



Global Express & Small Parcels 2018 – Report Overview

Introduction

In terms of headline growth, at least, these are good times for express parcels carriers. According to Ti's figures contained in this report, the market will grow by 8.6% in 2018, following on from just slightly higher levels of expansion in 2017. The development of the market is evenly split, with both domestic and international markets growing at about the same rate: 8.7% and 8.1% respectively.

The market is not only benefiting from a strong economic environment which is driving B2B volumes, but from the continued expansion of ecommerce, manifesting itself in high B2C growth rates. As is discussed in detail in this report, this has provided many carriers, not least the global integrators, with the headache of how to adapt their networks, pricing and operations to lower value e-commerce volumes both domestically and, increasingly, internationally.

The importance of crossborder e-commerce is undoubtedly an issue for the global players and a factor in the growth of this part of the industry. Expansion of the international market by 8.6% in 2017 was an acceleration of 3.2% percentage points over the previous year and ecommerce volumes were a major causal factor in this trend.

Although the majority of the parcels shipped crossborder will have benefited the networks of the postal operators (which charge just a few dollars per parcel) the growth of the express market is testament to the increasing willingness of consumers to pay for faster, tracked delivery, at least for higher value purchases. UPS has gone on record as saying that it had seen a "continued shift" towards its premium Worldwide Express and Transborder Express services, while DHL's time definite international (TDI) package volumes grew at almost 10% last year.

Over the next five years, Ti expects this rate of market growth to continue with a real compound annual growth rate (CAGR) of 8.2%, with the domestic market growing at 8.6% and the international market growing at 6.2%. Our analysts believe that the widening gap between the two sectors suggests 2017 and 2018 were unique years, caused largely by the strength of the global economy.

As already highlighted, the growth of the e-commerce sector is proving a 'double-edged sword'. In theory the economies of scale from higher volumes ought to drive profits higher. However, in a hyper-competitive market where rates are continuously under-pressure, companies are struggling to contain the costs of bringing in the extra staff and resources necessary to cope with the high growth in volumes. Rising fuel costs are also a factor. Delivery to individual's households is more expensive than B2B, due to the less dense nature of the network and the fewer numbers of parcels delivered per address. Continued cost pressures have resulted in re-structuring at both UPS and DHL.

International business is also facing some headwinds, not least the trade war between the US and China. This uncertainty, added to by Brexit in Europe, has the potential to weigh on the performance of many of the international express carriers, and in the case of UPS has already impacted upon its latest quarterly results (October 2018). Despite this, it would be wrong to overstress the importance of a trade war. China-US trade accounts for just 2% of FedEx's



revenues and not all of the volumes are affected by tariffs. However, protectionism has the potential to cause a wider economic slowdown which would be damaging.

Major players are restructuring and refocussing as they prepare for change

The seismic changes in market dynamics over the past decade have led two out of the 'Big 3' express parcels carriers to announce major changes in the way in which their marketing and operations are structured. Although there is no avoiding the crushing importance of ecommerce, there is what could be described as a determination by the major players not to become victims of the high cost/low margin nature of the B2C volumes involved.

In part, a major strategy announcement in September by UPS was designed to reassure investors that in the future it would be more selective about accepting expensive e-commerce volumes which had hitherto impacted upon its margins. The market believes that FedEx has taken a stronger line on B2C volumes and UPS's move could be seen as a reaction to this. At the same time, UPS announced a major capital investment programme in automation which should help it push down costs per parcel.

DHL is also coming to terms with the same challenge of making good returns on e-commerce volumes. Its Express division (traditionally B2B) has thrived due to its focus on higher value shipments, whereas its Post- eCommerce – Parcel (PeP) operation has suffered from rising costs and under investment. It announced in June that PeP would be divided into two parts; one focussed on Germany and the other named 'DHL eCommerce Solutions' composed of DHL Parcel Europe and DHL eCommerce. It still remains to be seen whether this new division will eschew volume growth for higher margins, a course its global rivals seem intent on. It, too, announced future investment on digitalization and automation which it hopes will drive down costs.

