

# *European offshoring: where and whence*

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## ***Abstract:***

The rapid emergence of China and India as major economic players in the global economy has a lot to do with the rapid growth in offshoring during the first decade of the 2000s. Offshoring describes the relocation of business processes from one country to another, but it also involves the migration of jobs to another country, but not the people who perform them. The economic logic is to reduce costs, whether it is wage, transport, or energy costs. And it relates directly to the issue of foreign ownership as well as to Adam Smith's idea of the division of labour and gains from trade. This paper will develop a simple model of offshoring and use a unique dataset on offshoring developed out of the European Restructuring Monitor (ERM). This database contains over 500 offshoring cases since 2002 and measures the employment effects of the job relocation, by both by country and by industry. Additional information helps to support the analysis. Several important conclusions are reached in the paper. First, European Offshoring is moving mainly to Eastern Europe, particularly in the manufacturing industries. Second, India is much more important than China as a location of offshoring, mainly because of the large amount of offshoring in the service industries. Third, offshoring mainly entails movement of low-skill jobs out of Western Europe. Offshoring of R&D activity and the more high-skill jobs tend to remain within Western Europe. Fourth, most low-skill jobs, such as textiles, are moving from Europe to other low-wage countries, particularly in Asia and Northern Africa.

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## **1. Introduction**

The European Monitoring Centre on Change estimates that at least 200,000 European jobs may have relocated because of offshoring between 2002 and 2009. While the number of jobs may appear quite staggering, it only represents about 5 per cent of total jobs lost to enterprise restructuring during the same period. It is, however, five times more likely to occur than domestic outsourcing. Still, neither statistic includes jobs that have moved within the European Union and European Economic Area, or new jobs created as a result of the economic restructuring. Economic restructuring in general and offshoring in particular are reflections of the process of ‘creative destruction’ as described by Joseph Schumpeter, and an outcome of the globalization of the division of labour foreseen by Adam Smith and David Ricardo. This paper discusses some of these issues in the context of the case studies on offshoring collected by the European Restructuring Monitor (ERM) since 2002.

Offshoring describes the relocation of business processes from one country to another. It is a type of outsourcing that involves ‘the migration of jobs to another country, but not the people who perform them’ (Blinder, 2006: 113). Offshoring includes in-house sourcing, or the transfer of certain tasks or stages of production within the same group of enterprises, or offshore outsourcing, or the transfer of certain tasks to another enterprise in another country. Both types of offshoring involve subcontracting, but only the first type considers the nationality of ownership as an important issue (OECD, 2007). In the latter case foreign direct investment (FDI) can be an important conduit for offshoring. Nevertheless, the nature and type of tasks being subcontracted can vary depending on the type of partnership. It can involve partial ownership, total ownership or be a strategic partnership. Finally, offshoring does not necessarily entail the migration of jobs ‘from rich countries to poor ones’ as stated by Blinder (2006: 113), but is the result of as the strategic behaviour of the enterprise to minimize costs, whether they be wages, transportation, energy or any material and intermediate input costs. Cost minimization may also involve an improvement in the utilization of capacity across the global enterprise as a whole.

Much controversy surrounds the issue of offshoring. The employment consequences of offshoring have fuelled the rise of protectionism in both the United States and the European

Union. While about half of the European jobs lost since 2001 have been relocated within the European Union itself, the migration of jobs within Europe has also contributed to an increasing tendency toward protectionism within the individual Member States. Empirical economic studies confirm that offshoring has a negative impact on employment, but this effect appears localized within the relatively low-skill tasks (Crino, 2009). The overall impact on economic growth relates closely to the twin issues of technology transfer and spillovers and whether the enterprise is foreign-owned or locally-owned, but this evidence appears to be rather mixed (Knell and Rojec, 2007).

Most empirical studies of offshoring focus on the share of imported intermediates. These statistics, which generally come from the national input-output tables, are used primarily to measure the extent of intra-industry trade of the country under investigation. Intra-industry trade refers to the exchange of products within the same industry, and not the trade in tasks. While both are highly related to the globalization of production, they are very different phenomena. Intra-industry trade represents international trade within industries, which is a flow of goods and services between countries, and trade in tasks represents the relocation of certain tasks in the global production network. It is what Baldwin (2006) calls the "second unbundling", where trade is focused not on sectors and industries, but on tasks in the global production system. In most discussions, offshoring is a one-off event that describes the relocation of certain tasks, which is an independent source of comparative advantage that may lead to intra-industry trade (Baldwin and Robert-Nicoud, 2007).

