanced production technologies in manufacturing, German companies have been asked about their offshoring and reshoring (in German, *Rückverlagerung*) of production and R&D every other year since 1995. The last survey is for the period mid-2010 to mid-2012 and covers a sample of 1,594 companies. The main features of developments over this period, indicated by the data collected by the survey, are summarised in Figure 9.

On average, 13% of German manufacturing companies have production facilities abroad, although, as expected, there is big difference between large and small companies. While just 3% of small companies (with fewer than 50 people employed) were engaged in activities offshore in 2010–2012 and only 16% of medium-sized ones (with 50–249 people employed), 40% of companies employing between 250 and 999 people and 83% of those employing 1,000 or more people did so. For large companies, therefore, offshoring tends to be the rule rather than the exception.

11 The French Ministry for Industrial Renewal has even developed a specific instrument, the Colbert 2.0, which was inspired by the US Reshoring Initiative and which has been available since July 2013 on a website, www.colbert2-0.fr, to help companies to examine the advantages of bringing some of their operations back to France. In the UK, the government has implemented the Reshore UK initiative to support companies that want to bring production back home.

12 The survey is also carried out in Austria, Croatia, the Czech Republic, Denmark, Finland, France, Italy, the Netherlands, Portugal, Slovenia, Spain, Sweden, Switzerland and the UK, but the results do not seem to be published.

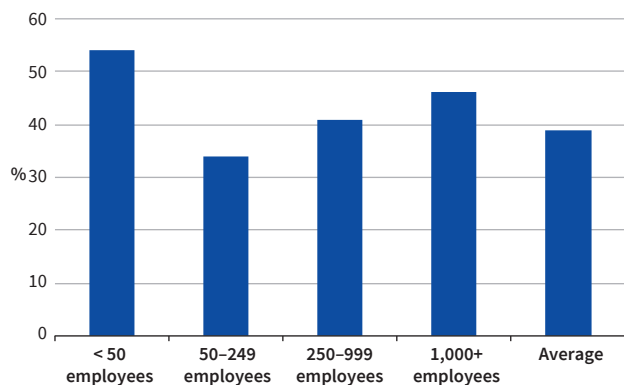
Figure 9: Share of German manufacturing companies with production facilities abroad, by company size, 2010–2012



Source: Zanker et al (2013)

The companies with facilities abroad produced on average 39% of their output abroad (Figure 10). Interestingly, the figure for small companies, 54%, is higher than average and higher too than for large companies, suggesting that those small companies that do manufacture in other countries tend to concentrate much of their production there. For medium-sized companies, by contrast, the proportion was only around a third.

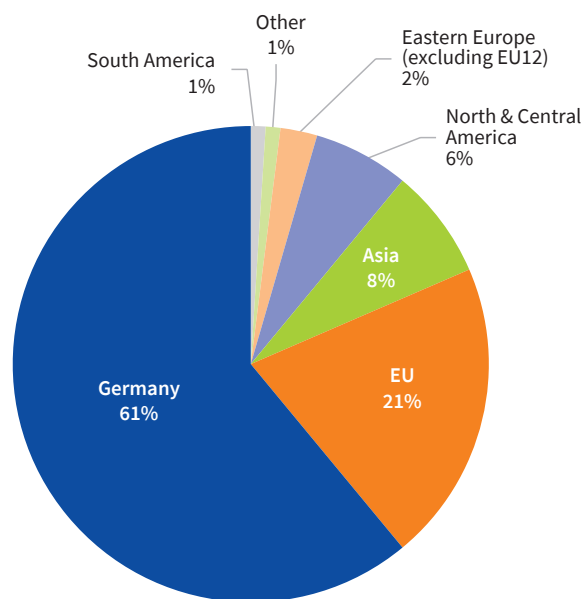
Figure 10: Share of output produced abroad by German manufacturing companies with production facilities in other countries, by company size, 2010–2012



Source: Zanker et al (2013)

The largest share of production capacity of German manufacturers located abroad was in the EU (over half, or 21% of total capacity), mainly in the EU12 (Figure 11), and much of this was owned by small companies. Asia is the second most important location, accounting for just over 20% of production capacity abroad (around 8% of the total), much of it owned by large companies with over 1,000 people employed. North and Central America accounted for around 15% of capacity abroad and eastern European countries outside the EU for around 5%. These proportions in the geographical breakdown of offshoring have remained much the same over time, with relatively little variation.

Figure 11: Distribution of production capacity of German companies as a percentage of total capacity, 2010–2012

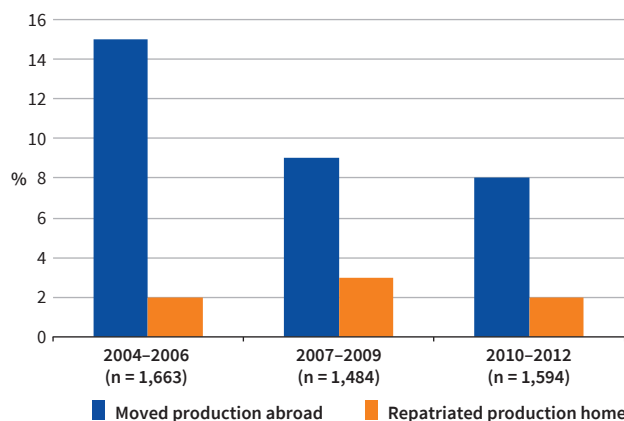


Source: Zanker et al (2013)

Over the period 2010–2012, some 8% of German manufacturers moved part of their production abroad (Figure 12), the smallest proportion since the first survey was carried out in the mid-1990s. The reduction in offshoring activity between 2010 and 2012, however, does not necessarily denote a decline in foreign direct investment by German companies, since it could simply be that, over this period, investment abroad was less often undertaken than previously to replace domestic production (Zanker et al, 2013).

At the same time, there was also a slight reduction in the proportion of companies involved in reshoring activities over this period, with only around 2% of them bringing production back to Germany, though this represents an increase relative to the companies involved in offshoring.

Figure 12: Share of German manufacturers that offshored and reshored production, 2004–2012

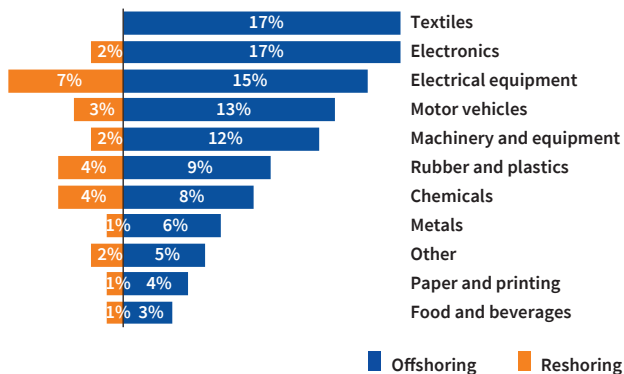


Note: n = number of companies in the sample.

