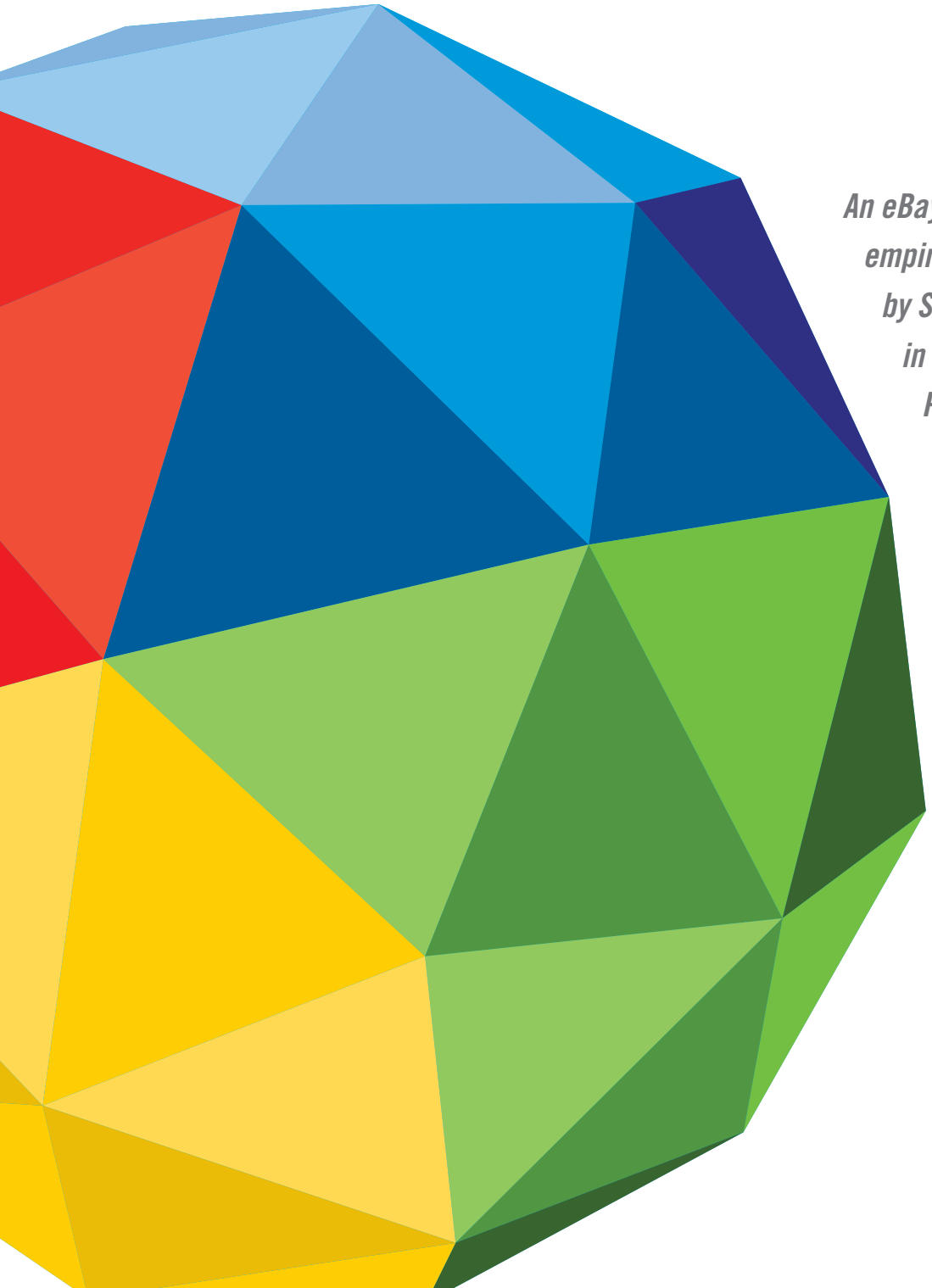
ENABLING TRADERS TO ENTER AND GROW ON THE GLOBAL STAGE

Story of an Online Marketplace: Opportunities also for Small Traders and Developing Countries



An eBay report based on empirical study and analysis by Sidley Austin LLP, in cooperation with Prof. Marcelo Olarreaga of Geneva University

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EXECUTIVE SUMMARY

eBay commissioned Sidley Austin LLP and Professor Marcelo Olarreaga to study and analyse international trade flows and exporting behaviour comparing offline channels and eBay.
Our aim was to understand how international trade is evolving and what role the internet and technology have played in its development to date.

This gives us a glimpse of the potential of technology-enabled commerce to break open world markets for consumers, merchants of all sizes, and countries at all stages of development.

We wanted to make this an empirical study based on real trade flow data. This meant that the study would have to centre on eBay transactions. However, we do not see this study as limited to the eBay Marketplace. We see eBay as an illustration of a new evolving, and powerful type of commerce – technology-enabled, multichannel, and consumer-driven – which we call Commerce 3.0. We believe, therefore, that the findings from this study and analysis apply beyond eBay.

The study findings reveal some astounding facts about this new commerce. First, we see that trade barriers are coming down online. eBay is better than offline channels at reducing the negative effect of trade costs on international transactions, illustrated by the fact that trade costs matter 60% less for eBay transactions than for offline trade.

Second, with lower trade barriers online, more sellers are able to reach more international markets. Not only is exporting easier from eBay, it is also as easy for small sellers as it is for large sellers: 94% of the smallest 10% of "commercial sellers" [1] on eBay engage in exports, not far behind the largest 10% (99%). And only 5% of those sellers are single-country exporters, with a remarkable 81% selling to five or more foreign countries.

Third, lower trade barriers and the ability to reach global markets mean newcomers have greater opportunities to grow faster and become successful. After five years, newcomers on eBay have a much higher combined market share (22%) than do new offline firms (13%) and they are on track to become established players within a few years.

And finally, lower trade costs translate to consumer welfare gains. The Sidley-Olarreaga team estimated the potential welfare gains in three scenarios: i) a move from a *"closed economy" to an economy open to cross-border eBay trade* would increase consumer welfare by on average 77.5% of the amount currently spent online; ii) consumers experience an increase in real income currently spent online by on average 42% by reason of *transacting on eBay instead of via offline channels*; and iii) if consumers worldwide conducted *all their international transactions on eBay* instead of offline, the average increase in real GDP would be 15.6%. In the first two scenarios, developing countries stand to benefit the most, whereas small and trade-liberal countries reap the largest benefits in the third scenario.

In no way are we suggesting that all trade can or should be moved onto eBay or that that would be desirable. These estimations merely indicate the potential benefits of moving in the *direction* of these scenarios. Nonetheless, what we see from these estimations is that the potential gains from moving to a more online trading world are very large for consumers, developing countries, and exporters and importers of all sizes. In this light, we suggest the study offers valuable, pioneering insights and a solid basis for building on the potential of technology-enabled commerce in the context of trade and development policies.

The study findings are exciting in themselves and even more so considering how they only describe the first part of a longer journey. The study describes what the internet and technology have achieved to date. The picture that emerges is one where online marketplaces, such as eBay, are turning world trade into commerce: an activity that consumers and merchants of all sizes comfortably engage in. World trade is no longer an abstract concept or remote activity exclusive to only the largest firms or countries.
The internet has dramatically changed the game by allowing consumers and merchants, to connect on a global stage, find a match, establish trust and transact despite all sorts of differences and costs.

From this it follows that the future potential is immense: the intersection of technology and commerce is a fast moving area and so the near future will most likely present ever more efficient channels and means that can be used to connect consumers and traders worldwide. As eBay CEO John Donahoe puts it, *"I believe that you're going to see more change in how consumers shop and pay in the next three years than we've seen in the last 20 years".*

Here, it is important to point out that this Report – whereby we share the Sidley study findings with a wider audience – tells the story of what can be achieved in terms of opening up world trade if one puts in place the right conditions. eBay for instance encompasses an online marketplace, the payment service PayPal, and e-commerce and marketing service provider GSI – these legs act together to enable commerce and connect buyers and sellers globally.

The messages of this Report are that, under the right circumstances, world trade can become a growth opportunity for firms of all sizes and that online trade is an important tool for developing countries to gain access to world markets.

[1] Sellers with annual sales above USD 10,000 on eBay.

INTRODUCTION

Since the 1970s, the political view of world trade has very much been fixed on an image of mega-ships carrying containers stacked high into the sky. This view has tended to see policy discussions being dominated by the interests of the largest firms engaged in such importing and exporting. Hence we saw the World Trade Organisation dismantling barriers to large scale trade in computer equipment and battling to open service and agricultural markets.

This image of world trade does not correspond with the experience of eBay. From its earliest days, international trade has been one of the most appealing features of eBay's global marketplace. Today it is a significant and growing opportunity for small and large merchants alike, representing 20% of our Gross Merchandise Volume in the last quarter of 2010. For example, among the Asian exporters making use of eBay we see primarily small business and entrepreneurs. These exporters shipped over 140 million parcels mainly to the US, the UK and Australia in 2011.

To put our experience to test, we commissioned Sidley Austin LLP, in cooperation with Professor Marcelo Olarreaga, to study and analyse international trade flows and exporting behaviour comparing offline channels and eBay[2]. The questions we asked the economic team to answer were how world trade is evolving and what role new trade channels, such as an online marketplace like eBay, play in its development.

We wanted to make this an empirical study based on real trade flow data[3]. This meant

that the study would have to centre on eBay transactions. However, we do not see this study as limited to the eBay Marketplace.

eBay encompasses both an online marketplace, present in 39 markets worldwide and over 97 million active users, and the payment service PayPal with over 100 million active users, available in 190 markets and in 25 currencies. The third leg of eBay, GSI, was added in 2011. These legs act together to enable commerce and connect buyers and sellers globally. As such we see eBay as an illustration of a new, evolving, and powerful type of commerce – technology-enabled, multichannel, and consumer-driven – which we call Commerce 3.0 and we believe, therefore, that the findings from the economic study apply beyond eBay.

