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The Impact of the Express Delivery Industry on the Global Economy

Oxford Economics

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Executive Summary

The express industry – a fast growing sector...

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 2.75 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\$80 billion in 2008 – similar to that of the shipbuilding industry
- It directly supports 1.3 million jobs, around a third more than the petroleum refinery industry.
- The express industry helps to support around 2.75 million jobs in total, allowing for those people employed in companies supplying the express operators (e.g. 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 2018

The express industry is a fast-growing sector – since 2003 its growth has been ahead of that of the global economy as a whole. It is expanding particularly rapidly in the transition and emerging market economies, particularly Latin America and China.

We expect the express industry to continue to increase its share of the air cargo market, growing by an average of 3% a year in real terms between 2008 and 2013, before accelerating to grow by an average of 7% in real terms between 2013 and 2018. This is in line with growth we expect in world trade (exports and imports) as the recovery to the global economy takes shape. And it is over fifty percent faster than expected GDP growth for the world economy 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 1.3 million now to 1.8 million by 2018, if it is unconstrained by regulatory impediments and restrictions. The express industry is expected to support almost 4.5 million jobs globally by 2018.

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 will continue to support the transport 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 that 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\$180 billion over five years, generating an additional 700,000 jobs.

1. The size and reach of the express industry

Introduction

This report sets out the impact of the express delivery industry on the global economy. The most important contribution that the express industry makes is that it improves 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.

First we begin by explaining what the express industry is, how it initially developed, and how it has grown globally over the last 30 years.

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 a fast growing sector in the global economy.
- It has made a significant contribution to the global economy in the past and we expect it to do so in the future but it will suffer in the short-term as world trade is adversely affected by the current economic climate.
- The industry now employs around 1.3 million people directly - around a third more than the petroleum refining industry - and supports 2.75 million jobs in total.
- It made a direct contribution to world GDP of US\$80 billion in 2008.
- A broad range of industries use express delivery services. But the largest users are typically 'high tech' parts of manufacturing, IT & telecommunications, pharmaceuticals and financial & business 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.

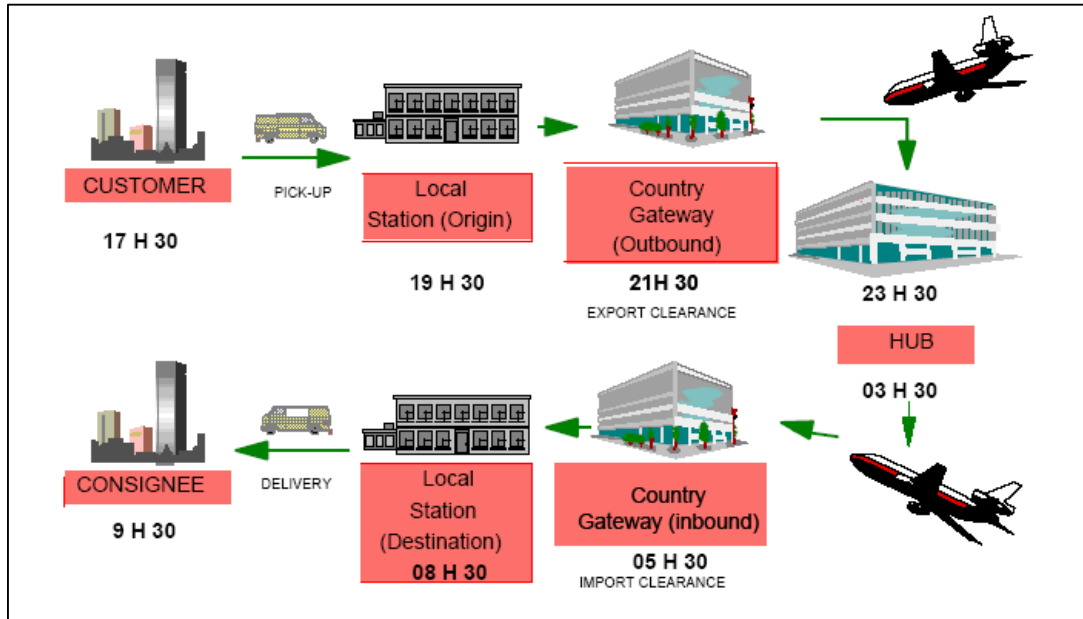
What is the express industry?

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.)

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 transportation 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

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.

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.

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, and 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.

For some companies, members of the express industry organise all aspects of their distribution process and so provide a complete supply chain management system.

Development of express services

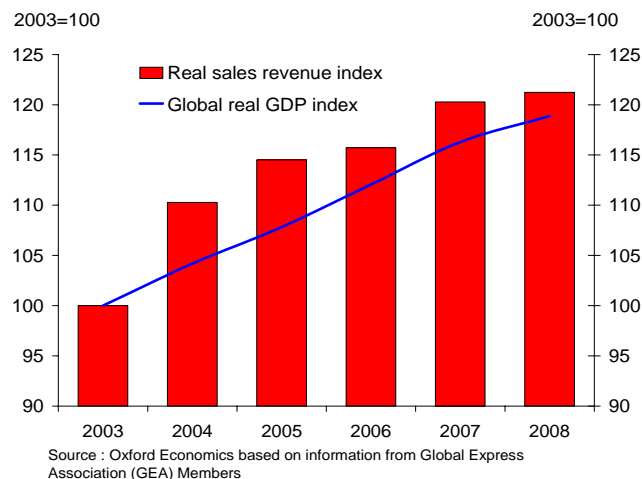
The express industry originated in the US in the late 1960s and flourished following the deregulation of air cargo in the US in the late 1970s. The express delivery companies met the increasing need of companies for time-definite, guaranteed delivery that could not be met by either postal services or 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.

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; however, express delivery is frequently called on to delivery urgent shipments of large, urgently-needed articles such as parts for aircraft and equipment for mining, construction, and manufacturing operations. The Air Transport Action Group (ATAG) estimate that the value of goods transported by air represents about 35% of all international trade. However, by weight, the share is estimated to be is much lower, at around 1%, reflecting the high unit value of goods transported by air. Express services represent a substantial proportion of this international trade: it constitutes almost half of the intra-European air cargo market.¹

Express delivery a US\$175 billion a year global business...

The express industry globally is estimated to have generated sales revenue (i.e. turnover) of US\$175 billion in 2008. Stripping out the effects of inflation, the express industry's sales revenue is estimated to have risen by just over 20% in real terms since 2003 – i.e. at an average annualised rate of 4% a year, slightly ahead of the rate of growth of the world economy as a whole.

Chart 1-1: Sales revenue of the global express industry versus GDP



¹ http://www.euroexpress.org/about_the_eea.php?section_id=1

The express industry has made a significant contribution to the global economy in the past and we expect it to do so in the future but it will suffer in the short-term (2009 and 2010) as world trade is adversely affected by the current economic climate. Chapter 4 sets out in greater detail the prospects for the express industry over the next decade.

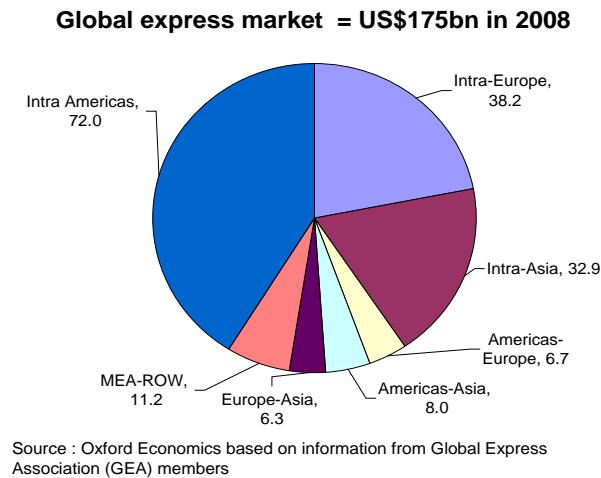
North America forms the largest express market in the world, with estimated revenues of US\$76 billion in 2008 (Table 1.1). Latin America contributes around US\$3 billion, 2 per cent of the global market. With revenues of US\$49 billion and US\$42 billion respectively, the European and Asia-Pacific domestic and international 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. The fastest regional growth in recent years has been in emerging economies, particularly the Middle East and Latin America, albeit from a relatively small base.

Table 1-2: Regional trends in the express industry over the past 5 years

	Express Revenue US\$ billion		Per annum growth	Global share
	2003	2008	2003-2008	2008
North America	58	76	6%	43%
Latin America and Caribbean	2	3	12%	2%
Europe	35	49	7%	28%
Asia Pacific	28	42	9%	24%
Middle East and Africa	4	6	10%	4%
Total	125	175	7%	100%
Source: Oxford Economics estimates based on information from Global Express Association (GEA) members and CECSS				

The vast majority of express deliveries are intra-regional – i.e. between countries and states within either the Americas, Europe, or Asia-Pacific. Express deliveries between these three regions account for 12% of express industry revenues. Nevertheless, inter-regional express deliveries generated revenues of US\$21 billion in 2008. The market for express services in the rest of the world is estimated to just over US\$11 billion.