Source: Zanker et al (2013)

Just like the proportion involved in offshoring, the proportion of companies reshoring production over the period 2010–2012 varied significantly between sectors. The largest proportion was in the electrical equipment industry (7%), which also had one of the largest proportions of companies involved in offshoring (which again is consistent with the ERM data) (Figure 13). Some 4% of companies in both the rubber and plastics and the chemicals industries brought production back from abroad (around half the proportion involved in offshoring), while 3% of motor vehicle manufacturers did so (less than a quarter of those that offshored production). The figures for companies in the electronics and the machinery and equipment industries bringing production back to Germany were even smaller relative to those involved in offshoring (2% as against 17% and 12%, respectively), while no textile manufacturer reported doing so, as against 17% that relocated production abroad. In general, therefore, reshoring in this period was on a relatively small scale relative to offshoring in most of the medium- to high-tech sectors, except perhaps for the electrical equipment industry.

Figure 13: Share of German manufacturers that offshored and reshored production, by sector, 2010–2012



Source: Zanker et al (2013)

UK

Although the data available on reshoring for the UK are less coherent than for Germany, a few surveys have been carried out that give an indication, at least, of its extent and how much it has changed recently. A survey carried out in 2013 (by the Engineering Employers' Federation, EEF) of UK manufacturing companies that had offshored some of their production abroad in earlier years found that one in six of them has brought production back to the UK in the previous three years. This compares with one in seven found in a similar survey conducted five years previously in 2008–2009 (Harris, 2014), indicating an increase in reshoring more recently, albeit a relatively small one.

A survey of companies conducted in 2012 found that for two-thirds of companies, reshoring was not relevant for them. Of the third for which it was relevant, over half were either doing it or actively considering it. More specifically, around 16% of the companies surveyed had reshored some of their production and another 5% were actively considering doing so (Birmingham Post, 2013). Around half of the companies involved in reshoring had brought production back from China or India, a third from other Asian economies and just over 20% from other parts of Europe.

Figures from another survey carried out in 2013 (by the Manufacturing Advisory Service, MAS), which covered just over 530 SMEs from across England, found that 11% of the manufacturing companies among them were planning to reshore part of their production. Though the number is smaller than that found by the EEF survey, the MAS survey was confined to companies with fewer than 250 people employed. Moreover, the proportion was significantly larger than those planning to offshore, which amounted to just 4% (Harris, 2014).

Estimates of the additional employment created as a result of reshoring are relatively small. For example, at the beginning of 2014, the UK Department of Trade and Industry identified some 1,500 manufacturing jobs that had been reshored back to the UK since 2011 (UK Department of Trade and Industry, 2014).

As the author of the EEF report cited above noted, the survey does not show that manufacturers are moving production back to the UK faster than it is being moved away. The survey also found that the number of UK companies with some production overseas and the proportion of manufacturing that they do there were both larger than in 2004.

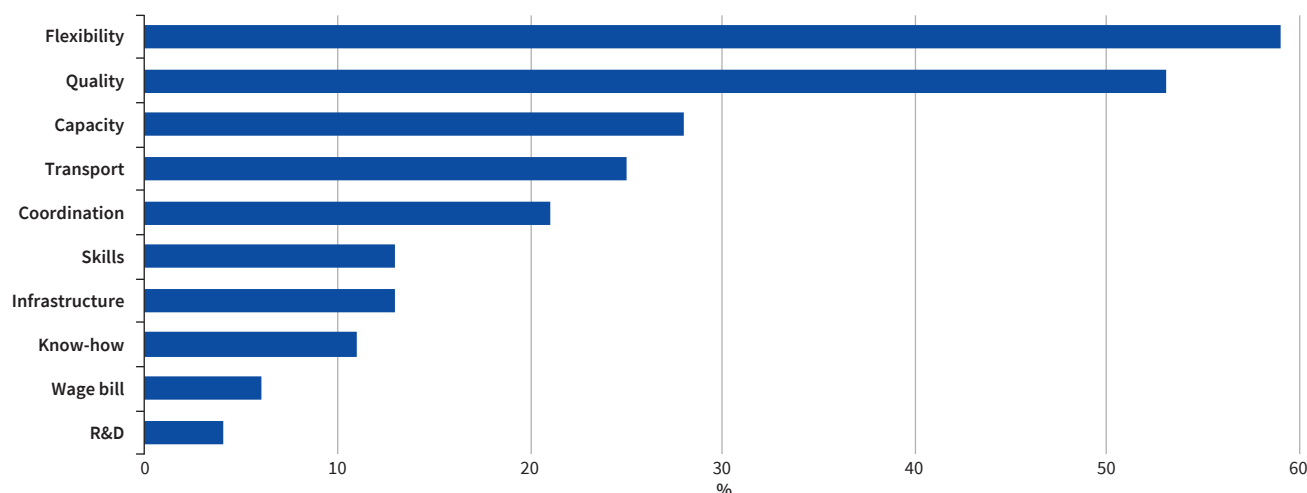
Reasons for reshoring

Germany

The EMS carried out in Germany also gives an indication of the reasons why some manufacturers have brought production back from abroad. These are summarised below along with a review of the factors identified in the literature and with reference to specific cases of companies involved in reshoring.

The responses to the 2012 survey suggest that the main reasons for reshoring production in the period 2010–2012 were to achieve a higher degree of operational flexibility and more control over the quality of manufacture (Zanker et al, 2013) (Figure 14).

Figure 14: Main reasons for reshoring reported by German manufacturers, 2010–2012



Source: Zanker et al (2013)

Nearly 60% of the companies involved in reshoring and responding to the survey reported that offshoring had reduced the flexibility of their operation unduly and over half (53%) stated that it resulted in quality shortcomings. Both figures are around twice the proportion of companies reporting other reasons. The latter included the under-utilisation of production capacity either abroad or in Germany (28%), increased transport costs (25%), perhaps related to higher energy prices, and the difficulties of coordinating operations (21%). The lack of skills and know-how among the workforce, which feature prominently in the literature on reshoring, were reported by only 11%–13% of respondents, while a similar proportion reported deficiencies in the infrastructure, and a small number (4%) referred to limited access to R&D. While the increasing wage bill in the host countries had been the decisive factor for a third of respondents for bringing production back to Germany in the 2007–2009 periods, it was the reason for only 6% in 2010–2012. This might reflect the effect of the crisis on wages in the Czech Republic, Hungary, Poland and Slovakia, where a large part of the foreign production capacity of German manufacturers is located.

UK

Evidence from the UK is very much in line with the German findings. According to the MAS survey cited above, the top three reasons for UK manufacturers bringing production back home were cost factors (rising labour costs in the countries concerned together with higher transport costs), quality control problems (or difficulties achieving the same product quality in low-labour-cost countries as in the UK) and the long lead times inherent in producing far away. An additional factor found by the other surveys was a desire among companies to locate production closer to consumer markets, not only to save on transport costs, but also to be better able to monitor demand and to react quickly to changes in this. Equally, importance was attached to the resilience of supply chains to ensure that orders could be met with a high degree of certainty within a specified period of time, which is often a problem when production takes place thousands of kilometres away.