The findings from this study and analysis reveal some astounding facts about this new commerce to date. Most striking, we see a "shrinking" of the world because of how online marketplaces, in this case eBay, enable trade that would otherwise not occur and make existing trade more efficient. Moreover, access to online channels facilitates exporting and allows new market entrants to grow faster and gain greater market shares quicker compared to those using only offline channels. Building on these findings, the Sidley-Olarreaga team is able to project consumer welfare gains associated with the new and more efficient trade enabled by eBay.

This Report is produced by eBay to share the findings of the Sidley-Olarreaga team with a wider audience. The findings are exciting in themselves and even more so considering how they only describe the first part of a journey: *"I believe that you're going to see more change in how consumers shop and pay in the next three years than we've seen in the last 20 years"* (eBay CEO John Donahoe).

[2] The study was conducted by a team of economists under the supervision of an outside expert, Professor Marcelo Olarreaga of Geneva University, and of Dr. Dr. Simon Schropp of Sidley Austinw's Geneva office, with the support of Christine Barthelemy (Sidley Austin Geneva), Andreas Lendle (Graduate Institute, Geneva) and Dr. Pierre-Louis Vézina (Oxford University).

[3] See Annex for the methodologies used by the Sidley-Olarreaga team.

CHAPTER I
TRADE BARRIERS COME DOWN ONLINE

WE FOUND THAT:

- eBay is better than offline channels at reducing the negative effect of trade costs on international trade. Trade costs – approximated by distance between trading partners – matter 60% less for eBay transactions than for offline trade.
- Between 2005 and 2009, the trade-impeding effect of distance between trading partners declined by 41% for eBay transactions, compared to by only 14% for offline trade.
- eBay i) helps buyers and sellers overcome traditional trade impediments, such as large distances between countries, absence of common borders or differences in GDP levels , and ii) substitutes for institutional differences, such as different legal tradition or differences in corruption level.
- Shipping costs, language barriers, and EU membership matter for cross-border transactions online. The EU with its internal market acts a catalyst for such transactions, whereas shipping costs and different languages naturally reduce cross-border online transactions.

We can conclude that online marketplaces, such as eBay, create new trade patterns and make existing trade more efficient. We can also conclude that policy efforts to create a harmonized, integrated market for citizens and businesses have a positive impact on cross-border online trade.

[4] See for example; Friedman, Thomas L. (2005). *The world is flat.* Farrar, Straus & Giroux; Cairncross, Frances (1997). *The Death of Distance.* Cambridge: Harvard Business School Press.

[5] See for example; Carrere, Celine, Jaime de Melo and John Wilson (2009). *The Distance Effect and the Regionalization of the Trade of Developing Countries.* CEPR Discussion Paper 7458; Disdier, A. and K. Head (2008). *The Puzzling Persistence of the Distance Effect on Bilateral Trade.* Review of Economics and Statistics 90(1), 37-48.

[6] Geographical distance is used as a proxy for a range of trade costs that are often not observed directly (shipping costs, market searching and matching costs, etc.). The Sidley-Olarreaga team also controlled for a range of other trade impediments that are – at least indirectly -observable, such as institutional costs (e.g., different legal systems across countries); presence or absence of a free-trade agreement, sharing a common border or language, and issues of trust and enforcement (e.g., high levels of corruption, low levels of rule of law, problems of enforcing legal claims across borders).

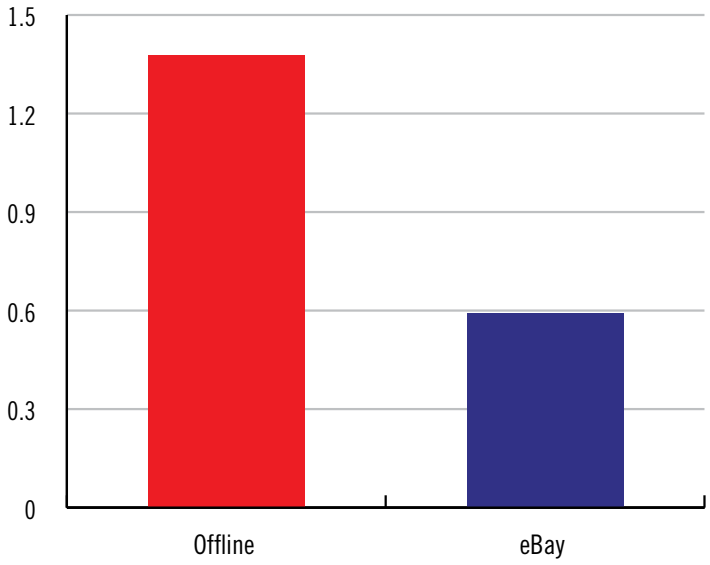
"DEATH OF DISTANCE"

The further away market participants are physically from each other the less likely they are to transact with each other. Despite claims to the contrary [4], *distance matters* for trade in the offline world [5]. Here, "distance" accounts for a range of – usually unobserved - transaction related costs (these are looked at individually below) [6].

The economic study found that distance matters considerably less for eBay transactions than for offline trade [7]. This is illustrated by Figure 1 below.

Figure 1 shows what happens to *offline* and *eBay* trade flows when distance increases by 1% [8]. For offline trade a 1% increase in geographic

Figure 1: Distance matters less online



Note: This chart applies a simple gravity model to online and offline trade-flows. A large value indicates that an increase in distance between two market participants reduces trade flows by a larger percentage.

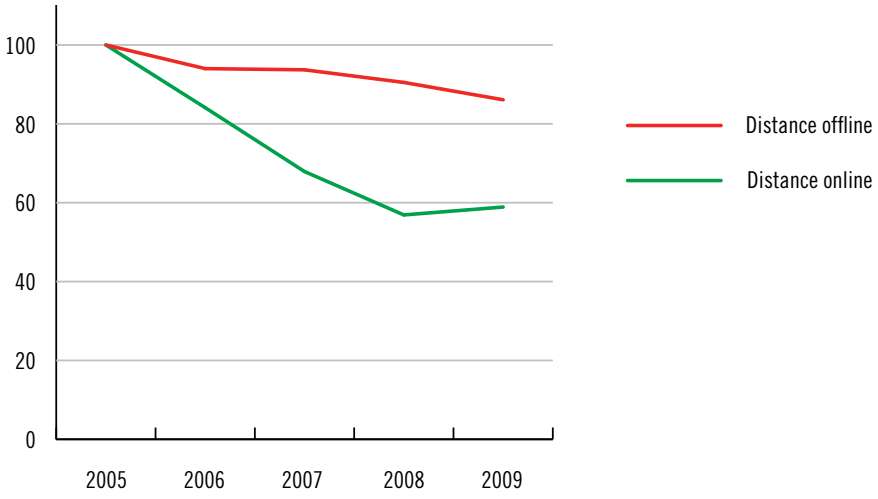
[7] The methodology used to arrive at this finding is a "gravity model" incorporating both traditional gravity control variables (publicly available data for offline transactions) as well as a unique set of online trade flow data from eBay. The gravity equation was then applied across all years and product categories for online and offline trade. See Annex for more details.

[8] Thus, a value of 1 means that a 1% increase in distance between seller and buyer reduces trade by equally 1%.

distance reduces trade by 1.4%, while it reduces eBay trade by only 0.6%. Distance thus matters 2.33 times more for offline than online transactions. This suggests that, compared to offline trade, there is relatively more trade among distant countries on eBay[9]. In other words, eBay is "shrinking the world".

Analysing the data over a five-year period, the economic team discovered that the trade-reducing effect of distance is declining for both offline and eBay trade over time[10]. However, Figure 2 shows that it is declining more rapidly for eBay trade compared to offline trade: for the period 2005 to 2009, the trade-impeding effect of distance has dropped by 41% for eBay trade compared to by only 14% for offline trade. In other words, the probability of matching distant buyers and sellers increases much faster over the years for eBay transactions than for offline trade.

Figure 2: Distance is "dying" faster for eBay trade



Note: This chart measures the death of distance over time in per cent (2005=100 per cent). In absolute terms, distance always matters less on eBay than on offline transactions. The chart shows that the importance of distance declines faster for online than for offline trade.

[9] The robustness of this finding has been checked to ensure it is not driven by any outlier variable or composition effect that occurred during the aggregation of the results. The basic gravity regression was therefore repeated for online and offline trade for each of the 29 product categories, by year, by eBay site, for B2C and C2C commerce separately, and including domestic trade. The result was that the finding is robust and not driven by composition effects.

[10] Note that the finding of a shrinking importance of the distance coefficient for offline trade somewhat contradicts findings of previous studies on offline trade, which find little to no indication for a "death" of distance. This may be explained by the country or product composition that this study focuses on.

MOST TRADE BARRIERS ARE LOWER ONLINE

It is an important finding in itself that distance matters considerably less for eBay trade than for offline trade. However, as mentioned above, "distance" accounts for a range of different transaction related costs which are likely to have a varying degree of importance for international trade.

The different transaction costs studied were traditional trade costs (shipping costs, absence of a common language, of a common border, of a direct colonial link) as well as institutional differences between countries (presence or absence of a trade agreement, difference in GDP per capita, difference in legal traditions) [11].