Figure 1-2: Global express market in 2008



...contributing US\$80 billion directly to GDP...

The direct contribution of the express industry to world GDP is measured by its 'value-added', defined as the value of sales less the value of intermediate purchases bought from suppliers (e.g. fuel, packaging materials, airlines etc). However, estimates of value added are not separately identified for the express industry 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.

Building on previous Oxford Economics research on the economic contribution of the express industry to the Global economy 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\$80 billion in 2008. This means that the express delivery industry makes a direct contribution to Global GDP that is similar to the shipbuilding industry.

...directly creating 1.3 million jobs...

The express industry employs around 1.3 million staff worldwide. 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 2.75 million jobs in total

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.

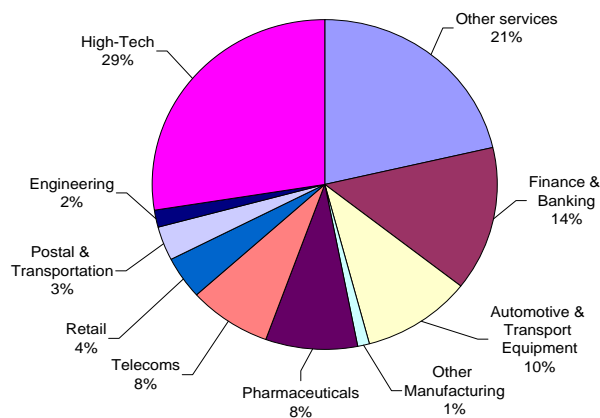
- On the basis of previous studies of the economic impact of the express industry that use both information from the integrators on the value their purchases from suppliers and the input-output tables prepared by national statistical offices, we estimate that the 1.3 million direct jobs in the express industry generate an additional 910,000 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 550,000 (i.e. 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.

Putting these different elements together implies that the express industry now helps to support around 3 million jobs 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

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, telecommunications, pharmaceuticals, electronics and financial & business services. But the express industry is also used extensively by firms in other sectors, including automotives and engineering and retail.

Figure 1-3: The express industry’s main client sectors



Source: Oxford Economics estimates based on information from Global Express Industry (GEA) members

Conclusion

The express industry is a significant global industry supporting 2.75 million jobs worldwide. In its own right the industry has made a significant contribution in the past and we expect it to do so in the future but it will suffer in the short-term as its client base is hurt by the current economic climate. 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

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 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 will continue to help to support the transport of world trade, even during the current economic climate, as companies continue to 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 providers are facilitating this trade by investing in new delivery routes and services.
- Express services are particularly important for companies geographically distant from their markets or where the national service providers are poor. Most notably, this includes many developing countries.

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

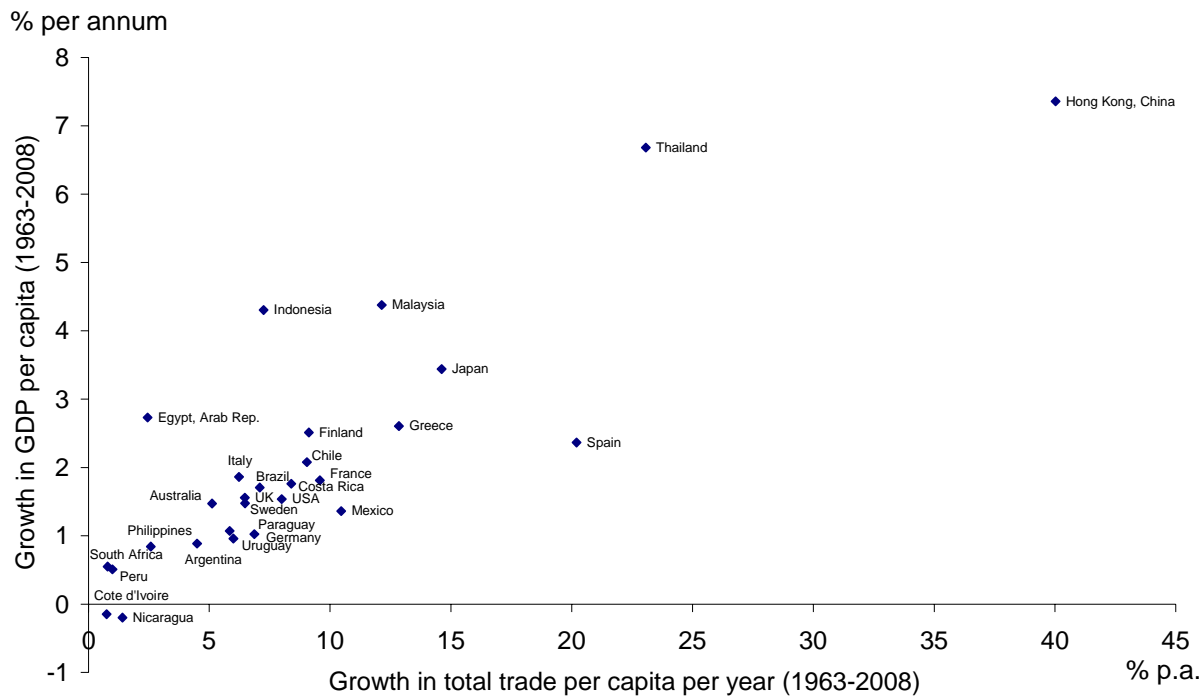
Trade performance is a key determinant of economic growth and prosperity. Over the last 45 years, the countries that have grown fastest have typically been those that have also seen the fastest growth in international trade (Chart 2.1).

Moreover, most economies have become increasingly dependent on trade in recent years. As Chart 2.2 shows, the leading growth 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 United States and Japan is largely a reflection of the size of those economies.)

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 communicate 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: Economic growth and trade



Source: WDI, Oxford Economics calculations

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).

Case Study: Denmark - producer of gas measurement instruments

This Danish company was formed 25 years ago and has around 125 employees globally, 75 of whom are based in Denmark. The company is a global leader for gas measurement instruments used in the food, medical and electronics

This company operates in worldwide niche markets, with about 95% of all products are exported from Denmark to places as far a field as China, Mexico, and Ukraine.

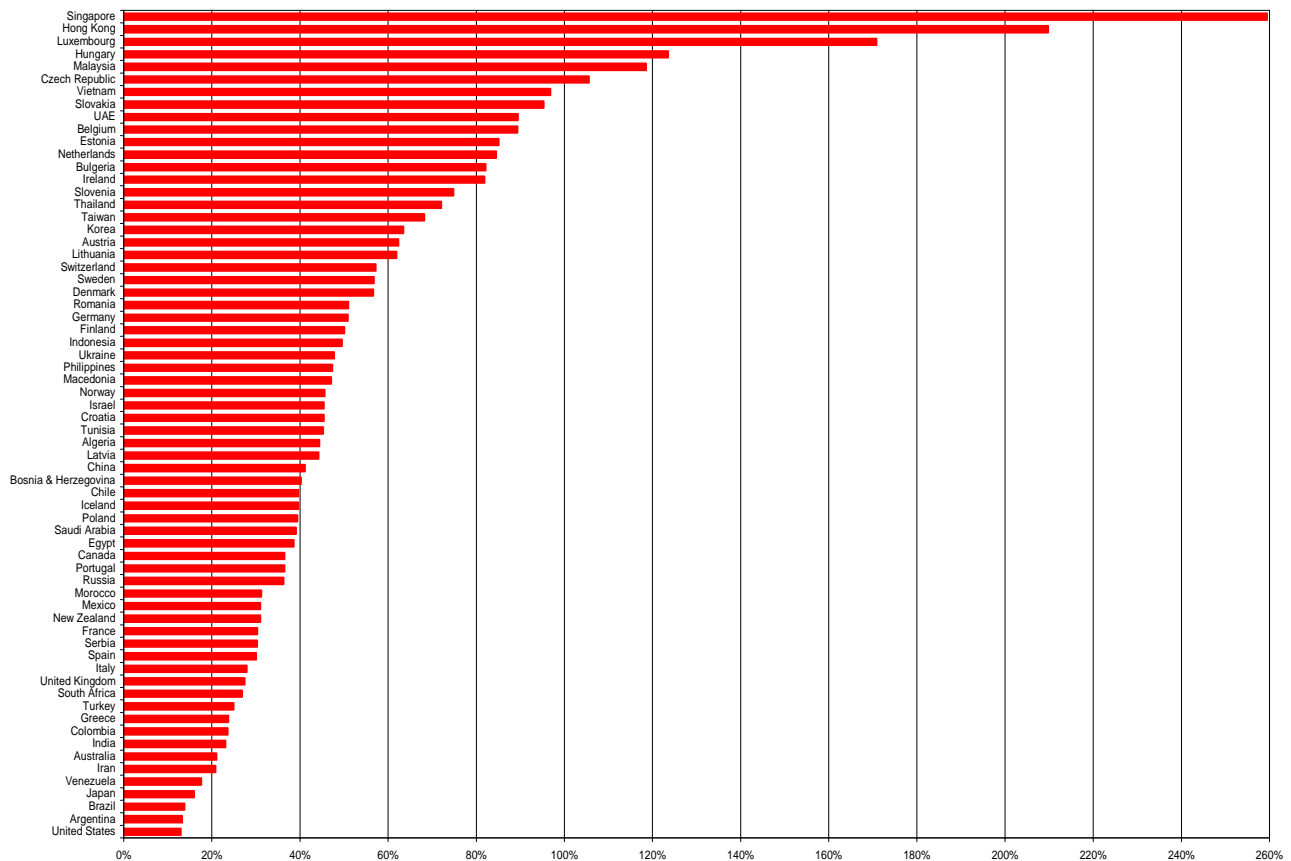
Express delivery services are integral to this company's operations. It uses express services to reach far destinations around the globe in just one or two days. This often happens, for instance, when customers need a spare part to continue the production of their goods. According to the company's shipping manager "it is absolutely imperative for us that the distribution of our products runs smoothly. It has to be easy, fast and without complications. With our express delivery partner we can cover the entire world, focus on our main competences and let our express partners do what they know how to do best".