In this paper, we make use of a unique dataset on offshoring developed out of the European Restructuring Monitor (ERM). The ERM monitors the extent of restructuring activities in Europe and their employment consequences since 2002. Of the more than 10,000 European restructuring cases in the database, over 500 cases involve offshoring or job relocation. Information contained in the database allows us to measure the employment effects of the job relocation, both by country and by industry. We go through each individual case study to determine both the country of origin as well as the country where the jobs are moving. The database makes it possible to analyze the role that economic integration within the EU relative to the offshoring to other countries.

The paper is outlined as follows. In the following section we look at some important ideas in the history of economic thought that relate to the trade in tasks. The division of labour, or tasks, becomes an important idea that when linked with the theory of comparative advantage can be a very powerful tool for discussion the problem of offshoring. These ideas developed by the classical economists are then discussed in the context of new growth theory, new trade theory, and whether the rise of offshoring is something new that needs further theoretical development. Section 3 describes the database used in the analysis, and presents some of the

findings in terms of tables and figures. In section 4 we explore some issues of structural change and offshoring. A concluding section summarizes the findings and discusses some of the ways these data could be used within a modelling framework.

Several important conclusions are reached in the paper. First, most offshoring occurs within Europe itself, but the rapid emergence of China and India as major economic players in the global economy has attracted many jobs over the decade. Second, India is much more important than China as a source of offshoring, mainly because of the large amount of offshoring in the service industries. Third, European offshoring is moving mainly to Eastern Europe, particularly in the manufacturing industries. Fourth, offshoring mainly entails movement of low-skill jobs out of Western Europe. Offshoring of R&D activity and the relatively high-skill jobs tend to remain within Western Europe. Fifth, most low-skill jobs, such as textiles, are moving from Europe to other low-wage countries, particularly in Asia and Northern Africa. Finally, the current economic crisis is creating an incentive to consolidate so as to increase capacity utilization within the group of firm, which creates the tendency for jobs to move back to plants in Western Europe.

## **2. Offshoring in economic thought**

Offshoring is not a new phenomenon, as Bhagwati (2004) et al. point out, but the extent to which it is carried out has increased significantly with the rise of international trade. The increase of offshoring is strongly associated with the fifth technological revolution, which began, according to Perez (2002) with the development of the microprocessor and the subsequent development of ICTs (information and communication technologies). This techno-economic paradigm made it possible to combine the economics of scale and scope with specialization and to decentralize production networks with direct and immediate global communications. Transportation costs became an important issue as certain tasks were moved around the global production network in an effort to minimize total costs, but it also highlighted some of the problems of moving knowledge-intensive tasks around the globe because of the nature of knowledge itself.

The classical economists recognized how offshoring could affect economic growth and employment. Adam Smith (1776) knew that an ever more sophisticated division of labour was the main source of productivity growth, and that it also implied an increasing specialization or ‘fragmentation’ of tasks that could transcend the confines of the local enterprise. An increasing division of labour could increase the dexterity of workers, save time lost in switching between different tasks, and lead to the invention of machines and organization that facilitate work. Driven by the extent of the market, specialisation divided productive operations into their constituent elements, which both saved time in changing

between different tasks and facilitated the introduction of equipment and machines.<sup>3</sup> International trade becomes important in this context because it not only increases the size and growth of the potential market, but as a vent for surplus, it also gives rise to specialization across countries as businesses subdivide tasks into well-defined activities and products.

David Ricardo (1817) and later Piero Sraffa (1960) also recognized the important role that the dynamism uncovered by Adam Smith could play within the circular flow of production, and in the generation of a surplus that promotes consumption, growth and international trade. Ricardo (1817), however, advanced the idea that countries trade with each other on the basis of the relative cost of production, rather than absolute cost as Smith maintained. He provided an example where both wine and cloth could be produced at a lower cost in Portugal than in England, but the cost of producing wine was relatively lower than cloth, creating an advantage for Portugal to produce wine and trade it for English cloth. While this example does not immediately recognize the importance of offshoring, but when production fragmentation across enterprises and countries is brought into the picture, then its importance becomes more apparent (Grossman and Rossi-Hansberg, 2008). Samuelson (2001) describes how a Ricardo-Sraffa model can be used to study the issue of fragmentation and offshoring.

