

THE IMPACT OF THE EXPRESS DELIVERY INDUSTRY ON THE GLOBAL ECONOMY

A Report by

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Executive Summary

The Impact of the Express Delivery Industry on the Global Economy

The express industry – one of the world’s growth sectors...

- Express operators provide guaranteed, fast, reliable, on demand, world-wide, integrated, door-to-door movement of shipments which are tracked and controlled throughout the journey. They are the “Business Class” of cargo services.
- The express industry simplifies and speeds the process of transporting goods. It organises collection, usually at the end of the business day, allows the sender access to information on the progress of shipments from pick-up to delivery and provides proof of delivery. Where shipments cross international borders, the express industry handles customs clearance as well as the payment of duties and taxes as required.

...supporting over 2.65 million jobs in total today...

- The express industry makes a significant direct contribution to the global economy:
 - Its direct contribution to world GDP was US\$64 billion in 2003 - double that of the electrical appliances industry and almost 50% larger than the shipbuilding industry.
 - It directly supports 1.25 million jobs, more than the petroleum refinery industry.
 - The express industry helps to support at least 2.65 million jobs in total, allowing for those people employed in companies supplying the express operators (eg in the automotive industry building delivery vehicles, in companies supplying IT support services etc) and for the jobs dependent on the spending of express industry workers.

...and almost 4.5 million by 2013

- The express industry is one of the world’s fastest-growing sectors – since 1998, its growth has been more than twice that of the global economy as a whole. It is expanding particularly rapidly in the transition and emerging market economies.
- We expect the express industry to continue to increase its share of the air cargo market, growing by an average of 8% a year in real terms between 2003 and 2013. This is a little faster than the growth we expect in world trade (exports and imports). And it is over twice as fast as expected growth for the world economy as a whole over the next decade.
- With demand for rapid, guaranteed delivery services growing strongly, direct employment in the express industry globally is expected to increase from 1.25 million now to 2.1 million by 2013, if it is unconstrained. The express industry is expected to support almost 4.5 million jobs globally by 2013.

The express industry plays a critical role in international trade...

- The most important role of the express industry is in facilitating the success of other parts of the global economy.
- Express services are being used to transport a growing share of world trade, as companies increasingly demand rapid, guaranteed delivery.

- Express delivery services are increasingly important to ensuring the continued competitiveness of companies, and so to winning export markets and encouraging investment. They are likely to become even more important in future as the world economy becomes increasingly integrated.
- Express services help to improve the competitiveness of almost all aspects of companies' operations, including sales, logistics and storage, production and customer support functions.
- Good access to markets is the most important factor influencing international location decisions: express services are an important element in ensuring that companies wherever they are based have the best possible access to markets.

...and in facilitating productivity and investment

- Express services enable companies to maximise the efficiency of their operations – reducing production shutdowns and allowing the implementation of best international techniques such as build-to-order.
- Express services also allow companies to minimise their inventory costs.
- The express industry enables small companies to utilise high quality, rapid delivery services which they could not provide themselves. This is particularly important in facilitating their participation in export markets.
- Express services contribute to regional development by linking geographically peripheral areas to the world's major centres.
- One area where express services are likely to be particularly critical to economic success is the knowledge-based sectors, such as pharmaceuticals/biotechnology, financial and business services, and research & development. These sectors are more-than-usually dependent on express services, reflecting the time-sensitive, high value products and services they provide.

Liberalising express services can generate substantial economic benefits

- International express services, like any other aspect of international trade, can be impeded by government policies and restrictions that undermine the ability of express delivery companies to operate efficiently and hence their ability to facilitate increased trade, investment and productivity across the wider economy. The restrictions imposed by some countries include: anti-competitive practices of government-owned or authorized monopolies; complex licensing requirements and inefficient customs procedures; restrictions on access to aviation markets and ground transportation systems; and restrictions on foreign investment.
- Such restrictions on express delivery services not only adversely affect the efficiency of express delivery companies but also undermine the competitiveness of companies across the whole economy.
- Steps to remove restrictions on the express industry would encourage increased trade, investment and productivity, boosting GDP, employment and government finances.
- The benefits from liberalising express services would be substantial. For example, it is estimated that China's output would increase by almost US\$85 billion over five years, generating an additional 800,000 jobs.

1 The Size and Reach of the Express Industry

Introduction

- 1.1 This report sets out clearly the impact of the express delivery industry on the global economy. The most important contribution that the express industry makes is through its impact on the capabilities and competitiveness of other sectors of the economy. We describe in detail in this report how the express industry facilitates increased output, trade, investment and employment around the world.
- 1.2 But first we begin by explaining what the express industry is, how it initially developed and how it has grown globally over the last 25 years.
- 1.3 We then illustrate the size of the express industry within the global economy, in terms of its contribution to GDP and employment.

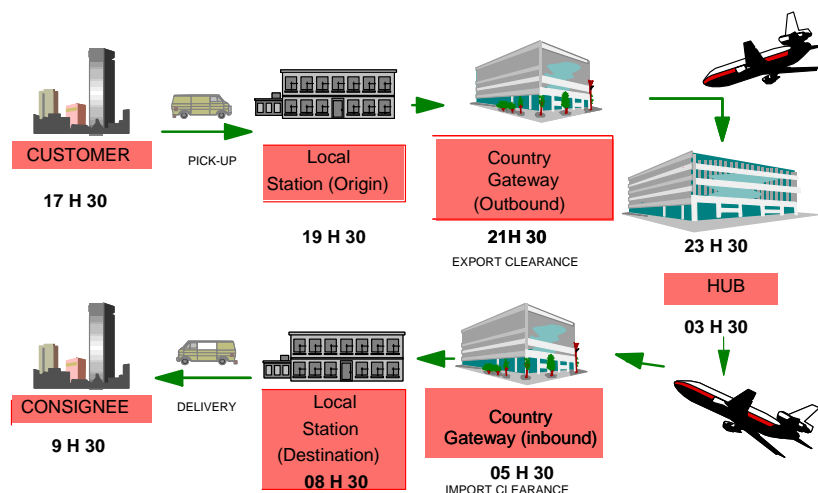
Key Findings:

- **The express industry is one of the fastest growing sectors in the global economy.**
- **It now employs around 1.25 million people directly – larger than the petroleum refinery industry - and supports over 2.65 million jobs in total.**
- **It made a direct contribution to world GDP of US\$64 billion in 2003.**
- **A broad range of industries use express services. But the largest users are typically ‘high tech’ parts of manufacturing, pharmaceuticals and business & financial services.**
- **The greatest contribution made by the express industry is in enabling companies in all regions of the world to compete effectively in an increasingly global market.**

What is the express industry?

- 1.4 The core business of the express industry is the provision of value-added, door-to-door transport and deliveries of next-day or time-definite shipments, including documents, parcels and merchandise goods. (Time-definite shipments normally incur a transit time of between 2 and 3 days.)
- 1.5 Four companies – DHL, FedEx, TNT and UPS, also referred to as ‘integrators’ – are the leaders of the global express industry, but there are many others in this highly competitive sector. The term ‘integrator’ refers to the ability of these companies to offer door-to-door, time-definite integrated services, where the company maintains control over all aspects of the distribution process – for instance, by offering the possibility of changing the destination and addressee in transit – and with each item being tracked at every step throughout its journey.

Figure 1.1: The key stages of a typical express delivery



Characteristics of the express industry

- 1.6 The express industry simplifies and speeds the process of transporting goods. It organises collection, usually at the end of the business day, allows the sender access to information on the progress of shipments from pick-up to delivery and provides proof of delivery. Where shipments cross international borders, the express industry handles customs clearance as well as the payment of duties and taxes as required. Figure 1.1 illustrates the key stages involved in a typical express delivery.
- 1.7 Other transport operators on their own cannot respond to the needs of business as effectively as the express industry. In particular, they are not able to offer the same level of rapid, guaranteed delivery to as wide a range of destinations.
- 1.8 To meet the requirements of business, the express industry relies on overnight transport to use the 'dead time' from when a company hands over its shipment late in the working day to delivery to the recipient early the following day. Express transportation is achieved by using a variety of different transport modes; lorries, vans, trains, passenger aircraft and freight aircraft as well as on-foot delivery. Where possible, though, the express industry uses surface transport modes. Air express services are only used where there are no other options available to meet same day and next-day delivery requirements.
- 1.9 For some companies, members of the express industry organise all aspects of their distribution process.

Development of express services

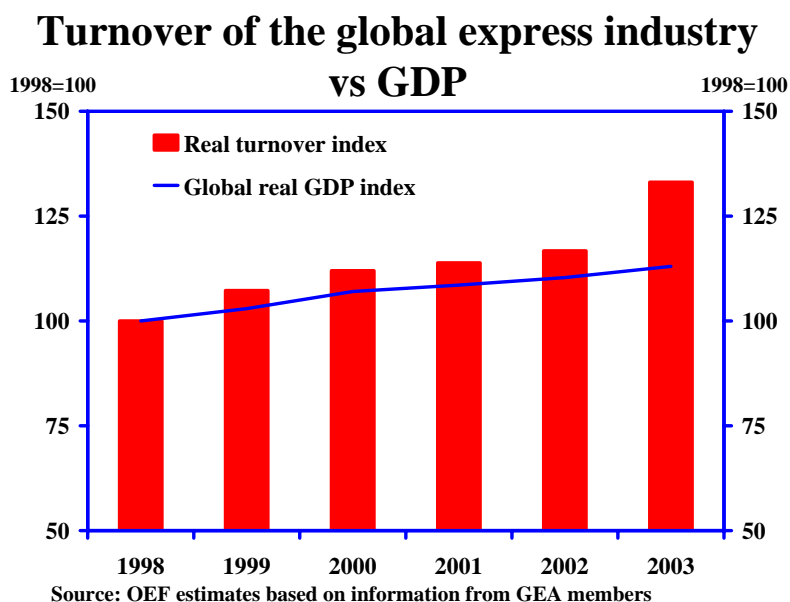
- 1.10 The express industry originated in the US in the late 1960s and flourished following the deregulation of air cargo in the US in the late 1970s. The express delivery companies met the increasing need of companies for time-definite, guaranteed delivery that, unfortunately, could not be met by either postal services or freight forwarders. As a result, the industry has grown quickly and in the 1980s moved beyond the US domestic market to become a global business.
- 1.11 The express industry has developed from the delivery of documents and parcels to specialist items such as high-tech products, semiconductors and general airfreight commodities. Typically, the types of goods transported by express services are high-value / low-weight

items such as electronic components, designer fashions and pharmaceutical products. It is estimated by the OECD that goods transported by air account for 3% by weight of all goods traded globally but about 40% by value. Express services represent a substantial proportion of this international trade.

Express delivery a US\$130 billion a year global business...

1.12 The express industry globally is estimated to have generated total sales revenue (ie turnover) of US\$130 billion in 2003. While the express industry itself is a small part of the global economy, it has been growing very rapidly. Stripping out the effects of inflation, the express industry's turnover is estimated to have risen by almost 35% in real terms since 1998 – ie at an average annualised rate of almost 6% a year, nearly 2½ times the rate of growth of the world economy as a whole.

Chart 1.1

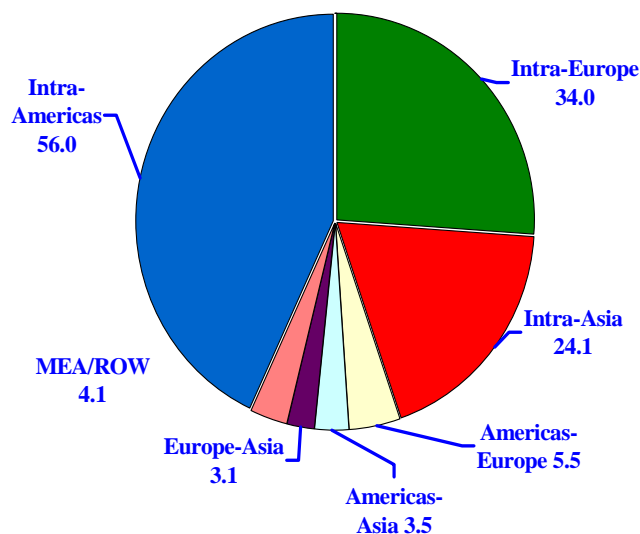


1.13 Not surprisingly, the Americas form the largest express market in the world, with estimated revenues of US\$59 billion in 2003; the express sector now accounts for over 60% of the US domestic air cargo market. With revenues of US\$33 billion and US\$26 billion respectively, the European and Asia-Pacific markets for express services have significant scope for further expansion as companies increasingly adopt best international business practice with regard to time-definite, guaranteed delivery.