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.

Chart 2-2: Export shares in GDP, 2008



Source: IMF, World Bank and Oxford Economics calculations

Case Study: Danish manufacturer

This company, based in Denmark, manufactures aluminium logo nameplates for television sets, hi-fi products, computers, and cellular telephones amongst other small electronic devices.

Having analysed the demands of their widely-dispersed customer base, they came to the conclusion that deliveries, no matter where in the world, had to be done within one to three days, in order for the company to remain competitive.

Maintaining a leading market position depends on this company being faster with their production and shipping without being more expensive. With that in mind, they had to ensure that their finished goods could be shipped from Copenhagen to Beijing just as fast as if the company was located in South China.

This company exports close to 99% of its production globally which necessitates not just fast but also reliable delivery across the world. Timely deliveries are also essential for this company during their customers' development and approval of new logos. Most of the company's customers have strong brands and decisions regarding a new logo design are always taken at the top management level. Logo prototypes in hand, delivered by an express services provider, aid these companies in the decision making process. Around 90% of their shipments are sent using Express delivery services which provides next morning delivery within Europe and within two days to their key destinations across the rest of the world.

Figures 2.1 - 2.5 show the pattern of international trade in goods for North America, Europe, Latin America, Asia (including China). Trade movements between these regions account for the bulk of world trade. They also trade extensively with the Middle East and Africa.

But it should be emphasized that there is considerable trade within each of the regions – both between different countries (e.g. within the EU or Asian blocs) and between different parts of individual countries (e.g. between US states or between different areas of China).

Figure 2-1: The pattern of North American trade with the rest of the world, 2007

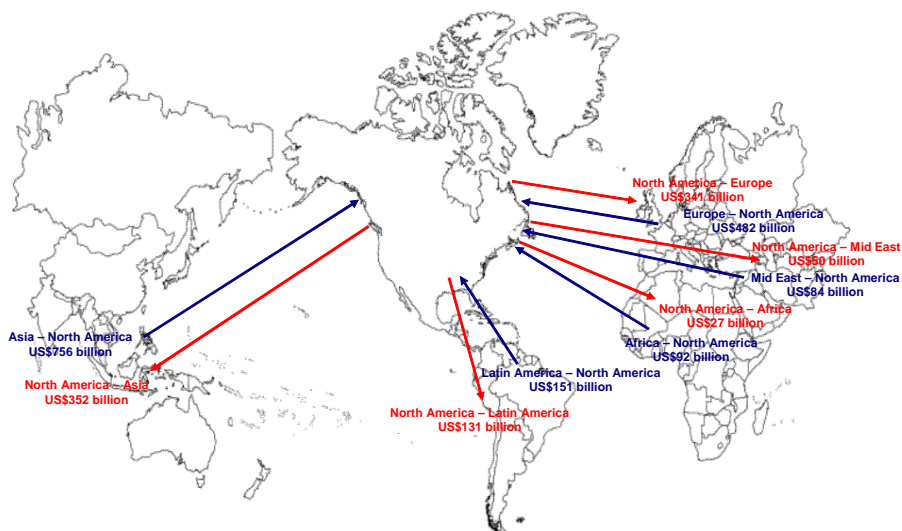


Figure 2-2: The pattern of European trade with the rest of the world, 2007



Figure 2-3: The pattern of Latin American trade with the rest of the world, 2007

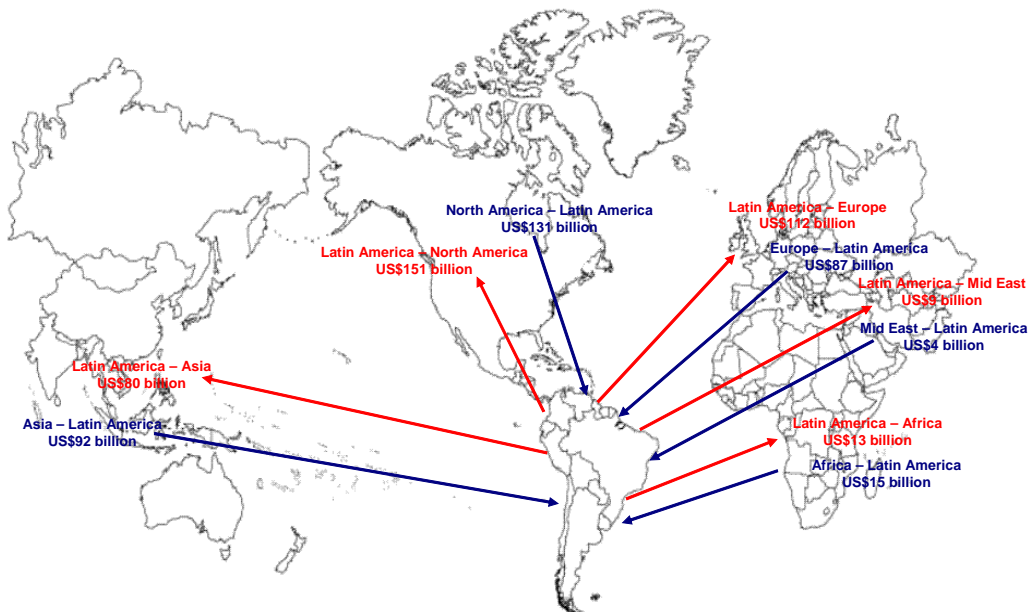
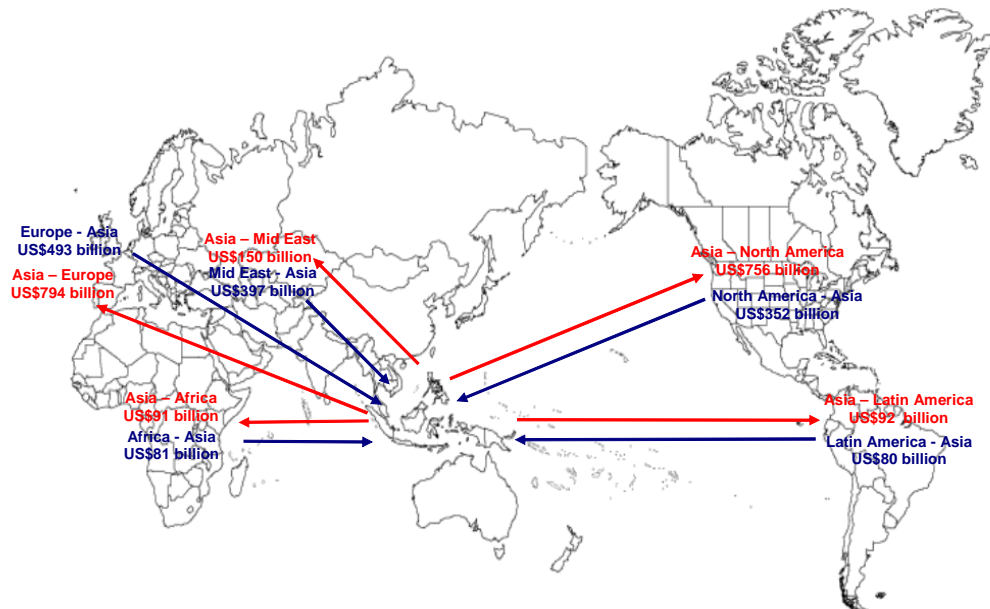