So where will higher margin volumes come from? UPS's announcement suggested that its future focus would, in addition to ecommerce, be on SMEs, non-US operations, and life sciences, very much a continuation of its positioning of the last few years. The emphasis on 'International High Growth Markets' will require considerable investment in assets outside of the US if it is to rival DHL and even FedEx which is integrating TNT. There may also be a change of culture underway, by drawing in people from outside of the organization.

What is clear, pharmaceuticals, life sciences and healthcare (whichever term is used) is growing in importance for the express sector as a whole. Companies see opportunities to make better returns due to the more complex handling, regulatory and operational sophistication of the sector and a changing demographic which will lead to market growth for many years to come. The greater market barriers to entry would seem to indicate higher margins due to lower levels of competition. A more solutions driven approach could also save healthcare customers money – increasingly important as public spend on health comes under pressure. UPS's app which will allow hospitals to track deliveries and route them to the right department within their campus is just one such measure.

However, these assumptions could be dangerous. As discussed in this report, one area, Direct-to-Patient (DtP) although seemingly attractive in theory for express operators, risks being starved of investment by healthcare operators, with logistics falling victim as an 'easy'



target for squeezing costs. There is also the spectre of Amazon entering the space with its low cost and high visibility supply chain tools. Its acquisition of US online pharmacy PillPack in June has already sent shockwaves through the global pharmacy sector.

Conclusion

From the market growth rates it would be easy to assume that the underlying health of the express parcels market was strong. In part, this is indeed the case. However, market growth masks a much more complex picture as carriers struggle to come to terms with the changing dynamics of the sector. Focusing on specific sectors such as healthcare may be advantageous. In the long run, though, carriers will need to decide on a strategy which enables them to benefit from the ecommerce.

The Big 3 – Facing disruption?

It had been accepted wisdom that the major express parcels companies, especially the 'Big 3', UPS, FedEx and DHL, have built operations and businesses which are so strong as to make them immune to disruption.

The global networks they have developed, their brands, their technology and the depth of their finances would seem to make them vulnerable to only a major shift on the demand side. However, this is only partly true. There are four types of new market entrant which could compete effectively against the market incumbents (whether the 'Big 3' or national/regional players).

- A small number of market entrants which have the resources and the innovative operating models to challenge the 'Big 3', not least in terms of brand, for significant parts of their business. (e.g. Amazon, Alibaba, JD.com)
- Market entrants which can compete effectively at a micro-level e.g. execution of last mile delivery.
- Innovators which can provide platforms that allow shippers to disintermediate larger parcels networks and connect direct to small and medium-size carriers.
- Innovators which can provide low-cost technology to SME carriers allowing them to compete with large companies.

It is perhaps more accurate to say that some of the present operating models of the major players and the technologies they deploy are vulnerable rather than companies themselves. Although vast in size, companies such as UPS, FedEx and DHL have shown themselves in the past to be flexible enough to adapt to changing economic and technological environments.

Many of the innovators which are transforming the industry at present are providing services which can be used by the incumbents rather than actually threatening them directly. Therefore, although there is little doubt that the conditions exist for the express parcels industry to be disrupted by new technologies and business models, this is not to say that the giant corporations which dominate parts of the industry face an existential threat. In fact, these companies have been at the forefront of innovation over the years and there is no reason to believe that they cannot take advantage of the latest technologies to exploit new markets.

On-demand: The new frontier for the express sector?



The critical question for companies providing on-demand delivery services is whether or not there is a large enough market to support them. In order to make a profit, businesses like Deliv or Deliveroo need to have a high frequency of orders within an operational area and if this frequency drops below a certain rate the unit economics of the service are unworkable.

There are two main causes of this:

- The market was never large enough to support the service in the first place
- Competition from rival service providers has diluted market share

So long as competing start-ups possess the funding to expand their business, the latter issue can be addressed by pricing incentives for both couriers and consumers in order to build effective economies of scale.