At the same time, a survey of manufacturers carried out in 2011 found that there were obstacles to reshoring back to the UK, such as the high cost of labour; difficulties accessing finance to expand production facilities, especially in the wake of the financial crisis; and a shortage of skilled workers after decades of deindustrialisation, especially in SMEs (Braithwaite, 2012). The MAS survey also found that skills shortages were a significant factor, with nearly 1 in 10 respondents reporting this to be a concern.

Italy

A recent study of 38 companies in Italy involved in reshoring activities also tends to confirm the importance of the factors motivating the decision to bring production back from developing countries (Fratocchi et al, 2013). The most frequent reason reported (in 42% of cases) was the advantages to be gained by being able to put the ‘Made in Italy’ label on products, followed by the low quality of production in the countries concerned (mentioned in 24% of cases). The third most often reported reason (in 21% of cases) was the necessity of paying more attention to customer needs, which was difficult to do when products were manufactured far away. Other factors mentioned were the social pressure to produce in Italy and provide employment there (reported in 18% of cases); the higher skill level of Italian workers than those in developing countries (16%); the availability of unutilised production capacity domestically as a result of the economic crisis (13%); the reduction in the difference in labour costs between producing at home and abroad (13%); and increased transport costs (11%).

The various reasons for reshoring are explored in more detail below through reference to the literature as well as through specific examples of companies for which there are reports in the media.

Operational flexibility

While offshoring can substantially reduce the labour costs of production, it also almost inevitably increases the difficulty of organising production, increases the time lags involved between orders being placed or decisions being taken to increase or reduce production in response to changes in market demand, and increases the time lags between production taking place and the output being delivered to

customers. In addition, keeping transport costs down might require a minimum shipping size, which in turn might mean minimum order sizes and lengthy lead times for production, implying a loss of flexibility and responsiveness to market developments as well as problems in tailoring products to customer channel needs (Ferreira and Prokopets, 2009). Reshoring, therefore, represents a means of alleviating these problems and adjusting production more closely and promptly to customer demand (see Box 8 for examples).

Box 8: Reshoring to increase flexibility and cut delivery times

Germany

Wolfgang Reichelt, the owner of a successful block transformers electronics company in Lower Saxony that had relocated large parts of its production from Germany to China some years previously, brought production back to Germany in the first part of 2012, providing employment for 700 workers. The reason was an increasing need to achieve more flexibility in its operations and more responsiveness to customer demand. Producing in Germany instead of China was also reported to facilitate subcontracting (Frankfurter Rundschau, 2012).

Berndes, a manufacturer of pots and pans, relocated production back from China to the company's home base in Arnsberg at the beginning of 2012 in order to increase flexibility and to enable the company to produce in shorter production runs and to produce a smaller volume of output of a particular line. In addition, a pot or pan carrying the 'Made in Germany' label commands twice the price as one that says 'Made in China'. The plan is to progressively bring 70%–80% of production back to Arnsberg (DW, 2012).

France

Unowhy, an SME with 30 employees manufacturing Qooq, a touch tablet for use in cooking, began by producing screens in China when the product was launched in 2008, with the content (the recipes and videos) produced in France. While the product was immediately successful, the ability to deliver quickly and monitor production carefully was complicated because of the distance involved. Because of the difficulties (aircraft being full, the product being held back at the airport and so on), the company decided in 2012 to find a new contractor to produce the screens in France rather than China. It opted for Eolane, an electronics manufacturers based in Montceau-les-Mines, a former mining town in the Bourgogne region of eastern France. In addition to cutting delivery times and giving better control over production, the relocation also enabled improvements in the product to be made, according to the company (Chef d'entreprise.com, 2014).

La Mascotte, a manufacturer of sweaters, moved production from Roanne, in the Loire region of France, to Bulgaria and Morocco in 1995 in response to price competition from China. In 2001, the company changed its policy to focus on creativity and responding quickly to the latest fashion trends. This meant producing in small quantities to test the new line in shops, which could only be accomplished by moving production back to France. Six years later, the move had proved successful in the sense that the company was still in business, with 30 people employed directly and between 150 and 200 employed via French subcontractors (Journal du Net, 2008a).

Mobilis Development, a company producing computer accessories, moved production to China in 2004. Although the company was satisfied that it had made the right decision initially, the disadvantages of the move soon became apparent. Large amounts of working capital were needed in order to pay for the goods produced before they were sold and sometimes even before they were received. It was also unable to respond to rush orders. According to the company's co-manager, delivery times tended to be random, so it was decided to bring back part of the production to the central region of France. This enabled the company to make prototypes for customers quickly and to work with the latter in co-designing products. The aim is to bring all of the production back to France in the near future, which is likely to mean expanding the current workforce of 100 (Chef d'entreprise.com, 2014).

Mauboussin, a company selling jewellery, relocated the production of its bestselling ring (with 2,500 sold each year) from India to a subcontractor in Lyon in France mainly to reduce delivery times from 45 days to 30 days. While the costs of producing the ring have risen because of higher labour costs, the rise is relatively small since most of the cost consists of the raw materials that the ring is made from (Journal du Net, 2014a).

Rossignol, a manufacturer of skis and other sports equipment, brought back production of skis from Taiwan to France in 2011. The costs of production would not be significantly higher, as 80% of the costs go towards raw material rather than labour, but delivery times, which were up to six months from placing an order, would be much shorter (at only two months between order and delivery). It would also be closer to its main market since the factory producing them is at the foot of Mont Blanc (Charbit, 2012).

UK

RDM is a small engineering company, based in Coventry, producing components for the motor vehicles industry. It shifted production to China in the mid-2000s because of the low wages and other low costs there, but brought it back to the UK in 2013–2014. The main reason reported by the company was that the nature of the market had changed, with increasing personalisation of products to customer needs and an ongoing demand for faster delivery times. According to the chairperson, a supply chain that takes months to respond to orders is incompatible with the flexibility now required. In addition, the company's specialist engineers are increasingly working with UK-based customers on special projects relating to vehicle design and technology. The company has, therefore, invested in new state-of-the-art machines and the latest CAD/CAM software in order to minimise production costs, which at the same time gives it the capability of offering 'world-class' prototyping services and producing to order in low volumes without a significant cost disadvantage. Some 25 new jobs were created by the initial move back to the UK (expanding the workforce to 38), and the company is forecasting an increase in sales of more than fourfold by 2018 with a diversification of sales to the aerospace, marine and other sectors (Coventry Telegraph, 2014).