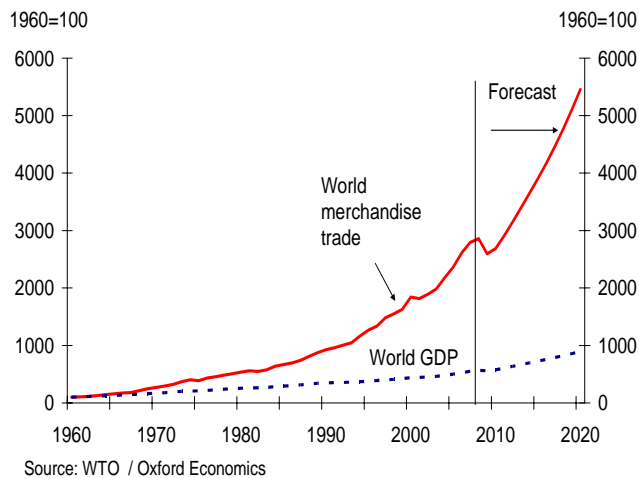
Figure 2-4: The pattern of Asian trade with the rest of the world, 2007



Source for Figures 2-1-2.4: WTO, exports and imports of goods, 2007

Oxford Economics global forecast suggest that the global economy will become even more dependent on trade over the next decade, with world merchandise trade forecast to increase by over 60 per cent between 2008 and 2018, double the increase in global GDP. But in the short-term prospects for both world trade and world GDP are bleak. World merchandise trade is forecast to contract by around 10% in 2009 and GDP nearer 2%. The slowdown will be most abrupt in the industrialised countries. Emerging markets will also slow significantly over the next two years, as world trade growth drops and capital inflows dwindle. But, over the medium term global growth rates will pick-up (see Chart 2-3), helped in part by strong emerging market growth rates.

Chart 2-3: GDP and World Trade in Goods, 1950-2020



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

And even in times when world trade is falling, countries remain dependent on efficient and competitive means of both delivering exports to their destination and bringing imports from other countries. During such times, the express industry will continue to play an important role, helping to support global trade in a number of ways, including:

- **Destinations served:** The global nature of express delivery services means that companies can adapt to a changing client base and ship products to and from different destinations quickly and cost-effectively (i.e. 'connectivity' is important)
- **Reliability:** Companies' reputations can be undermined if their deliveries fail to arrive with customers on time or are lost in transit.
- **Time-sensitive/time-specific delivery:** 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 fresh food, but also those working to newer business models such as "fast fashion" clothing chains. But it is also important, for example, for firms meeting orders to strict delivery dates or having to respond

immediately to customer demand (i.e. the so-called 'Day+1 economy').

Case Study: Italian garment producer

This company, based in northern Italy, is a family run business which has been producing exclusive knitwear for more than 35 years. All raw materials and fabrics are produced in Italy by highly-skilled craftsmen using the latest in knitwear technology. This guarantees excellent quality garments, carrying the 'Made in Italy' label and makes them highly appreciated in international markets. The company distributes quality and fashionable knitwear to high-end stores in Europe and North America.

This company realised that in order to be competitive in these mature markets it needed a supply chain solution that could synchronise various fulfilment milestones - customs clearance included - and reduce delivery times, whilst keeping costs down. Accordingly, the company turned to an express delivery services provider to handle their entire fulfilment supply chain, from collection at their production facility in Italy to the delivery of knitted garments to high-end stores located in Las Vegas or Calgary.

With the support of express delivery services order fulfilment time was reduced from 15 days to just 48/72 hours which meant that this company exceeded its new business targets and expanded rapidly in the United States and Canada. Supported by express delivery services, in less than two years this company has been able to double its order volume in North America. The company now has a presence in leading multibrand stores in 31 large cities and further international growth is anticipated.

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

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.

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.

Case study: Lebanese goods distributor

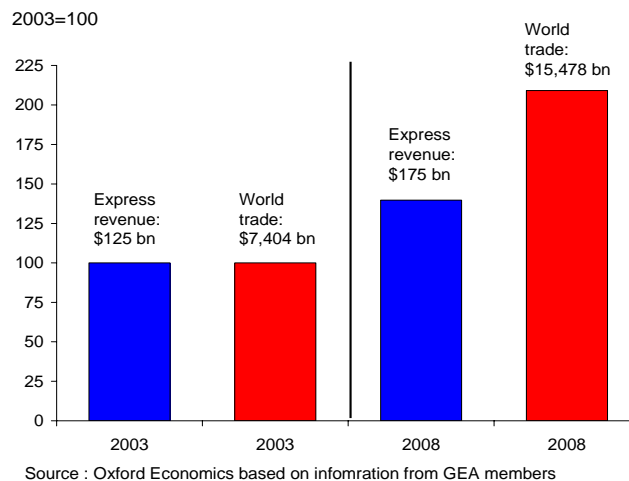
This Lebanon-based company provides its worldwide clientele with Lebanese food and products, directly from Lebanon. Their main delivery challenge is to handle perishable goods and have their packages delivered as fast as possible in a perfect condition. To meet these needs, it relies on express services to deliver the full logistics supply-chain, from collecting the goods from the various supplies, packaging them, and delivering them to their respective destinations in more than 100 countries worldwide. With the support of express delivery services, the business has achieved significant growth in their internet-based operations.

Express services are typically used for delivering relatively high-value/low-weight products. For example, in Italy air transport is used to carry just 0.4% of exports by weight but 11% of exports by value, with the express industry accounting for more than half of these exports by value.

The benefits that express delivery offers have resulted in the revenues of the express operators rising by around 40% cent since 2003 (or 20% when stripping out the effects of inflation). But that revenue growth has not kept pace with the sharp acceleration in the value of world trade (Chart 2.4). This is likely due to a combination of factors, including:

- The **increasing share of developing countries in world merchandise trade** that reached 34 per cent in 2007, an all-time record level. Express delivery services are relatively underdeveloped in developing economies, particularly those within Asia and Latin America, but those economies will offer considerable opportunity for expansion over the coming years.
- **Impact of restrictions** – Restrictions placed on the operations of the express industry in fast growing trade areas such as Latin America, the Middle East and Africa, and Asia Pacific mean that companies in some of these countries cannot take full advantage of express services and this undermines their ability to operate efficiently in an increasingly global market and hence their ability to benefit from increased trade. This undermines both their performance and the performance of their economies as a whole. We return to the impact of restrictions on express delivery services in Chapter 5 of this report.

Chart 2-4: Express industry revenues and the value of world merchandise trade



Over the longer-term, a combination of petroleum and metal prices moving back from 2008 highs and the express industry continuing to invest in new delivery routes to help support an increasingly integrated world economy, will mean the express delivery services will maintain its share of world trade (see Chapter 4 for more details).

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

The importance of the express industry in facilitating trade and competitiveness is highlighted by the results of business surveys and case study evidence from 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 the US, China, Chile, and six EU countries (UK, France, Germany, Italy, Belgium, Portugal, and the Czech Republic) about their use of express delivery services. The surveys are supplemented by a new business survey covering companies in Germany, Brazil, and India. In addition, the report draws from case study interviews undertaken with senior executives in the US, Asia, Latin America, and the Middle East.

The US survey results show that express delivery services are very important to a third of US companies in order for them to meet delivery commitments to clients. In European survey around a third of companies frequently use express delivery for sending products to customers, while over half do so at least occasionally. And around 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

In Brazil and India, almost half of companies frequently use express delivery for sending products to customers. A similar proportion reported that express delivery services are very important part of their company's ability to compete in both domestic and international markets.

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.

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: US machine tool manufacturer

For over 70 years, this company has been developing innovative machinery and tools for mining, road and building construction, the automotive, air and space industries, as well as for agriculture and forestry. With its headquarters in the US (Pennsylvania), the company now has around 13,500 employees worldwide located in over 60 countries.

With its machinery and tools, the company is bound to a service promise to its customers. Part of this promise is to be able to provide products quickly in case of need, in order to keep waiting time to a minimum. For this reason, the company has a central distribution warehouse on each of the five continents. The two largest warehouses are located in the USA and in Europe, where most of their customers are located.

Express delivery services are used to provide a fast and reliable connection between the European central warehouse and their American customers. This means the company can deliver products to its American customers on the following day, even if they are not available in the American warehouses but have to come from Europe

According to the Manager of European Distribution, express delivery services "have assisted us in establishing an optimal connection between our European central warehouse and customers in the USA, Canada, and Mexico. In the end, that benefits our customers, who can then get their products as needed just as quickly from our European warehouse as from one in the USA".