This risks financial losses, forcing start-ups in a competitive market to make tough choices when the money begins to run out. Consolidation amongst the existing companies is inevitable, through M&A and bankruptcy. Due to the geographical nature of this market, it is likely that certain companies will dominate in certain countries; Didi Chuxing in China versus Uber in the USA, for example.

Sharing Economy and Crowdshipping

Smartphones and other connected mobile devices are very powerful communication and sensor platforms, allowing all parties to be combined into a virtual partnership via Apps through a service can be delivered to the customer. They have been utilized by disruptors such as Uber to challenge regulated sectors such as taxis, as well as within transportation.

The smart phone phenomenon has effectively democratized technology. Now all companies – and individuals – have high levels of computing power available to them which in turn has encouraged technical innovation to flourish. No longer do very large computing companies monopolise the development of software, rather everyone has the opportunity to conceive and develop new technology solutions, as well as distribute them to a mass market. This has led to disruptive, agile and continually evolving applications. Running in parallel with the distribution of computing power and hardware throughout the population has been the generation of massive amounts of data.

This has been brought about by the so-called 'Internet of Things'. By 2020 Gartner believes that there will be 20 billion objects or 'things' with some form of embedded computing device (often very simple) connected to the internet or 'Cloud'. The amount of data ('Big Data') which is generated can inform decision making opportunities which can bring significant benefits, be them economic, safety, societal or environmental.

Perhaps the best example in the transportation sector is the potential for use in cars and trucks. Not only can sensors provide information about the whereabouts of a vehicle, for instance, to a central database, but they can also interact with other vehicles around them. They can of course provide much more information than this, including the condition of components, making maintenance programmes more effective, as well as the standard of driving.

The technological innovations, democratization as well as the ubiquity of low cost sensors has combined with an important cultural shift to create the 'sharing economy'. Whereas asset



ownership was once seen as highly important, a new generation is happier to forego the status that this once bestowed in return for greater levels of efficiency or service. Many see that cars will become shared assets in the foreseeable future with a focus being on 'on-demand' services. This is due partly, it must be said, to economic necessity which puts many assets (housing, transport etc) out of reach of younger generations.

Crowdshipping is also part of this broader trend. Professor Alan McKinnon, says crowdshipping '...effectively turns ordinary citizens into couriers, creating new informal logistics networks for the local distribution of small items ordered online.' The concept involves ordinary individuals taking parcels with them on an existing journey and stopping to affect the delivery en route.

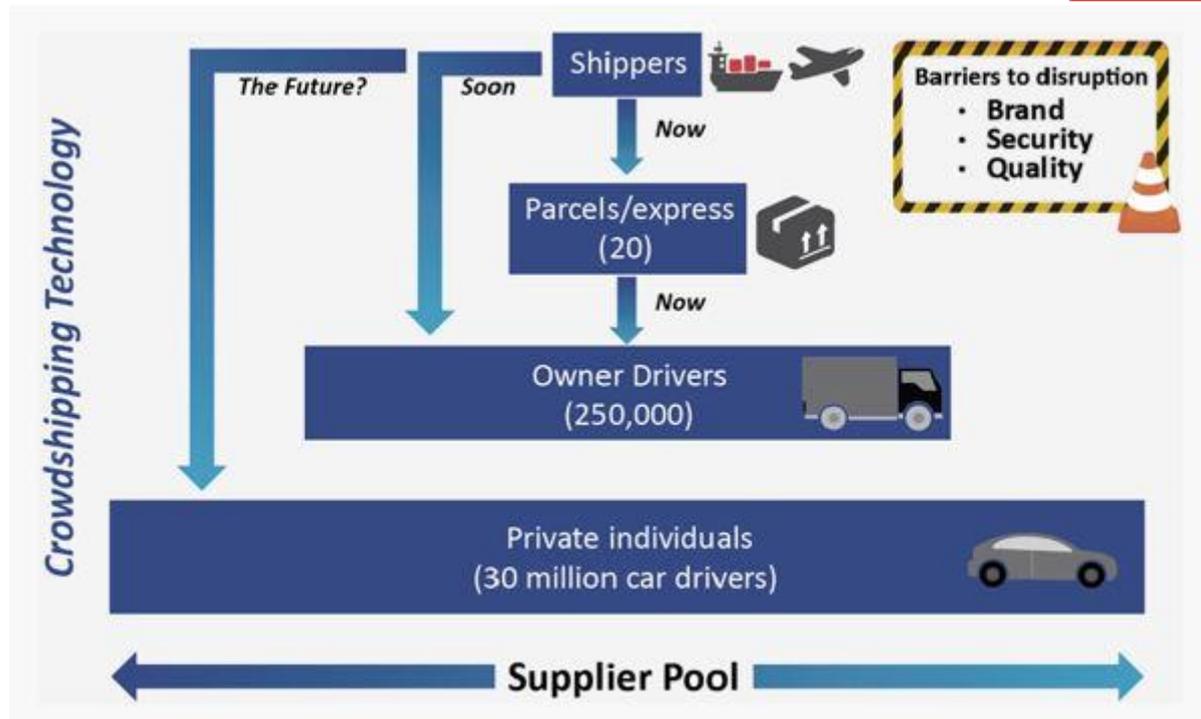
The benefit of this process is that the delivery can be made with low marginal costs both in terms of the financial and environmental implications. It also means that the person carrying out the delivery can be reimbursed for their time and effort, creating value from an essentially non-value adding exercise. As McKinnon has also commented, 'the growth of crowdshipping is an example of people using social networking to behave collaboratively and share services and assets for the greater good of the community.'

