



Is Faster Necessarily Better? – The Impacts of Faster Domestic Delivery Systems on the Economy in the Contexts of Online Consumption

Shuaiying Li¹ and Gavin Kader²(✉)

¹ China UK College, Shenzhen 518102, China

² Southwestern University of Finance and Economics, Chengdu, China
gav.kader@outlook.com

Abstract. On the rise of online shopping, advanced delivery system makes life easier. This paper aims to investigate the positive and negative outcomes associated with faster delivery systems. Overall, this study considers faster delivery integral to a growing domestic economy. However, it should not be overlooked the potential adverse effect onto environment due to the inefficiency nested in such intense service. Additionally, larger firms, with more resources and better infrastructure, could easily meet such high demand, which small local business struggles to achieve. Overall, such intense demand and competition lead to better quality service and positive spill-overs.

Keywords: Sustainable Development · Microeconomic Behavior: Underlying Principles · General Labor Markets · Industry Studies: Postal and Delivery Services · Transportation: General · Economic Development: Urban, Rural, Regional, and Transportation Analysis

1 Introduction

In recent times, technological advancements have been made such that we are able to buy and sell items online with short delivery times. This paper considers the direct costs and benefits as well as the negative and positive externalities associated with speedier delivery systems. Overall, this paper takes the view that faster deliveries are part of a natural progression associated with growing domestic economies [4]. However, the effects on the environment through inefficiencies that result from less time and care being taken to provide such an intense service should not be ignored [5]. For example, by demanding same-day/next-day deliveries, this can lead to many inefficient routes being taken to service many households, rather than accumulating packages and distributing them in a way that is cost effective. In addition to this point, high demand for faster deliveries is more easily met by larger firms with the appropriate levels of resources and infrastructure, which may not be true of smaller local businesses [4]. Overall, faster domestic delivery systems are welfare improving in terms of better quality service as a

result of increased competition, and general improvements in convenience which lead to positive spillovers. For example, having more time to spend online and/or spend on other leisure activities can lead to further spending providing a further positive boost, especially in times of the Covid-19 pandemic when many retail shops have been forced to close.

To summarize, the main research agenda for this paper is aimed at discussing how the increase in demand for faster delivery systems has impacted the domestic economy. What are the direct advantages and disadvantages? Are there hidden costs/benefits associated with speedier delivery systems? If so, what are these negative/positive externalities?

2 Main Analysis

2.1 Advantages

First, faster delivery systems provide convenience by shopping from home. This may result in a string of connected advantages. One of them is that people will have more time to spend on other things like leisure activities. For example, an individual who buys a book online will have more time to spend in coffee shops or restaurants instead of the individual spending time searching for the book in a store. When this happens, he/she is likely to spend more of their disposable income, and therefore contributes to overall consumption beyond his/her original purchase, simply because he/she was able to save time. In essence, the time saved by shopping online results in more money being spent in other industries. Overall, faster delivery systems may increase the aggregate demand thus indirectly affecting the economic output and/or productivity (as well as increases in tax revenues collected on purchases). Also indirectly has positive effects on the economy. Since there is also a large demand for online services and deliveries, producers (and potentially government) would be incentivized to invest more money in order to produce even more of this kind of product or services. In fact, [3] suggests that in 2013, 4 major US delivery companies contributed to more than three million jobs representing 0.19% of global gross GDP in terms of increased economic activity. Such firms and other businesses providing delivery services might be making more profits, and therefore can produce and sell more. This potentially also increases aggregate supply of the goods and services. See Fig. 1 for a summary of values for express delivery services.

Secondly, faster delivery systems make it more appealing to search for products online. This means people have more time to search online to find what is available and their corresponding delivery times. Further, people can read and write comments about online goods and services, which further inform the consumer. Although at first hand this may not sound very relevant to the overall economy, as long as buyers invest time on reading reviews from other customers (which are typically more honest), they are able to make more informed decisions and better choices. By making better choices, buyers can stimulate the firms to make better products or differentiated products, otherwise those firms will suffer unless they are able to compete in some other dimension e.g., price. In essence, firms have to be more competitive in order to attract a more informed market. Once these firms experience drops in revenue from customers, they will not be able to run their firms in the same manner. Hence, the better and more informed choices not

Global Reach	Ability to send items anywhere
Reliability	Knowing the items arrive on-time
Transparency	Being able to track items
Speed	Being able to reach markets and customers quickly
Security	Knowing the items do not get lost

Fig. 1. Overview of attributes that customers value in express delivery services (Original)

only achieve increases in demand for better quality goods, but this also inadvertently encourages a boost in equilibrium supply.