Elite Electronic Systems, which makes equipment for Caterpillar, Chubb and Tyco among other large companies, decided in the mid-2000s to source cables from China that it had previously made at its base in Enniskillen, Northern Ireland, in order to reduce production costs. While the move worked well for a time, the onset of the recession in 2008–2009 highlighted the pitfalls of long supply chains. The company had placed an order immediately before the downturn in the market that it unsuccessfully tried to stop. It ended up holding 20 months of stock instead of the normal 1–2 months, which hit the company's cash flow just as the financial crisis made it difficult to get credit. In addition, the remoteness of production caused problems making changes to products and prototyping, while lead times of 20 weeks or so made it difficult to respond to customer demands. The decision was made, therefore, to invest in more efficient equipment at its Enniskillen base and to bring production back to Northern Ireland, thus increasing its workforce to 185. According to one of the company's directors, the initial decision to source cables from China was motivated partly by pressure from customers pointing to the cost savings they would be able to make by doing so. They carried out only a rudimentary analysis of the overall costs entailed, largely neglecting the less tangible ones (Telegraph, 2014).

Eaton Hydraulics, a US multinational employing 102,000 people worldwide, decided in 2014 to reshore production of its X20 piston pump from the US to its Havant site in the UK, thus creating up to 100 jobs over the next five years. The move will enable delivery times to be reduced to four to six weeks, which is half the industry standard, for orders from Europe, the Middle East and Africa as well as facilitating test programmes. The move was also motivated by the high standards of safety and product quality in the Havant plant (The Manufacturer, 2014a).

Bathrooms.com, a company specialising in online sales, decided in 2012 to begin manufacturing 25% of its products in the UK instead of China. The decision was motivated by a desire to reduce the time needed to bring products to the market. According to the company, the whole process from the initial design to the manufacture of the product for sale took up to six months in China, but using British manufacturers would reduce it to six weeks. This enabled the company to be a leader in design rather than a follower. In addition, the company expected the move to increase the speed of delivery to customers from 6–12 weeks in the case of products manufactured in China to 1–2 weeks for those made in the UK (Builders' Merchants News, 2013).

Symington, a food manufacturer, relocated noodle production from China to a new factory (costing around €3 million) in Hunslet near Leeds in 2013. Noodles from the factory are used in around 100 different products (such as Golden Wonder), sold mainly in the UK. According to the company, moving noodle production to the UK shortened the supply chain considerably. Whereas it used to take 8–10 weeks to source noodles from China, delivery times were reduced to a week or two, thus enabling the company to be more responsive to customer orders. The move was reported to have created around 50 new jobs, including for skilled machine-tool operators whom the company trained specially in order to improve the production process. The company expected to create another 75 jobs during 2014 (FoodManufacture.co.uk, 2014).

Product quality

The evidence shows that in some cases the decisions on where to locate, or relocate, production are made without taking account of the possible effect on the quality of the product if the location is a country where labour costs are low, especially if it is far away from the company's home base, where it might be difficult to exercise control over quality. The evidence also suggests that quality shortcomings became more important as a reason for reshoring production over the crisis period, perhaps, it has been argued, because of greater reluctance among companies to invest in quality management when finance

is tight and the pressure to contain costs is extreme. When quality problems emerge, some companies might respond by bringing production back from the country in question rather than spending on setting up effective quality control systems (Zanker et al, 2013).

A case study carried out in 2011 of 11 companies in Germany that had recently reshored production confirms the importance of quality control problems as a reason for the decision (Leibl et al, 2011). Quality deficiencies were reported by seven of the companies as a major factor of producing in developing countries, especially China (see Box 9 for company examples).

Box 9: Reshoring because of quality control problems

Germany

Steiff, a manufacturer of cuddly toys, decided to bring back all of the production of its Snuggle line of furry animals from China to Germany in 2010. Originally, the manufacture of a toy baby polar bear (Knut in Berlin Zoo) was located in China because the demand for the bear was higher than the company could handle in its Swabian factory. However, quality problems soon emerged, with wholes batches of toys having, for example, the eyes sewn on crooked. This, together with long delivery times, had the potential to damage the company's reputation, and after a while, it became too much for the company to tolerate (Wirtschafts Woche, 2010).

Varta Microbatterie, a company producing micro batteries and employing around 1,300 people worldwide, with 600 employed at its Ellwangen site, offshored part of its production as long ago as 1979. Button cell batteries were manufactured in Singapore, which was close to the strongest-growing market as well as offering low wage costs. Market research showed that customers rated quality and the performance of the button cells more than price to an increasing extent, so when the company needed to increase its production capacity in 2005, it looked for a location where it could best ensure that quality was high. Accordingly, it chose to expand in Germany rather than Singapore (Rueckverlagerung.de, 2006).

Wolf, a company based in Hallertau, Bavaria, was one of the first companies to bring the production of solar panels back to Germany in 2007. A prime factor behind the move was to be able to put the 'Made in Germany' label on its products. Quality deficiencies were also a significant problem when producing in the Czech Republic. In addition, the lower wage costs were offset by the higher costs of logistics and the infrastructure needed. According to the company, it decided to produce only in Germany, a decision that also represented a commitment to corporate social responsibility. It also expressed the view that robotics and creativity would compensate for the higher wage bill involved and that the production of solar collectors was increasingly reliant on the use of robots (n-TV.de, 2007).

France

Geneviève Lethu, a manufacturer of tableware, brought back much of its production of knives, towels and tablecloths from Asia to France in 2009, reducing the amount produced abroad from 40% to 10%. While big increases in the price of energy, raw materials and transport were factors, the main reason was to obtain more control over product quality and to be able to put the 'Made in France' label on products, especially for the US and Australian markets. Although producing in France is between 15% and 50% more expensive than doing so in China, depending on the product, quality problems sometimes meant that half of a container was unusable. Reshoring nevertheless, gave rise to specific problems of its own in that it took some time for the company to find competent subcontractors in France to manufacture the products because of the decline in the industry (Charbit, 2012).

Del Ing, a company set up in 2010 to produce LED bulbs, started off by manufacturing its products in China. In January 2014, the company relocated 70% of its production to Lannion in France because transport costs and customs duties had increased, and more importantly, because the quality of the products had become problematic. Although labour costs were higher in France, the company was able to remain competitive as a result of better quality, more flexibility and proximity to the market (France 3 Bretagne, 2014; 20 Minutes, 2014).

Sart Von Rhor, a manufacturer of valves and tapes for large industrial plants, based in Alsace, relatively recently relocated part of its production to Asia in order to reduce costs. It quickly reversed the decision, mainly for reasons of quality control, which led to significant wastage and the need to recycle materials, as well as potential damage to the company's reputation. Adding transport costs and delivery delays that sometimes meant transporting products by aircraft, the company calculated that it was more economic to produce domestically. The company planned to double the size of its plant in 2014 and may begin to export (Journal du Net, 2014b).