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

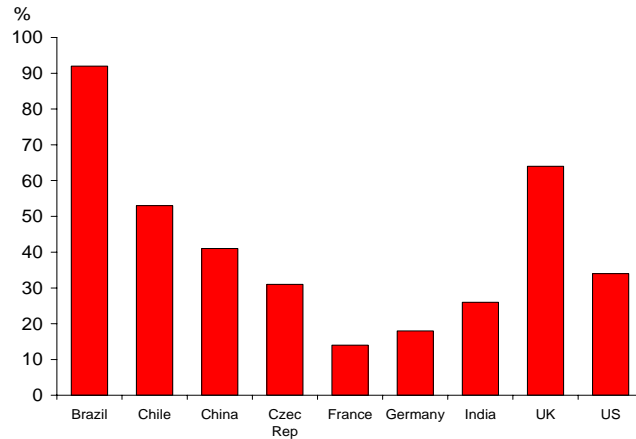
Many companies rely on express services because their company's products are perishable/time-sensitive. This includes companies in the food, pharmaceuticals, electrical engineering, and business services sectors.

Almost 40% of businesses surveyed use next-day delivery services to meet more general time-critical commitments to clients (Chart 2.5). More specifically, nearly two-thirds of firms surveyed 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.

Case Study: French food products exporter

This well-known French bakery, an SME, has just three shops - two in Paris and one in London, and a large facility outside Paris that bakes 24 hours a day. The loaves are sold to about 2,000 stores, hotels, and restaurants in France and abroad, and are shipped worldwide via express delivery services to assure maximum freshness. About 20 percent of the company's €15 million annual revenue comes from international sales delivered by express service.

Chart 2-5: Are next-day delivery services very important for delivery commitments to clients?



Source : Oxford Economics, CBI

Case Study: South African fresh produce exporter

This consortium of fresh produce exporters in South Africa was formed in 1998 to create, within free-market principles and a deregulated environment, a prosperous but disciplined fruit-export sector. The consortium has 66 members, which represent 76% of the fresh fruit volume exported from South Africa. The membership profile includes exporters, producer-exporters and industry related service providers.

Fresh produce is a major export industry for South Africa, earning over R8bn in foreign currency, and providing over 400,000 jobs. South African fruit is generally of a high quality and much desired by international buyers. Market opportunities are opening up in the People's Republic of China, Russia, the Middle East, Eastern Europe, India, and in Africa. Many markets with great potential are distant from South Africa but the consortium is committed to maintaining the high quality that has earned South African produce its prestigious reputation.

"Fruit is a perishable commodity and the timely delivery of it into any specific market not only determines the freshness and quality, but also the price," says the consortium's chief executive officer. "Consumers are increasingly demanding higher sanitary standards for fruit and phytosanitary protocols have to be adhered to if an exporting country wants to maintain its global position. The same would apply if the exporting country wants to open up new markets." For many products, the rapid transport and careful handling offered by express delivery can be critical to meeting customers' expectations.

Detailed case study interviews from previous research 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 highlighted in this report include:

- Firms in the electronics and machine tools 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.

- Companies in the manufacturing sector who must get must be able to produce and dispatch new designs to their customer' during the development and approval of new products to secure a new order.
- A garment manufacturer who must to produce and dispatch new designs within days for order fulfilment.

The survey of companies in Brazil and India shed light on the possible impact on orders lost because of longer delivery times. Around half of companies surveyed in Brazil would lose orders if international express delivery services to and from the country were no longer available and those firms would lose around a quarter of their orders. Similarly, in India, just over 40% of survey respondents reported that they would lose around a third of their orders if international express delivery services were no longer available.

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

Case Study: Global Manufacturer of Sports and Lifestyle Goods

With annual revenue of over €10 Billion and more than 150 subsidiaries worldwide, this company is one of the world's largest manufacturers of sport and lifestyle goods. Its products, which include sports footwear, apparel, gear, and accessories, are available in almost every country. The geographical scope and scale of the operation, shorter time to market requirements, coupled with a discerning customer base have necessitated the development of multiple supply chains and transport models, new outsourcing concepts, as well as the development and procurement of innovative services that only the largest express and logistics providers can offer.

For example, the company ships a significant portion of its products from Hong Kong, Indonesia, Thailand, and Vietnam into European Union countries. To improve delivery efficiency, simplify customs clearance, as well as to reduce the overall transit time to a large number of delivery points, the company uses an innovative break bulk express delivery solution. Shipments destined for individual retail stores and sales offices are consolidated at origin and cleared through customs at a single gateway in the European Union, greatly reducing the cost of clearance and potential for delay. After clearance, the consolidated shipment is broken down into individual components and delivered through the express provider's regional network without any further customs documentation requirements or additional charges. Throughout the process, the customer has full visibility on the location of his or her shipments.

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

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 geographically distant from their largest markets – 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. Example countries include South Africa, Australia, and New Zealand, and 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: 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 labour costs, and shorter cycle times.

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).

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

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, even during such times when world growth is contracting.

Case Study: Indian clinical research team

This company is a global pharmaceutical major with its clinical research team based in Mumbai conducting tests at sites across India. The company stores small batches of drugs, many of which are highly perishable, in carefully controlled conditions in Mumbai. Drugs are distributed to other cities only after patient appointments are arranged so pick-up notice is short and shipments must reach their destinations overnight. Often, the company needs to ship on holidays and weekends. To meet its unusual shipping requirements the company uses express delivery. The express delivery operator provides specially-designed gel packs to maintain constant temperatures and provides data on temperatures during transit. A dedicated team of express delivery drivers with special training are assigned to serve the company's needs. The close partnership between the company and its express delivery operator, and the high level of speed and reliability the express delivery operator provides in delivering perishable shipments, make it practical for the company to maintain its research and testing operation in India, and to make the latest medical advances available to special Indian patients.

3. The role of the express industry in facilitating productivity and investment

Introduction

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 that they could not provide themselves. This is particularly important in facilitating their participation in export markets.
- Express services contribute to regional development by enabling businesses to locate in regions that are not necessarily close to their market. This includes many developing countries.
- 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...

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.

The efficiencies companies derive from using express services are demonstrated by a 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 (e.g. for computers). According to PA Consulting, these strategies have been found to reduce total supply chain costs by between 3% and 5%.

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

The key role express services play in helping companies avoid interruptions to the production process is also illustrated by the survey of companies in India. For example, respondents expect that, without next-day delivery, production would on average be interrupted on more than 10 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 16 days a year.

The 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.

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: Romanian business services support company

This company has become the first Romanian supplier capable of providing complex integrated solutions for cash management, customer flow management, automated identification of data, and brand/documents security. As the leading Romanian expert in the analysis and automation of cash processes, the company is able to provide any type of store with complete front-office and back-office, store equipment, and anti-theft systems. Since its beginning, it has provided solutions, along with service and technical assistance, to over 3000 companies in finance and banking, retail, logistics and warehousing, distribution, transportation, telecommunications, and other industries. By investing in the latest technologies and offering the best-in-market products and services, it assured not only its own rapid growth but the success of its customers and partners on the local and international markets.

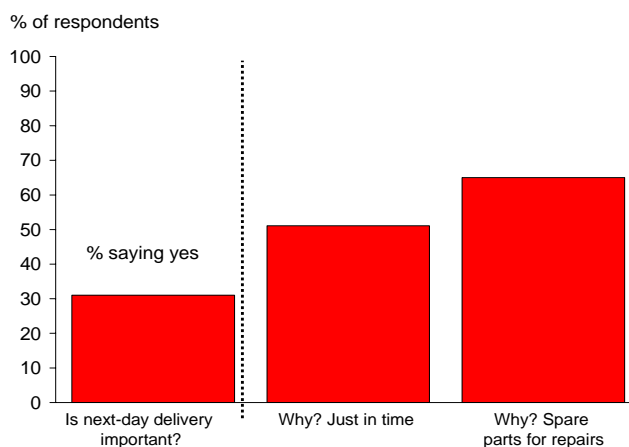
In order to achieve and maintain its high pace of development in a market that has recently joined the European Union, the company needed the support of a reliable and flexible partner in transportation able to ensure its connections with key suppliers – more than 25 international partners – and with customers in all Romanian cities. From the beginning, its partner in transportation has been a business-to-business express delivery company. The use time-definite services have helped to shorten distances and provide the best service on the market, and an essential contributing factor in delivering 24/7 expert customer service.

...and reducing companies' inventory costs

Business surveys covering nine countries across North America, Europe, Latin America, and Asia show that around a third of 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 50% report that next-day delivery of sub-components is important because they operate a just-in-time inventory system, while around two-third require urgent delivery of spare parts for machinery in case of breakdown.

Survey evidence and the case studies clearly show 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 UK over the last 20 years, saving UK companies over £6 billion a year. Large savings are likely to have been achieved in other developed economies.

Chart 3-1 – Use of express services for production



Source : Oxford Economics

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 inventory financing expenses of 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, USASEAN Business Council

In order to illustrate the role of the express industry in helping firms to minimise their inventory costs, firms in Europe, Brazil, and India were asked how they would react if next-day delivery services to or from their countries to foreign locations were no longer available. In Europe around 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.

The importance of express services to efficient inventory management is further illustrated by the survey of Brazilian companies. This found that, if international next-day deliveries were withdrawn, firms would, on average, have to increase by 10% their inventories of intermediate goods to meet the requirements of the production process. And Brazilian companies' inventories of finished goods would have to increase by 9% on average to ensure that consumer demand could be promptly met.