Figure 3 charts these trade costs and their trade-impeding effect for offline and eBay trade. The coefficient reflects the degree to which these indicators reduce trade flows:

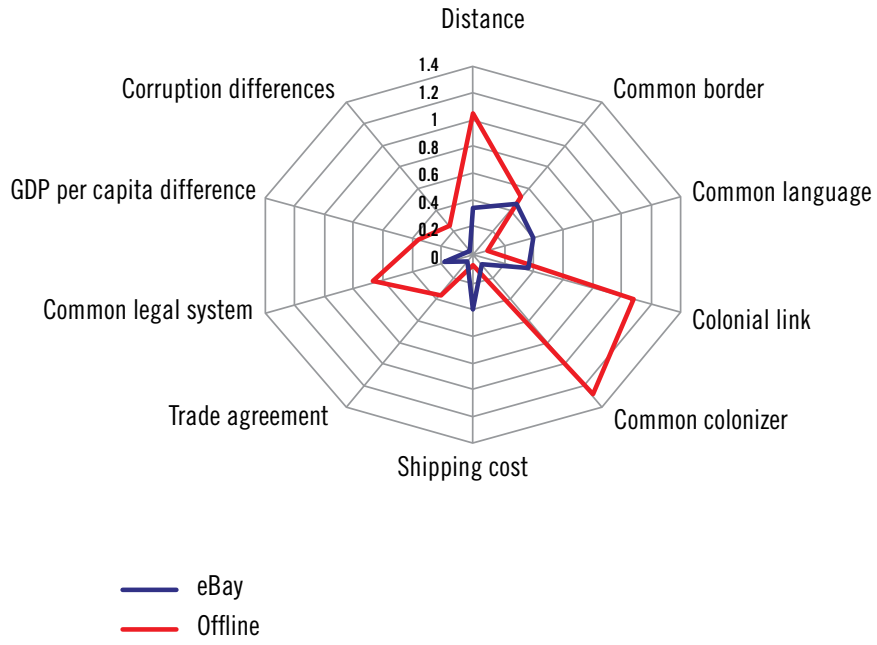
- Example 1: As one moves from having a common legal system (i.e. a legal tradition, such as common law compared to civil law) to not having a common legal system, trade flows offline decrease by almost 50% (0.5), whereas for eBay trade the decrease is only around 20% (0.2).
- Example 2: As one moves from a situation where a country pair does not have a colonial link to one that has a colonial link, trade flows offline increase by almost 150% (1.5), whereas eBay trade increases around 35% (0.35). Thus, eBay trade is less driven by a common colonial history of two trading partners.

In contrast to examples 1 and 2, geographical distance, shipping costs, differences in GDP per capita and in corruption level all have an estimated negative coefficient (*i.e.*, they reduce trade flows).

After controlling for the entire basket of trade costs, the Sidley-Olarreaga team could conclude that, with the two exceptions of shipping costs and no common language, all the traditional trade costs and institutional factors matter less for eBay trade than they do for offline trade.

[11] These costs were factored in as control variables into the gravity model. Control variables do two things: 1) They reduce the error term and therefore help explain trade flows; and 2) they eliminate the bias on the distance coefficient that may be due to omitted variables that are correlated with distance (for example common language, or common border). Take for example the control variable "common language". Clearly, not speaking the same language is an impediment (or "trade cost") to international trade. Controlling for this variable means considering explicitly all country pairs that do (not) share the same language. By adding "common language" as an explanatory variable, the resulting coefficient on "distance" changes; it now explains only the residual trade costs without common language issues.

Figure 3: Most trade costs matter more offline than online



Note: For binary variables such as common colonizer, colonial link, common border and common language, the estimated coefficient is corrected to capture percentage changes.

Figure 3 shows that geographical distance, common border and common legal system are significant factors for both offline and eBay trade. However, in all instances the importance of these factors is considerably less for eBay trade.

In fact, the study found that controlling for trade costs and institutional factors increases the "distance differential", *i.e.* the difference in distance coefficients between eBay and offline trade. Accordingly, online marketplaces, in this case eBay, enable more – and more distant – market participants to transact by helping them to overcome all sorts of trade barriers: from classic trade impediments to institutional differences. This is creating new and different trade patterns and makes existing trade more efficient.

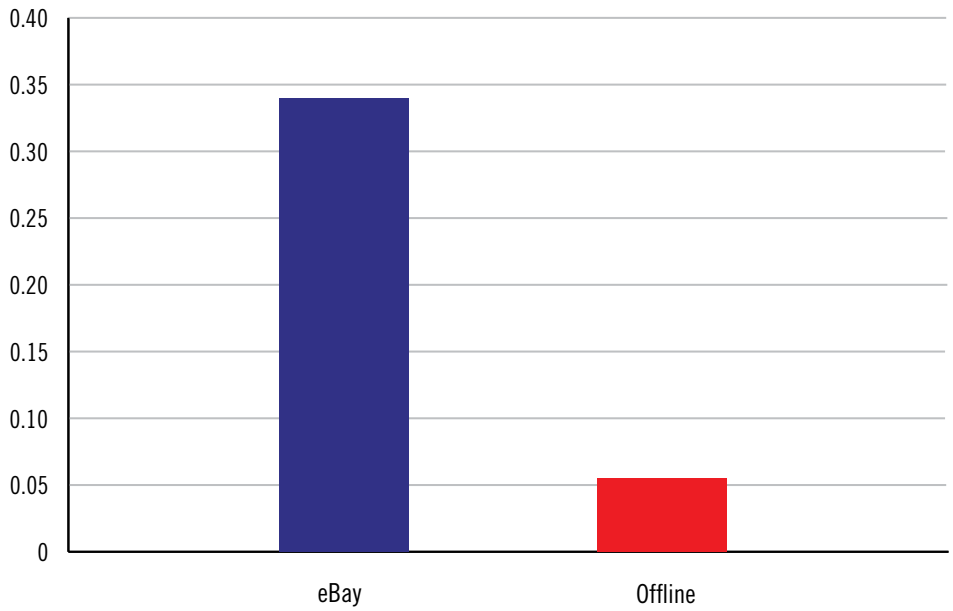
THREE FACTORS MAKING AN ONLINE DIFFERENCE

The gravity equation used showed that shipping costs and language are factors that have a greater impact on cross-border trade on eBay than offline:

- The trade reducing effect of *shipping costs* is four times larger on eBay compared to for offline trade. Shipping costs tend to represent a larger share of the value of each online transaction due to the fact that products traded on eBay are rarely shipped in bulk [12].
- Regarding the factor *common language*, online transactions are often peer-to-peer interactions, while offline trade occurs through distributors, retailers and other "middlemen".

In terms of facilitating trade, the economic study found that the EU acts as a catalyst for cross-border trade on eBay. Tying countries closer together in a trade union, such as the EU with its (political, social and economic) internal market, has significant effects on trade between those countries: Figure 4 illustrates how membership of the EU increases cross-border eBay trade by 40.5% – the effect is substantially lower, if not statistically insignificant, for offline cross-border trade.

Figure 4: The Effect of EU Membership on Cross-Border Trade

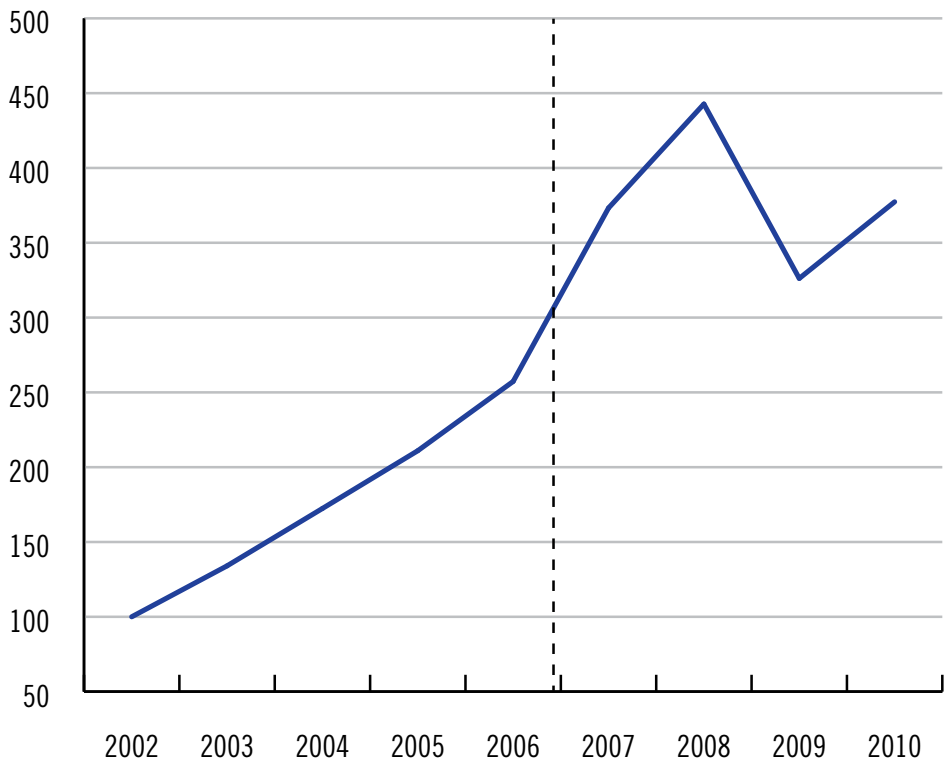


[12] In addition, online shipping costs reach the end-consumer directly. Thus, shipping costs include the "last mile", which usually are an important cost factor that is not integrated in offline shipping statistics.

EU countries have harmonised important rules and regulations to a great extent as well as actively targeted practices that segment markets for citizens and business. The study shows that this indeed facilitates online trade among buyers and sellers from EU countries.

During the time covered by the dataset (2004-2009), two countries joined the EU: Romania and Bulgaria. The study explored whether the data could tell us anything about the effect accession to the EU has on trade.