1.14 The vast majority of express deliveries are intra-regional – ie between countries and states within either the Americas, Europe or Asia-Pacific. Express deliveries among these three regions account for just under 10% of total express industry revenues. Nevertheless, inter-regional express deliveries generated revenues of almost US\$11 billion in 2003. The market for express services in the rest of the world is estimated at less than US\$4 billion.

Figure 1.2

Global express market = US\$130bn in 2003



Source: OEF estimates based on information from GEA members

...contributing US\$64 billion directly to GDP...

- 1.15 The direct contribution of the express industry to world GDP is measured by its so-called 'value-added', defined as the value of sales less the value of intermediate purchases bought from suppliers (eg fuel, packaging materials, airlines etc). However, the express industry is not separately identified in the National Accounts produced by national statistical offices. As a result, the scale of the industry and its direct contribution to GDP and employment are not well understood.
- 1.16 Building on previous OEF research on the economic contribution of the express industry in Europe and incorporating information from the accounts of the integrators, we estimate that the direct contribution of the express industry to global GDP was around US\$64 billion in 2003. This means that the express industry makes a direct contribution to global GDP that is double the electrical appliances industry and almost 50% larger than the shipbuilding industry.

...directly creating 1.25 million jobs...

- 1.17 The express industry employs around 1.25 million staff worldwide, larger than the petroleum refineries industry. It provides work for people with a wide range of skills, including sorting and delivery, administration and sales, as well as engineers/technicians and managers.

...and supporting 2.65 million jobs in total

- 1.18 The express industry helps to support other jobs in the global economy, including:
- Employment in companies supplying goods and services to the express industry – so-called '**indirect employment**' – including those working in: commercial and cargo airlines employed by express operators; the aerospace industry building aircraft operated by

express companies; the automotive industry building delivery vehicles; in companies supplying IT equipment and support services; in oil companies; accountants and lawyers; etc.

On the basis of previous studies of the economic impact of the express industry which use both information from the integrators on the value their purchases from suppliers and the input-output tables prepared by national statistical offices, we estimate that the 1.25 million direct jobs in the express industry generate an additional 875,000 indirect jobs globally through the supply-chain.

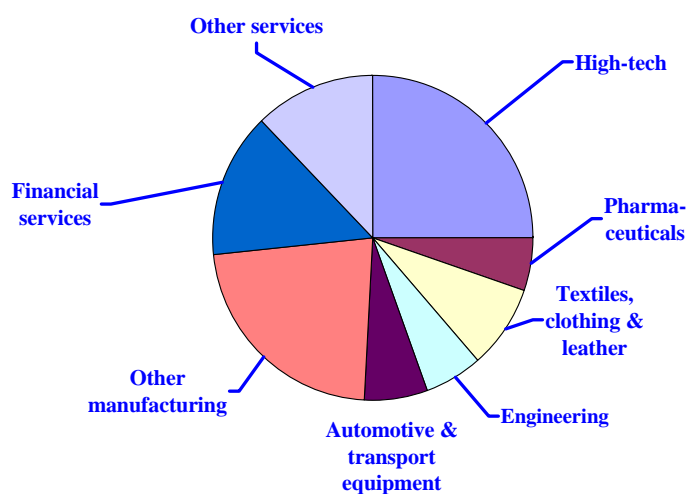
- Employees in the express industry (whether directly or indirectly) use their income to purchase goods and services for their own consumption, and this spending then helps to support jobs in other sectors, so called **'induced employment'**. Estimates based on simulations conducted on the Oxford Economic Forecasting Global Macroeconomic Model suggest that this so-called **'induced employment'** may be around 530,000 (ie about 25% of direct and indirect employment in the express industry). This does not mean that these additional jobs would not exist without the express sector, but they are likely to do so only at somewhat lower real wages and living standards for those workers.

1.19 Putting these different elements together implies that the express industry now helps to support around 2.65 million around the world. In addition, the express industry also helps to generate employment elsewhere in the economy by, for example, facilitating trade and investment, and improving the efficiency of its client companies. These wider effects reflect the so-called 'catalytic' impact of the express industry and are discussed in detail in the rest of this report.

Express particularly important to high-tech and knowledge-based sectors

1.20 The services provided by the express industry are used by companies across the business spectrum. The most important client sectors include high-tech and other leading 'growth' sectors, such as IT, pharmaceuticals, electronics and financial & business services. But the express industry is also used extensively by firms in other sectors, including textiles, automotives and engineering.

Figure 1.3 **The express industry's main client sectors**



Source: OEF estimates based on information from GEA members

Conclusion

- 1.21 The express industry is a significant global industry supporting 2.65 million jobs worldwide. But the most important role of the express industry is in facilitating the success of other parts of the economy, which is the subject of the remainder of this report.

2 The Role of the Express Industry in Facilitating Trade and Competitiveness

Introduction

2.1 In this Chapter, we begin our analysis of the contribution that the express industry makes to the long-term growth potential of the global economy by considering its role in international trade and the delivery of time-sensitive goods.

Key Findings:

- **Express delivery services are increasingly important to the competitiveness of companies throughout the world, and so to their ability to win markets and support jobs and investment.**
- **Express services help to improve the competitiveness of almost all aspects of companies' operations, including sales, logistics and storage, production and customer support functions.**
- **Express services are being used to transport a growing share of world trade, as companies increasingly demand rapid, guaranteed delivery.**
- **Express services are likely to become even more important in future as the world economy becomes increasingly integrated.**
- **Express delivery services are facilitating this trade by investing in new delivery routes and services.**
- **Express services are particularly important for many companies based in geographically remote countries or where the domestic transport infrastructure is poor. Most notably, this includes many developing countries.**

Express industry plays a critical role in international trade...

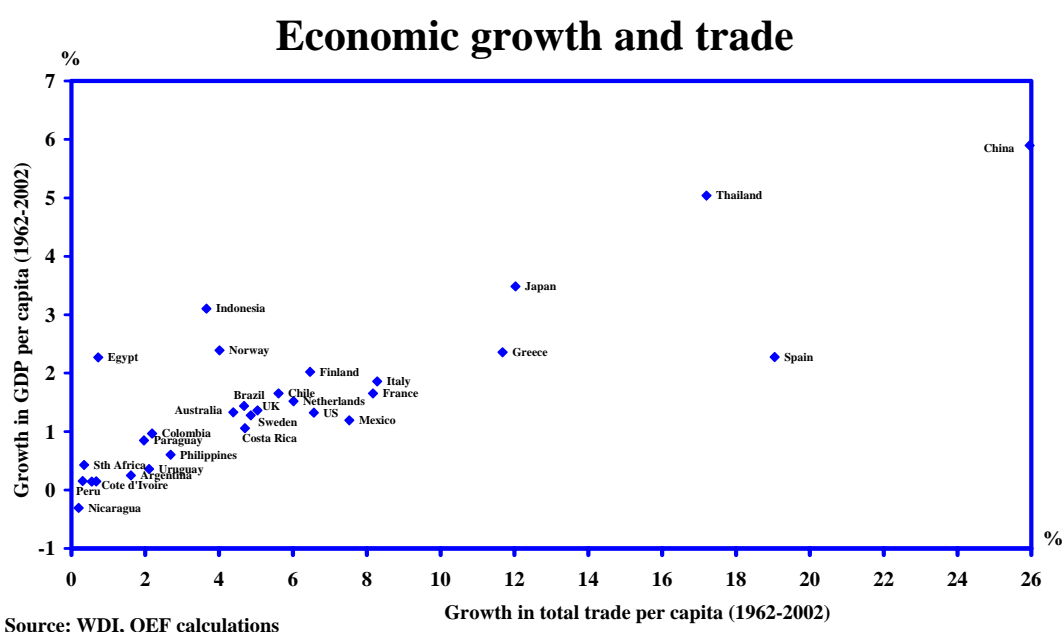
2.2 Trade performance is a key determinant of economic growth and prosperity. Over the last 40 years, the countries that have grown fastest have typically been those that have also seen the fastest growth in international trade (Chart 2.1).

2.3 Moreover, most economies have become increasingly dependent on trade in recent years. As Chart 2.2 shows, the leading economies are typically very dependent on international trade. Many of the emerging market economies, in particular, are heavily export-oriented. (The low share of exports in GDP for the US and Japan is largely a reflection of the size of those economies.)

2.4 Rapid growth in international trade is by no means a phenomenon only of recent years. For example, world trade in manufactured goods increased eight-fold between 1950 and 1973. But the absolute volume increase in world trade since the mid 1970s has been over four times that over the previous 25 years, driven by:

- The gradual **removal of barriers to international trade** - including the creation of free trade blocs, such as the European Single Market, NAFTA and Mercosur, and the widening influence of the World Trade Organisation.
- **Globalisation** – as new markets have opened up and more companies have established international operations and foreign subsidiaries.
- **Increased specialisation** – encouraging countries to focus on the activities in which they have a comparative advantage, and trade with other countries that have an advantage in the production of other goods and services.
- **Global communications** – enabling companies to market their products around the world, and liaise with customers and suppliers in other countries.
- **More favourable political background** – allowing increased trade with former communist countries – a number of whom are now members of the EU – and China.

Chart 2.1



Case Study: Chinese electronic goods manufacturer

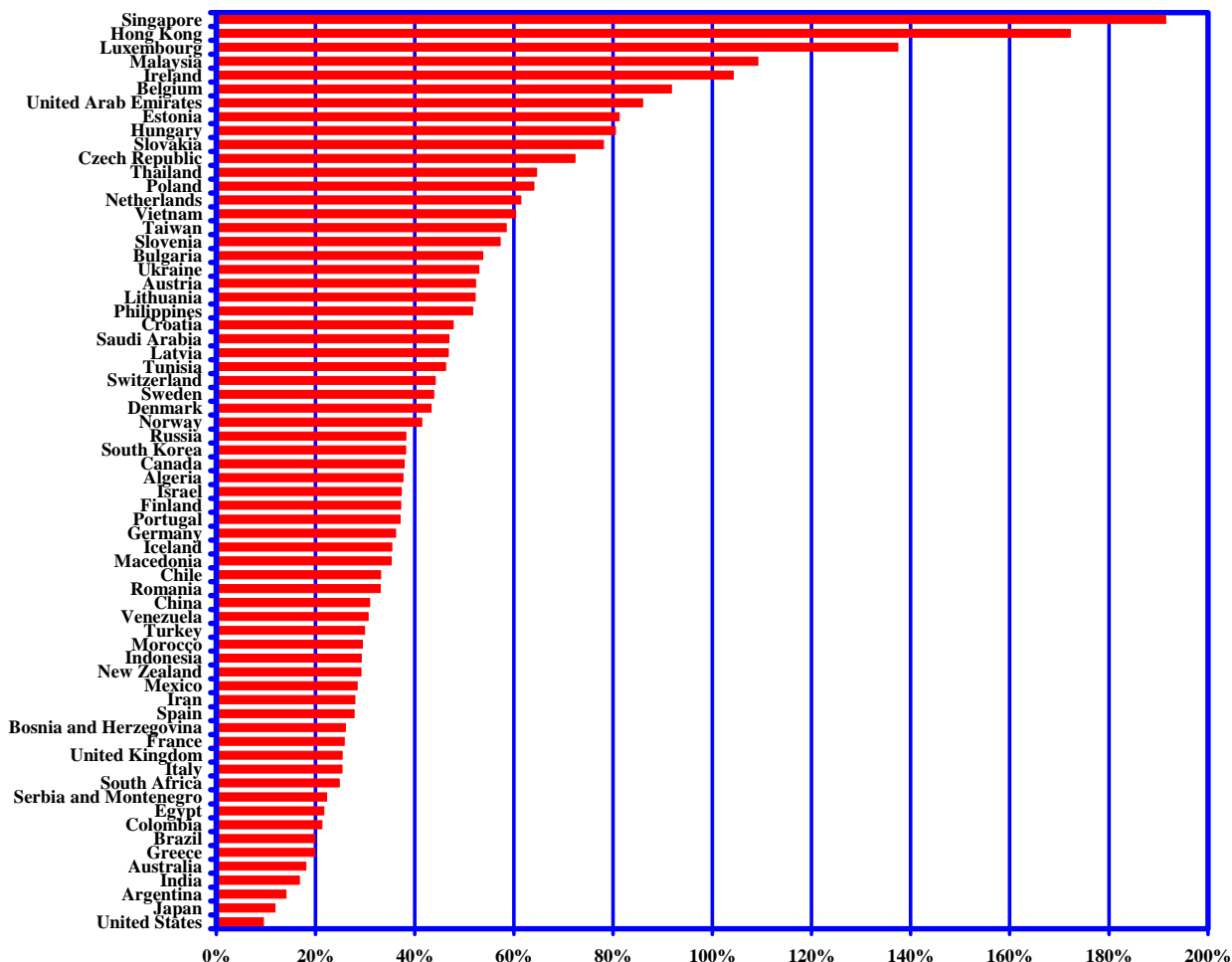
This US-owned multinational company has had a presence in Shanghai since 1927. Its main offerings are traditional and digital cameras. The production of digital cameras is relatively new, having only started at this Shanghai factory in 2001. Production is growing rapidly; today 90% of the factory's camera production is digital. These are high-value items, worth at least \$200 per unit.