The classical economists suggested that offshoring and fragmentation can be thought of as technological progress, as Jones and Kierzkowski (1990) and Jones (2000) also maintained. If there are increasing returns, then the process of capital accumulation and labour force growth will lead to an exponential growth in income per person. A newly defined task implies increasing returns and innovation (Schumpeter, 1934), which is key to explaining offshoring and fragmentation. Each task embodies a certain kind of knowledge, which is then used in the production of a particular product or service. Adam Smith's example of the pin factory suggests that all of the tasks are located within one factory, but they can be located outside the factory in another enterprise with the same owner or in an enterprise with different owners and they can be located in the same country or in another country. The theory of international trade provides the spatial distance necessary to complete the story. Baldwin (2006) rightly points out that production of cloth in England and the production of wine in Portugal are a 'package of tasks' that can be unbundled in a way that some tasks in the production of cloth can be done in Portugal and some tasks in the production of wine can be done in England. In this story relative wage rates will not be the only factor that determines whether a task is relocated, but also the nature and type of knowledge embodied in each task.

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<sup>3</sup> Allyn Young (1928) later developed the idea that the division of labour was a response to changes in the market external to the firm.

Knowledge creation and accumulation are slippery subjects because they are not easy to define (Penrose, 1959). Most studies on offshoring get around the problem by combining wage rates with labour intensities to establish whether the task is knowledge-intensive or not. This is fine as a first approximation, but as Johnson, et al., (2002) point out, there are many different types of knowledge such as knowing how (procedural knowledge), and knowing that, (descriptive knowledge), knowing why (theory), and knowing whom (social). Developing new tasks is a time-consuming and costly process that requires learning by doing, learning by using and formal scientific learning. While codified technical knowledge is generally public (or non-rival) and at least partly excludable, tacit knowledge is private (rival) and excludable, making it much less tradable (Romer, 1990). For this reason certain kinds of tasks that are not well defined cannot be easily relocated abroad.

Since offshoring necessarily involves increasing returns and technological learning as well as jobs being relocated abroad, some of the discussions on the employment effects of technical progress are relevant. In the third edition of Ricardo's (1817) *Principles*, took the position that mechanization (through the division of labour) could have a long-term detrimental effect on employment because 'machinery and labour are in constant competition'. In other words, job creation was by no means certain when new processes were introduced by into the market. New investments, new machines, new products, decreasing prices and decreasing wages are compensation mechanisms discussed by economists in the past (Vivarelli, 1995). In general, neoclassical theory incorporates an automatic compensation mechanism into the theory because of the assumption of market clearing, but if it were assumed that markets do not clear, or that the principle of effective demand (Keynes) has long-run implications, then compensation would not be automatic.

While offshoring is not a new phenomenon, it has gained in importance in recent years. This importance has led to the idea that it is driving force behind the 'third industrial revolution' (Blinder, 2006) or the 'second great unbundling' (Baldwin, 2006). The data for Europe suggest, however, that these might be overstatements, and the extent to which offshoring takes place is much less than believed, perhaps because many of the tasks are not so easily tradable. What does appear to be important is that offshoring is important to the fifth technological revolution (Perez, 2002; Freeman and Louçã, 2001) as the microprocessor (and subsequent developments in software) made it possible for telecommunications (and the internet) to improve access to information on a global scale. Transport links have gradually improved though each of the five technological revolutions since the first one began around the time of Adam Smith.

### **3. Measuring the employment effects of offshoring**

It is difficult to measure of the employment effects of offshoring, mainly because direct measures have many problems. Most analyses are at the theoretical level and contain very little direct evidence of the labour market consequences of offshoring. The empirical studies surveyed by Crino (2009) use the share of imported intermediates in industrial value added or output as a proxy for offshoring. These statistics, which generally come from the national input-output tables, are used primarily to measure the extent of intra-industry trade in the global economy, but this does not measure the trade in tasks. A relocation of a task is a one off activity, much like foreign direct investment or a transfer of technology that appears to be part of the global production network, whereas intra-industry trade is an ongoing activity that is measured as a flow of goods or services.