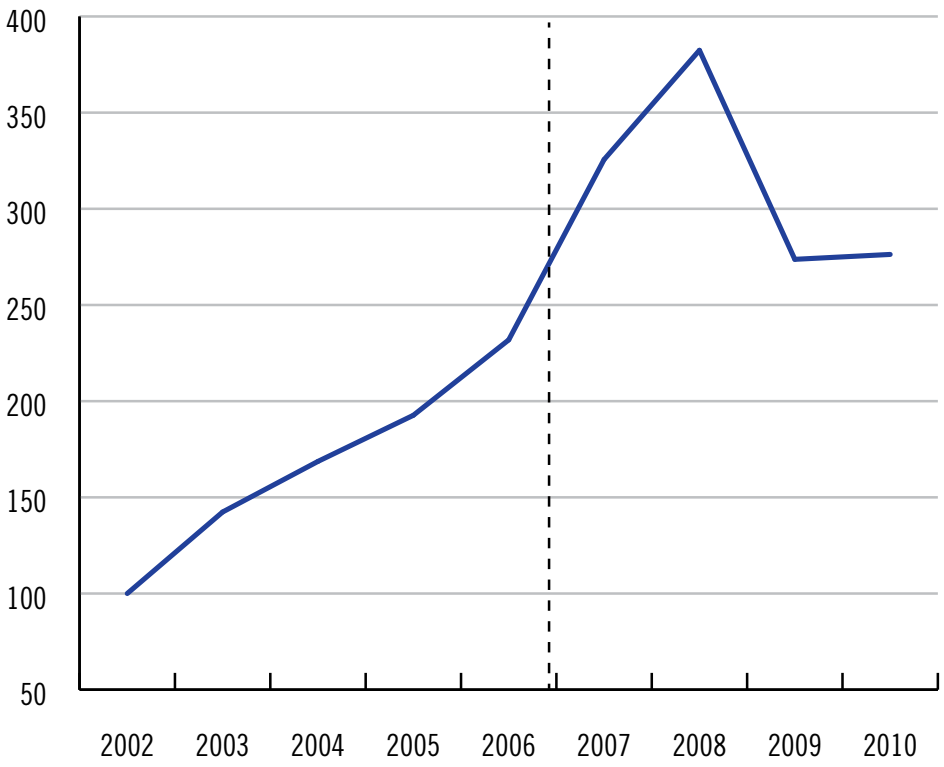
Figure 5: The Effect of EU Accession on Cross-Border eBay Trade into Romania



Figures 5 and 6 show trade into Romania and Bulgaria from sellers on eBay based in EU countries (the vertical reference line in grey signals EU accession on 1 January 2007).

As the graphs demonstrate, trade increases over the entire accession talks period wherein the countries are aligning laws and procedures to the EU acquis, and it accelerates just before accession.

Figure 6: The Effect of EU Accession on Cross-Border eBay Trade into Bulgaria



CHAPTER II
ENTERING GLOBAL MARKETS

With lower trade barriers online, more sellers are able to reach more international markets.

WE FOUND THAT:

- Reaching foreign markets is much easier for sellers on eBay than for offline firms: 97% of "commercial sellers" on eBay export.
- Not only is exporting easier from eBay, it is also as easy for small sellers as it is for large sellers: 94% of the smallest 10% of "commercial sellers" on eBay engage in exports, not far behind the largest 10% (99%).
- Sellers reach multiple markets from eBay: On average, "commercial sellers" selling abroad on eBay reach 19 different countries. Only 5% of those sellers are single-country exporters, and a remarkable 81% sell to five or more foreign countries.

We can conclude that online marketplaces, such as eBay, enable market diversification and global reach for merchants of all sizes.

SMALL AND LARGE SELLERS VENTURE ABROAD

The previous section mapped out the extent to which various trade barriers matter for international offline and eBay trade respectively. The conclusion was that traditional trade costs (with the exception of shipping costs and absence of a common language) as well as institutional differences have a less negative effect on international eBay trade than for offline trade. What does this mean for individual sellers? Do sellers on eBay who benefit from lower barriers behave differently compared to offline sellers who face higher barriers?

In traditional offline markets, it is rare for a firm to engage in exporting. Generally speaking exporting entails costs that only larger and more productive firms can afford or for which they will find it worth investing [13]. A wide range of recent empirical literature confirms that only relatively few offline firms have the capacity to export to international markets.

In their widely cited paper on US firm behavior, Bernard *et al.* (2007) showed that a remarkably small proportion of US firms engages in international trade: out of 5.5 million firms operating in the US in 2000, only 4% exported. Bernard *et al.*'s data sample includes *all* US firms– for many of which one would not expect any export activities, such as small retailers [14]. Nevertheless, the share of firms exporting is remarkably low.

Similar evidence can be found for other countries. For example, a study of French firms, which has been widely cited in the trade literature, shows that only 15% of French manufacturers export (Eaton *et al.*, 2009). The French data also reveals that exporting is almost exclusively performed by large firms: only 3% of the smallest 10% of French firms (measured by total sales) export, while 65% of the largest 10% of French firms export.

A very different picture emerged from the Sidley-Olarreaga team's study of the exporting behaviour of US sellers on eBay. (The decision was to focus on US sellers [15] because that gives rise to the richest dataset.) The analysis showed that these sellers are unique in two respects.

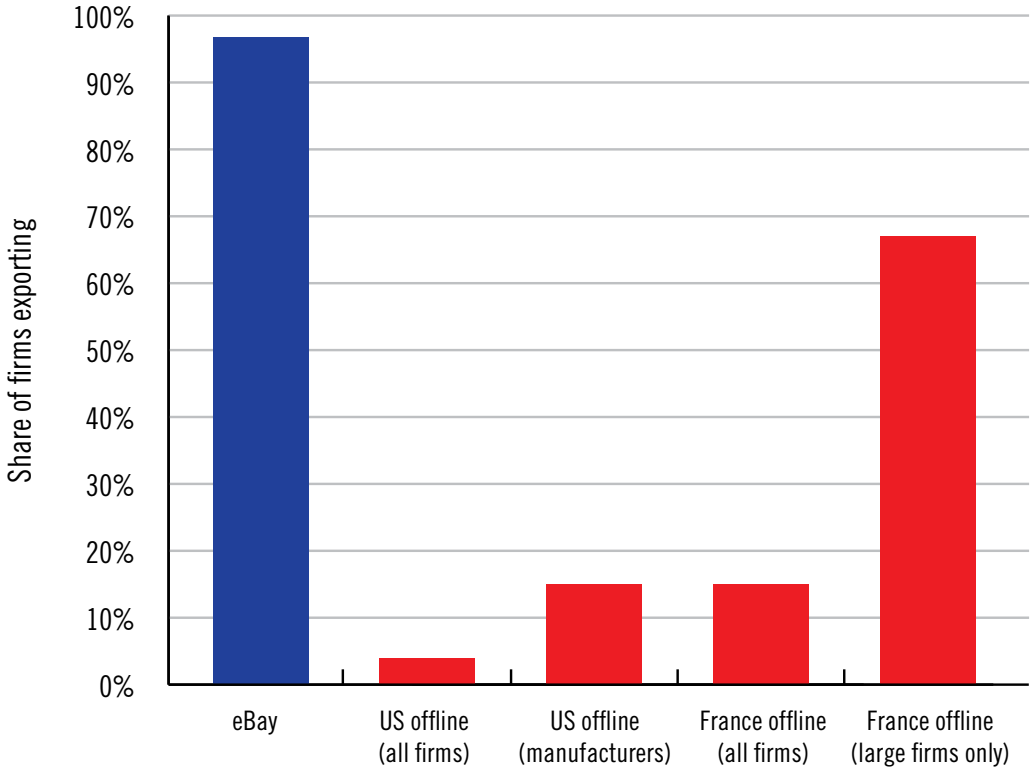
[13] Such costs could for example include finding foreign customers, setting up a distribution network, dealing with international shipments, different technical and other regulations, etc.

[14] Bernard *et al.* (2007, Table 3) find that exporting US firms are on average 148% larger, have 26% higher value added per worker, and 119% higher employment rates.

[15] This largely covers trade occurring on eBay.com; however, the data also includes sales of US sellers through foreign eBay sites. Sales of non-US sellers on the US site are excluded. The "nationality" of a seller is based on the country where the seller is located.

First, a remarkably high share of US sellers on eBay engage in cross-border sales: out of those sellers considered as "commercial sellers" (for the purposes of this Report, these are sellers with annual sales above USD 10,000) a staggering 97% export[16]. Figure below compares this figure with the available offline data.

Figure 7: Share of sellers exporting – eBay versus offline



Source: eBay: data for 2010, sellers with sales of at least USD 10,000. US offline: Bernard et al. (2007). France (all firms): Eaton et al. (2009). France (large firms only): Mayer & Ottaviano (2007).

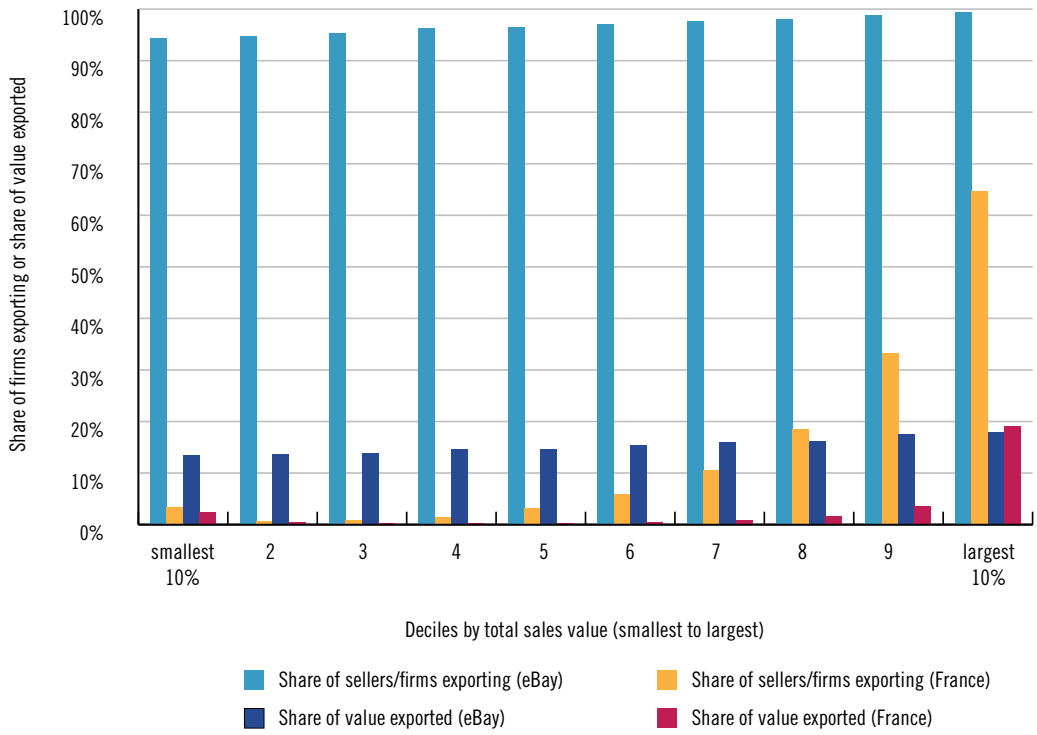
[16] This figure and the following charts were calculated based on 2010 data. Results are very similar for years 2006-2009. If we include all sellers, i.e., also those sellers below the $10,000 threshold, we still find an export rate of 69%, even though this includes many users with negligible sales.