However, the commercial life span of digital cameras is short: new models come onto the market every 4-5 months. Therefore, the company must rely on international air express to deliver its products to the US, Europe, Australia, and elsewhere on an expedited basis. The express company is able to repack and re-label products, ship them to Chicago and then break bulk the shipment and the cameras on to a multitude of retail outlets, making it an integral part of the distribution chain.

The Chinese operation also sends its digital cameras to Rochester, NY, once a month for testing to make sure it maintains Six-Sigma quality certification (meaning that the probability of poor products will be below 3.4/1,000,000).

Chart 2.2

Export shares in GDP, 2003



Source: IMF, World Bank, OEF calculations

Case Study: Argentinean wine producer

This company, located in the province of Mendoza, is the Argentine unit of one of the world's leading producers of sparkling wines. It produces both sparkling and still wines, 15% of which is exported, primarily to the US.

Although almost all of the company's exports are shipped by ocean transport, the company relies on air express services for its most important function – generating sales. It uses an express delivery company to deliver the samples it provides to potential distributors of its wines in foreign markets as well as to wine competitions held throughout the world. In addition, the company entrusts to the express delivery company the delivery of all documentation related to its exports, such as invoices and special agricultural certificates, which are critical to getting shipments released from customs.

The company relies on the express industry because it provides speedy and reliable service that ensures that the wine samples arrive at their destination in premium condition to be tasted. Special packaging and temperature controls are used when shipping the wine.

- 2.5 Figures 2.1-2.4 show the pattern of international trade in goods for North America, Western Europe, Asia and Latin America. Trade movements between these regions account for the bulk of world trade. But they also trade extensively with the Middle East and Africa.
- 2.6 Moreover, it should be emphasised that there is considerable trade with each of the regions – both between different countries (eg within the EU or Asean blocs) and between different parts of individual countries (eg between US states).

Figure 2.1: The pattern of North American trade with the rest of the world

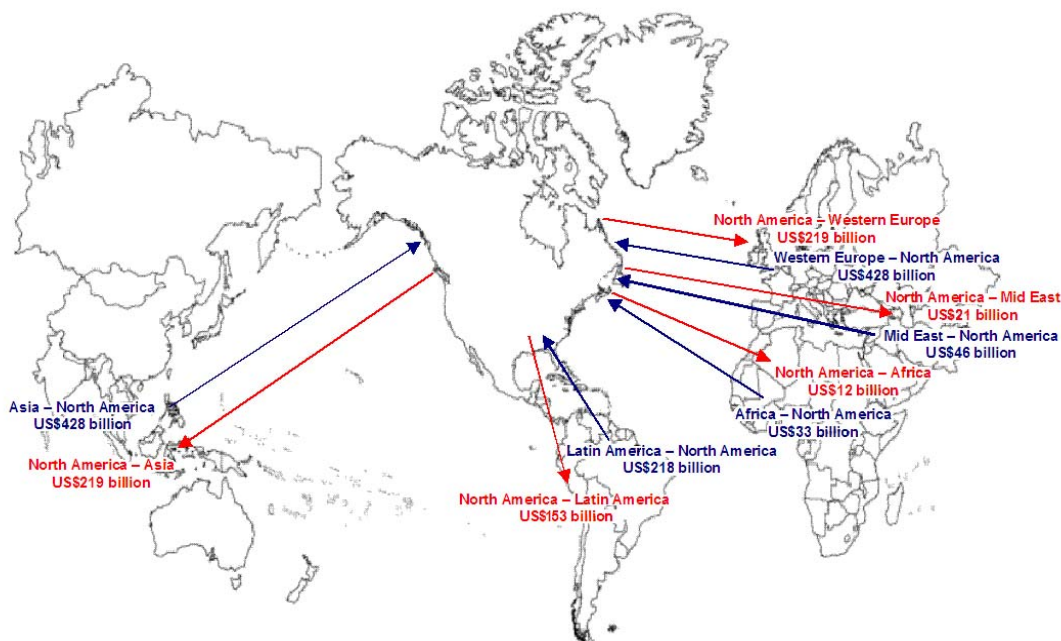


Figure 2.2: The pattern of Western European trade with the rest of the world



Figure 2.3: The pattern of Asian trade with the rest of the world

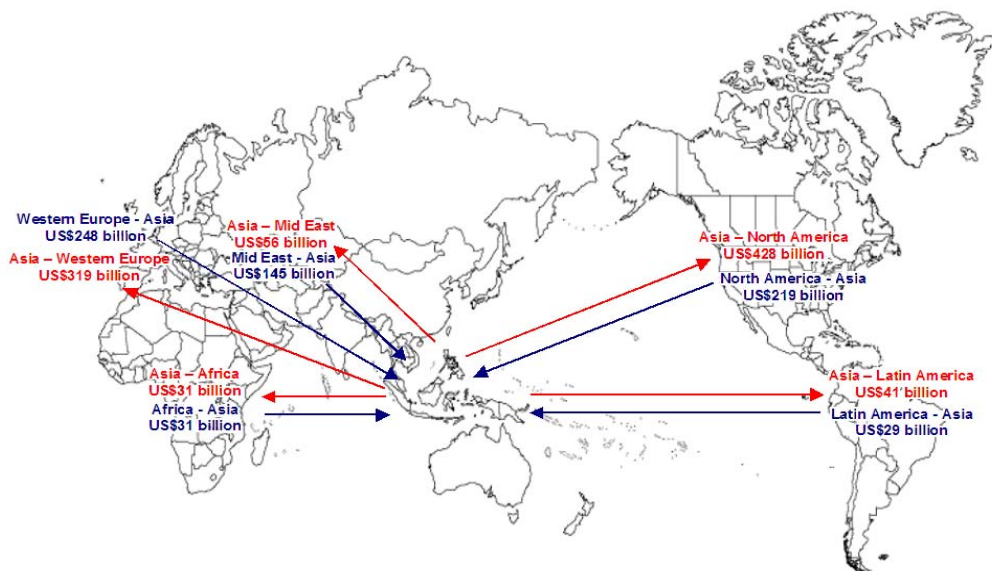
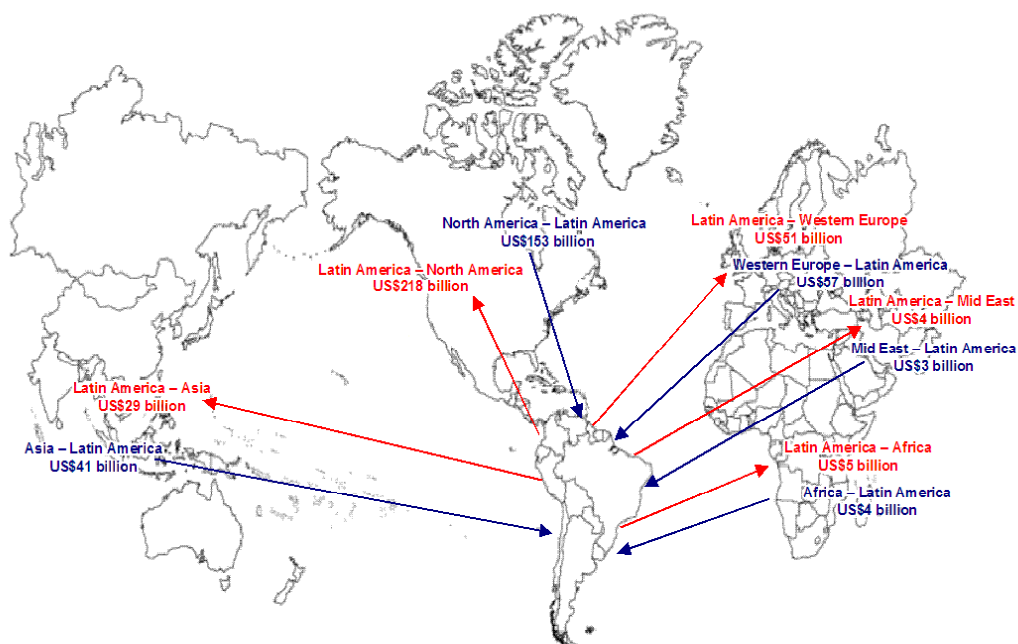


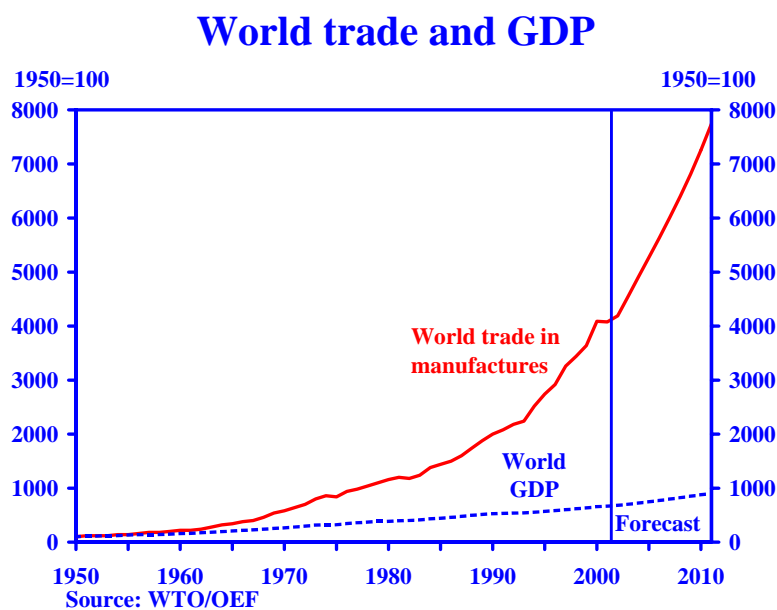
Figure 2.4: The pattern of Latin American trade with the rest of the world



Source for Figures 2.1-2.4: WTO, exports and imports of goods, 2003

2.7 OEF's global forecast suggests that the global economy will become even more dependent on trade over the next decade. World trade is forecast increasing by over 90% between 2004 and 2014, more than double the increase in global GDP (Chart 2.3).

Chart 2.3



...with rapid, guaranteed delivery increasingly key to competitiveness...

2.8 The global economy's increasing reliance on trade means that countries are also increasingly dependent on efficient and competitive means of both delivering exports to their destinations and bringing in imports from other countries. There are a number of aspects to such services that are important:

- **Speed:** For some organisations speed to market is even more important than cost in determining their competitiveness. This is obviously vital for perishable goods, such as pharmaceutical test materials. But it is also important, for example, for firms meeting orders to strict delivery dates or having to respond immediately to customer demand (ie the so-called 'Day+1 economy').
- **Reliability:** Companies' reputations can be undermined if their deliveries fail to arrive with customers on time or are lost in transit.
- **Destinations served:** Globalisation and global purchasing by large companies means that the ability to ship products to and from an increasing number of countries cost-effectively and quickly – ie 'connectivity' - is also important.

Case Study: Malaysian semiconductor manufacturer

This company's operation in Penang, Malaysia employs over 2,100 staff manufacturing of various high-tech products. It uses international express transportation to ship its products directly and reliably from its manufacturing centre to its customers throughout the US, Europe and Asia. But it is also able to give their customers immediate, accurate shipment information through its express delivery company's track and trace system.

As well as dedicated warehousing, systems integration, security, end-to-end visibility, and control throughout the supply chain, the express delivery company also provides door-to-door distribution of the company's products via its global distribution system. Express services have helped the company to remain competitive, based on lower inventory expenses, reduced labor costs, and shorter cycle times.