UK

Laxtons Ltd is a manufacturer of wool worsted yarns for the clothing, upholstery and carpet industries. Established in 1907, at its peak it operated one of the biggest spinning mills in Europe, employing nearly 600 people. It closed its UK operations in 2001 and moved to lower-cost sites in Spain and Italy. In 2010, the company returned to the UK to set up a new wool worsted manufacturing facility in Guiseley, near Leeds, the first new factory of its kind in the UK for 25 years and one featuring the latest specialist yarn-spinning technology, with a workforce of 12. The move was motivated by a decision to concentrate on the middle and upper ends of the market, on design and on high-quality products. According to the company, it is impossible to compete in the mass market for textiles, with producers constantly seeking the lowest-cost locations and moving from eastern Europe and China, where labour and shipping costs have risen substantially and quality is still very unpredictable, to India and other Asian countries, such as Cambodia, as well as Turkey. In its view, therefore, UK manufacturing has to be based on niche markets, flexible production runs, high quality and innovation. By producing locally, the time from designing a new product to bulk production could be reduced to a matter of weeks rather than up to 12 months, which was previously the case. In addition, as the only worsted spinner in the UK licensed to use the Woolmark logo, Laxtons enjoys a major advantage in domestic and overseas markets since it lends a guarantee of quality to its product beyond the company's own reputation (Leeds Manufacturing Forum, 2013).

Mediplus, a family-run business based in High Wycombe, Buckinghamshire, which produces medical devices and equipment, decided at the beginning of 2014 to bring its manufacturing operations back from North Africa and France to the UK. The company expected that move that would lead to the creation of 25 new jobs, almost doubling its workforce of 30. According to the company's managing director, the move was in large part a response to the increasing regulation of the products it manufactures, which necessitate close control over the processes carried out by subcontractors. Producing in-house would enable the company to exercise more quality control over its output (The Manufacturer, 2014b).

Transport costs

In recent years, rising fuel prices, increasing congestion and bottlenecks in logistics have pushed up transport costs substantially and reduced the potential savings from offshoring. The freight costs of transporting goods by sea have climbed rapidly as the growth in demand has outpaced the expansion of capacity, increasing by 135% between 2005 and 2008 (Ferreira and Prokopets, 2009). This has caused companies to rethink their supply chain

strategy (Goel et al, 2008; Leibl et al, 2011), especially companies producing bulky products with low unit value.

A survey in 2013, by the French Ministry for Industrial Renewal, of 30 companies in France that had brought production back from abroad confirms the importance of increased transport costs as a factor behind the decision: two-thirds of the companies surveyed referred to this as a major reason (Ministère du Redressement Productif, 2013) (see Box 10 for specific examples).

Box 10: Reshoring because of high transport costs

France

Majencia, a company producing office furniture, relocated production to China in the early 2000s. A big increase in transport costs because of higher oil prices, which halved the overall cost saving of producing in China from 20% to 10%, had recently persuaded it to bring production back to Noyon in Picardy – initially part and then all of it. In addition, the drop in sales during the economic crisis meant that its sales were not enough to keep its workforce employed domestically, so it was a choice of paying either for transport or wages. Producing in France has enabled the company to become more responsive and flexible to customer demands, as well as being able to put the 'Made in France' label on products (Journal du Net, 2014c).

Loiselet, a company producing metal goods, offshored its foundry from France to Tianjin, south of Peking, in 2001 in order to reduce production costs. Although this was achieved, by 2012 the costs of transport had risen to such an extent (to €1 million a year) that, combined with defects in the products, it offset any savings. It was therefore decided to relocate the foundry to Dreux in the central region of France. Around €15 million was invested in new machinery to automate production, which enabled the wage bill to be reduced substantially, as 600 workers in China were replaced by just 84 employees in France (France Info, 2013).

Aquaproduct, a manufacturer of showers, offshored the production of shower walls to Romania in 2003 in a factory employing 40 people, to take advantage of low labour costs for a labour-intensive activity. However, after two years, when the production line needed renewing, the decision was taken to bring production back to France, to Chéméré, a small town in Pays de la Loire, and to invest in more automation in the plant to compensate for the lower wage costs in Romania. The fact that there were also big savings in transport costs, which were high because of the bulky nature of the product, meant that overall costs of production were no higher than in Romania (Journal du Net, 2008b).

Samas, a manufacturer of office furniture, needed to restructure its operations several years ago in order to continue operating. The choice was either to expand production in China, where part of its production was already located, and close down the plants in France, or to bring all of the production back to France. It chose the second option, firstly, because half of the cost gain from producing in China, which amounted to around 20%, was absorbed by transport costs, and the additional 10% could be compensated for by better organisation of work. Secondly, the time between orders and deliveries could be reduced to four or five days, compared to eight weeks in China (Journal du Net, 2008c).

Production capacity

Reshoring has been motivated in several cases by the following:

- a desire to increase production relative to capacity in domestic plants or factories during times of economic downturn to avoid making workers redundant and to save on fixed costs;
- problems of expanding capacity in low-labour-cost countries because, for example, of a lack of know-how.

In practice, when production capacity worldwide exceeds demand and there is a need for rationalisation, which is most economically achieved by concentration in a single plant, companies rarely, if ever, choose to do this in the plant abroad rather than the one at home (see Box 11 for specific examples).

Labour costs

It is widely recognised that the difference in labour costs between Europe and China and other developing

countries – the primary reason for offshoring production – is narrowing progressively if specific allowance is made for differences in labour productivity (see, for example, Ritter and Sternfels, 2004; Leibl et al, 2009; Powell, 2011). In a Boston Consulting Group White Paper published a few years ago, Sirkin et al (2012) predicted that by 2015, adjusted labour costs in the more industrialised areas of China, such as the Yangtze River Delta, would be around 69% of US costs, as against 31% in 2010. The continuing spread of automation is likely to reduce the cost differential further.

While rising labour costs in China and similar countries clearly affect decisions of where to locate the production of labour-intensive commodities, it does not necessarily follow that this will lead to reshoring. Instead, the typical response, as indicated above by the review of ERM cases, is to move production to even lower-cost locations, to countries that are at an even earlier stage of development, such as Bangladesh, Cambodia, Indonesia or Vietnam.

There are, nevertheless, some examples of companies, described in Box 12, for which the decision to bring production back to the home country is reported to be based on the erosion of labour cost differences.

Box 11: Reshoring because of production capacity problems

Germany

Stihl, a Swabian family business making chainsaws, decided to bring back a large part of production to its headquarters near Stuttgart from Brazil in 2010. A major reason was to be able to increase the output of the domestic plant and so preserve jobs. However, there were other reasons, too. In particular, the Brazilian currency had appreciated in value, thus increasing costs in terms of US dollars or euro of both labour and transport (Wirtschafts Woche, 2010).

France

Haworth, a manufacturer of office furniture, had so much success with its Epure line that production could not keep up with the orders. The expansion of production that was required, however, was difficult to achieve in its Chinese plant because of a lack of know-how and because of difficulties operating the equipment needed. Accordingly, the manufacture of the foundry pieces that went into the desks, which up to then were made in China, was subcontracted instead to a company in Loire-Atlantique. This company was used to producing for the motor vehicle industry and had the sophisticated machine tools needed to meet the company's requirements. While it was more expensive to produce in France in terms of labour costs, this was compensated for by the use of a more productive technology. A second advantage was the proximity to the company's own site, which meant a significant saving in transport costs (Journal du Net, 2008d).