Although the term 'crowdshipping' originally referred to the practice as undertaken by ordinary individuals, some of the platforms which have been established, such as Zipments (acquired in 2015 by Deliv), are used predominantly by professional couriers. Some, such as Deliv itself, are focused around the delivery of goods purchased in shopping malls. Deliv (in which UPS is an investor, contributing to its Series B funding round and gaining a seat on Deliv's board), for example, says it seeks to bridge the gap between multi-channel retailers and their customers.

Whether or not crowdshipping is undertaken by an individual, on their way to work for example, or by a professional courier is an important issue. Although it may not matter to the end-recipient, the shipper or for that matter the platform, there are implications in terms of road use, congestion and environmental impact. Professional couriers may travel much longer distances to collect and deliver shipments, making dedicated journeys for each consignment. By substituting a low cost alternative to formal delivery networks traditionally involving the consolidation of parcels in vans, the result may be higher levels of congestion and emissions. Certain popular high density delivery locations, such as an urban area, may attract large numbers of professional couriers from outside, exacerbating already overcrowded roads.

The benefits to shippers of crowdshipping in its purest, original form are evident from the illustrative graphic to the below based loosely around the UK market.

Crowdsourcing technology



Source: Ti

In the scenario a shipper has the option of using a relatively small number of major carriers. Using new technology a shipper now has the opportunity of bypassing these carriers to establish its own distribution solution, using local partners.

This is exactly the strategy employed by one of the biggest shippers in the market, Amazon, through its subsidiary, Amazon Logistics. Using crowdshipping technologies, a shipper would then be able to directly access a large number of owner-drivers and, beyond this, a larger number of individual drivers. In fact, this number would be of an even higher magnitude as it could include train and bus passengers, especially those who could deliver small packages very easily to an inner city destination.

There are, however, risks involved with 'disintermediating' established carriers. Not least of these are the issues of quality and security. The major express parcels operators have been successful over the years partly due to the brands they have established and a large factor in this has been the guaranteed levels of service and trust. Although these carriers may charge their services at a premium, many shippers, especially those of high value goods, may be willing to accept these if they know that their goods will be moved securely and will be well taken care of.

There have also been worries by regulators that crowdshipping services may be vulnerable to misappropriation by terrorist or criminal gangs. If a crowdshipping platform is completely 'open', perhaps resembling a social networking site such as Facebook, it is possible that, inadvertently, a courier may be asked to deliver illicit goods or even explosive devices. Although even the major global network providers are not immune to such acts, the bad public relations which would result may put a halt to the development of these services.