Case Study: Italian On-Line Fashion Outlet

This company buys designer clothing, footwear and accessories from retailers and fashion companies at the end of the sales – summer and winter – and then sells them on-line. Its main markets are Italy (over 40% of turnover), Germany, UK, France, Spain and, since mid-2002, the US.

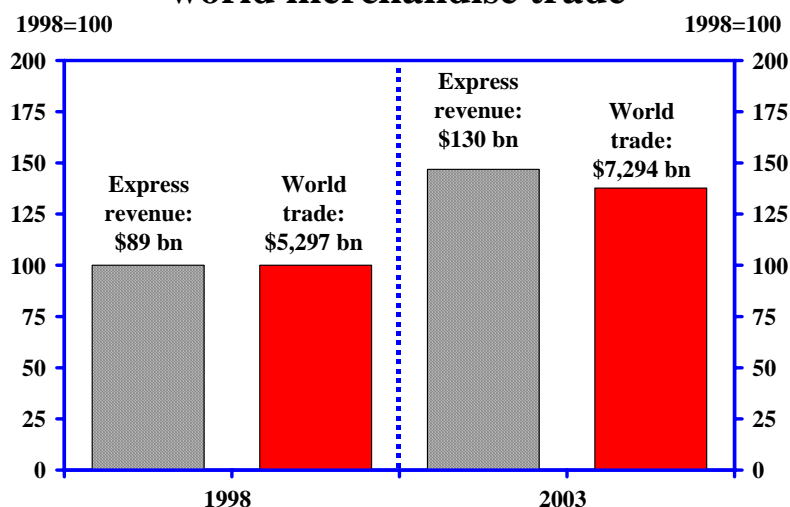
This company relies on express services for all its deliveries and has developed a strong relationship with a leading express company. Fast, guaranteed delivery is important to ensuring customer satisfaction and to providing a competitive advantage over its rivals. The company’s clients particularly value being able to track their orders in transit over the internet.

...and the express industry investing in new routes to fast-growing markets

- 2.9 Companies use a variety of means to transport goods to and from abroad, including road/rail and ferry, sea-freight and airfreight. But express delivery services – which represent the ‘business class’ of the freight transport market, focused on providing fast, highly reliable delivery – are becoming increasingly important. The express delivery companies are able to connect 90% of world GDP within 24-48 hours.
- 2.10 The express industry is responding to the growth in international trade by investing in new delivery routes and services to ensure that they can meet the growing demand for rapid, guaranteed international delivery. Moreover, they are increasingly working with their clients to provide support with distribution and logistics services.
- 2.11 Express services are typically used for delivering relatively high-value/low-weight products. For example, in the US, courier, parcel and postal deliveries account for just 0.2% of commodity shipments by weight but 11.8% by value. Similarly, in Italy air transport is used to carry just 0.4% of exports by weight but 10.7% of exports by value, with the express industry accounting for more than half of these exports by value.
- 2.12 The benefits that express delivery offers have resulted in the revenues of the express operators rising about 10% more than the value of world trade since 1998, as express services carry an increasing proportion of world trade (Chart 2.4).

Chart 2.4

Express industry revenues and world merchandise trade



Source: OEF estimates based on information from GEA members

Case Study: US machine tool manufacturer

This company has 500 employees globally, 250 of whom are located in the US (Wisconsin), and the remainder in the Netherlands, China and Singapore. It makes components for implant into construction processes – parts of assembly benches, for example – in industrial markets across the globe.

Each year, total spending on freight transport is around \$1 million, of which around \$100,000 is spent on small package express deliveries, and around \$250,000 on air freight. Nearly all of the usage of express deliveries is on outbound rather than inbound deliveries.

Because of the service requirements of its customers, express delivery services are vital to the business of this company. Express deliveries provide a range of reliable delivery-time options (same-day, next day, particular times of day etc) for them. This enables the company to meet the time-critical needs of their customers.

If there were no express deliveries in the US, that would be make life very difficult for this company. Other modes of transport would have to be employed. The direct impact would be that their distributors would be required to carry more stock, which in turn would have an impact on the final price to the customer, and thereby on their sales and profits. It is not a big enough factor to make the company consider relocating abroad, but it is still very significant.

Business surveys confirm importance of express services to companies...

- 2.13 The importance of the express industry in facilitating trade and competitiveness is highlighted by the results of business surveys and case study interviews in a number of countries. As explained in the Annex to this report, the surveys, conducted by independent researchers, asked a range of companies across all sectors of the economy in China and six EU countries about their use of express delivery services. In addition, case study interviews have been undertaken with senior executives in the US, Asia, Latin America and the Middle East.
- 2.14 The European surveys show that around a third of companies frequently use express delivery for sending products to customers, while over half do so at least occasionally. And a third of firms either frequently or occasionally use express delivery for sending sub-components to other production facilities. In addition, many companies use express services for sending legal documents and distributing reports within the company. But as noted in Chapter 1, general shipments now account for over 80% of total express shipments in the EU.
- 2.15 Similarly, in China over three-quarters of companies reported that their customers are demanding faster and more reliable delivery of products. A similar proportion therefore views integrated express services as vital to the competitiveness of China's exports. The express industry is widely seen as helping to overcome the two main problems of distribution in China, which are slow and unreliable delivery – problems that are common in developing economies.
- 2.16 The surveys and interviews shed light on the reasons why companies use express services rather than alternative means of delivery. Whether it is in developed economies, such as the EU and the US, or in developing economies, such as in Asia or Latin America, almost all companies report that:
- **Guaranteed delivery** is important, as the reputation of a business is undermined when their deliveries fail to arrive on time or are lost in transit.
 - **Speed of delivery** is also important, and for many companies even more important than cost in determining their competitiveness.

- And most firms also value **the ability to track the location of products en-route** – a particular specialisation of express operators.

Other reasons cited by companies for using express delivery services include: the convenience afforded by the integrated 'door-to-door' service; the security provided by the integrators; assistance in completing customs clearance procedures; and the value-added services available, such as 'import express', where payment is made by the consignee.

Case Study: Middle East petrochemical company

The company, whose production facilities are located in Abu Dhabi, is a joint venture established in 1998 between a local petroleum company and a European polyolefin manufacturer. Full operations at the Abu Dhabi production facilities commenced at the end of 2001 and a sister company was founded in Singapore to provide marketing and distribution services. The company also has a broad network of sales offices and agents across the Middle East, Africa, the Indian Subcontinent, East Asia, and Australia. The company's main offerings are high-quality ethylene resins. The resins are the raw materials for the manufacture of flexible and rigid packaging and high-pressure hose for construction use. The Abu Dhabi office also oversees the sale and distribution of the products of its European parent throughout the Middle East and Asia.

The company has roughly 600 employees worldwide, mostly in the UAE, but also has a highly distributed system of agents, sales offices, and customers. Fast reliable delivery services are vital to its daily operations. The company's use of express delivery services has grown by 5-10% per annum since it was established and is expected to continue to grow at a similar rate over the next few years – a phenomenon it expects to see throughout the petrochemical industry. The company delivers product by delivery system of the customer's choice, and customers generally prefer to use an express delivery service rather than mail, courier, or some other form of non-integrated export service, although there is still a great reliance on traditional freight-forwarders.

The company relies on express services for new equipment, spare parts, and materials, nearly all of which must be imported. With one of the parent companies in the EU, it also depends on express delivery services for distribution of company documents and contracts among offices. E-commerce has, in fact, increased the company's demand for express delivery services as customers now expect increasingly high levels of service, greater speed of product delivery, and the tracking ability offered by integrated services. Express delivery allows both this company and its customers to keep leaner inventories and reduce costs.

...with an increasing amount of trade in time-sensitive goods...

- 2.17 Many companies rely on express services because their company's products are perishable/time-sensitive. This includes companies in the pharmaceuticals, electrical engineering and business services sectors. Nearly two-thirds of firms in Europe, for example, consider next-day delivery to be very important at times because their customers are using streamlined production processes. And almost half have customers who need next-day delivery of spare parts for machinery and equipment.
- 2.18 The detailed case study interviews highlight that a very large proportion of business across the world is time-sensitive – not just companies making perishable products, but many who will lose orders or fail to close important negotiations if their products or contracts arrive late. Particular examples include:
- Firms in the electronics and motor vehicle sectors who use express delivery to send spare parts when products need to be repaired. High quality, rapid after-sales service is essential to maintaining their reputation with customers.
 - A distributor of music CDs whose success depends on getting releases into US stores ahead of its rivals.

- Companies in the pharmaceutical sector who use express services for transporting materials to be tested quickly and safely to laboratories.
- A garment manufacturer who must get samples to client within 2-3 days to secure an order, and who must be able to produce and dispatch new designs within days.

2.19 Moreover, express services allow companies to centre their operations in a particular country while still serving a global market in perishable materials.

Case Studies: UK Pharmaceutical / Biotechnology Companies

Three pharmaceutical / biotechnology companies rely on express services in the following ways:

- **Shipment of samples for clinical trials.** These trials involve transporting highly perishable and delicate materials (blood, urine, tissue samples, etc) to laboratories, and the results of the trials back to the source. In both directions, urgency is required, with same day or next-day delivery often the norm. Clinical testing of samples needs to be done under very rigorous conditions and using one site only keeps differences caused by equipment variance to a minimum, so the materials and results have to be transported globally into and out of the UK. For the operation to work, transport has to be very quick, efficient and available to a high degree of reliability and timekeeping on a worldwide basis.

- **High-level paperwork,** including legal documents and patent applications. Here security and tracking are priorities.

- **Shipments of drugs to hospitals etc.** Frequently, the speed and reliability of these deliveries are matters of life and death. Without express services, hospitals would have to hold much larger stocks of (often perishable) drugs on site, which would require costly security arrangements.

- **Inward shipment of spare parts for machinery in laboratories.** Express services mean that firms do not need to hold inventory of spare parts, helping in their just-in-time stock management practices. Holding stocks would be very costly, since many of these products have a limited shelf-life.

Without express services, much of these firms' global operations out of the UK would be impossible. Clinical trials are not possible if the safe and timely arrival of the samples cannot be guaranteed. Hospitals will not use drugs suppliers unless they are able to deliver drugs quickly and reliably on demand.

Case Studies: Chinese garment manufacturer

This company specializes in exporting jeans of all designs. More than 60% of its exports are sent to Canada, with the remainder destined for the US, Europe, Australia, New Zealand and other countries.

For seasonal and fashionable clothes such as jeans, even the most popular designs soon become passé. Consequently, China-based manufacturers must be able to produce and dispatch items of a new design within days. Any delay in shipment, even half of a day, will incur the wrath of overseas buyers. Consequently, the company relies on the global express delivery companies; the alternatives are just too slow.

In economic downturns, customers become more, not less, demanding. The whole order cycle – from the sending of samples through to the shipment of the final order – must be completed with in 30 days. This compares to a 'leisurely' 45 days just a few years ago. Bulky shipments (50,000-100,000 pieces) are still transported by sea, being the most cost-effective, albeit much slower, method. To make up some time, textile/garment manufacturers must get samples to their clients within 2-3 days to secure an order.

...but express services also enable firms to reduce their costs

- 2.20 Providing rapid and reliable delivery is clearly one critical way in which the express industry contributes to the companies' success in international trade and is therefore vital to their competitiveness. Express services are particularly important to the competitiveness of countries at the geographical periphery of regions – without the speed of delivery and global reach provided by the express operators, many companies based in such areas would be limited to serving their local market. This includes many developing countries, where the use of express services is growing very rapidly as these economies increasingly export to the US, EU and other developed markets (see Chapter 1).

Case Study: Chilean technology-products distributor

This company is the world's leading wholesale distributor of computer-based technology products and services, operating in over 30 countries. It markets computer hardware, networking equipment and software products to more than 175,000 reseller customers in more than 130 countries and has become the "back room" to leading Internet e-tailers with football-field sized warehouses located around the world. The company is also a driving force behind the evolution of business-to-business e-commerce, changing the way IT supply chains trade with one another.

In Latin America, it operates in Argentina, Brazil, Chile, Mexico and Peru. In addition, the company maintains export sales offices in Colombia, Costa Rica, Ecuador, Panama and Venezuela. In Santiago, Chile, it operates an assembly and distribution facility, employing about 130 workers. The Chile office also is responsible for importing merchandise for the Mercosur markets of Argentina and Brazil, which is re-exported from Chile.

To meet the exacting transportation demands of its business in Chile, the company relies on air express services as a routine element of its supply chain - about 60% of its total trade is transported via air express. The speed provided by air express is critical to the company's operations because the high-tech products in which it deals are subject to volatile price swings. It is therefore necessary to deliver merchandise to its customers before the price falls. The rapid pace of change in computer hardware means products can become obsolete quickly, further underlining the importance of delivery speed.