Renault Trucks, with headquarters in Lyon, terminated its contract with the Turkish manufacturer Karsan in 2013 in order to be able to increase the capacity utilisation of the company's two plants in the Rhône-Alpes region of France, where the workers were facing a lengthy period of partial employment. The decision was also linked to new European anti-pollution standards (Rue89Lyon, 2013).

Eminence, the leading producer of men's underwear in France, reduced purchases from subcontractors in Tunisia, Morocco, Egypt and Asia in 2012 in order to maintain employment at its French factories and to avoid part-time working in the face of a large reduction in orders. The decision enabled the company to run its two factories in France, together employing 250 workers, at full capacity. Although it meant some reduction in profits, the company said this was preferable to losing qualified workers, who would be difficult to replace in the future, if they were needed, because of a lack of young people being trained as a result of the virtual disappearance of textile manufacturing in France (Les Echos, 2013).

Box 12: Reshoring due to falling cost advantages

Germany

Simba-Dickie, a family-owned company making toys, shifted production to China in 1984, one of the first companies to do so. In 2011, it decided to bring production back to Germany essentially because cost differences were gradually shrinking due to rising wages in China and because of increases in transport costs. Producing in China instead of Germany was considered to be less and less justified in terms of costs (Bild, 2011).

Fackelmann, a manufacturer of household goods, terminated production in China in 2011, with a loss of at least 1,000 jobs (a third of the company's global workforce), and expanded production in Germany to partly compensate. The decision is reported to have been mainly motivated by increasing labour costs. According to the owner, 'the times are over when China can be regarded as a cheap work bench' (Nordbayern, 2012).

UK

Hornby, a leading manufacturer of model toys, decided to relocate 60% of the production of its Humbrol enamel paints from China, where they had been produced for 10 years, back to the UK in 2012. The decision was made after comparing the prices offered by companies in the UK with those in China and India and was prompted by the rising costs of labour in China, which, according to the company, had trebled in the previous seven years and was set to double again in the coming decade. After taking account of the higher costs of transport, it was considered that the cost advantage of sourcing supply from China was negligible. In addition, a location much closer to its UK head office in Kent offered far shorter delivery times and more control over quality (Telegraph, 2012a).

Caldeira, a textile manufacturer making cushions that is based in Merseyside, opened a factory in the Zhejiang province in China in 2004 and moved half of its production there to keep costs down at a time when wages were only a tenth of those in the UK and the exchange rate was favourable. In 2012, it decided to bring the production back to Merseyside because the difference in costs of producing in China as opposed to the UK had become insignificant. Over the eight years since 2004, the wages of the workers employed by the company in China had risen by 400%, while shipping costs and duties had also risen, and the Chinese yuan exchange rate had appreciated substantially. While wages in the UK were still higher than in China, even though the company paid only slightly above the minimum wage, this was compensated for by higher productivity levels. Labour costs could have been reduced by moving to a country with even lower wages, such as Vietnam or Bangladesh, but since the raw materials come from China, this would have entailed increased transport costs as well as the added complications of producing in a less developed country. The company, however, has faced difficulty in Merseyside in recruiting skilled machinists who are willing to work for the low wages offered, although this was also a problem in the industrial regions of China because of the increasing competition among companies for staff. Many of the workers taken on are in their fifties and sixties, who trained as apprentices in the 1970s and 1980s; the necessary skills have not been widely taught since then (CNN, 2012; Telegraph, 2012b).

R&D and innovation

Since manufacturing tends to be central to innovation and economic competitiveness, there is – and, indeed, should be – a great deal of concern when production is offshored and, even more so, when it involves an R&D capacity, which is central to innovation. The link between production and R&D or innovation, however, is complex and differs between industries. While in some industries R&D and production do not necessarily need to be carried out in the same place, in other industries, or segments of industries, R&D is most effective when undertaken in close proximity to production; indeed, in some cases the two need to take place together. The extent to which this is the case also depends on the

type of R&D or the phase of production it relates to. For process development, for example, proximity to production is typically very important. Equally, the incorporation of new designs into production typically requires close collaboration at plant level with machine tool suppliers. The more advanced and intricate the product, the more such direct involvement is important, whereas in industries in which production processes are relatively simple and R&D intensity is low, production and R&D can more easily be separated.

There are a number of examples of companies in France that reshored production in order to improve the conditions for R&D and innovation to take place in, although this was usually not the only reason (see Box 13).

Box 13: Reshoring to facilitate innovation

TEB, a manufacturer of video surveillance equipment employing 90 people, decided in 2006 to adopt a more technologically oriented approach by concentrating on producing higher-quality, high-definition products. At the time, half of its output was produced in China, which was not conducive to the close monitoring and control over prototypes that was needed. The company, therefore, relocated production back to France in 2009 when it launched its new robotic camera and selected a French subcontractor to help with this. The additional production costs involved were reported not to be significant, and the responsiveness to customer orders greatly improved (Chef d'entreprise.com, 2014).

Veloscot, a small company making electric bicycles, initially got the idea for the product from China and adapted it for the French market in 2006. After five years of producing in China, the company relocated manufacture to France for practical reasons. Since producing an electric bike is complicated and involves over 300 separate pieces, it was considered much easier to carry out user-driven innovation in France than in China. Equally, it was possible to put the 'Made in France' label on the cycle (Chef d'entreprise.com, 2014).

Atol, a manufacturer of eyewear, decided in 2007 to start bringing back production from China to the Jura for reasons relating to innovation. Specifically, it was considered that R&D capacity was better in France than in China and that being located in France enabled the company to react more quickly to market developments. According to the company, which sells its output only in France, proximity to the customer is crucial, as demand changes very fast and the production line must be capable of adapting quickly to the changes. Equally, although wages in China are only a fraction of what they are in France, this is offset by much lower levels of productivity in China and the capacity to innovate in France (Charbit, 2012).

Decathlon, a larger retailer of sports goods that manufactures many of the products it sells, has in recent years brought a significant part of its production back from Southeast Asia to France, specifically to Lille, where the site covers over 180,000 square metres and where the company's B'Twin cycle is assembled. The prototypes are designed there, R&D is carried out and the products are tested before being marketed. A major problem of locating R&D in Southeast Asia was maintaining control of the copyright, which is not an issue in northern France. In addition, producing in Lille allows the company to put the 'Made in France' label on the cycles, which adds to their attractiveness on the market, as well as enabling the company to maintain domestic employment levels and so discharge its social responsibility (Charbit, 2012).

Other aspects

Given the advantages listed above of producing domestically, the question arises as to why companies would choose to offshore in the first place. As indicated earlier, the extent of offshoring continues to be significant and appears to be several times the scale of reshoring. One answer is that economic conditions have changed over time and, for certain types of product, the increases in energy and transport costs that have occurred alongside the rise in wages in developing countries like China have altered the calculation. As also noted above, however, rising wages in the countries to which production has tended to be offshored in the past does not necessarily constitute a case for bringing production back home, but rather for seeking other locations where wages remain low, assuming that labour costs are the determining factor behind location decisions (in other words, other factors are less important).