Similarly, in India, around a third of survey respondents report that they have achieved inventory cost-savings through the use of express services: without them, their costs would be over 2% higher.

Express services help SMEs serve global markets...

The vast majority of firms are Small and Medium-Size Enterprises (SMEs – i.e. firms with fewer 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.

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 – time-sensitive delivery, reliability, and tracking – provided to large companies. The express industry allows the many small firms that are part of a network (e.g. owned by a single entrepreneur) to transport products between operations quickly and efficiently. Moreover, express services will assist in completing customs clearance procedures so that SMEs don't have to concern themselves with the numerous rules and associated paperwork.

Case Study: Cambodian handicraft producer

This SME company is a fair trade producer of a variety of Cambodian handicrafts. Exports play a small but important part of their business success. However, exporting handicrafts from a developing country is not always straightforward. In the past they used several creative means to facilitate exports: sometimes the handicrafts were carried onto the aircraft by hand by friendly travellers and posted within the destination country; in other cases the company shared shipping with other larger local businesses.

In 2004 the company decided to experiment with express delivery. The results were so entirely satisfactory that the company now relies exclusively on express services to deliver its exports. Express services take care of the required details for customs clearance and have helped the company achieve "100% safe delivery of our products, in good time".

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

Case Study: U.S. manufacturing company

This company has been producing industrial sewing machines in Newington, Connecticut in the USA since 1838. As textile and apparel production shifted from the U.S. to other locations, the company has followed its customers overseas. The current company president, the eighth generation to manage the family-owned business, describes the transition: "One of our biggest challenges was to figure out how to continue to compete efficiently as a global company, as we actively sell sewing machines and spare parts to 85 or more countries. Global agencies, what we used to call distributors, have been weakened so much in the last 25 years that it has become necessary for us to service and support end-users directly. Our international business is viable now largely because of our ability to use express delivery to have proximity to our markets."

Case Study: French SME

Founded in 1993, this SME has 30 employees located just outside of Paris. It offers a wide range of upmarket, creative products, including cutlery, accessories and dinner sets. The company's exports have grown quickly, thanks to its presence at trade shows in France, other European countries and the USA. Today, this company makes 55% of its turnover through exports, mainly to the USA (20% of global turnover), but also Germany, Italy, the United Kingdom and Australia.

To ensure the quality of customer service and guarantee business development, the company must deliver ready-to-use products to its customers and be able to inform them about the status of their delivery at any time. To meet demand, this company must send numerous packages (the average weight for the USA is 8 kilos). These shipments are destined for multiple locations and must meet short deadlines.

To manage these constraints, this company uses express delivery services to deliver its parcels within the European Union (France, Germany, Italy and the United Kingdom) and to the USA. This service allows the company to plan delivery times in a reliable way according to the destination and to track its shipments very closely in order to provide the most accurate information possible to customers at any time. Moreover, by managing the constraints of an SME specialized in upmarket products, the express delivery services provider helps the company to reinforce brand image, meeting customers' needs for quality, reliability and transparency.

Case Study: French cheese exporter

This company was launched in 1996 with the ambition of becoming a worldwide purveyor of French artisan and farmer cheeses, products traditionally made and consumed locally. According to the founder the company faced several difficulties of shipping cheese around the world: the product is perishable, “if delivery is delayed for six hours beyond what I expect I will not allow it to be delivered”, and it is an agriculture product (“no two countries have the same rules”).

The company turned these problems over to an express services provider. A review of the company by Fork & Bottle, an on-line reviewer of internet gourmet food purveyors, noted that an order placed for a New Year celebration in California, placed on 27 December, was delivered by express services 72 hours later, less than 24 hours after being shipped. “Everything was beautifully packed with four reusable ice packs. The cheeses were perfect – no compression from being packed. I was nervous ordering from France – but really it was perfect transaction. No hassles.”

...and support regional development...

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 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 titled ‘Express hubs as a spur to regional development’ describes such clustering around the major express hubs in the US and continental Europe.

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) Memphis:

Memphis International Airport - Federal Express’ 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).

(iii) Leipzig:

In May 2008, DHL opened its new €300 million Central European Air Hub at the Leipzig/Halle airport. Night flight operations, which are key to express operations, could no longer be expanded at the existing DHL hub in Brussels. Seamless connections to road, air and rail transport, 24-hour operations and comprehensive night-flight authorization create the ideal basis for enabling a trimodal hub to serve intra-European and intercontinental traffic. More than 2000 jobs have been created so far, their number is expected to rise to approximately 3500 in the future as the hub expands. Nearly 90% of the newly employed workers come from the region around the airport. Two-thirds of them were previously unemployed. Some 7000 more jobs will likely be created in the surrounding area. Furthermore DHL is training young people in various logistics and IT professions at the airfreight hub. Experts predict that a large-scale investment in the Leipzig/Halle site will provide strong impulses for the area's overall economic development.

(iv) Louisville:

Louisville International Airport is home to Worldport, the all-points air hub of UPS. The location of Worldport has been a tremendous economic engine for the city of Louisville and surrounding communities. More than 100 companies have located in or near Louisville to tap into UPS' extensive logistics and distribution network. According to Greater Louisville Inc., as the city's chamber of commerce is known, the estimated annual impact of UPS' Worldport expansion was nearly 14,000 new jobs (direct and indirect) and \$478 million in new payroll (direct and indirect). Companies doing e-commerce fulfillment in Greater Louisville include Nike, Zappos, and Gateway Computers. Companies doing traditional transportation fulfillment include GE and Ford.

...and helps facilitate foreign direct investment

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.

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 international transport links are particularly important. For example, a survey by Cushman & Wakefield shows about 60% of companies consider easy access to markets, customers or clients, as "absolutely essential" when deciding where to locate their business.

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, business surveys in European countries show that investment would be vulnerable if next-day delivery were no longer available:

- 30% of French companies and 10% of Belgian firms would seriously consider outsourcing production.

- 35% of Portuguese companies report that they would possibly have to relocate some operations from Portugal to another country.
- Over 16% of UK companies and 10% of Italian firms report they would possibly have to relocate abroad.

Conclusion

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

Case Study: Indian telecommunications company

This company is a new, fast-growing provider of telecommunications infrastructure in India. It must be certain that it can provide a world-class service to its customers in India, where the market is highly competitive and service "down time" must be kept to an absolute minimum in order to preserve reputation and brand loyalty. The company needed a logistics partner that could provide support across a wide geographic area. The logistics partner also needed to maintain supply facilities in key strategic locations to facilitate the fastest possible response times and 24/7 distribution of critical spare parts to customers. The Indian company chose an express delivery operator as its partner. The express delivery operator maintains two warehouse facilities, in New Delhi and Chennai, where it manages inventory and orders, packing and dispatching, and return of defective parts. It guarantees next-day delivery of spare parts to all major cities across India and replenishment of parts at the two central warehouses. With the express delivery operator taking care of the entire storage and distribution supply chain the telecommunications company is able to concentrate on growing its core business and increasing its competitive edge.

4. Prospects for the express industry and its impact on global economic growth

Introduction

In this Chapter, we consider the future prospects for the express industry and calculate its likely direct contribution to world GDP and employment in five and ten years' time.

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 in the economy. In this Chapter we highlight the dependence of companies' sales on express services, while in the next Chapter we discuss the implications that restrictions on the availability of express services would have on economic performance.

Key Findings:

- The express industry made a significant contribution to world growth in the past and we expect it to do so in the future, but industry growth will be weaker over the next five years than in the previous five years.
- Despite the short-term prospect of falling world trade and a contraction in world growth, the industry will continue to support global trade by delivering to new destinations quickly and cost-effectively. Moreover, the industry will enable companies to achieve significant cost saving by facilitating a more streamlined production process.
- The growth of express services is expected to average 3% a year in real terms over the next five years then accelerate to 7% a year over the following five years, providing there are no further constraints on its growth.
- The growth prospects of the industry will outpace that of world GDP and mainly reflects the longer-term prospect of expansion of international trade and the increasing need for rapid, guaranteed delivery, particularly in emerging economies.
- There is little sign the relatively new technologies, such as e-mail, will prevent the express industry from growing faster than the economy generally.
- As a result, employment in the express industry globally is expected to increase from 1.3 million now to 1.8 million by 2018, if growth is not constrained.
- If Express services were constrained to grow in line with GDP, then employment in the express industry would be around 300,000 lower than these forecasts by 2018.
- Companies' success in the fast-growing knowledge-based sectors will be facilitated by the express industry.

Express services to continue to perform well ...

Over the last five years the express industry has performed well, with turnover rising on average by around 4% a year in real terms (i.e. over-and-above inflation), slightly ahead of the rate of growth of the world economy as a whole.