The company also uses air express because of the in-transit visibility and security it provides. The company ships high-value goods that are frequently subject to theft and counterfeiting. The track and trace technology used by air express operators allows it to monitor the security of its shipments and ensure their authenticity. The use of air express ensures that the company is able to meet its commitment to its customers that they will receive their deliveries on time and in proper condition.

- 2.21 But there are a number of other ways in which express services and their operators contribute to competitiveness:

- Enabling firms to **reduce purchasing costs**, by increasing the area from which inputs can be sourced and facilitating sourcing from cheaper suppliers.
- Facilitating **cost-savings on inventories** by enabling better concentration, rationalisation and location of warehouses.
- Providing extensive **logistics support services** to companies, enabling them to delegate responsibility to professionals in the sector who seek the most cost-effective way of transporting goods and paperwork on their behalf. This both relieves companies of the burden of running their own transport departments and vehicles, and allows managers to focus on their core business.
- Improving companies' **handling of returns and complaints** – for example, by allowing next-day delivery of replacement equipment to customers or quick turnaround of repairs.

- Improving the **effectiveness of companies' R&D** activities, by facilitating their decentralization. For example, 80% of survey respondents in Germany reported that this helps to reduce the time-to-market of new product developments by enabling R&D centres to be based in locations which provide maximum participation in leading research associations.
- Facilitating **improved stock-management and production techniques**, reducing firms' storage costs, losses due to stock-outages and disruption caused by failure of machinery on production lines (see Chapter 3 for more details).

2.22 Again, express services are likely to be of particular benefit to companies in the developing countries, allowing them to adopt best international practice in transport and logistics without having to make a major investment in their own warehouses or fleet of vehicles. Moreover, express services help to facilitate foreign direct investment in such countries, overcoming weaknesses in their transport infrastructures and allowing efficient networking with multinationals' operations in other parts of the world (again, see Chapter 3 for more details).

Conclusion

2.23 Express services are vital to for the competitiveness of companies around the world. Being able to respond quickly to customer demand – for new products, spare parts, contracts etc – is essential to winning and maintaining business in an increasingly competitive global economy.

3 The Role of the Express Industry in Facilitating Productivity and Investment

Introduction

- 3.1 In this Chapter, we continue our analysis of the contribution that the express industry makes to the global economy through the impact it has on the performance of companies in other sectors by considering its role in determining productivity and investment. We also discuss the importance of express services to Small and Medium-Size Enterprises, regional development and foreign direct investment.

Key Findings:

- **Express services enable companies to maximise the efficiency of their production activities – reducing production shutdowns and allowing the implementation of best international techniques such as build-to-order.**
- **Express services also allow companies to minimise their inventory costs.**
- **The express industry enables small companies to utilise high quality, rapid delivery services which they could not provide themselves. This is particularly important in facilitating their participation in export markets.**
- **Express services contribute to regional development by linking geographically peripheral areas to the world's major centres.**
- **Good access to markets is the most important factor influencing international location decisions. Without international next-day delivery a significant proportion of companies would possibly have to relocate some operations to countries that provide next-day services.**

Express services enable firms to organise production efficiently...

- 3.2 As well as using express services to deliver products to their customers, companies are increasingly relying on express services in order to organise their production operations as efficiently as possible. Surveys of companies and case study interviews suggest that the majority of firms either frequently or occasionally require their suppliers to deliver spare parts by express services. Many also use express services for delivery of sub-components to their production facilities.
- 3.3 The efficiencies companies derive from using express services are demonstrated by the survey of German companies. This found that:
- Two-thirds of companies are or have been able to achieve **cost-savings** from working with express delivery companies.
 - Around one-third of firms using express services are able to reduce their production costs. The main advantage here is considered to come from **cutting idle periods and production shutdowns**, as express delivery companies are able to ensure rapid delivery of materials and spare parts.

- Two-thirds of respondents believe that express services facilitate the **adoption of international best practice in production**, which increase companies' flexibility and ability to adapt to changes in demand. For example, many companies use express services to permit 'build-to-order', since time savings on delivery can be used to allow customisation to match particular client requirements (eg for computers). According to PA Consulting, these strategies have been found to reduce total supply chain costs by between 3% and 5%.

Case Study: Brazilian aircraft manufacturer

This company is a major manufacturer of aircraft and aviation-related structural parts, components and equipment. It faces the challenge of continuing its high growth despite of the logistics of being located in South America, far away from its main consumer markets in the US and Europe.

The company relies on express services to fulfill its spare parts service contracts with its customers, which involves delivering replacement parts to customers all over the world within specified timeframes. These timeframes can be very tight, depending on where the customer is located. For example, it guarantees delivery of replacement parts to customers in North America within 24 hours of receiving an order. Further, orders for spare parts often are related to so-called "aircraft on ground" events in which an aircraft is stranded at an airport because it cannot fly without the requested part. Such an event can cost its customers thousands of dollars an hour in costs and foregone earnings.

...helping to avoid costly production shutdowns...

- 3.4 The key role express services play in helping companies avoid interruptions to the production process is also illustrated by the survey of Italian companies. For example, respondents expect that, without next-day delivery, production would on average be interrupted on more than 3 days per year because spare parts for equipment could not be delivered next-day when needed. Some firms believe that their production might even be seriously affected on more than 20 days a year.
- 3.5 Our case studies provide a number of examples illustrating how firms rely on express services to maximise their efficiency, including:
- Airlines, who demand delivery of spare parts within 24 hours to avoid costs resulting from aircraft being grounded.
 - A manufacturer of semiconductors, for whom one of the leading express delivery companies has developed a facility to handle its orders that has reduced lead times, improved customer service levels and lowered inventory costs.
 - A multinational company that uses express services to speed the importation of parts for its oil facilities and for handling customs procedures.
- 3.6 It is not only companies in the manufacturing sector that rely on express services; they are key to efficient operations for many firms in the service sector too.

Case Study: French car manufacturer

Express services are core to the after-sale service of this car manufacturer. Since the quality and speed of repairs are key to client satisfaction, it is strategically vital that its network of distributors can get the necessary spare parts very quickly. Because distributors do not have the financial resources to be able to keep the entire range of spares, which can be up to tens of thousands of parts, the manufacturer has implemented a distribution process based on express delivery. As a consequence, around 17,000 tonnes of spares are sent via express delivery every year to more than 800 outlets.

...and reducing companies' inventory costs

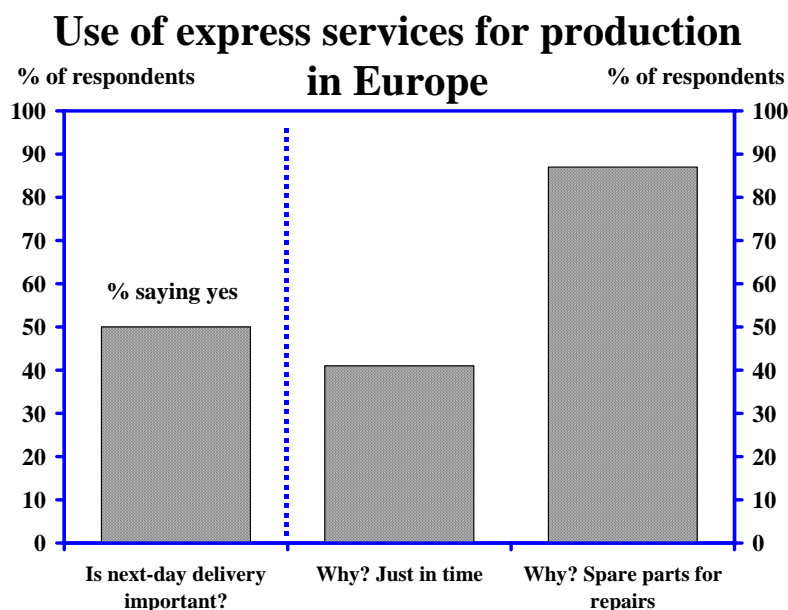
3.7 50% of all European firms surveyed report that there are aspects of their production process for which next-day delivery of sub-components from their suppliers or elsewhere in their companies is very important (Chart 3.1). Of these firms, around 40% report that next-day delivery of sub-components is important because they operate a just-in-time inventory system, while the large majority require urgent delivery of spare parts for machinery in case of breakdown. Other reasons for needing sub-components on a next-day basis mentioned by respondents include getting samples to be approved before production processes can begin.

Case Study: Italian data communications and network integration group

This international company aims to be a one-stop service partner, solution provider and manufacturer for fixed and mobile networks. The company has to be able to respond rapidly when there is a fault in its networks. For this, it relies on same day express delivery of spare parts coordinated by one of the leading express services companies, which also provides logistics and warehousing services. Next-day delivery services are then used to replenish stocks at the warehouse. The company considers this to be a cheaper and more efficient solution than operating its own warehousing and transportation operation given the logistics expertise on which it can draw, which helps to reduce its inventory costs.

3.8 It is clear from the surveys and case studies that just-in-time inventory controls are now increasingly important for companies around the world, and that these have created strong demand for express delivery services. Under just-in-time, an increasing number of firms hold only very limited 'buffer' inventories in case they run short of critical sub-components or spare parts. Instead, they require their suppliers (which may be other parts of their business) to deliver to a strict timetable to fit in with the production runs. It is estimated, for example, that this system has contributed to a reduction of over 20% in the inventory-output ratio in the US over the last 20 years, saving US companies over \$25 billion a year. Large savings are likely to have been achieved in other developed economies.

Chart 3.1



Source: OEF

The value of speed and reliability

Integrated express services improve customer efficiency and help control costs in a variety of ways. Looking at how express service can reduce costs in just one area – inventory finance charges – can help put potential savings in perspective.

Consider two sources of inventory finance charges: time spent in transit and extra days of inventory kept on hand to guard against disruptions in supply.

Assuming an annual inventory finance charge of 10 percent, a \$100,000 dollar shipment (semiconductors or computer components, for example) costs the shipper roughly \$27 in finance charges for every day it is delayed (perhaps because it is being shipped air freight instead of express or because it is being delayed in customs). If a typical delay is two days and there are 200 additional delays during a year, inventory financing expenses will total approximately \$11,000 per year.

Assuming that shipment unreliability causes a manufacturer to maintain two additional weeks of inventory on hand (to guard against stock-outs or disruptions in production, for example), over a 250-day manufacturing year a \$10 million average daily inventory would increase annual expenses by approximately \$96,000.

Together, then, the combination of delayed and unreliable transportation could cost this company over \$100,000 per year in inventory finance costs alone.

Source: Delivering Business into the 21st Century: The Integrated Express Industry in the ASEAN Region, US-ASEAN Business Council

- 3.9 In order to illustrate the role of the express industry in helping firms to minimise their inventory costs, firms in Europe were asked how they would react if next-day delivery services to or from their countries to foreign locations were no longer available. A third reported that they might have to hold increased inventory at their home production site in order to meet the requirements of their production process, while nearly 40% reported that they might have to hold increased inventory to meet customer demand.
- 3.10 The importance of express services to efficient inventory management is further illustrated by the survey of Italian companies. This found that, if international next-day deliveries were withdrawn, firms would, on average, have to increase by 3.4% their inventories of intermediate goods to meet the requirements of the production process. And Italian companies' inventories of finished goods would have to increase by 5% on average to ensure that consumer demand could be promptly met.
- 3.11 Similarly, in Germany, around half of survey respondents report that they have achieved inventory cost-savings through the use of express services: without them, their costs would be almost 3% higher.

Case Study: German manufacturer of building machines and tools

This company repairs 250,000 PCs, notebook and electronic components a year, undertaken by its 160 employees. It uses an express delivery company to collect broken equipment from around 95 regional partners. This allows it to pick up a defective device within four hours and bring it to the repair centre.

Orders are logged on an internet-based system, which allows them to be tracked by the service provider and other service partners. Once an order has been placed, the express service provider is committed to delivering the repaired item within 24 hours. The main benefits include a more efficient way of dealing with spare parts, reduction of shipment sizes and a shortening of delivery times.

Case Study: Singapore semiconductor manufacturer

This company is a manufacturer of analog and digital technologies and its chips lead many sectors of the personal computer, communications, and consumer markets. One of the leading express delivery companies has developed a facility to handle its orders and achieve an average delivery time of 48 hours on a global basis.