[17] The sellers/firms are sorted by sales value and then grouped into 10 equally large clusters ("deciles"). The first decile consists of the 10% smallest sellers/firms, the second decile contains the next 10%, etc. The 10th decile then consists of the 10% of firms with the largest sales values.

[18] One should also note that the largest French firms are much larger than the largest eBay firms, and nevertheless fewer of them export.

Second, the share of sellers exporting via eBay and the share of their export sales are almost identical across size. Figure 8 compares small and large sellers on eBay with small and large French firms, both divided into deciles [18].

Figure 8: Share of sellers exporting and share of value exported by deciles



Source: eBay data for 2010, sellers with sales of at least USD 10,000. France: Eaton et al. (2007).

Figure 8 shows that small and large sellers on eBay are almost equally likely to export: even the smallest 10% of commercial eBay sellers overwhelmingly engage in exports (94%), and these small sellers export a share of 14% – not very different from the behavior of the largest 10% where 99% exports a share of 18%.

In contrast, and taking the best available offline data from the French study, almost none of the smaller offline firms export (see second set of bars, light red). Even the largest French offline firms have much lower export shares than small eBay sellers. The share of sales exported, while fairly equal across eBay sellers, reaches the eBay level only for the largest French firms [18].

These results lead to two conclusions:

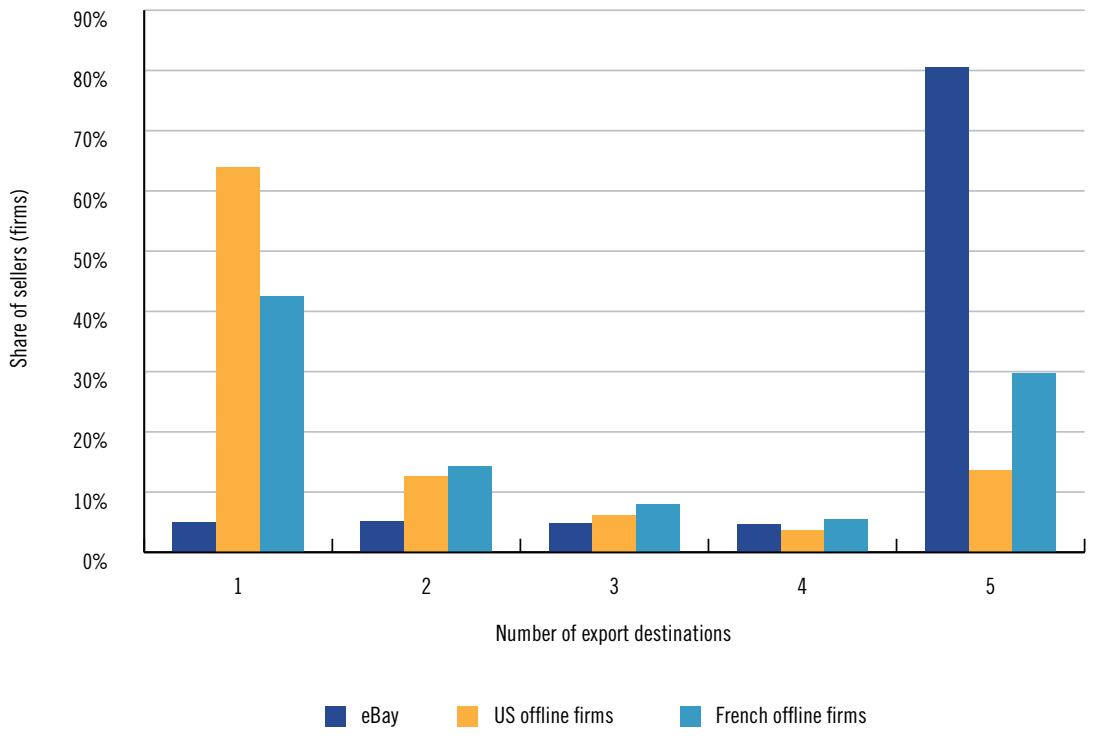
1. Reaching foreign markets is much easier for sellers on eBay than for offline firms.
2. Not only is exporting easier online, it is also as easy for small sellers as it is for large sellers.

REACHING MORE MARKETS

Offline firms usually export to a few select markets only. Bernard *et al.* (2007) show that out of US firms that export (a fraction of about 4% of all firms), 64% export to a single country. Only 14% of exporting firms sell to five or more countries. Although French firms tend to export to more countries than US firms – which is intuitive, as France is a smaller and relatively open economy – we still find that 43% of French firms sell to a single country only[19].

These results are in complete contrast to the study findings when looking at "commercial sellers" on eBay. Only 5% of those sellers are single-country exporters, and a remarkable 81% sell to five or more foreign countries.

Figure 9: Number of export destinations – eBay sellers versus US and French firms



Sources: eBay – data for 2010 (exporting sellers with annual sales above USD 10,000); US – Bernard et al. (2007); France – Mayer & Ottaviano (2007).

[19] Source: Mayer & Ottaviano (2007).

[20] For example, while only 14% of US exporters sell to five or more countries, those firms account for 93% of all US exports (see Bernard et al. (2007), Table 4).

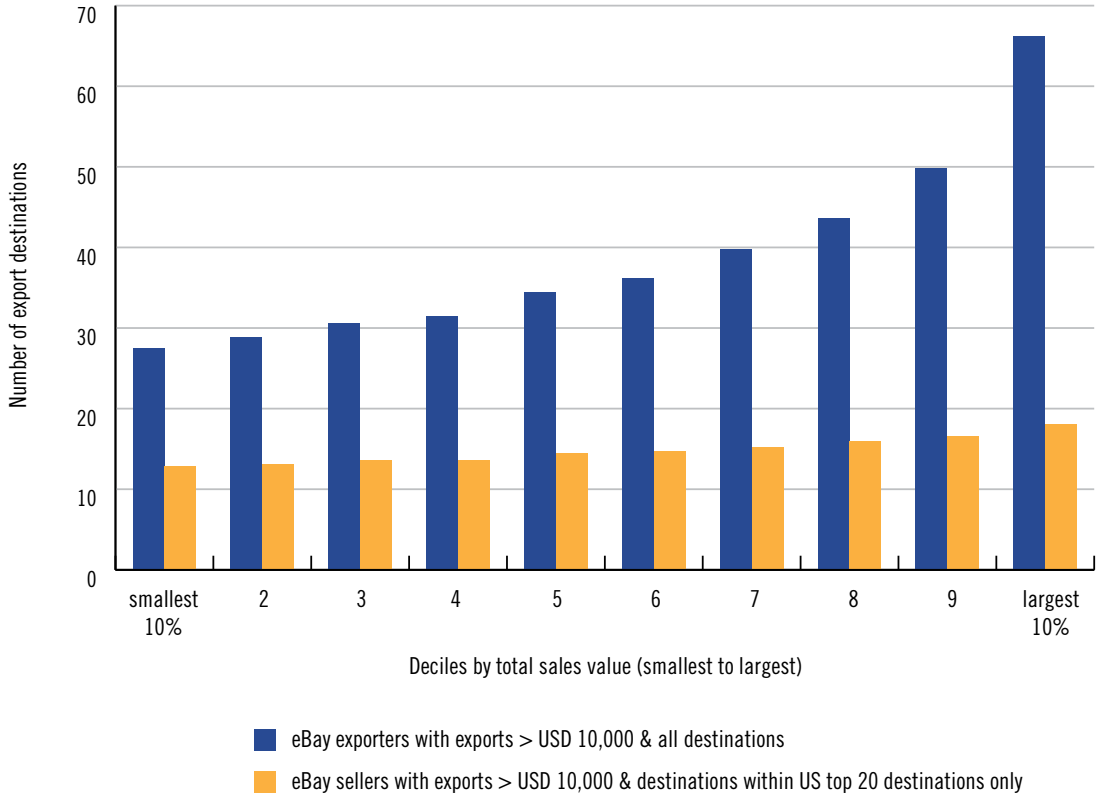
[21] Small eBay sellers, by definition, have small sales volumes. Accordingly, because the number of transactions is small, these sellers only reach a limited number of usually large markets, but not necessarily because exporting to more and smaller markets is too costly.

Figure 9 compares export markets for online and offline exporters. While few offline firms export to several countries and most offline firms to just a few, we find that most US sellers on eBay export to several countries. On average, US sellers on eBay selling abroad reach 19 different countries.

In the offline world, the few firms that export to five or more countries tend to be much larger than single-country exporters [20]. Studying the behavior of "regular exporters" on eBay (for the purposes of this Report, "regular exporters" are US sellers with total exports of USD 10.000), the economic team found that also the smallest 10% not only serve multiple markets but reach most of the largest markets [21].

Figure 10 shows that the smallest 10% of "regular exporters" serve 28 markets on average, and the largest 10% sell to 66 different markets, just over twice as many. The difference between the number of markets reached by small and large "regular exporters" decreases further when focusing on the 20 largest markets: the smallest "regular exporters" sell on average to 13 out of the 20 largest markets, whereas the largest "regular exporters" reach 18 out of 20 markets.

Figure 10: Number of export destinations – small versus large eBay exporters



CHAPTER III
GROWING AND SUCCEEDING

With lower trade barriers and the ability to reach global markets, newcomers have greater opportunities online to grow faster and succeed.

WE FOUND THAT:

- The market share of new entrants on eBay grows faster than offline firms (according to available data): after five years, newcomers on eBay have a much higher combined market share (22%) than do new offline firms (13%).
- Newcomers on eBay are on track to become established players within a few years: sellers who registered in 2006 have in 2010 reached a combined market share of almost 8% – which is not much below the average combined market share of about 10% that fully established sellers – who started in any of the previous years – hold.

We can conclude that online marketplaces, such as eBay, offer better growth opportunities for new entrepreneurs.