Another answer is that companies simply miscalculated the gains from locating in low-labour-cost countries when they made the decision to offshore. According to a survey of US manufacturers carried out a few years ago, 60% of companies that opted for producing abroad based their decision on rudimentary calculations of costs, ignoring the 'soft' or less tangible elements (Ferreira and Prokopets, 2009). They, therefore, took account only of the most easily available cost items, such as wages, and so obtained a distorted picture of the relative cost of producing in different places and organising manufacture in different

ways. They neglected the loss of ability to respond quickly to customer demands and to customise products to these, as well as quality control problems.

The fact that cost savings tend to be overestimated in many cases when the initial decision to relocate is made is indicated by the results of the EMS for Germany. These show that, on average, one in every four decisions to offshore production is followed within three to five years by an opposite decision to bring at least part of the production back again. Moreover, a study of 39 German manufacturing companies revealed that 85% of companies reporting that they had decided to reshore all or part of their production had offshored manufacturing activities only four to five years previously (Kinkel and Maloca, 2009). This suggests that reshoring decisions can be regarded as much as corrections to previous misjudgements about the relative advantages of offshoring to the countries concerned as responses to changes in local factors.

Conclusion

Although there is a limited amount of data on the scale of reshoring and the way that it is changing over time, especially in Europe, the conclusions that can be drawn from the relatively piecemeal evidence available is that so far the extent is modest, and, while it seems to be increasing, it is doing so slowly. This, at least, is what the surveys undertaken and the specific cases that have been publicised indicate in Germany, France and the UK.

In Germany, for example, only 2%–3% of manufacturers engaged in reshoring over the period 2010–2012, which was much the same as over the preceding 10 years or so, although the proportion may have risen since then. In the UK, while there seems to have been an increase in companies with production abroad reshoring between 2008 and 2013, the extent was small.

There is a need, however, for a word of caution. The large majority of cases of companies bringing back production from abroad that can be identified from the media, and more specifically from the internet, relate to companies that are relatively small, with fewer than 100 people employed. But it would be misguided to assume that these cases are representative of the reshoring that is occurring. As noted above, large companies do not necessarily publicise the fact that they have reshored production for a number of possible reasons: they may not want to advertise their strategy to competitors; they may be unwilling to admit to a past miscalculation; or it might be difficult to recognise when it has actually happened, in cases where it is the outcome of multinationals deciding in which of their plants across the world to expand production and where to contract it.

At the same time, reshoring seems to be occurring over a wide range of industries and is not confined to any particular kind of product. Although in Germany, there seem to be relatively few cases in the more basic industries, such as textiles or food and beverages, this is not so in France or the UK, where there are examples of companies producing relatively basic products, such as textiles, and bringing their manufacture back to the domestic economy, though often with a focus on the upper end of the market.

The motives for re-shoring are numerous. The competitive need to reduce delivery times, to respond to market developments and to collaborate closely with trade customers as well as to ensure the quality of what is produced seem to have become more important factors affecting locational decisions. In addition, big increases in wages in China and other rapidly developing economies and in transport costs as a result of higher energy prices, together with unfavourable movements in currency exchange rates, appear to have played a role.

Moreover, it is important to recognise that offshoring has continued to take place and probably on a larger scale than reshoring. Although the scale seems to have declined over the period 2010–2011 (according to both the EMS in Germany and the ERM), it appears to have picked up again in the last two years (according to the ERM). While this is true of Germany, it does not seem to have occurred in France or the UK, where (according to the ERM) the job losses from offshoring seem to have declined markedly since 2012.

Whatever the motives behind reshoring, there still seems to be factors encouraging companies to offshore production, increasingly, it seems, to countries with lower wages than China and, in particular, industries where manufacturing is highly labour-intensive. Equally, it is important to bear in mind that the production offshored is not only destined to be sold in the domestic or other European markets – much of the output produced is for the market in the country or wider region to which production has been offshored. It is unlikely that this part of the production will be returned to the domestic economy. It is this part, moreover, that it is likely to have been expanding most given the much faster rate of growth of the economies concerned than the EU over the past few years.

It should also be borne in mind that while the lack of skills in these countries is one of the factors underlying the decisions of companies to reshore production, it is also the case that similar shortages seem to exist in manufacturing in the domestic economy as well, especially in the more basic industries, which in the UK in particular, though also in France, if to a lesser extent, have experienced a large-scale decline over the past 30–40 years. Alleviating the shortage depends not only on providing the training required for people to acquire the skills in question, but arguably also on companies being able and willing to pay the wages to attract people to take up the jobs concerned, which may be difficult, given the competition faced from companies still manufacturing products in low-wage countries.

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Annex 1: NACE sector divisions

Table A1: NACE Rev. 2 sector divisions, with short and full titles

NACE division	Short title	Full title
1	Agriculture	Crop and animal production, hunting and related service activities
2	Forestry	Forestry and logging
3	Fishing	Fishing and aquaculture
5	Mining of coal	Mining of coal and lignite
6	Oil and gas extraction	Extraction of crude petroleum and natural gas
7	Mining of iron	Mining of metal ores
8	Other mining	Other mining and quarrying
9	Mining support	Mining support service activities
10	Manufacture: food	Manufacture of food products
11	Manufacture: beverages	Manufacture of beverages
12	Manufacture: tobacco	Manufacture of tobacco products
13	Manufacture: textiles	Manufacture of textiles
14	Manufacture: clothing	Manufacture of wearing apparel
15	Manufacture: leather	Manufacture of leather and related products
16	Manufacture: wood products	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17	Manufacture: paper products	Manufacture of paper and paper products
18	Manufacture: printing and recorded media	Printing and reproduction of recorded media
19	Manufacture: coke and petrol products	Manufacture of coke and refined petroleum products
20	Manufacture: chemicals	Manufacture of chemicals and chemical products
21	Manufacture: pharmaceuticals	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture: rubber/plastic	Manufacture of rubber and plastic products
23	Manufacture: other non-metallic mineral products	Manufacture of other non-metallic mineral products
24	Manufacture: basic metals	Manufacture of basic metals
25	Manufacture: fabricated metal products	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture: computer, electronic and optical	Manufacture of computer, electronic and optical products
27	Manufacture: electrical	Manufacture of electrical equipment
28	Manufacture: machinery and equipment	Manufacture of machinery and equipment n.e.c.
29	Manufacture: motor vehicles	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture: other transport equipment	Manufacture of other transport equipment
31	Manufacture: furniture	Manufacture of furniture
32	Manufacture: other	Other manufacturing
33	Repair or installation of machinery	Repair and installation of machinery and equipment
35	Electricity, gas, etc. supply	Electricity, gas, steam and air conditioning supply
36	Water collection, treatment and supply	Water collection, treatment and supply
37	Sewerage	Sewerage
38	Waste collection and treatment	Waste collection, treatment and disposal activities; materials recovery
39	Other waste management services	Remediation activities and other waste management services
41	Construction	Construction of buildings
42	Civil engineering	Civil engineering
43	Specialised construction activities	Specialised construction activities
45	Wholesale/retail of motor vehicles, etc.	Wholesale and retail trade and repair of motor vehicles and motorcycles
46	Wholesale, except motor vehicles	Wholesale trade, except of motor vehicles and motorcycles
47	Retail, except motor vehicles	Retail trade, except of motor vehicles and motorcycles
49	Land transport	Land transport and transport via pipelines