The distribution process starts with the receipt of manufactured chips from the company's manufacturing sites in Singapore and Malacca, Malaysia. Next, the chips are allotted and stored using the latest scanner technologies. Then, the "wave" process occurs, which is the computerized allotment and sorting of the chips and the waving of orders. This process allows for priority orders to be handled immediately and the efficient shipping of all the day's orders. The chips are then retrieved, according to computer-generated guidelines, allowing for maximum speed, efficiency, and inventory control. Next, the "split and combine" function occurs which involves packing partial quantity combinations according to customer specifications. At this point, the shipment is ready to go out the door and into the hands of the customer within 48 hours.

The distribution facility's capabilities include advanced scanning and laser technologies, pre-arrival electronic customs clearances, real-time tracking and tracing, closed loop security, and a 24-hour customer call centre. The benefits of the operations include reduced lead times, improved customer service levels, lowered inventory costs, increased visibility, real-time data for accurate planning and forecasting, increased flexibility, and faster delivery cycles.

Case Study: Mexican automotive components manufacturer

This company is one of the world's leading suppliers of automotive occupant safety restraint systems, manufacturing modules and components for passenger and driver-side airbags, side-impact airbag protection systems, seat belts, steering wheels, safety seats and other safety systems and products. Its subsidiary in Mexico is located at Lerma, 5 kilometers from Toluca Airport and 45 kilometers from Mexico City. It manufactures seat belts and side airbags for automotive production plants located in Mexico, the US, Brazil, Australia and Germany. Because of automotive production increases associated with NAFTA trade, the Mexican operation has become an important production centre in recent years.

The Mexican facility receives components from 135 suppliers located in 17 countries. The company's "just-in-time" delivery systems have been designed to accommodate the specific requirements of each customer for low levels of inventory and rapid stock delivery service. To meet these needs, it relies on express services, based on the air express operator's speed and reliability.

Express services help SMEs serve global markets...

- 3.12 The vast majority of firms are Small and Medium-Size Enterprises (SMEs – ie firms with less than 250 employees). Express delivery services are important to SMEs because they typically do not have the same transport delivery infrastructure that large companies have in place. While the scale of large manufacturers, such as the motor vehicle producers, makes it economic either for them to run their own transport fleet or buy-in dedicated services from a contractor, this would be uneconomic for most SMEs making relatively few and irregular deliveries. SMEs therefore frequently rely on transport services where a central provider delivers on behalf of a large number of customers.

- 3.13 The express industry enables SMEs to take advantage of the economies of scale its large-scale transport operations generate, while at the same time providing the same high quality of service – speed, reliability, tracking – provided to large companies. Moreover, the express

industry allows the many small firms that are part of a network (eg owned by a single entrepreneur) to transport products between operations quickly and efficiently.

3.14 The business surveys and case study interviews confirm that SMEs are substantial users of express delivery services. For example:

- Companies responding to the survey in Belgium highlighted the importance of express services to SMEs' ability to participate in international markets.
- The Italian survey found that over half of SMEs frequently send packages by express delivery. Without next-day international express delivery, 80% of Italian SMEs report that they would probably lose some export orders.
- Similarly, the UK survey found that a third of SMEs believe that, without next-day international delivery, they would probably lose orders.

Case Study: Chinese SME

This small import/export business started at the end of 2000 with only two staff and faced a daunting struggle. To solicit orders from demanding Scandinavian and central European customers, the company must dispatch samples of the sweaters it sells for every individual export order. Customers need to receive the samples to confirm the colour, size, design and other aspects of the garment's quality. Typically, 4-5 shipments are required before an order is placed. If the client is particularly demanding, samples can be sent back and forth as many as 10 times. In this respect, the speedy and reliable services provided by express delivery companies are indispensable. They help the company to secure more orders and build stronger relationships with customers, most of whom are repeat buyers.

...and support regional development...

3.15 The employees of the express industry are widely spread around the world and in different regions within countries. But the express industry contributes to regional development in a number of other ways as well:

- It enables businesses dependent on fast delivery to customers to locate in regions that are not necessarily close to their market. This includes many developing countries.
- Companies that rely on next-day delivery to customers may locate near hubs for express services so as to make the last pick-up time for their deliveries as late as possible, providing them with maximum production flexibility. The box describes such clustering around the major express hubs in the US and continental Europe.

Case Study: Middle East telecommunications/computer services company

This UAE-based company employs 10,500 people, mostly in its domestic operations, but with a large number of technicians seconded to other countries to install infrastructure. It makes extensive use of express delivery services, both within the UAE and for deliveries to other Gulf countries, Africa, India, and Australia. The volume of use has increased by approximately 10 percent over the last five years and is expected to continue to grow at the same rate over the next five years.

Express delivery services are integral to the company's operations. It uses express services to deliver products to customers, for which guaranteed next-day delivery and en-route parcel tracking are paramount. Secondary uses are deliveries of legal documents and sending components to other facilities. The company insists that all contracts and payments be sent via express delivery services. The national postal service provides a reliable but slow delivery service, although it does not provide automatic tracking, overnight delivery or, for most companies, parcel pick-up and delivery.

Express hubs as a spur to regional economic development

(i) Liege

Liege Airport has been TNT's European operating hub since 1998. As express and air cargo traffic has grown, so a number of distribution and logistics companies have established in the close vicinity of the airport. These companies are located within the Liege Logistics platform: Liege Logistics now employs over 500 people. Around 845 acres have been designated on and bordering the current airport site to enable Liege Airport's economic growth through to 2020.

(ii) Brussels

In 1985, DHL established the Brussels hub as a sorting facility in the corner of a hangar at Brussels National Airport. Within a few years it became DHL Brussels Hub, the largest express hub outside the USA. Through its Express Logistic Centre (ELC), the hub acts as a central distribution point for a number of major companies based in the surrounding areas of the Brussels National Airport. DHL is not only the biggest customer of Belgocontrol (providing about 25% of their income) but also contributes almost 50% of the profit before taxes of the airport owner BIAC. According to a report issued in September 2003 by the Vlerick Leuven Management School and K U Leuven Universite Libre de Brussels and ECORYS Transport Rotterdam, the presence of DHL's major hub at Brussels National Airport contributes €394 million of value-added to the Belgian economy. As from mid-2008, Leipzig will become the main hub in DHL's European network and the Brussels hub will downsize.

(iii) Memphis

Memphis International Airport - Federal Express' world headquarters and Superhub - is the world's largest cargo airport. In addition to the jobs and direct economic benefits it provides, FedEx is a magnet for attracting distribution centre development to Memphis. According to SRI International more than 130 foreign-owned firms from 22 countries employing 17,250 workers have been drawn to Memphis since the early 1980s, largely due to the presence of FedEx. Examples of customers that relocated to Memphis metro area include Williams-Sonoma (distribution & data centre); Submitorder.com (Internet fulfilment centre); Hewlett Packard (Distribution) and Ingram Micro (Distribution / assembly / repair).

(iv) Louisville

Louisville Airport is home to the international airfreight hub of UPS. Many companies have located in or near Louisville because of the extensive logistics and distribution opportunities there. According to Greater Louisville Inc. The Metro Chamber of Commerce, the estimated annual impact of UPS' Hub 2000 expansion was 13,965 new jobs (direct and indirect) and \$478 million new payroll (direct and indirect). Companies doing e-commerce fulfilment in Greater Louisville include Nike and Gateway Computers, while companies doing traditional transportation fulfilment include GE and Ford.

...and helps facilitate foreign direct investment

- 3.16 Foreign direct investment is critical to the development of many developing and transition economies. Express operators offer multinational investors high quality transport links, both for bringing in materials, components and spare parts to their production facilities and for transporting finished products to market. In this way, express operators help investors overcome both problems of geography and weaknesses in the transport infrastructure.

Case Study: Hungary attracts KLM Royal Dutch Airlines

When KLM decided in favor of Hungary for its Central European headquarters, the availability of express delivery services was very important. KLM depends on express delivery companies to deliver aircraft spare parts, airline tickets, marketing communications materials and business documents to its affiliates all over Europe and in the East European member countries of the Commonwealth of Independent States.

Express services made the centralisation of KLM's main business processes possible at a location where labour skills were available at competitive rates but which is not in the centre of Europe. With express services, KLM did not have to compromise low labour cost or advantageous transport costs and fast delivery. With the help of the express delivery companies, all material that is vital to its daily business can be distributed effectively, as if the company was located in the heart of Europe. Moreover, the company can capitalise on greater cost savings than its competitors located in the centre of Europe.

- 3.17 A wide range of factors influence firms' decisions about how much and where to invest. However, surveys of international investors suggest that ease of access to markets and transport links are particularly important. For example, a survey by Healey & Baker shows that 58% of companies consider easy access to markets, customers or clients, as "absolutely essential" when deciding where to locate their business, making it the most important influence on company location decisions.
- 3.18 Express services are an important element in ensuring that companies have the best possible access to markets. For example, almost one-third of Chinese companies surveyed indicated that, in the absence of efficient integrated express services, they would scale back their reinvestment and/or expansion plans in China. Similarly, the European business surveys show that investment would be vulnerable if next-day delivery were no longer available:
- 35% of Portuguese companies report that they would possibly have to relocate some operations from Portugal to another country.
 - Over 15% of UK companies and 10% of Italian firms report they would possibly have to relocate abroad.
 - 30% of French companies and 10% of Belgian firms would seriously consider outsourcing production.

Case Study: Indonesian operations of a multinational oilfield services company

This company is a leading supplier of services and technology to the international petroleum industry. The parts it requires to carry out its drilling operations in Indonesia come from three major distribution centers in Amsterdam, Houston, and Tokyo. It uses express services to bring parts from these far-flung origins into its Jakarta bonded warehouse. In the warehouse, the express delivery company and Indonesian customs apply a streamlined clearance process that permits shipments to clear expeditiously while ensuring that the company's imports benefit from the government concessions available to the industry.

These time-sensitive shipments are then distributed directly to mine sites around the country. The entire process averages about four days to complete from pick-up through delivery to remote final destinations. The express delivery company provides Schlumberger with tailor-made customer service, point of origin to point of destination tracking and tracing, and adheres to tight performance requirements.

Conclusion

- 3.19 Express services are now integral to business operations around the world, helping to reduce firms' operating and inventory costs, and facilitating the use of latest production techniques. Without them, companies' competitiveness – and so investment - would be significantly undermined.

4 Prospects for the Express Industry and its Impact on Global Economic Growth

Introduction

- 4.1 In this Chapter, we consider the future prospects for the express industry and calculate its likely direct contribution to world GDP and employment in ten years' time
- 4.2 But, as the previous Chapters have demonstrated, the most important contribution the express industry makes to the global economy is through its impact on the capabilities and competitiveness of other sectors of the economy. In this Chapter, we highlight the dependence of companies' sales on express services – in the next Chapter we discuss the implications that restrictions on the availability of express services have on economic performance.

Key Findings:

- **The growth of express services is expected to average 8% a year over the next ten years, over twice as fast as world GDP, providing there are no further constraints on its growth.**
- **That out-performance mainly reflects the continued expansion of international trade and the increasing need for rapid, guaranteed delivery, particularly in emerging market economies.**
- **There is little sign that new technologies, such as e-mail, will prevent the express industry from growing much faster than the economy generally.**
- **As a result, employment in the express industry globally is expected to increase from 1.25 million now to 2.1 million by 2013, if it is allowed to grow unconstrained.**
- **If express services were constrained to grow in line with GDP, then employment in the express industry would be around 750,000 lower than these forecasts by 2013.**
- **Companies' success in the fast-growing knowledge-based sectors will be facilitated by the express industry.**

Express services to continue to grow strongly...

- 4.3 Over the last five years the express industry has been one of the fastest growing sectors of the global economy, with turnover rising on average by almost 6% a year in real terms (ie over-and-above inflation), nearly 2½ times the rate of growth of the world economy as a whole.