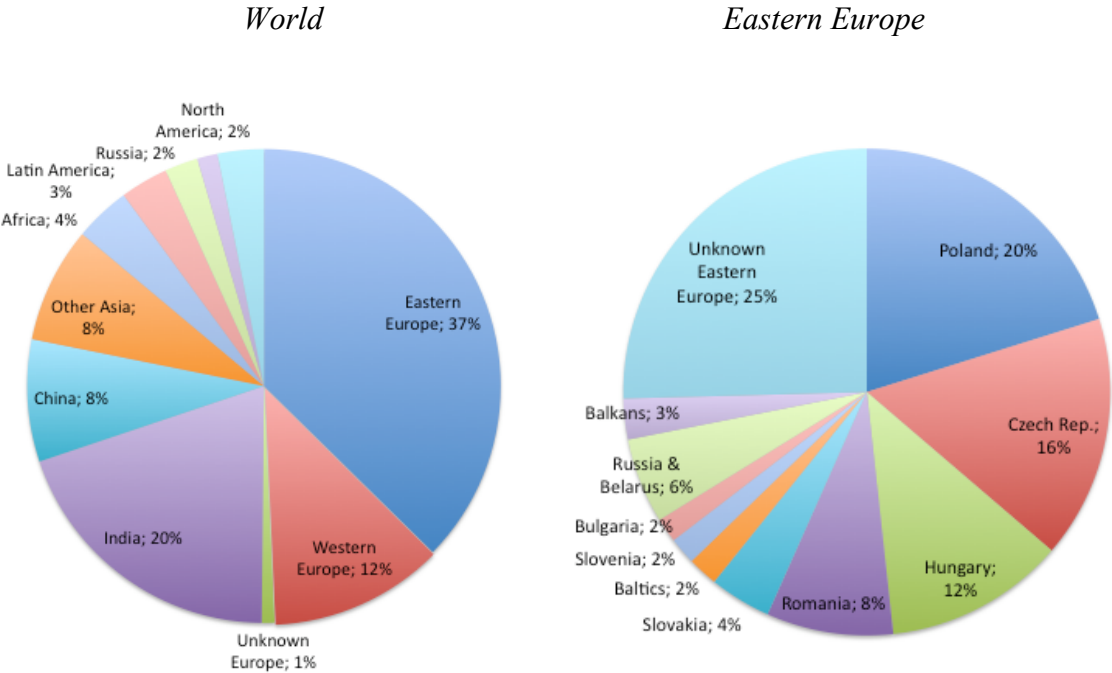
To analyze the employment impact of offshoring we use the European Restructuring Monitor (ERM) database, which provides over 10,000 cases of enterprise restructuring since 2002 for all EU Member States plus Norway. Information from over 500 cases of offshoring or job relocation allows us to measure the employment effects of the job relocation, both by country of origin, country receiving the jobs and by industry. To obtain this information we had to go through each individual case study to determine where the jobs are moving and the reason why they are moving. This information is only contained within the case study itself and therefore requires some guesswork as the actual location the jobs are moving to.

A major advantage of the ERM database is that information is from the public domain and is usually available long before the reduction of the workforce is implemented. Correspondents collect the information by scouring through newspapers and other media to determine whether a job reduction is a case of offshoring. But the dataset contains certain problems. First, it overestimates the actual number of workers affected by the restructuring. Second, there are company and country size bias. Third, company files often contain missing information and errors in ISIC code. And fourth, it is not clear whether the data is representative of job loss in general. Nevertheless, it is one of the few direct sources of information on the extent of offshoring in Europe.

The ERM (2006) adopt a definition of offshoring that is similar to the broad definition provided by the OECD (2007). They use the term offshored when they are between two enterprises within the transnational enterprise group, and the term offshored and outsourced to describe contracts that are between two differently owned enterprises. The focus of our analysis is on the number of jobs that relocate from individual Member States of the European Union plus Norway to any other countries, including those within Europe.