NACE division	Short title	Full title
50	Water transport	Water transport
51	Air transport	Air transport
52	Warehousing and transport support activities	Warehousing and support activities for transportation
53	Postal and courier activities	Postal and courier activities
55	Accommodation	Accommodation
56	Food and beverage services	Food and beverage service activities
58	Publishing	Publishing activities
59	TV, film and music production	Motion picture, video and television programme production, sound recording and music publishing activities
60	Broadcasting	Programming and broadcasting activities
61	Telecoms	Telecommunications
62	Computer programming, consultancy, etc.	Computer programming, consultancy and related activities
63	Information services	Information service activities
64	Financial services, except insurance and pensions	Financial service activities, except insurance and pension funding
65	Insurance and pensions	Insurance, reinsurance and pension funding, except compulsory social security
66	Auxiliary financial services	Activities auxiliary to financial services and insurance activities
68	Real estate activities	Real estate activities
69	Legal and accounting activities	Legal and accounting activities
70	Head office, management consultancy activities	Activities of head offices; management consultancy activities
71	Architectural and engineering activities	Architectural and engineering activities; technical testing and analysis
72	Scientific R&D	Scientific research and development
73	Advertising and market research	Advertising and market research
74	Other professional and scientific activities	Other professional, scientific and technical activities
75	Veterinary activities	Veterinary activities
77	Rental and leasing activities	Rental and leasing activities
78	Employment activities	Employment activities
79	Travel agencies, etc.	Travel agency, tour operator and other reservation service and related activities
80	Security and investigation activities	Security and investigation activities
81	Building services and landscaping	Services to buildings and landscape activities
82	Office and business support activities	Office administrative, office support and other business support activities
84	Public administration, defence and social security	Public administration and defence; compulsory social security
85	Education	Education
86	Health	Human health activities
87	Residential care	Residential care activities
88	Social work	Social work activities without accommodation
90	Creative, arts and entertainment	Creative, arts and entertainment activities
91	Libraries, museums, etc.	Libraries, archives, museums and other cultural activities
92	Gambling	Gambling and betting activities
93	Sports and recreation	Sports activities and amusement and recreation activities
94	Membership organisations	Activities of membership organisations
95	Repair of computers and appliances	Repair of computers and personal and household goods
96	Other personal services	Other personal service activities
97	Domestic services	Activities of households as employers of domestic personnel
98	Private household activities	Undifferentiated goods- and services-producing activities of private households for own use
99	Extraterritorial organisations	Activities of extraterritorial organisations and bodies

Annex 2: Employment levels by sector

Table A2: Employment (in thousands) by sector division, EU28, 2008–2016

NACE Rev. 2.0		Employment (000s)				
Letter code	Sector	Divisions (total=88)	2008	2016	Change	% change
A	Agriculture, forestry and fishing	1–3	11,308	9,298	-2010	-18
B	Mining and quarrying	5–9	886	808	-78	-9
C	<i>Manufacturing, of which:</i>	10–33	37,990	34,218	-3773	-10
CA	Food, beverages and tobacco products	10–12	5,092	5,024	-68	-1
CB	Textiles, clothing and leather products	13–15	3,329	2,305	-1024	-31
CC	Wood, paper and printing	16–18	3,323	2,469	-855	-26
CD	Coke and petroleum products.	19	246	179	-67	-27
CE	Chemicals	20	1,470	1,330	-140	-9
CF	Pharmaceuticals	21	799	829	30	4
CG	Rubber and plastics products	22–23	3,356	2,939	-418	-12
CH	Basic metals and metal products	24–25	5,706	4,798	-908	-16
CI	Computers, electronic and optical products	26	1,712	1,501	-211	-12
CJ	Electrical equipment	27	1,601	1,405	-196	-12
CK	Machinery and equipment	28	3,334	3,417	83	2
CL	Motor vehicles and transport equipment	29–30	4,217	4,367	150	4
CM	Furniture and other products and repair	31–33	3,805	3,655	-150	-4
D	Electricity, gas, steam and air conditioning supply	35	1,496	1,550	53	4
E	Water supply, sewerage, waste, etc.	36–39	1,584	1,629	45	3
F	Construction	41–43	18,491	14,577	-3914	-21
G	Wholesale and retail	45–47	31,408	31,053	-355	-1
H	Transportation and storage	49–53	11,489	11,638	149	1
I	Accommodation and food service activities	55–56	9,189	10,272	1083	12
JA	Publishing and broadcasting	58–60	1,999	2,006	8	0
JB	Telecommunications	61	1,451	1,102	-349	-24
JC	IT and information services	62–63	2,737	3,584	847	31
K	Financial and insurance activities	64–66	6,579	6,555	-24	0
L	Real estate activities	68	1,687	1,853	166	10
MA	Legal, accounting, architecture, engineering, etc	69–71	7,470	8,695	1225	16
MB	Scientific research and development	72	832	938	106	13
MC	Other professional, scientific and technical activities	73–75	2,146	2,734	587	27
N	Administrative and support service activities	77–82	7,953	9,315	1362	17
O	Public administration and defence	84	15,550	15,196	-354	-2
P	Education	85	15,603	17,156	1552	10
QA	Human health services	86	12,538	13,817	1279	10
QB	Residential care and social work	87–88	8,374	10,322	1948	23
R	Arts and entertainment	90–93	3,374	3,790	416	12
S/U	Other service activities and extraterritorial organisations	94–96,99	5,567	5,585	18	0
T	Activities of households	97–98	2,505	2,304	-201	-8
	Non-response		664	1,394	730	

Source: EU-LFS

The 2016 annual report from the European Restructuring Monitor (ERM) provides evidence of the employment impact of recent restructuring activity in Europe based on the European Union Labour Force Survey (EU-LFS) and the ERM events database. The thematic part of this year's report centres on trends in both the offshoring and reshoring activity of companies in Europe, with a focus on the manufacturing sector. ERM data indicates that offshoring has never been a large source of job loss in Europe, and the analysis finds that offshoring started to decline after the global financial crisis and has yet to recover. It also finds that offshoring has increased in eastern Europe while it has declined in western Europe. Evidence of reshoring is limited; what evidence exists suggests that it is a relatively minor phenomenon.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency, whose role is to provide knowledge in the area of social, employment and work-related policies. Eurofound was established in 1975 by Council Regulation (EEC) No. 1365/75, to contribute to the planning and design of better living and working conditions in Europe.