FASTER GROWTH

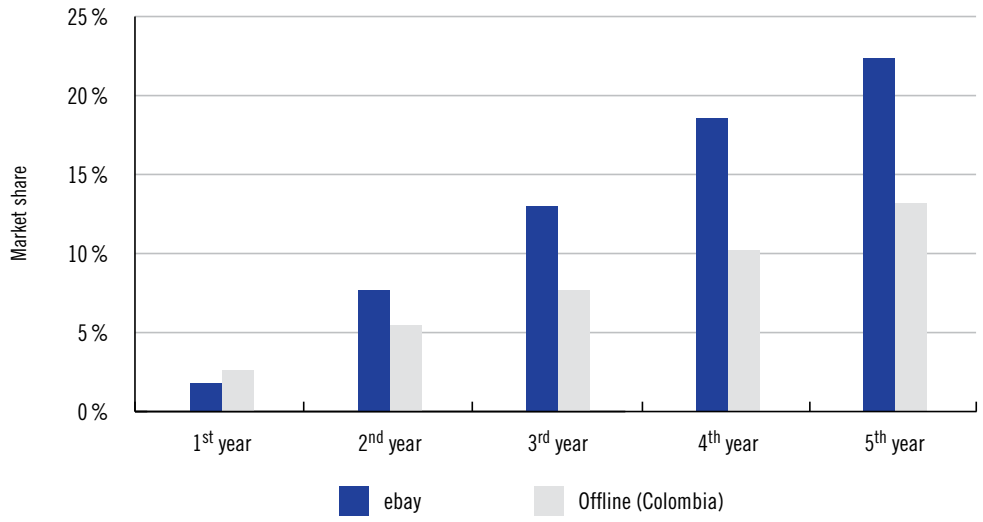
In both online and offline markets, there is significant turnover among sellers. In any given year, a large share of firms are newcomers, meaning they have not appeared in the previous year. In the same vein, many firms exit each year. New entrants are typically smaller than established firms.

One paper that has studied this issue of turnover is Eaton *et al.* (2007)[22]. The authors secured access to unique data on Colombian exporters that allowed them to track these firms over a period of ten years. Their research concluded that on average 25% of all offline firms in a given year are new entrants. However, these new firms only account for 2% of exports, and export 20 times less than established firms.

Comparing the overall market share of newcomers over time (both for Colombian offline firms and US sellers on eBay), the result shows that the market share of new entrants on eBay grows faster: after five years, new sellers on eBay have a much higher combined market share (22%) than do offline firms (13%). Figure 11 below presents the combined market shares of new entrants on eBay and offline (in Colombia) who enter in the first year, second year, and so on, until the fifth year after entry.

Figure 11 demonstrates that, over time, new sellers using the eBay Marketplace capture market shares faster than in the offline world[23].

Figure 11: Market shares of new sellers – on eBay versus offline



Source: eBay – data for 2006-2010 (all sellers). Colombia: Own calculation based on Eaton et al. (2007, Table 8). The graph shows the combined market shares of all sellers/firms that enter (register on eBay) in the first year or later. For eBay, first year refers to 2006. For Colombia, the figures are based on an average of five different five-year periods (1997-2001 to 2001-2005). Example: All eBay sellers that started in the first year or later have a combined market share of 22% in the fifth year. For offline firms, they reach only a market share of 13%.

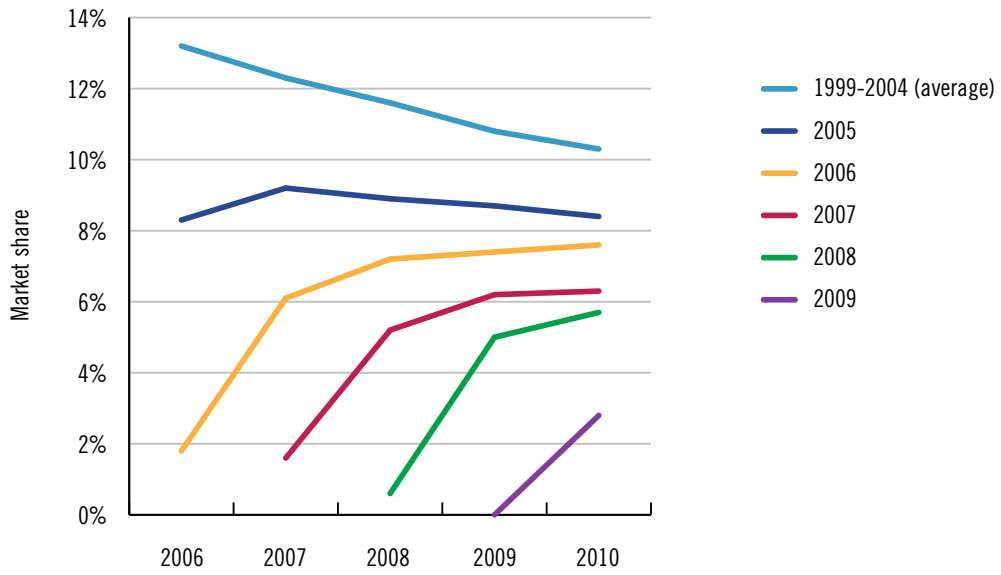
[22] To our knowledge, such data is not available for US firms, or any other country for that matter.

[23] The findings do not suggest any bias towards or increased drop-out rate of any particular group of sellers.

SUCCESSFULL GROWTH

Another way of showing the strong growth of new entrants on eBay is by presenting the development over time (in terms of market share) of sellers who registered in the same year. The Sidley-Olarreaga team divided eBay sellers into groups with the same registration year, calculated market shares for each group over time and then compared the groups. As expected, Figure 12 below shows that newcomers fairly quickly catch up with established sellers.

Figure 12: Market shares of new versus established eBay sellers



Source: eBay – data for 2006-2010 (all sellers). Example: The 2007 cohort (all sellers that registered in 2007) reached a combined market share of just under 2% in their first year 2007 and of just over 6% in 2010. Their market share in 2006 was by definition zero.

Each line in Figure 12 represents a group of sellers that registered in the same year and tracks their combined market share over the period 2006-2010. For example, in 2006 the market share of those sellers that had registered in 2005 was 8%, and the market share of 2006 registrations was at 2%. The bold black line shows the average market share of each yearly group of established sellers, defined here as those that registered in 2004 or earlier. The market share of established sellers naturally shrinks over time as the shares of new sellers increase [24]. For example, in 2010 sellers who registered in 2006 have reached a combined market share of almost 8% within four years – which is not much below the average combined market share that fully established sellers have.

Figure 12 thus shows that within a few years, eBay entrants reach market shares close to those of established sellers. In other words, on eBay new entrants become "established" players within a matter of less than a decade.

[24] Figure 12 shows that new sellers capture market shares faster online; the findings do not suggest a bias towards or increased dropout rates of any particular group of sellers.

CHAPTER IV
BENEFITTING CONSUMERS AND ECONOMIES

Lower trade costs translate to consumer welfare gains.

WE ESTIMATED THE WELFARE GAINS IN THREE SCENARIOS:

1. A move from a *"closed economy" to an economy open to cross-border eBay trade* would increase consumer welfare by on average 77.5% of the amount currently spent online. The largest gains from freer online trade would accrue to developing countries.
2. Consumers experience an increase in real income currently spent online by on average 42% by reason of *transacting on eBay instead of via offline channels*. Again, the largest actual welfare gains from lower trade costs occur in developing countries.
3. If consumers worldwide conducted *all their international transactions on eBay* instead of offline, the average increase in real GDP would be 15.6%. The largest welfare gains would accrue to small, open and export-oriented countries.

These welfare gains are largely driven by the fact that online trade costs are significantly lower than offline trade costs. Hence, moving trade online can increase welfare.

In no way are we suggesting that all trade can or should be moved onto eBay or that this would be desirable. These estimations merely indicate the benefits of moving in the *direction* of these scenarios. The estimations point out the upper limits of the welfare gains that may accrue from such a move, which in turn could serve to help guide policy choices.

We can conclude that policy regimes that actively promote online trade have the potential of creating significant welfare gains for consumers worldwide, and in particular for developing countries.

LOWERING TRADE COSTS, INCREASING WELFARE

This Report has shown that online marketplaces, such as eBay, bring down trade barriers allowing consumers and merchants to easier and more efficiently engage in cross-border transactions.

Lower trade costs allow consumers to gain access to products that they otherwise would not have been able to purchase. Moreover, the presence of lower trade costs allows consumers to enjoy products that they were already purchasing but now at lower prices. Both elements increase the real income of the consumer. With the same nominal income a consumer can now purchase more goods at lower prices – increasing the consumer's welfare.

The Sidley-Olarreaga team estimated the consumer welfare associated with such lower trade costs on eBay ("welfare gains"). In short, they assessed the effect of three distinct "shocks" on each of the 62 countries in the dataset:

(1) The "shock" when a country moves from being closed to international online trade to opening up to cross-border trade on eBay.

(2) The "shock" when higher offline trade costs are applied to eBay transactions.

(3) The "shock" when consumers face lower eBay trade costs for all their international transactions.

(For details on the methodology used to estimate welfare gains see Annex.)

The objective of estimating the potential gains in these hypothetical, and for "shock" 3 rather extreme, scenarios is in no way to suggest that all trade should be moved onto online marketplaces. The objective is rather to obtain policy guidance: the study's estimations indicate the upper limits of the potential benefits countries and consumers can reap from moving in a certain direction.

SHOCK 1: GAINS FROM OPENING UP TO ONLINE TRADE

The economic team modelled a move from a "closed economy" (*i.e.* a situation of no international trade, only domestic online trade) to a situation of eBay cross-border trade. This is the welfare gain for a country completely isolated from international online trade that opens up to cross-border online trade, which could be seen as comparing the status quo with the world before eBay.

On average (*i.e.*, across all 62 countries under examination), such a move would boost welfare by a remarkable 77.5%, based on that part of income that is currently spent on eBay purchases. This is the estimated increase in real income achieved when a "closed economy" opens up and allows sellers and buyers to engage in cross-border online transactions. The overall gain, say compared to GDP, is lower because currently consumers spend only a portion of their income online. Nevertheless, this number demonstrates the immense potential in electronic commerce that consumers can tap in the future.