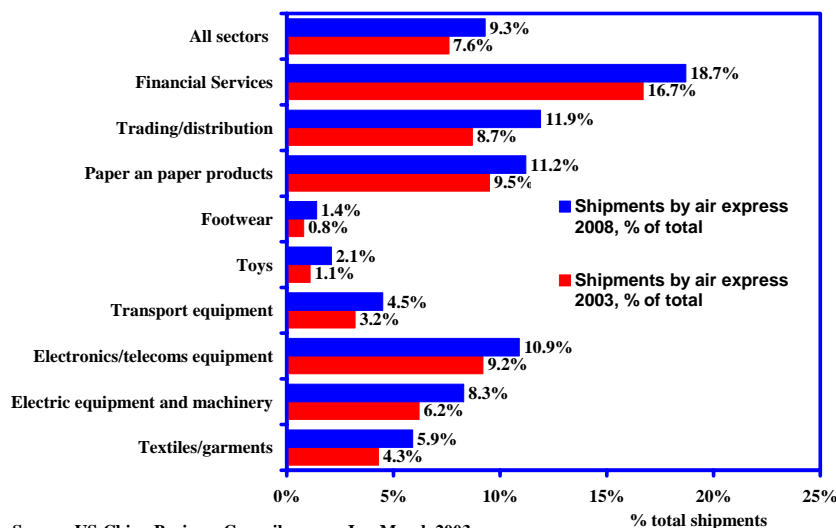
...as need for rapid, guaranteed delivery intensifies...

- 4.4 The express industry is likely to remain one of the world's fastest-growing sectors. The requirement for rapid delivery is likely to intensify further among existing users of the express industry and spread to other sectors of the economy as, for example, more businesses use the internet for purchasing and supply management, and the demand for logistics services increases. And while the market for express services is relatively mature in developed economies, such as the US and EU, there is considerable scope for expansion in emerging economies, particularly in Asia and Latin America. For example, the proportion of Chinese

export shipments expected to be transported by air is expected to increase from 7.6% in 2003 to 9.3% by 2008 (Chart 4.1).

Chart 4.1

The growing importance of shipments by air express in China



4.5 Moreover, international trade is expected to continue to grow rapidly – OEF forecasts it to increase by over 90% over the next decade compared with a rise of almost 40% in world GDP.

4.6 Business surveys and case study interviews show that companies generally do not expect that new technological developments and distribution methods (for example, transferring information, data or contracts by secure electronic means such as secure web-based products and broadband data transmission) will reduce their use of express services.

... with output expected to rise by 8% a year over the next decade...

4.7 Boeing expects world air cargo traffic to expand at an average annual rate of 6.2% over the next two decades, with the fastest growth in Asian markets – the domestic Chinese and intra-Asian cargo markets are forecast to increase by 10.6% and 8.5% a year respectively.

4.8 We expect the express industry to continue to increase its share of the air cargo market, growing by an average of 8% a year in real terms between 2003 and 2013. This is a little faster than the growth we expect in world trade (exports and imports). And it is over twice as fast as our forecast of 3¼% a year real growth for the world economy as a whole over the next decade.

Table 4.1: Prospects for the express industry over the next decade

Real terms (ie inflation-adjusted)	Per annum growth	Per annum growth
	1998-2003	2003-2013
World trade	5	7
Express industry output	6	8
World GDP	2½	3¼

...boosting direct employment to 2.1 million...

- 4.9 The direct contribution of the express industry to global GDP is set to more than double by 2013 to about US\$135 billion in today's prices. This rate of growth will result in overall GDP being about US\$50 billion higher by 2013 than if the express industry grew merely in line with our GDP growth forecast of 3¼% per annum. (And note that this is only the direct impact of the express industry's growth: it does not include the indirect or wider 'catalytic' impacts of strong growth in the express industry on other sectors of the economy.)
- 4.10 There will also be benefits to global employment from the express industry's continued fast growth. In 2003 employment in the express industry is estimated to have been 1.25 million worldwide. We expect it to reach 2.1 million by 2013. If express services were constrained to grow in line with GDP, then employment in the express industry would be around 750,000 lower than these forecasts by 2013.

...and almost 4.5 million jobs supported by the express industry

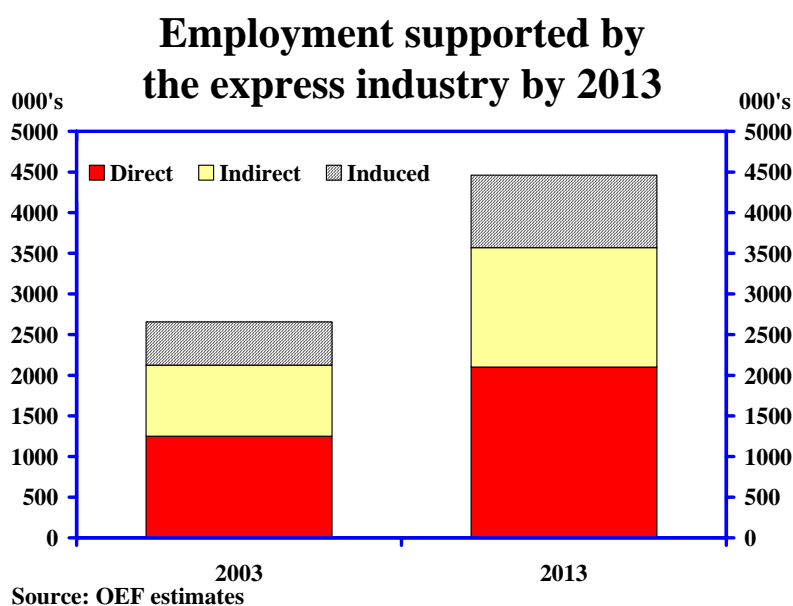
- 4.11 The expansion of the express industry will support growth in jobs both in its supply chain (indirect employment) and as its employees purchase goods and services from other sectors (induced employment). The total global employment supported by the express industry is forecast to increase to almost 4.5 million by 2013. The majority of these new jobs are expected to be in the developing and transition economies.

Case Study: Italian telecommunications company

This mobile telephony company relies on express services to feed its network of shops and distribution outlets in Italy. Express services are also used to provide assistance to customers whose handsets are faulty or damaged.

The company considers express services to be critical to meeting rapidly expanding demand without keeping large stocks of expensive items. Similarly, its dealers appreciate having access to reliable supply without the costs involved in holding stocks. Customers expect their orders to be met within 24 hours, even at very busy times of the year (eg Christmas), and express delivery is essential in meeting this requirement. As a result, the company has developed a very close relationship with an express delivery company, on which it relies for its logistics and transportation. It particularly values both the high security standards that the express company has put in place for its operations, and the ability to track orders in transit.

Chart 4.2

**Cast Study: Argentinean printing company**

This company is a small wholesaler of pre-printed and specialty paper located in Rosario, Argentina. Its products include paper, cards, pamphlets, posters, letterhead, presentations and labels, and it increasingly relies on e-commerce to generate sales. Most of its customers are, like it, small and medium-size enterprises and use the firm to produce high quality marketing and company image materials. They typically require small runs of materials that can be printed by laser printers or photocopied. The company has 500 domestic and 25 foreign accounts. Its foreign customers are located in the United States, Europe and Latin America, markets that are relatively distant from Argentina.

The company's shipment characteristics are typical of many small users of air express services: irregular low-volume shipments of goods with relatively high value to weight ratios. Because of the nature of its business, small size, and distance from foreign markets, it needs competitive shipping prices, software to manage its deliveries, and individual assistance in conducting foreign trade.

Through its relationship with an express delivery company, it has been able to use e-commerce to expand internationally and better compete with foreign rivals. Typically, it takes five to six days for it to produce an order and a similar period for final delivery. Because of the short 10 to 12-day timeframe from order to delivery, the company's services are more competitive. For example, it was able to secure accounts in Costa Rica and Honduras that previously were serviced by a US firm because it could beat the competitor's 45-day delivery timeframe.

Companies' sales are increasingly dependent on express services...

- 4.12 Companies are likely to become increasingly dependent on express services over the next decade – hence the rapid growth we expect in the industry's output and employment. In particular, express services are likely to become increasingly important for companies' sales, especially in the fastest-growing export markets.
- 4.13 The business surveys suggest that express services are key for:
- around 8% of Chinese companies export shipments (Chart 4.1).
 - one-third of deliveries in Germany (with firms in the electrical engineering and retail & wholesale trades using express for around half of deliveries).

- 5% of sales in France (ie 25% of sales for 20% of companies)
- 15% of sales in Portugal

...as knowledge-based sectors expand

- 4.14 One area where express services are likely to be particularly critical to the companies' success is the knowledge-based sectors, such as pharmaceuticals/biotechnology, financial and business services, research & development, and the 'high-tech' industries (eg information technology equipment and services, internet business).
- 4.15 The business surveys and case studies suggest that firms in the knowledge-based sectors are more-than-usually dependent on express services, reflecting the kind of products and services they provide, such as:
- High-value items, for which low stocks are essential (electronic components etc).
 - Perishable items (such as tissue or blood samples for clinical trials).
 - Failed items, such as personal computers, for which rapid repair and return is essential.
 - Items purchased on-line, where rapid delivery to the customer is essential.
- 4.16 The implication is that if economies are to be successful in these key sectors – and we expect these to be among the fastest-growing industries over the next 10-20 years – they will become increasingly reliant on the services of the express industry.

Case Study: Chinese on-line retailer

This on-line retailer specialises in unique oriental lifestyle products from China, including apparel, accessories and decorative items. These are high quality products that are durable and light, making them ideal for sale over the Internet. Its suppliers are conveniently concentrated in the Shanghai area, but its customers are from all over the world: mainly the US and Europe but as far away as Greenland.

For any e-commerce operation, speed of delivery is critical. To compete with rival e-commerce companies that hold stock in the US, the company must ensure that its customers can receive their orders as quickly as possible. Making a purchase over the Internet is a risky proposition for first-time buyers. They are often unsure if the product will arrive at all. The two ways to assuage this anxiety are to get the product into the customer's hand as quickly as possible and to enable them to track the delivery of their purchase. Hence, most buyers opt for expedited delivery by a global air express company. It takes 10 days for a standard international air parcel to reach the US from Shanghai. Even customers in the more remote corners of the US can receive their purchases from this company within three days, courtesy of express delivery. For on-line buyers, total customer satisfaction is closely aligned with speed and security of delivery.

Express delivery services also help the company save on labour costs. For example, if a customer wants to check the status of an order being shipped by ordinary airmail, the company's staff would need to phone the post office numerous times before they can get any sort of response. Even for registered parcels, the tracking number provided by the post office can only be used in the event of a loss. Then it takes the post office two months to find a missing package. With express delivery services, the company sends its customers the tracking number of each and every shipment together with detailed instructions on how to use the tracking system. In the unlikely event of a mishap in delivery, the problem will be resolved within a week, with the express delivery company reimbursing the customer the cost of the ordered item.

Cast Studies: UK High-Tech Manufacturing Companies

These three high-tech manufacturing companies rely on express services in the following ways:

- **Just-in-time stock management.** By allowing rapid (often same-day), reliable delivery, both of sub-components and spare parts on the one hand, and products to customers on the other, express services are a vital ingredient in keeping stock levels low. That is particularly important for these firms, whose products are typically high in value and have a relatively fast depreciation rate. Holding inventory of such products is very costly.
- **Concentration in UK location.** Two interviewees reported recent closure of branches in other countries and consolidation in the UK that would not have been possible without express services. One firm reported that, without express services, the US part of their business would probably disappear.
- **Shipment of time-sensitive goods.** Customers often require replacement parts for failed items the day after the breakdown occurs, and express delivery allows the high-tech companies to guarantee this. Rapid, reliable delivery is essential to the reputation of these firms, and they are able to charge a premium price for this premium service.
- **Global sourcing / global reach.** Express services allow high-tech firms to take advantage of the benefits of global sourcing, and to access markets for their products all over the world – still guaranteeing next-day delivery in most cases. For some firms, the majority of their business (up to 85% in one case) is outside the UK. And, in at least one case, same or next-day delivery out of the UK has to be guaranteed as far afield as Africa and the Middle East.

Conclusion

- 4.17 The express industry is a fast-growing sector in its own right and key to the success of other growth sectors. The express industry will support almost 4.5 million jobs globally by 2013.

5 The Impact of Restrictions on Express Delivery Services

Introduction

- 5.1 The previous Chapters have explained the important contribution made by the express industry to the global economy. However, restrictions placed on the operations of the express industry mean that companies in some countries cannot take full advantage of these services. This undermines both their performance and the performance of their economies as a whole.
- 5.2 In this Chapter we illustrate the restrictions placed on express delivery services in some countries and provide example estimates of the overall economic cost of these restrictions.

Key Findings:

- **Restrictions on express delivery services not only adversely affect the efficiency of express delivery companies but also undermine the competitiveness of companies across the whole economy.**
- **Steps to remove restrictions on the express industry would encourage increased trade, investment and productivity, boosting GDP, employment, and government finances.**
- **The benefits from liberalising express services would be substantial. For example, it is estimated that China's output would increase by almost US\$85 billion over five years, generating an additional 800,000 jobs.**

Policies and regulations affecting express delivery services...