Another advantage is that customers are able to find discounts or coupons which, effectively, lowers the price of goods (either through a direct lower price, or a bulk buy purchase). The most classic example of this is Black Friday whereby lots of online retailers start slashing their prices in order to get rid of old stock. This is much easier to do with an online platform and in particular if the firms have access to good logistics i.e., they are able to deliver their products easily, then they are able to sell a lot more in a short period of time. As such, an even larger number of customers will choose to enter the market as a result of knowing about the temporary nature of Black Friday. For example, a consumer who wishes to buy some necessity goods during this discount period will have more time to spend on other activities, as well as reducing the overall stress of such consumer events, also by allowing the consumer to buy more products than they would be able to originally. However, with faster delivery systems came up, the consumer can just buy goods online instead of going to the physical shops. This provides a huge advantage throughout the whole economy, because there are more consumers that buy more things during this period, which means a lot of money enters the economy, even if it is temporary in nature.

In terms of prices, with so many firms being able to enter the market with online platforms such as Amazon, eBay, Taobao, Ali Baba, etc. This means that competition in prices can be fierce so any form of advantage over the other firms can be beneficial e.g., faster delivery times. In other words, if a market is sufficiently saturated, then the market begins to resemble perfect competition in prices, and therefore, any form of unique selling point is going to essentially differentiate the service that is provided. This means, competition in prices for the actual good also spreads to the eventual cost of delivery (which in many cases, is offered for free, given some premium subscription to online platforms e.g., Amazon Prime) [2][3]. Clearly cheaper products mean higher disposable income, but what is the main source of the cheaper price? This comes from improved competition. We have already seen that sellers use discounts to try get people to buy their goods. More firms competing in prices meaning that price is lower in comparison to when there are fewer firms, and more firms means it gets closer to perfect competitive market in which consumer welfare is maximal, across many different goods.

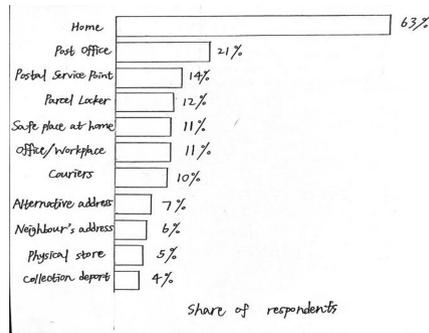


Fig. 2. Most used methods in package delivery worldwide (Original)

2.2 Disadvantages

Due to the demand for faster deliveries, there can be less time to figure out or calculate efficient delivery routes, or more precisely, there could have been more efficient delivery routes if we were able to deliver more goods in a fixed period of time [2]. For example, if someone lives in a quieter area, this might imply that there is lower delivery demand in that area. However, if those individuals have access to faster deliveries, this can lead to a lot of inefficient routes being taken, as the delivery company would rather wait for more deliveries in the smaller area in order to be more cost-effective (for example, in the UK, central London is more populous than Zones 5–6 of London). This means that it costs more money in terms of fuel, wages, and fewer deliveries being made in a fixed amount of time, overall, leading to very large inefficiencies. As can be seen from Fig. 2, this takes up a large proportion of deliveries meaning the magnitude of these effects can be significant.

From the consumer side, as businesses might be using inefficient routes, the costs incurred by those businesses might be passed on to the consumer. For example, some firm might try to do the deliveries themselves when they are not trained or specialized in deliveries which would mean the consumer would be paying for that service, which will not be inefficient, and priced as such [5]. In this case, it makes far more sense to use a delivery service or employ specialized people in order to make the deliveries. (for example, in the UK, restaurants might use apps like Deliveroo/Uber Eats to deliver food, which would far more efficient and cost-effective than employing specific delivery people or buying delivery transport).

From a societal point of view, when transport routes are more inefficient, this obviously has direct costs in terms of the fuel consumption, but the more indirect consequence of this is increased air pollution and/or traffic [5]. This is clearly an issue as it can greatly affect the environment by reducing air quality in highly populated areas where there is huge demand for deliveries. More specifically, in certain countries e.g., China, Vietnam etc.... the delivery people are more likely to be using high-polluting vehicles which exacerbates the environmental issues. However, in the near future, this might be remedied by the use of more environmentally friendly vehicles like electric cars/motorcycles.

Another form of inefficiency comes from the packaging of good, in the sense that, due to the demand for faster deliveries, there is also less time to figure out the most efficient

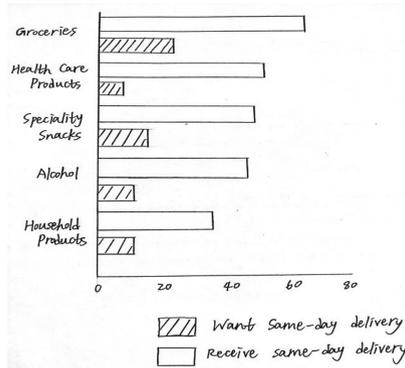


Fig. 3. Proportion of households that want express deliveries compared to the proportion of households that are able to receive the speedy delivery service (Original)

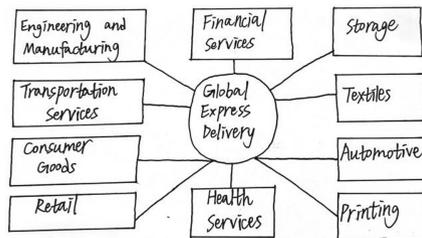


Fig. 4. Global Express Delivery (Original)

box size. For example, a small product like a computer mouse might be packaged in a large box capable of holding 20 computer mice. This clearly leads to a waste of natural resources and excess rubbish which can lead to potential issues if it is disposed of properly. From the business side, this is also a source of inefficiency as this means that the boxes are taking up too much space meaning it is not able to deliver the maximum number of boxes as so many of them are not filled correctly, essentially just delivering air (!) Clearly, the above is an unnecessary and easily remedied form of inefficiency for consumers, businesses, and potentially society.