Importantly, as illustrated by Figure 14, the results show that opening up to online cross-border trade over-proportionally benefits developing countries: the largest gains are witnessed in developing countries – and this carries through for further trade liberalisation (rather than the more extreme move from a "closed economy").

Figure 14: Gains from opening up to online international trade and GDP per capita

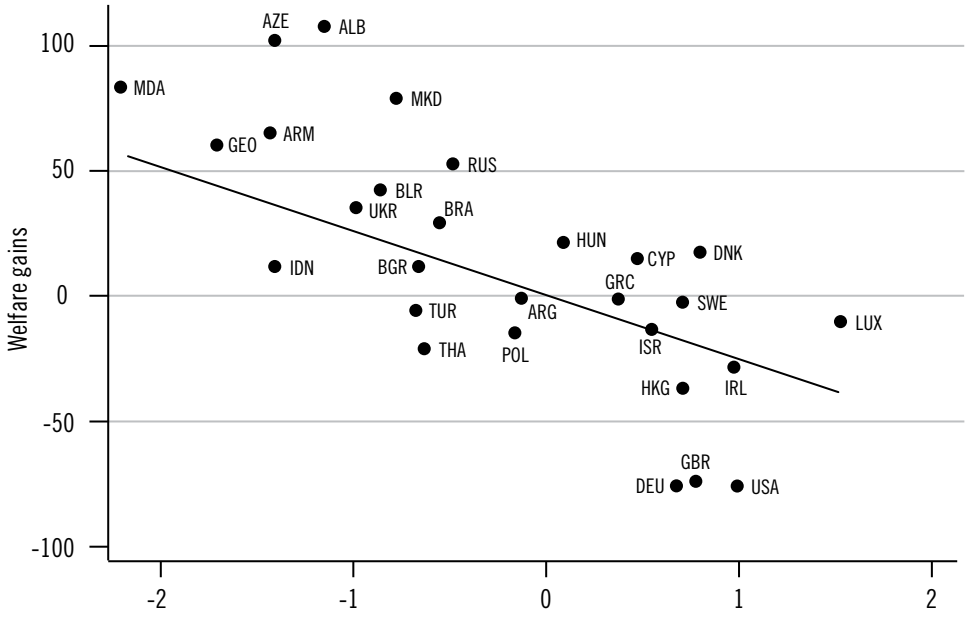


Figure 14 illustrates the correlation between the measured welfare gain and the log of GDP per capita. The downward sloping trend line shows that the poorest countries (on the left side of the graph) experience the largest gains when moving from a "closed economy" to international online trade.

SHOCK 2: GAINS ENJOYED BY CONSUMERS ON EBAY

The economic team modelled what would happen if all eBay trade occurred at higher offline trade costs. Under this scenario, customers would suffer welfare losses of on average 42.5% on income spent on eBay.

These numbers for the hypothetical loss are at the same time an expression of the actual welfare gains through eBay: eBay users have benefitted from significant welfare gains by transacting online instead of at higher offline trade costs.

Figure 15: Correlation between losses in real income from trading offline and GDP/capita

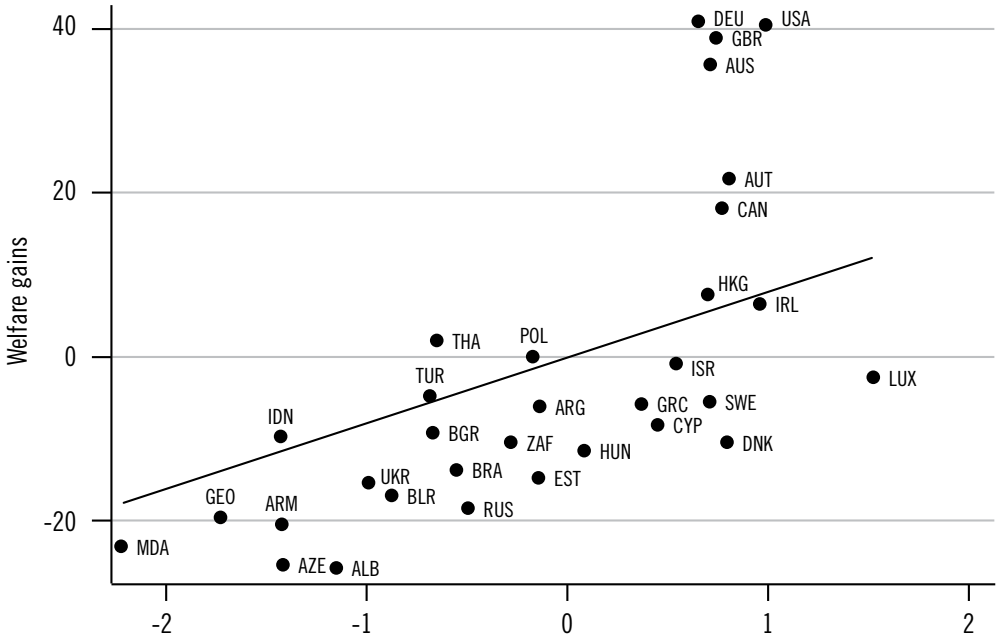


Figure 15 demonstrates that the largest welfare losses occur for the poorest countries (on the left side of the graph) for a hypothetical move from eBay trade costs to higher offline trade costs.

Again, the findings show a strong negative correlation between welfare gains and per-capita GDP: Figure 15 demonstrates how the poorest countries accrue the largest welfare losses. Conversely, the largest actual welfare gains from lower eBay trade costs occur in the poorest countries. This can be explained by the fact that offline trade costs are higher in developing countries, whereas online these trade costs are similar to those of developed countries. Hence developing countries can gain more when moving online (or can lose more from moving from online to offline trade costs).

SHOCK 3: GAINS FROM SWITCHING TO ONLINE CHANNELS

Finally, the economic team modelled what would happen if all international offline transactions occurred at the lower eBay trade costs. This is the welfare potential not yet reaped by consumers because they are transacting at higher offline trade costs instead of at lower online trade costs.

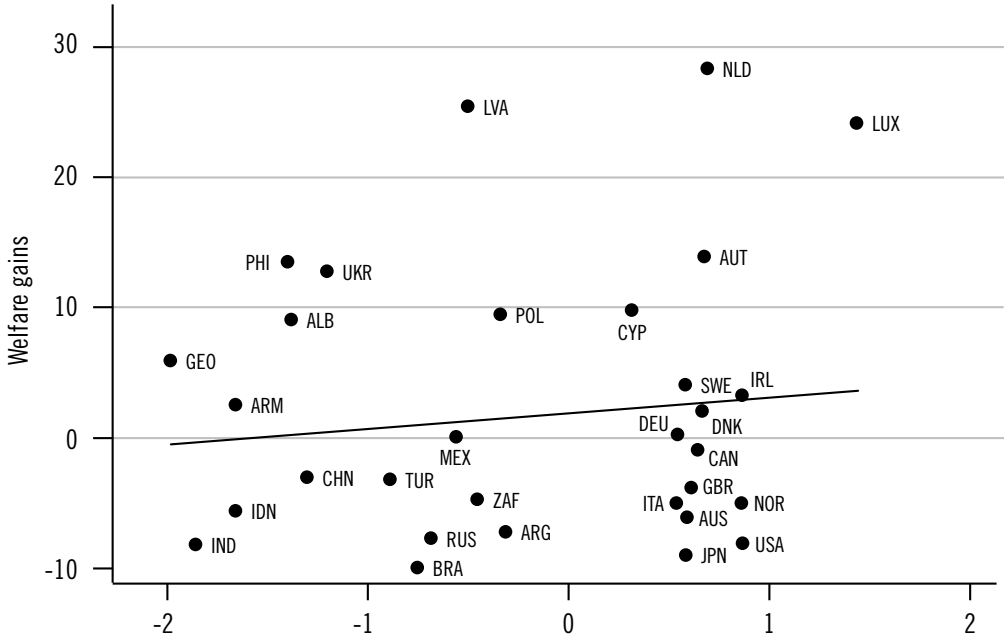
We are the first to admit that this model is extreme. Of course, this Report does not argue that all trade can or should become eBay trade or that that would be desirable. However, if the upper limits of potential gains are significant enough then moving in the *direction* of more online trade is likely to be a benefit to the world economy. Again, the aim is to provide useful pointers for the scale of benefits that may accrue from moving in the direction of the modelled gains.

The hypothetical welfare gains from switching to online channels are formidable. The study found that if consumers worldwide conducted their trading at estimated eBay trade costs instead of at offline trade costs, average real income (real GDP) would increase by a remarkable 15.6%.

Figure 16 below plots the distribution of these gains. The biggest welfare gains appear to accrue to small, open and export-oriented countries[25]. In this model, it is not necessarily developing countries that would benefit over-proportionally from moving to online trade channels. Other forces such as the initial trade levels of GDP are at play benefiting a large number of countries, among them also many developed countries. The conclusion would appear to be that countries across the board benefit from increased online commerce, but those smaller economies that are open to trade and seriously engaged in exporting will benefit the most.

[25] Evidently, countries that trade more (relatively to their GDP) also stand to gain more (again, relatively to their GDP), once trade costs decrease.

Figure 16: Gains in real GDP from adopting online trade costs and log of GDP per capita [26]



[26] Note that welfare gains are always positive. The vertical axis shows how welfare gains deviate from average gains, but gains are positive across the board, even for countries with the lowest welfare gains (such as Brazil and Japan).

CONCLUSIONS

This Report tells the story of what can be achieved in terms of opening up world trade if you offer merchants, irrespective of size and provenance, access to online markets; provide a global payment system; and develop trust mechanisms that facilitate communication, dispute resolution, and clarity on rights and obligations.

The picture that emerges from the economic study, which we commissioned from Sidley Austin and Professor Marcelo Olarreaga, is one where online marketplaces, such as eBay, are turning world trade into commerce: an activity that consumers and merchants of all sizes comfortably engage in. The internet and new technologies – for the purposes of this study embodied in eBay – allow sellers to overcome traditional barriers to trade and find a match for their offerings. We are witnessing a fundamental "change in the game". World trade is no longer an abstract concept or remote activity exclusive to only the largest firms or countries. Consumers and merchants can connect on the global stage, where they can find a match, establish trust and transact despite all sorts of differences and costs.