In the database, more than 200,000 European jobs may have relocated to other countries between 2002 and 2009, half of which were to other countries within the European Union. Figure 1 shows that Eastern Europe with 37 per cent share and Asia with 36 per cent share are the most important locations of European offshoring. About 12 per cent migrated within Western Europe, while other locations are less important. As expected, most of Asian offshoring goes to India (20 per cent of total) and China (8 per cent). Contrary to a general public view, China is far from being the main offshoring location. India appears to be much more attractive offshoring location, mainly because of the better knowledge of English language, which is of major importance for call centres. Among the Eastern European locations, Poland (20 per cent of all offshoring to Eastern Europe), Czech Republic (16 per cent), Hungary (12 per cent) and Romania (8 per cent) are the main locations. This is pretty much in line with general geographical pattern of foreign direct investment (FDI) in Eastern Europe. Very few jobs were relocated to non-Member States in eastern Europe. Offshoring within Europe is predominantly an intra-EU relocation of jobs. Taking into account a considerable share of European offshoring going to Western Europe, it is safe to conclude that approximately half of all job reallocations in the European Union are to other Member States.

Figure 1: Location of European offshoring, 2002–2009

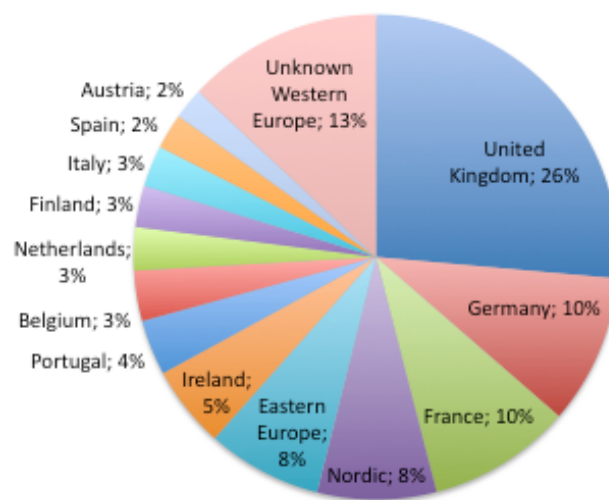


Source: Own calculations based on ERM



Figure 2 shows that the United Kingdom experienced the greatest number of relocated jobs (26 per cent), followed by Germany (10 per cent), and France (10 per cent). Many of these jobs were back room telephone call rooms that went to India. The rest of Europe proved to be a good location for these jobs because of the need to have perfect fluency, without any ‘accents’. In one instance, some telephone call room jobs were relocated to Estonia, but were subsequently moved the following year for because of the need to have fluency. Only 8 per cent of the jobs relocated from eastern Europe, mainly because these countries are close in geographic proximity, have a high level of education and wage levels are much lower than most of their west European counterparts. Some reversal in this trend appeared in 2009, as some of the global enterprises, particularly in the automotive industry, attempted to consolidate production into few plants. In this instance, the largest greenfield investment in Slovakia was relocated back to Germany and France.