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

The express industry is likely to remain a healthy growth sector over the medium to longer-term. 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 over the short-term, in an economic climate of falling world trade and a contraction in world growth, the express industry will continue to support the activities of their client base in several ways including:

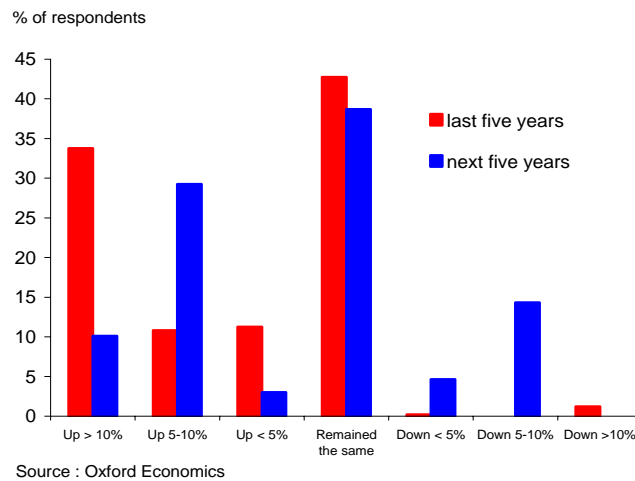
- **Lean-inventory:** Express services enable companies to achieve significant cost and time savings by facilitating more streamlined production processes (reduces firms' storage costs) and rapid provision of spare parts, especially for companies with overseas subsidiaries or suppliers
- **Global sourcing:** Express services increase the area from which inputs can be sourced, facilitating the purchase of inputs from cheaper suppliers.
- **Quality of service:** To remain competitive many businesses have to adapt to a changing global client base and deliver products to and from new destinations quickly and cost-effectively. The express industry facilitates this by connecting 90% of world GDP within 24-48 hours.

...but growth will be weaker over the next five years...

International trade is expected to continue to grow rapidly over the longer-term – Oxford Economics forecasts it to increase by almost 70% in real terms (i.e. adjusted for inflation) over the next decade compared with a rise of 45% in world GDP. But as alluded to in Chapter 2, these long-term growth prospects hide short-term weaknesses. Both world trade and world GDP are expected to contract in 2009, and be generally weak in 2010, with the slowdown most abrupt among the industrialised countries.

A recent business survey supports the view that growth will be weaker over the next five years compared with the recent past. The survey asked German companies whether they had increased their use of express delivery services over the past five years and how they believe their use of express delivery services will change over the next five years. Around a third of respondents reported that their use of express services had risen by more than 10% over the last five years, while just 10% of firms expect such robust growth over the next five years. However, 30% of firms still expect to increase their use of express delivery services by between 5-10% over the next five years and overall, respondents reporting an increase in use of express industries outweighs those anticipating a decline in use.

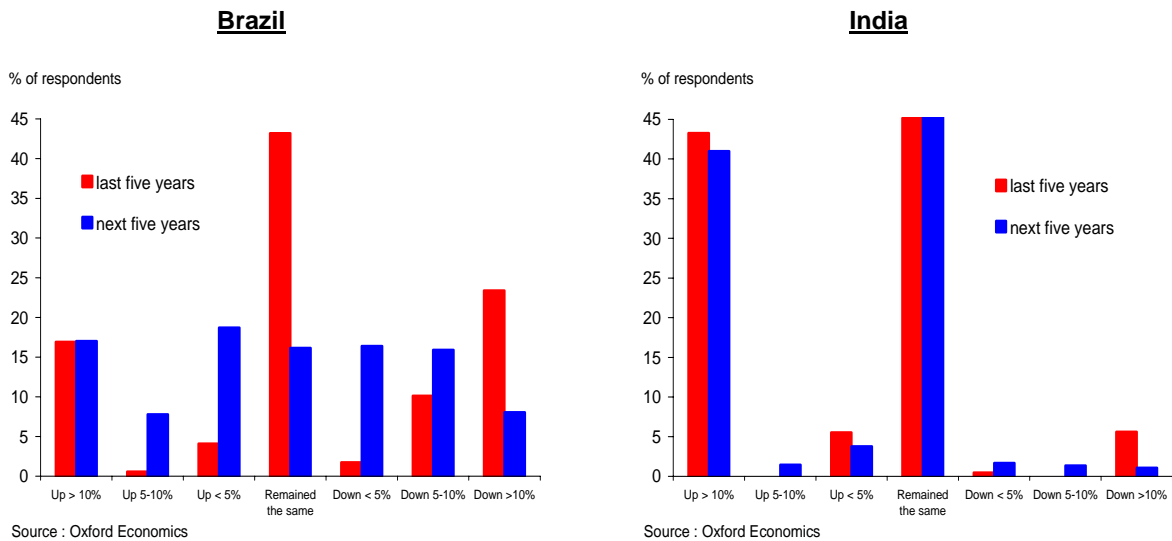
Chart 4-1: The use of express services in Germany



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, over 40% of businesses surveyed in India expect their use of express delivery services to increase by over 10% in the next 5 years, and, on balance, more companies surveyed in Brazil expect an increase in the use of express delivery services over the next five years than expect a decrease in usage.

Chart 4-2: The use of express services in Brazil and India



Business surveys also 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. Indeed, in the UK e-commerce has become becoming a major driver for the economy, and the

express industry will play an increasingly important role in the supply chain ensuring business efficiency and consumer satisfaction.

...before world growth picks-up across all regions...

Over the medium term global growth rates will pick-up helped, in part, by strong emerging market growth rates, particularly within Asia, and a return to growth for the industrialised countries.

This upturn will be reflected in the growth rates of both world trade and world air cargo traffic. Boeing expects world air cargo traffic to expand at an average annual rate of 5.8% over the next twenty years, with the fastest growth in Asian markets – the domestic Chinese and intra- Asian cargo markets are forecast to increase by 9.9% and 8.1% a year respectively.

... with output expected to rise by 5% a year over the next decade...

We expect the express industry to continue to increase its share of the air cargo market, growing by an average of 5% a year in real terms between 2008 and 2018. This is in line with growth we expect in world trade and well ahead of our forecast of 3% a year real growth for the world economy over the whole of the next decade. Note, this is slightly slower growth than implied by the projections from Boeing and reflects the current slump in air cargo traffic (IATA expect a double digit decline in air cargo traffic to in 2009) - we expect that world air cargo traffic will expand an average annual rate of a little under 5% over the next decade.

The period 2013-2018 will see particularly strong growth for the express industry, world trade and world GDP as the global economy rebounds sharply out of the current downturn.

Table 4-1: Prospects for the express industry over the next decade

Real terms (i.e. inflation-adjusted)	Per annum growth 2003-2008	Per annum growth 2008-2013	Per annum growth 2013-2018	Per annum growth 2008-2018
World Trade	8	3	7	5
Express industry output	4	3	7	5
World GDP	3.5	2.5	3.5	3.0

...boosting direct employment to 1.8 million...

The direct contribution of the express industry to global GDP is set to increase by over 60% by 2018 to reach about US\$135 billion in today's prices. This rate of growth will result in overall GDP being over US\$25 billion higher by 2018 than if the express industry grew merely in line with our GDP growth forecast of 3% 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.)

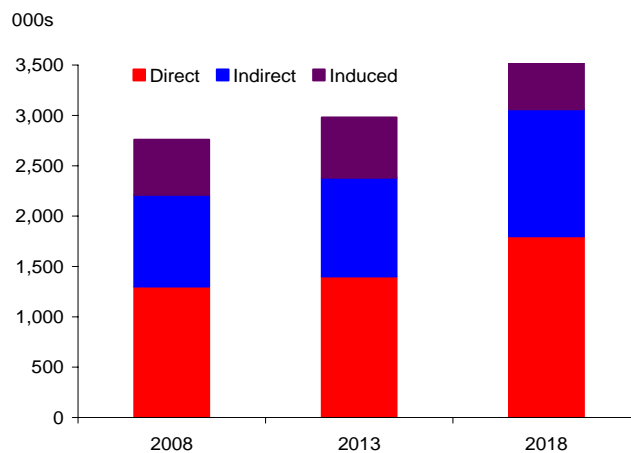
There will also be benefits to global employment from the express industry's continued fast growth. In 2008 employment in the express industry is estimated to have been 1.3 million worldwide. We expect it to reach 1.8 million by 2018. If express services were constrained to grow in line with GDP, then employment in the

express industry would be around 300,000 lower than these forecasts by 2018.

...and 3.8 million jobs supported by the express industry

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 3 million by 2013 and reach 3.8 million by 2018. The majority of these new jobs are expected to be in the emerging market economies.

Chart 4-3: Employment supported by the express industry by 2013 and 2018



Source : Oxford Economics

Case 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...

Companies are likely to become increasingly dependent on express services, particularly over the second half of 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.