Newer, Smarter Retail

A new breed of online retailer is forcing change within e-commerce logistics, of which express and small parcels is a significant element. Two of China's largest e-commerce companies, Alibaba and JD.com, have been driving this change over the last several years by developing the infrastructure on which the future of Chinese retail will run. Both are driving hard at the development of systems and technologies which erase the divide between online and offline retail and cascade innovation and rapid change throughout retail in China, as well as throughout the logistics systems which support it. To say that both companies are pursuing rapid change at vast scale would undersell the breadth, depth and sophistication of what both are undertaking.

Amongst Alibaba's efforts is its Ling Shou Tong programme, which aims to modernise 'mom-and-pop' convenience stores across China. Alibaba claims to have more than one million such stores in the programme which brings inventory management, restocking, logistics and customer analytics into Alibaba's Tmall environment. Operated via an app, the inventory management system lets each store know how much of which products to order and when. Fast moving goods are despatched next day from city-specific warehouses, while regional warehouses guarantee two-day delivery for slower moving goods. Crucially, the programme ties the stores into Alibaba's central warehousing and logistics system, locking the store into Alibaba's environment and infrastructure. Alibaba's Cainiao network is key to the infrastructure on which more than one million independent retailers now rely. Its logistics data platform also provides real-time data to help LSPs improve the efficiency of inventory management and optimise delivery routes.

That Alibaba relies on delivery partners rather than owned assets and operations to effect its logistics operations, though, is a major point of departure in the infrastructure strategy from rival JD.com. JD's ownership of its logistics network and operation brings it closer to the centre of its own infrastructure plans, through which it plans to implement its 'retail-as-a-service' vision. Process and cost efficiency, as well as a culture of rapid innovation, guide the development of JD.com's logistics network which spans 486 warehouses and 84,790 delivery employees. One current thrust in logistics innovation are plans for a network of 'dark warehouses'. These unmanned, automated fulfilment centres are beginning to come online. Announced in October 2017 and believed to be in operation now, one such dark warehouse occupies 40,000 sq m in Shanghai's Jaiding District. The facility has the capacity to fulfil 200,000 orders per day and is operated by a combination of robotics and other automated technologies, which can self-calculate how to avoid collisions and optimise routes. The facility has just four human employees. Such automation, though, comes with restraints – the facility can only handle certain types of goods, uniform in size, shape and weight, as its Delta robotic picking arms cannot lift packages heavier than 3 kg.

Clearly, these examples of Alibaba and JD.com's plays to develop new retail infrastructure do not sum to the total of their efforts, but they are instructive of a number of pillars on which the efforts are built. At a strategic level the plans are to create something no one else has, which is defensible and the advantages of which no one else can match. In implementing these plans, both are leveraging their position as marketplace operators to offer a range of services to retailers, from advertising and marketing tools to payment systems, cloud computing, media and entertainment properties and logistics. For both Alibaba and JD.com, these are effective,



plug and play, digitalised retail solutions. Alibaba's Ling Shou Tong solution, for example, can cost less than \$10,000 to install and requires ongoing costs that can come in at under \$1,000 per year, with no revenue share.

Amazon also maintains an aggressive push into new retail formats. In the past few years it has released multiple tools to make online shopping, and now even in-store shopping, even more seamless. In January 2018, it opened its first checkout-free grocery store in Seattle, known as Amazon Go. The shop relies on cameras and sensors to track what shoppers remove from the shelves, and what they put back. However, Amazon was beaten to it by Alibaba who opened its prototype 'Tmall Supermarket' in November 2017 which is far broader in scope than Amazon Go. In addition to an automated checkout system, facial recognition and augmented reality provide a personalised in-store experience. For example, cameras are used to offer 'emotional discounts', whereby if a customer smiles to a product the price, on an electronic price tag, drops. JD.com also opened a check-out free store in January 2018 but has gone a step further by announcing plans to open hundreds of these unmanned stores, ahead of Amazon.