*Figure 2: Location of European job-loss, 2002–2009*



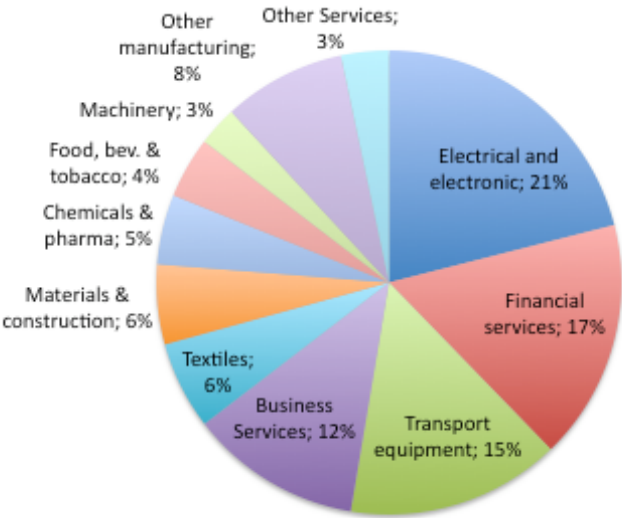
*Source: Own calculations based on ERM*

**4. Structural change through offshoring**

Figure 3 indicates that the manufacturing sector clearly dominates the European offshoring activity. Almost one-third of the jobs relocated were in the service industries, of which 17 per cent were in financial services and 12 per cent were in business services, including software engineering. Two manufacturing industries – electrical and electronic (21 per cent), and transport equipment (15 per cent) – dominate the scene, while the rest of the offshoring is accounted by a broad variety of manufacturing industries, i.e. textiles, materials and construction, chemicals and pharmaceuticals, food, beverages and tobacco, and machinery. In the transport equipment industry there is no doubt that job relocation is also motivated by the market-seeking rationale, while this may be less so in other industries. All in all, the European offshoring activities are concentrated in four industries, i.e. electrical and electronic equipment, transport equipment, financial and business services.

Domination of the manufacturing sector in the European offshoring activity also helps to explain also the geographical structure of offshoring by recipient countries, that is, the domination of eastern Europe and relatively low importance of China. Geographical proximity is likely to be an important fact, especially if transportation costs are taken into account. However, this is not so in the service sector, where India has distinctive advantages (language) over China. Domination of intra-EU deals in the European offshoring activity, thus, seems to be to a major extent a part of the post EU enlargement consolidation of the activities of global corporations. Simple cost cutting seems to be more important in the case of the service industries.

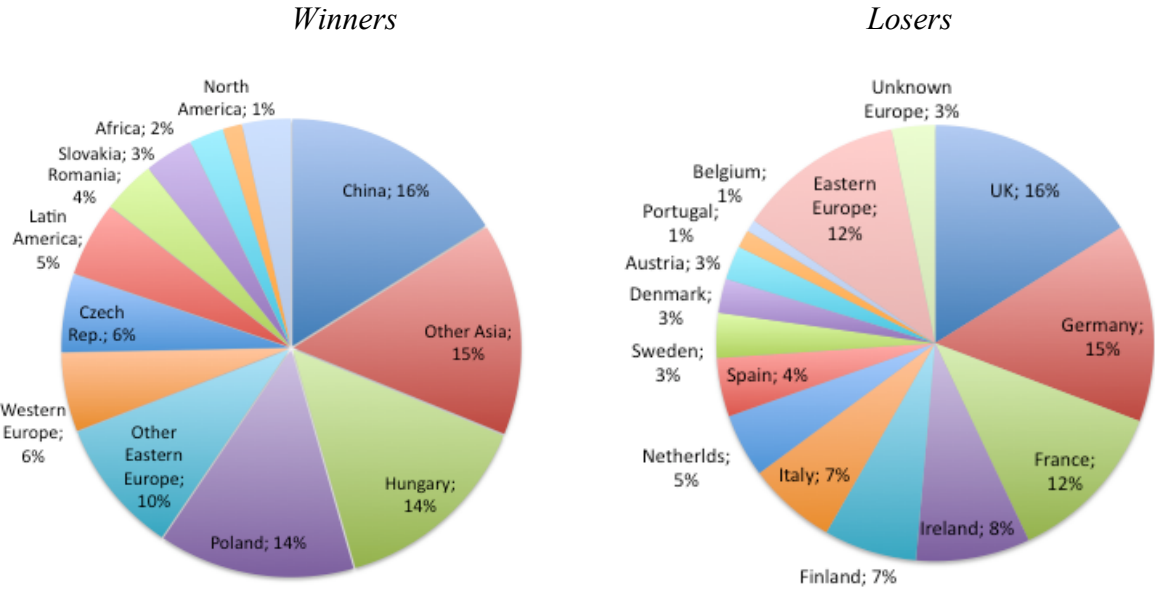
*Figure 3: Structural Change through offshoring, 2002–2009.*



*Source: Own calculations based on ERM*

Certain distinctive patterns appear in the different industries. The largest industry, which is the manufacturing of electrical, electronic and optical equipment, is traditionally seen as knowledge-intensive. Most of the relocations were in the manufacturing of electrical machinery and telecommunications equipment. Nevertheless, when the industry is broken down into tasks, it becomes apparent that not all tasks are knowledge intensive (Srholec, 2007). Many of the tasks are rather mundane and resemble those in Adam Smith’s pin factory. In some cases entire factories doing assembly were relocated to countries with lower wages and the R&D department was either kept in the same location or relocated within Western Europe. Figure 4 shows that countries that lost jobs was fairly well distributed across Europe, with about 12 per cent of employment in Eastern Europe being relocated to another country. Less than a third of the jobs lost were relocated to China (16 per cent) and other Asian countries (15 per cent), including India (6 per cent). Most were relocated within Europe itself, including 6 per cent within the original 15 EU countries. Another 8 per cent were relocated to Latin America, North America and Africa. One noticeable trend was that Germany lost more than 4,000 jobs (about 10 per cent of total) in the manufacturing of mobile telephones during the period.