The economic study also shows that there are substantial potential gains for consumers, developing countries, and exporters and importers of all sizes from moving to a more online trading world. In light of these findings, we conclude that policy choices to encourage and facilitate online trade should actively be pursued in both trade and development policy agendas.

We wanted to share the economic findings with a wider audience through this Report because we believe they offer valuable, pioneering insights and a solid basis for understanding the potential of technology-enabled commerce for trade and development policies. The study describes what the internet and technology have achieved to date – the future potential is immense. The intersection of technology and commerce is a fast moving area and so the near future will most likely present ever more efficient channels and means to connect consumers and traders worldwide.

The conclusion this Report draws is that, under the right circumstances, world trade becomes a growth opportunity for firms of all sizes and online trade becomes an important tool for developing countries to gain access to world markets.

ANNEX

Method: Distance

The empirical methodology used for this economic study follows the well-known "gravity" explanation for international trade flows. The gravity model is the workhorse tool of international trade economists, and it fits well with the data on actual trade flows. It has several theoretical explanations in international trade, but its origin goes backs to Newton's gravity theory that stipulates that the force between two masses depends on the size of those masses and the distance between them, as well as the gravitational constant. The international trade version suggests that international trade flows between two countries will depend on their economic size (GDP) and the distance between them, but also on other trade-related factors. The model is widely used to identify such other factors.

In the case of international trade, the variable "geographic distance" is used to proxy all sorts of trade costs between countries. To better capture the multitude of actual trade costs, the gravity equation often includes other observable factors in addition to geographical distance, such as transportation costs, whether countries share a common language or a common border, whether countries are landlocked, or whether they have signed a trade agreement.

The gravity model allows us to explain why some countries trade more with each other, and why still others do not trade at all. It posits that, everything else equal, countries trade more with each other the larger they are, and the smaller is the distance between them. Combined with other indicators, such as common language, common border, mutual trade agreements, or socio-historical relationships, the model can explain a large part of actual global trade flows. We control for each country's specificities and idiosyncrasies, which means that the model is not trying to explain, for example, the amount of imports or exports of individual countries, but rather how trade flows are spread across their trading partners. The model then allows us to estimate the statistical effect of an increase in distance, say by one per cent, on the volume of trade between any two countries at issue.

Apart from the customary datasets used for implementing the gravity model (distance coefficients, geographic factors, GDP, trade data, cultural and sociological data, institutional indices, etc.), we used eBay dataset.
This dataset contains aggregated bilateral trade-flows between 69 country pairs in the period 2004-2009. These countries represent more than 90% of offline world trade. The eBay dataset contains information on trade values and volumes and shipping costs in the 29 product categories. The dataset also contains information on trade flows generated by specific eBay sites, power seller status, and B2C/C2C commerce.

In order to compare trade on eBay with offline trade-flows, we compiled an offline dataset in which we matched the 29 product categories with the corresponding product categories in the Harmonized System ("HS") classification at the six-digit level. Since HS-six digit offline trade flows are available from the United Nation's Comtrade database, we were able to compile an offline dataset that we termed the "Comtrade eBay image". As the name suggests, the Comtrade eBay image replicates offline trade between the same countries in the same product categories over the same time period of observation as the eBay data collected.

Method: Welfare Gains

Previously, it was a daunting task to estimate overall welfare gains reaped from international trade. Fortunately, Arkolakis *et al.*, in a paper forthcoming in the *American Economic Review*, one of the top-ranked economic journals, describe a very general way to measure different types of welfare gains associated with trade[27].

Our modelling approach is based on the Arkolakis *et al.* paper. In a nutshell, following Arkolakis *et al.*'s approach, we examine every country in the data set individually, and assess the effect of three distinct "shocks" on its welfare (measured in real eBay or total income):

1. **Welfare gains 1 – the gains from online cross-border trade.** Here, we estimate the increase in real income achieved from trading internationally on eBay, *i.e.*, from allowing sellers and buyers in different countries to engage in cross-border trade. The policy "shock" we consider is a move from online autarky to liberalized trade online. The result is the welfare gain for a country completely isolated from online trade that opens up to cross-border trade on eBay[28].

2. **Welfare gains 2 – imposing offline trade costs on actual eBay trade.** Here, we compare the importance of distance, common language; common border, and other trade cost variables on international trade flows (*offline* and *online*). We "shock" international online

[27] Although we are not able to disentangle the exact channels through which these gains occur, the approach taken by Arkolakis *et al.* provides an overall estimate of welfare gains afforded by eBay thanks to the trade-creating nature of the e-commerce platform. To put it simply, Arkolakis *et al.* show that the overall welfare gains are unchanged when we add different channels (as long as some basic modeling assumptions are kept, and these are satisfied in our gravity setup).

[28] Imagine the situation of a least-developed country (say, East Timor or Central African Republic) that engaged into very little international online trade, but was provided with the chance of trading online through eBay. The welfare gain here would be a combination of a) gains from trading with other nations; and b) being able to trade a low trade costs, thus reaching more customers and being able to offer lower prices.

trade by applying offline trade costs to online transactions. We then estimate the welfare losses that would be observed if consumers substituted online for offline trade channels. *This welfare loss* can be interpreted as the *welfare gain* achieved by eBay trade, compared to the counterfactual that eBay trade would occur through offline channels, *i.e.*, at higher trade costs.

3. **Welfare gains 3 – assuming online trade costs for offline trade transactions.** Here, we shock the system by supposing that consumers face online trade costs for all their trade transactions. The result is the welfare potential not yet reaped by consumers, because they are not using eBay as their trade channel, instead mostly relying on offline channels.

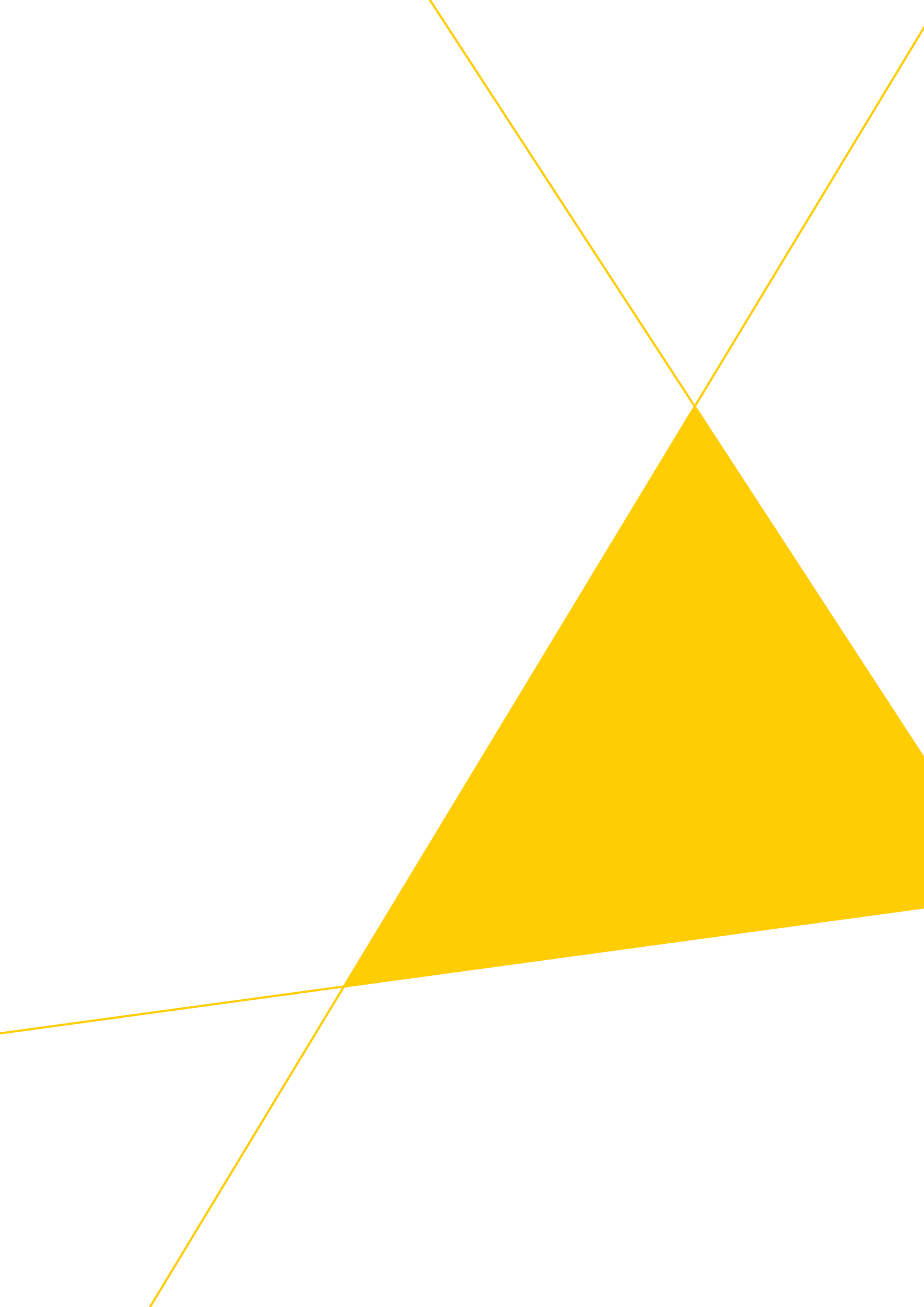
To estimate the welfare gains in each country contained in our dataset, we use the formula central to the Arkolakis *et al.* paper. To implement this formula we used the following information:

a) trade elasticities (changes in imports following a change in ad valorem trade costs);

b) share of imports in total expenditure before the shock; and

c) share of imports in total expenditure after the shock.

Trade elasticity estimates are taken from the existing trade literature. Changes in imports before and after a certain shock are mathematically derived from our econometric estimates, which are based on the eBay dataset and publicly available UN Comtrade data for offline trade.



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