Perhaps the bigger picture here, though, is not only the wider play to prepare China and its retail and logistics sectors for a tech-powered future, but also the significantly different future of all retail these developments hint at. In sum, the infrastructure spans sourcing and procurement, payments, inventory management, logistics and a wide array of technologies, including AI, facial recognition and augmented reality, while at the same time ultimately aiming to remove the distinction between online and offline retail. It also points to a more interconnected future. Amongst JD.com's investors are Google (<1% equity), Walmart (~11%) and Tencent (~20%), while Google also has a partnership with Alibaba. Talking of its \$550m investment in JD.com this week, Google's Philipp Schindler said the companies would "explore new solutions for retail ecosystems around the world to...give consumers the power to shop wherever and however they want." That capability, as JD.com and Alibaba are demonstrating, requires a whole new logistics infrastructure.

Global Express & Small Parcels Market Size & Growth

2017 and 5-year forecast

Ti estimates that the global express and small parcels market reached €289bn in 2017. In real terms (holding prices and exchange rates constant), the market is estimated to have expanded by 9.7%.

The domestic express and small parcels market expanded by 9.9%, in real terms, to reach €233bn. The international segment, by comparison, expanded by 8.6% to €56bn in 2017.

Over the last several years, a trend for quicker growth in domestic express and small parcel markets when compared with international markets has emerged. It appears 2017 may be the



year this trend starts to reverse, with notably strong international market growth in Asia Pacific and North America, as well as in Europe where the international market grew at a faster rate than domestic for the first time since 2010. This is partially explained by the interconnectedness of the European market where barriers to international trade are less, but the growth of cross-border e-commerce is likely a significant driver of rapid internal market development across the three regions.

Over the current forecast period, Ti expects the global gap between the growth rates of the domestic and international markets to narrow, although domestic growth is expected to remain the stronger of the two. From 2017 to 2022, the global parcels market is projected to expand at a real CAGR of 8.2%. The domestic market is set to expand at a real 2017-2022 CAGR of 8.6%. The corresponding figure for the international market is 6.2%.

Domestic markets have proved capable of seizing on the opportunities that e-commerce brings. A number of issues remain for international market. Obviously there is a higher cost and delivery time connected with international parcels. Trust of international retailers is also a problem for many. But there is still enormous potential for cross-border e-commerce. At present the international market is currently proportionally more popular for high value products, with consumers more likely to pay a €10 shipping fee for a €200 product rather than a €20 product. However, with growing middle classes and a more impatient society, consumers are increasingly demanding other products sooner and are willing to pay more for them. They are even starting to pay for more premium express products, more readily associated with the B2B market which is expected to drive growth in the long run. Fashion and electronics are currently big cross-border sellers, but further opportunities remain in beauty & cosmetics, pet care, food and beverages and sporting goods.

Therefore, as domestic market growth slows from 2017 levels alongside the slowdown in e-commerce volume growth, it may be that opportunities to use international volumes to plug the gap and build at a similar rate to or higher than domestic markets. However, if customers are not willing to wait for international products, or if costs remain high, or both, then as with in other industries, we could see localisation in the market. There is potential for online giants such as Amazon to expand into new domestic markets and rapidly consolidate market share, as there is for traditional retailers to enter emerging e-commerce markets, of which Walmart's \$16bn acquisition of India's Flipkart is an example. Although e-commerce accounted for less than 4% of retail sales in India during 2017, Walmart is betting the \$38bn market will expand to more than \$200bn over the next decade as the number of Indians using smartphones and the internet grows. This would mean an increase in domestic, rather than international volumes.

As well as splitting the market between domestic and international, the parcels market can be broadly split into the B2B and B2C categories. The B2B market is the slower growing of the two segments. Numerous reports into B2B parcel volume growth in developed markets have suggested that there is approximately a one-to-one relationship between B2B parcel volume growth and real GDP growth. In terms of volumes of parcels sent, this is the smaller of the two segments. However, B2B parcels are higher price express products and this means that it is the larger of the two segments in terms of value.