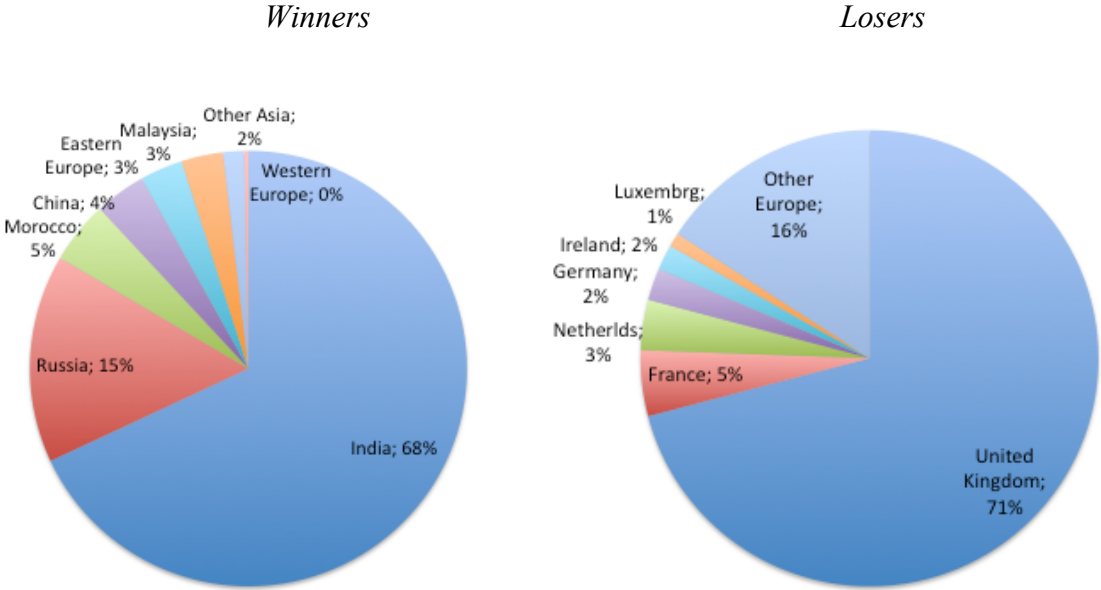
Figure 4: Location of European of the offshoring of electrical and optical equipment manufacturing, 2002–2009



Source: Own calculations based on ERM

The story was very different in financial services, which include insurance, banking and other various financial services. Almost all of the jobs that were relocated were either call centres, or data entry. There was a certain similarity in that almost all of the jobs relocated were relatively low-skill, requiring either the ability to speak English fluently, or have the capability to do rapid data entry. The English requirement made India attractive, being a member of the British Commonwealth, but it also explains why the United Kingdom lost so many jobs. Figure 5 shows that at least 71 per cent of all jobs in financial services that relocated from Europe were in the United Kingdom, and at least 68 per cent of these jobs went to India. In total, more than 23,000 jobs relocated from the United Kingdom to India from 2002 to mid 2009. In contrast, there was a very large relocation of 5,000 jobs in 2004 from Western Europe to the Russia, which accounted for more than 15 per cent of all offshoring activity in this industry over the period. This was mainly a strategic move the largest Italian bank to relocate parts of its business closer to the markets it serves.