The survey of companies in Brazil, Germany, and India demonstrates the importance of express services to company sales. The surveys suggest that express services are key for:

- 17% of sales revenue in Brazil (and 30% of sales revenue of firms operating in the food industry)
- 11% of sales in revenue Germany (and 80% of sales revenue of German IT service suppliers)
- 8% of sales revenue in India

...as knowledge-based sectors expand

Express services are likely to be particularly critical to the companies' success in the knowledge-based sectors, such as 'high tech' parts of manufacturing, IT & telecommunications, financial & business services and also those related to internet-based businesses (including those in retail industries).

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) - 82% of electronic & electrical equipment companies surveyed in Germany would be very badly effected if international delivery services to and from their country were no longer available
- Failed items, such as personal computers, for which rapid repair and return is essential – Over half of IT service providers surveyed in India stated that express delivery services were very important to the overall business performance and two-thirds expect their use of express delivery services to increase by over 10% over the next five years.
- Items purchased on-line, where rapid delivery to the customer is essential. A recent report on the express industry in China supports this view – 35% of all express deliveries were through on-line purchases and this 'e-business' delivery is expected to continue to grow at a fast pace and become the new area of growth for express delivery enterprises operating in China.

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 years – they will become increasingly reliant on the services of the express industry.

Conclusion

The express industry is a fast-growing sector in its own right, outpacing world GDP as the industry serves the increasing need for rapid, guaranteed delivery across an increasingly global market. The industry will support around 3.8 million jobs globally by 2018.

5. The impact of restrictions on express delivery services

Introduction

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.

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.
- Restrictions on express delivery services generate significant economic costs. For example, imposing a restriction that led to international next-day delivery services no longer being available in the EU could reduce GDP across the EU by more than €16 billion a year.
- The benefits from liberalising express services would be substantial. For example, it is estimated that China's output would increase by almost US\$180 billion over five years, generating an additional 700,000 jobs.

Policies and regulations affecting express delivery services...

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.
- **Preferential treatment** – government-owned or sanctioned delivery service providers may receive preferential treatment for their express delivery services in, for example, the application of customs procedures and enforcement practices; and the enforcement of traffic laws.
- **Restrictions on market access** – foreign express delivery companies may be restricted to international gateways only, therefore forcing them to use a local partner. This creates a reputation risk associated with loss of custodial control throughout the entire supply-chain.
- **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 taxes on total receipts) and do not allow automatic renewal, requiring express delivery companies to reapply annually. Others require licensing express services for private firms but not for publicly-owned postal bodies. For example, an international provider of express delivery services may have to obtain 10 to 12 licences to do business; including licences for foreign investment, international freight forwarding, customs express shipments consignee, air transportation sales agent, road transportation, etc. 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. Others apply different value and weight criteria for imports and exports. 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.

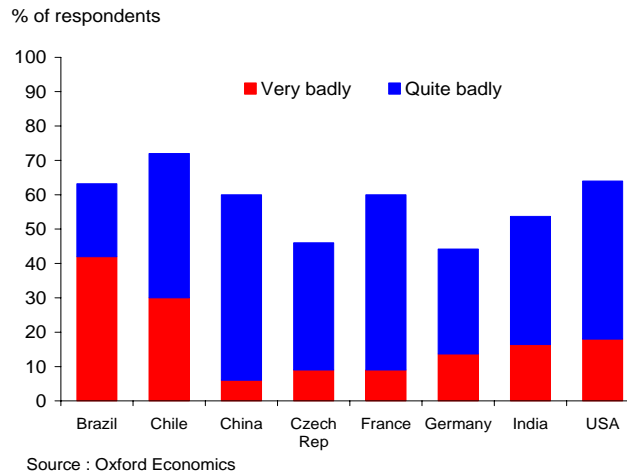
- ***Inconsistent and unpredictable valuation criteria and inspection procedures.*** Frequent amendments to customs procedures are not always well communicated and lead to different interpretation of existing notifications by customs personnel.
- **Restrictions on access to aviation markets** – The major express delivery companies (i.e. 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 in a package’s journey, from pick-up to final delivery, the international express delivery companies must work through agents and 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. Indeed, in some countries, cargo delivery vehicles are not permitted to enter congested city centres during the important early morning delivery and late evening pick-up slots.
- **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.

...hinder the performance of businesses...

Survey evidence clearly highlights that if the availability of express delivery is constrained it would have an effect on the performance of business. Overall, some 20% of business consider that their company would be very badly affected by the various ways in which the constraints on the availability of express services would impact on them, and around 40% of businesses surveyed considered their ability to compete would be either very badly or quite badly affected. These effects would be most strongly felt in Latin America – over 60% of

companies in Brazil and Chile feel their would be a very bad or quite bad effect on their ability to compete, with 40% of companies in Brazil reporting their international business activity would be very badly affected.

Figure 5-1: Impact on companies if international express delivery services to or from the country were no longer available



...and generate significant economic costs...

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.

The wider costs of restrictions on express services are clear from the surveys of businesses across Asia, Europe, and Latin America. 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:

- 40% of Indian companies expect that they would lose orders. It is estimated that orders would fall by over a third. And production would on average be interrupted on more than 10 days per year because spare parts for equipment could not be delivered next-day when needed. Indeed over 10% of firms believe that their production might even be seriously affected on more than 16 days a year.
- 20% of Brazilian companies would have to increase their inventories of intermediate goods by over 10% in order to meet the requirements of the production process.
- Over half of German companies expect they would lose sales. It is estimated that sales would fall by 2.6% in retail & wholesale trade 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.
- Over half 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.

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 €16 billion a year to EU GDP

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:

- • €3 billion in France
- • €2 billion in the UK
- • €1 billion in Italy
- • €300 million in Portugal²

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 €16 billion a year. Over a 20-year period, the cumulative cost in terms of foregone GDP would be over €350 billion.

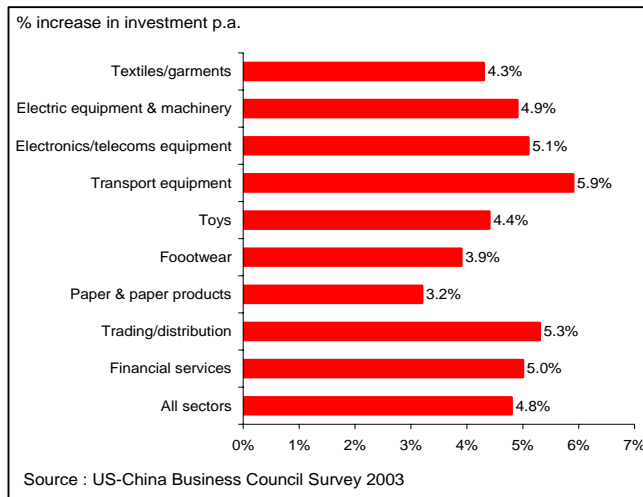
Liberalising express services can generate substantial economic benefits

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:

- Over 50% 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.

² 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.

Figure 5-2: Impact on investment of fully developed air express industry



On this basis, we estimate that a liberalised express industry would result in an additional US\$9 billion investment in China over a five-year period. Output would be expected to increase by around US\$180 billion. And employment would rise by over 700,000 over five years.

Conclusion

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.
- A new series of **surveys of companies** in Brazil, Germany and India conducted specifically for this study and supplemented with surveys of companies in Chile, China, Czech Republic, France, the US, the UK, Italy, Belgium and Portugal conducted by a number of independent research groups and published in the following reports:
 - **Chile, China, Czech Republic, France, the US:** *“Measuring Airline Network Benefits”*, Oxford Economic Forecasting (published October 2006)
 - **UK:** *“The economic impact of express carriers for UK plc”*, by Oxford Economic Forecasting and Mott MacDonald (published in January 2006)
 - **China:** *“The integrated express industry in China: A catalyst for growth and investment”*, by The US-China Business Council (published September 2003)
 - **Italy:** *“The impact of express carriers for Italy’s economy and competitiveness”*, by Oxford Economic Forecasting and Centro Studi Confindustria (published 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 studies** of companies who use express services. The case studies explore in more depth the ways companies rely on express services and 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:
 - **Global:** *“The impact of the express delivery industry on the global economy”*, by Oxford Economic Forecasting (published March 2005).
 - **ASEAN region:** *“Integrating ASEAN to global markets”* by The US-ASEAN Business Council (published in June 2005).

- **Europe:** *“The economic impact of express carriers in Europe”*, by Oxford Economic Forecasting (published in 2004)
- **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)

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

- *“The impact of the express deliveries service industry on Thai economy”*, by the faculty of Commerce and Accountancy, Chulalongkorn University (April 2008)
- *“Report on the Express Industry in China in 2008”*, by XU Yong, Chief Express management Consultant, CECSS)
- *“Cushman & Wakefield Cities Monitor, 2008”*, published October 2008
- *“Express delivery services: Competitive conditions facing US-based firms in foreign markets”* by US International Trade Commission (published in April 2004)

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.