The B2C segment is not as affected by macroeconomic performance. The boom in e-commerce related parcel deliveries on a worldwide basis far exceeds GDP growth. However,

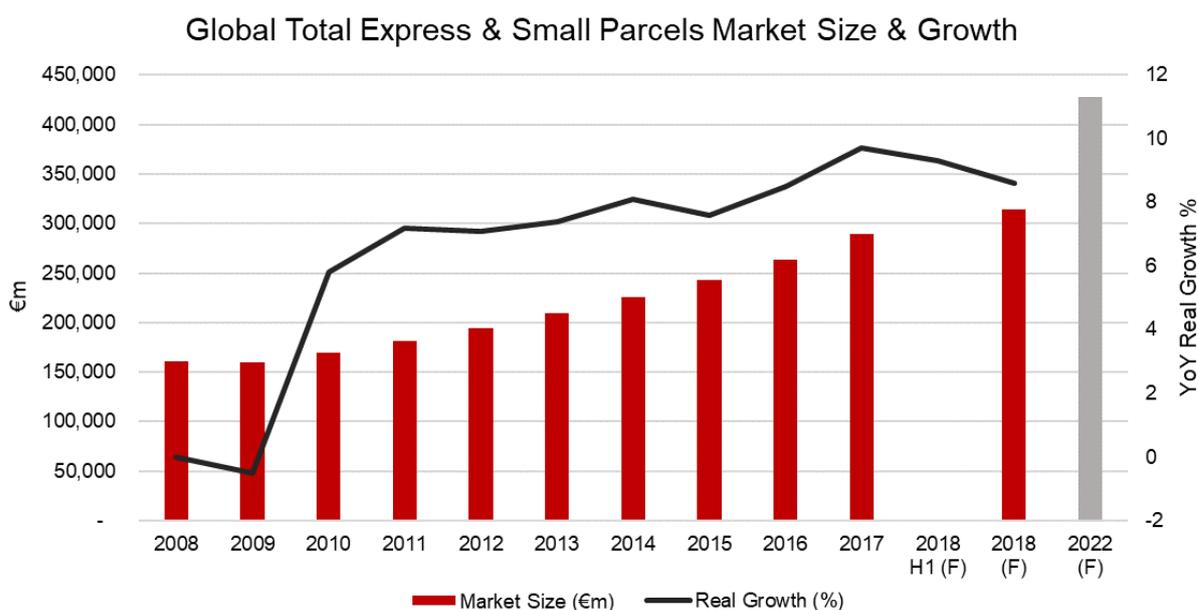


online retail sales growth, like all retail sales growth, is not immune from macroeconomic performance.

2018

In the first half of 2018, express and small parcels volumes have grown by 9.3% year-over-year (i.e. volumes in H1 2018 are 9.3% larger than they were in H1 2017). Growth has been led by the Asia Pacific market, which has expanded by 11.4% in year-over-year (YoY) comparisons. The domestic express market grew by 9.5% YoY, whilst international volumes grew 8.6% YoY. Full year 2018 forecasts put the total express and small parcel market real growth rate at 8.6%. This would give the market a value of €313bn (holding prices and exchange rates constant at 2017 levels). The real growth rate is a reduction from the 9.7% seen in 2017 as both the global domestic and international markets see moderation in their individual growth rates.

Both the global domestic and international express and small parcels markets are each expected to grow at above 8% in 2018 (domestic: +8.7%, international: +8.1%). The North American and Asia Pacific markets, already powerhouses for express and small parcels, are the drivers of this growth. Together the two accounted for 70.8% of the global market in 2017, and with their share is expected to increase to 71.2% over the course of 2018, as the total Asia Pacific market expands by 10.4% and the whole North American market grows 8.0%.



Source: Ti

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 H1 (F)	2018 (F)	2022 (F)
Market Size (€m)	161,093	160,342	169,684	181,911	194,783	209,143	225,948	242,939	263,485	288,940	-	313,810	427,885
Real Growth (%)	-	-0.5	5.8	7.2	7.1	7.4	8.1	7.6	8.5	9.7	9.3	8.6	-
Real 17-22 CAGR (%)	-	-	-	-	-	-	-	-	-	-	-	-	8.2