- 5.3 International express services, like any other aspect of international trade, can be impeded by government policies and restrictions that undermine the ability of express delivery companies to operate efficiently and hence their ability to facilitate increased trade, investment and productivity across the wider economy. These policies and restrictions can take many forms:
- **Anti-competitive practices of government-owned or authorized monopolies** – In some countries delivery service providers, often government-owned, benefit from statutory or de facto monopoly status that allows them to use their dominant market positions to limit competition in the express industry. This can involve, for example:
 - *Outright exclusion of competition* – reserving the right to offer express delivery services to a government-owned or sanctioned enterprise.
 - *Cross-subsidisation* – Many countries have not developed a regulatory framework such as that developed by the European Union to avoid anti-competitive practices that could result as a consequence of cross-subsidies from the revenues of monopoly operations. Moreover, in many countries general tax revenues are used to support express delivery services provided by postal operators with a monopoly.
 - *Special taxes* – imposing extraordinary taxes or fees on private express delivery service providers. Often the proceeds of these taxes are used to finance the development of the government-owned or sanctioned service provider. The burden of these taxes is borne ultimately by the national business community, thus reducing its competitiveness in global markets.

- *Predatory pricing* – cutting charges for express services in an attempt to force independent companies out of business.
 - *Preferential treatment* – government-owned or sanctioned delivery service providers may receive preferential treatment for their express delivery services in, for example, the allocation of aircraft parking assignments, ground handling services and terminal locations; in the application of customs procedures and enforcement practices; and the enforcement of traffic laws.
 - *Restrictions on market access* – express delivery companies may be required to file an ‘entrustment’ application with national (or even provincial) postal monopolies in order to be allowed to operate.
- **Complex licensing requirements** – While many countries require licenses for the provision of certain delivery services, in some cases these are applied arbitrarily or in ways that are discriminatory, non-transparent or excessively complex. For example, some countries charge high license fees (some even in the form of turnover-related fees) and do not allow automatic renewal, requiring express delivery companies to reapply annually. Others grant longer licenses to domestic companies than to foreign operators, or require licensing express services for private firms but not for publicly-owned postal bodies. And in some cases the national postal body has the right to conduct inspections and financial audits of competing firms and to withdraw their licenses.
- **Inefficient customs procedures** – While customs clearances are an integral part of the responsibility of governments to enforce tariffs, safeguard public health and meet international obligations to protect against illegal trade, delays at customs can seriously undermine the operations of the express delivery companies and reduce delivery speeds. In addition, the efficient operation of express services can be impeded by:
- *Inadequate resourcing of customs facilities* – both staff shortages and inadequate use of modern technology, such as use of electronic communication rather than paper documents, and adoption of risk-based techniques for designating shipments for intensive physical examination.
 - *Restrictions on the value and weight of express shipments* – Some countries classify only low value and low weight goods as express items which may receive expedited customs processing. But, as explained earlier in this report, express delivery is increasingly used for transporting high value products. Moreover, low *de minimis* thresholds for taxes and duties can significantly increase the administrative cost of customs clearance while raising relatively little revenue.
 - *Inconsistent and unpredictable valuation criteria and inspection procedures.*
- **Restrictions on access to aviation markets** – The major express delivery companies (ie the ‘integrators’) operate their own aircraft using a so-called ‘hub-and-spoke’ network system. Incoming aircraft bring packages to a central sorting operation (‘hub’). These aircraft then convey shipments from around the region back to the point (the end of the ‘spoke’) from which they originated. Such networks enable the integrators to offer customers more service to more markets, and to optimise the utilisation of their aircraft fleets. But some countries do not grant the air freedom rights that would enable the full operation of such a network in their region or country. The optimal condition for provision of efficient and customer-responsive delivery services is a fully liberalised air cargo market throughout the world.

In addition, some authorities, for example in Europe, have introduced restrictions on the night-time operation of express delivery companies at airports. This again undermines the operation of the hub-and-spoke system, and restricts the ability of the express industry to provide guaranteed next-day international delivery.

- **Restrictions on access to ground transportation systems** – In some countries express delivery companies are not granted the right to offer surface transport for international air shipments. So, rather than being able themselves to control every stage of in a package's journey, from pick-up to final delivery, the international express delivery companies must work through agents, local partners or establish a subsidiary to provide ground distribution services. This may reduce the efficiency of express delivery services. In addition, the ability of the express industry to operate efficiently is severely undermined in a number of countries by inadequate investment in the transport infrastructure – notably, poor road maintenance and congestion.
- **Restrictions on foreign investment** – Some countries impose regulations on foreign investment in logistics firms, forcing the separation of international and domestic operations. In addition, there may be limits on the proportion of joint ventures that can be owned by foreign companies. These restrictions can again affect the ability of express delivery companies to maintain door-to-door control of shipments and affect speed of delivery.

...generate significant economic costs...

- 5.4 It is important to emphasise that restrictions on express delivery services not only have an adverse impact on the efficiency of the express delivery companies. They also damage the competitiveness of companies across the whole economy and have a substantial overall economic cost.
- 5.5 The wider costs of restrictions on express services are clear from the surveys of European business. Respondents believe that their companies would be seriously affected if government regulations were to mean that international next-day delivery services were no longer available:
- Over half of German companies expect that they would lose sales. It is estimated that sales would fall by 2.6% in retail & wholesale trades and by 1.7% in manufacturing. Moreover, two-thirds of German firms expect that their costs would increase, by almost 3% on average.
 - 20% of French companies would expect their sales to fall by between 5% and 25%, while 10% would expect their costs to increase. Moreover, 30% would consider shifting some of their operations to a location where international next-day delivery services were available.
 - 56% of UK firms report that that they would be very badly affected and a further 39% would be inconvenienced. As a result, 16% would consider relocating operations.
 - Italian firms expect that they would lose around 4.5% of their orders, which could prompt about 10% of companies to consider relocating some of their operations.
 - 40% of Portuguese firms report that that they would be very badly affected, with 60% reporting that their international competitiveness would be affected. In part, this would reflect higher costs. But it would also reflect reduced market access and lost contact with clients. 18% of firms would therefore consider relocating operations.

- 10% of Belgian companies would also consider relocating production.

5.6 The sectors reporting that they would most likely have to relocate if there were no next-day delivery include computers & office equipment, electrical engineering, textiles & footwear and chemicals. These sectors also typically report a significant likely loss of orders, as do the motor vehicles and other transport equipment sectors.

...worth €11 billion a year to EU GDP

5.7 Taking into account the impact on European companies' sales, costs, investment plans and investment decisions, independent researchers have estimated that restrictions that led to international next-day delivery services no longer being available in Europe could cut GDP each year by:

- €2 billion in France
- €2 billion in the UK
- €800 million in Italy
- €250 million in Portugal¹

If these figures are indicative of Europe as a whole, we estimate that the loss of express services would reduce GDP across the EU by more than €11 billion a year. Over a 20-year period, the cumulative cost in terms of foregone GDP would be almost €280 billion.

Liberalising express services can generate substantial economic benefits

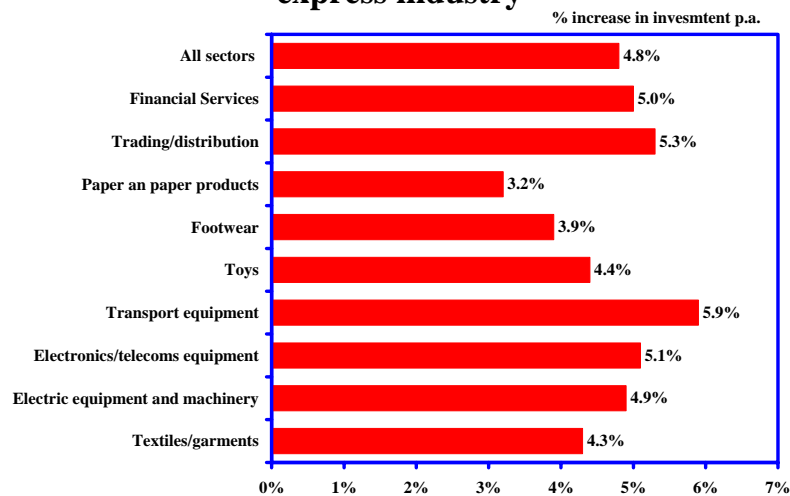
5.8 Similarly, eliminating restrictions on express delivery services offers substantial economic benefits. For example, Chinese companies were asked what difference a completely free and unfettered express industry would have on their industry:

- 58% of respondents believe that their companies would become more competitive and able to increase sales.
- 44% would expect their companies' investment to increase.
- 41% would expect their companies to take on more employees.

5.9 On this basis, the US-China Business Council has estimated that a liberalised express industry would result in an additional US\$3 billion investment in China over a five-year period. Output would be expected to increase by almost US\$85 billion. And employment would rise by 800,000 over five years.

¹ These estimates assume that people working in the express industry would find jobs in other sectors, so reflect only the 'catalytic' impacts that express services have on the trade, productivity and investment of other sectors of the economy. KE-CONSULT, using a different methodology, estimated that ending international next-day delivery would reduce German GDP by €21 billion, including direct, indirect and induced impacts on employment.

Impact on investment of fully developed air express industry



Source: US-China Business Council survey, Jan-March 2003

Conclusion

5.10 The express industry makes a substantial contribution to the global economy. Countries that impose heavy restrictions on the operations of the express industry also undermine the competitiveness of companies across the wider economy. Removing restrictions would not only benefit the express industry but would also encourage increased trade, investment and productivity.

Annex: Research Sources and Acknowledgements

The information in this report is drawn primarily from three sources:

- Information from the published reports and accounts of **the four leading express companies that are members of the Global Express Association (GEA)** – DHL, FedEx, UPS and TNT – to identify the turnover and value-added of their operations, and their staffing levels. These companies estimate that they account for more than half of the global market for express services.
- **Surveys of companies** in China, Germany, France, the UK, Italy, Belgium and Portugal, conducted by a number of independent research groups and published in the following reports:
 - **China:** “*The integrated express industry in China: A catalyst for growth and investment*”, by The US-China Business Council (published September 2003)
 - **Germany:** “*Produktivitäts- und Wachstumseffekte der Kurier-, Express- und Paketdienste für die arbeitsteilige Wirtschaft*”, by Institut für Verkehrswissenschaft, Universitäts zu Köln, KE-CONSULT Wirtschafts- und Verehrberatung (published February 2004)
 - **France:** “*L’impact du secteur du transport Express sur l’économie française*”, by Deloitte Consulting (published January 2003)
 - **UK:** “*The economic impact of express carriers for UK plc*”, by Oxford Economic Forecasting and Aviation & Travel Consultancy (published June 2002)
 - **Italy:** “*The impact of express carriers for Italy’s economy and competitiveness*”, by Oxford Economic Forecasting and Centro Studi Confindustria (published January 2004)
 - **Belgium:** “*Étude d’impact économique du secteur belge du courrier et du transport express*”, by KPMG Business Advisory Services (published April 2003)
 - **Portugal:** “*The economic impact of express industry in Portugal*”, by GTE Consultores (published in January 2004).

The business surveys conducted as part of the research for these studies asked companies about the importance of express services to their businesses, and how their activities would be affected if there were restrictions on international express deliveries.

- **A series of in-depth case study interviews** with companies who use express services. These interviews explore in more depth the way these companies rely on express services and how the use of express services affects the organisation of their production and distribution operations. In addition to the case studies contained in the above reports, we have also both conducted additional interviews for this study and drawn on the following reports:
 - **Latin America:** “*The air express industry in Latin America and the Caribbean: an assessment of economic benefits and regulatory barriers*”, by PA Consulting Group Inc for the Inter-American Agency for Cooperation and Development (published in 2001)

- **ASEAN region:** “*Delivering business into the 21st century: The integrated express industry in the ASEAN region*” by The US-ASEAN Business Council (published in September 2000)

Other reports on which we have drawn for this study are:

- “*Express delivery services: Competitive conditions facing US-based firms in foreign markets*” by US International Trade Commission (published in April 2004)
- “*The importance and impact of the express industry in Europe*” by Rigas Doganis and Associates, The Aviation and Travel Consultancy and York Consulting Ltd (published in October 1999)

We gratefully acknowledge the help that we have received from all of the organisations who assisted with the surveys and case studies. The design of the overall framework of analysis and drafting of this report was undertaken by Oxford Economic Forecasting.