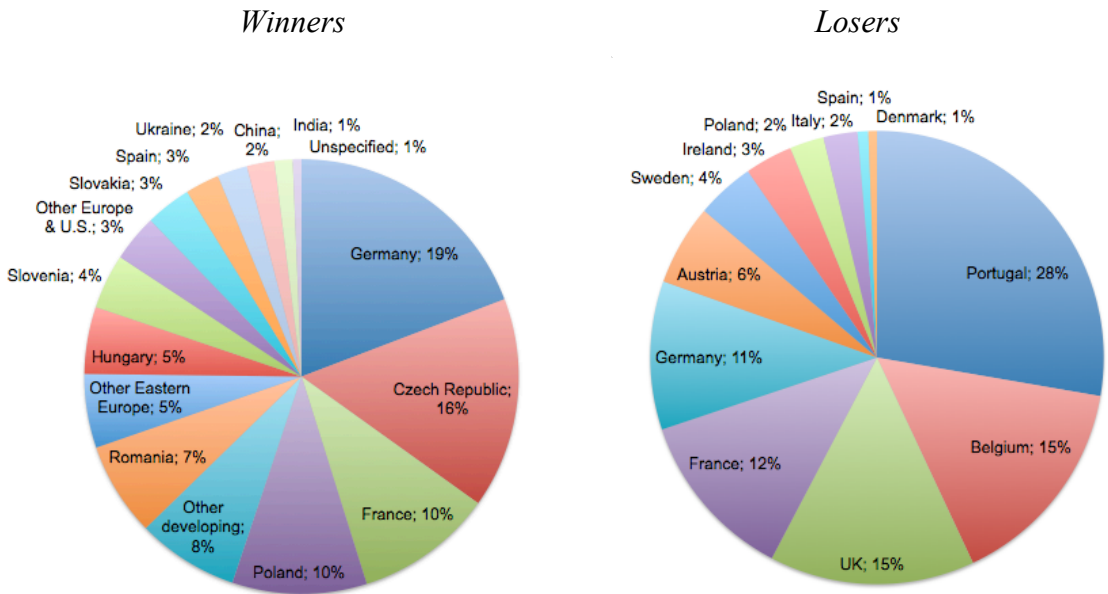
Figure 5: Location of European of the offshoring of financial services, 2002–2009



Source: Own calculations based on ERM

The automotive industry appears different from the other three top industries for offshoring from Europe. Figure 5 shows that the main loser was Portugal (28 per cent loss) and the main winner was Germany (19 per cent gain). Almost 90 per cent of the jobs lost in this industry were regained in other countries in Europe, mainly because of the high transportation costs in the industry. Almost all of the jobs were assembly, and fairly low-skill, but because of strategic divisions and the need to increase capacity utilization there was a tendency to keep certain tasks within Western Europe. In 2009 the largest greefield investment in Slovakia was closed down and the assembly line consolidated with existing lines in Germany.

Figure 5: Location of European of the offshoring of the automobile manufacturing, 2002–2009



Source: Own calculations based on ERM

## **5. Some concluding remarks**

This paper showed the importance of using direct measures of job relocation to show the nature and extend of offshoring. To do this we used the publically available ERM case studies and determined where jobs are lost and where they are being relocated. Several important conclusions are reached in the paper. First, at least half of all European offshoring occurs within Europe itself, but the rapid emergence of China and India as major economic players in the global economy, particularly for the relocation of electric and electronic manufacturing to China and east Asia for the relocation of certain service activities to India. Second, India is much more important than China as a source of offshoring, mainly because of the large amount of offshoring in the service industries (mainly telephone call centres). Third. European offshoring is moving mainly to Eastern Europe, mainly because of lower wages, but there is evidence that the labour force is also well educated. Fourth, offshoring mainly entails movement of low-skill jobs out of Western Europe and that the offshoring of R&D activity and the relatively high-skill jobs tend to remain within Western Europe. Fifth, most low-skill jobs, such as textiles, are moving from Europe to other low-wage countries, particularly in Asia and Northern Africa. Finally, the current economic crisis is creating an incentive to consolidate so as to increase capacity utilization within the group of firm, which creates the tendency for jobs to move back to plants in Western Europe.

The ERM database provides a promising way to understand offshoring and restructuring in the European context. The database used for this paper only includes about 5 per cent of the total database. Comparisons an be made to other forms of restructuring such as bankruptcy, business restructuring, mergers and acquisitions, outsourcing and internal restructuring. There are, however, problems with the data. First, the data only includes Europe and does not capture U.S. relocations within NAFTA and toward Asia. Second, data only includes announcements, which means that relocations may not have actually happened. Third, there are appears to be many errors in the data which means it must be cleaned.

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