Furthermore, a direct issue with introducing faster delivery services is that the growth in demand for fast delivery may be too quick with respect to the time it takes for more businesses to offer such a service [2]. As can be seen from Fig. 3 (2018), demand for household goods through express delivery is large, yet there is a significant proportion of households not yet able to take advantage of such a service. Since the delivery systems offered are becoming faster and faster, more and more people tend to consume the delivery service further exacerbating the issue. One reason for this problem is that it is difficult to get enough people actually provide the service. On the other side of this, we can interpret as a lack of supply (at least in the short-/medium-term) i.e., the supply-side has not been fast enough to react to the increase in demand. Examples of where this comes from could be not enough training, lack of labor supply, lack of infrastructure etc.... So,

there is some lag when it comes to reaching the new equilibrium for faster deliveries. In essence, it is very easy and quick for demand to shift upwards, but it could take some time for equilibrium to adjust. However, it is much easier for larger firms to provide such a service because they have the resources to invest into improved infrastructure and labor. The rate at which products are provided by larger firms is much faster compared to smaller firms, so those small companies may not be able to provide such a quality service creating further divergence in market share/power. This is kind of inefficiency in the economy; this is another dimension of the market in which smaller firms will find harder to compete. For example, a small local supermarket would find it extremely difficult to justify the huge upfront costs required for faster deliveries, compared to a large supermarket chain which would already have a certain amount of infrastructure, and understanding of the supply chain. For the larger supermarkets, providing faster deliveries is an inevitability as they are able to invest appropriately compared a small local supermarket which does not have access to large resources. In the end, it is a service which is just more difficult to provide than the traditional slower deliveries while it is more expensive and relies higher requirement for the whole fast delivery chain.

3 Concluding Remarks

In conclusion, the increase in demand for faster delivery systems truly affects the economy in both positive sides and negative sides. Faster delivery systems provide convenience by shopping from home and could have positive spillovers into the overall economy as people have more time to spend on other forms of consumption, as well as the benefits of increased competition. On the other side, inefficient routes for deliveries and incorrect box sizes are negative externalities on the environment which comes as a result of trying to meet the high demand of faster deliveries. This may also price out many smaller local businesses that already struggle to compete with larger firms.

3.1 Further Points of Discussion

A possible extension to this paper would involve the analysis of faster delivery systems across country border i.e., international trade. For example, with improved infrastructure, domestic delivery systems improve greatly with massive positive spillovers into faster international deliveries. With a reasonable trade agreement between countries, this can be welfare improving for customers as they can get access to more imports at lower prices, as well as incentivizing local firms to be more competitive. As Fig. 4 shows, the potential for global express delivery is as vast for international trade as it is for domestic trade.

Another interesting point to mention would be the indirect effects on incentivizing research and investment into better vehicles for transportation [5]. This could be in terms of environmental efficiencies and increased productivity. For example, investment into electric vehicles would mean lower greenhouse gas emissions which has clear advantages on the environment. In terms of productivity, costs could be reduced with more efficient vehicles. Directly, fuel costs could be lowered if a vehicle is more efficient i.e., the vehicle can travel longer distances with the same amount of fuel. Also, if a vehicle is

more efficient, it might be able to travel faster using the same amount of fuel, meaning more deliveries could take place, thus increase productivity. Although these costs might seem minimal in the short run, with increased demand for deliveries, these costs can easily add up and result in huge reductions in costs, which can also be passed on to the consumer.

In the current pandemic situation, clearly there was a global increase in online delivery demand, with many consumers wanting the same fast delivery service that they had experienced before the pandemic. However, even the largest firms in the world were unable to guarantee such a service due to the diminished labor force required for such a service [2]. For example, in warehouses, workers have to ensure social distancing is followed, and generally, more hygiene precautions mean time is somewhat less productive. In other words, because faster delivery systems relied heavily on a strong labor force, which would never have been an issue pre-pandemic, all delivery systems across the world suffered as a result of the pandemic. This has a negative impact on consumers as they would not have experienced a price reduction in deliveries, for example, many users of Amazon Prime [4] are paying for free and faster deliveries, however, this price has not changed despite the lack of supply in terms of this particular service. Relating this to the point about competition with smaller firms, clearly, as local supermarkets were most likely already working at their delivery capacity, they would not be as greatly affected by the imposed health and hygiene measures put into the workplace, compared to the larger firms. This might indirectly, make the smaller firms more competitive as their delivery service has now improved relative to the larger firms as their service greatly diminishes. All of these points are left for further research.

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