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Abstract

This paper tackles the impact of red tape barriers on firms' exports. The topic of this paper is crucial in international trade for three main reasons: first, trade barriers—as argued by the WTO—are highly correlated to lengthy, bureaucratic and time consuming trade procedures that negatively affect firms' exports. Second, these barriers are highly persistent and costly in developing countries such as Egypt. Third, they represent a deadweight loss as they do not generate any rent or revenue. In this study, we estimate a gravity model using Egyptian firm-level data to examine the impact of these barriers on firms' exports. For administrative barriers, we use the Doing Business dataset developed by the World Bank. The findings show that red tape barriers negatively affect Egyptian firms. This effect seems more robust for both the extensive margin (the probability of exporting across different destinations) more than the intensive one (the value of exports). This result is also consistently robust even after we control for the selection bias that may arise in our regressions. Moreover, small and medium exporters are more likely to be affected by such barriers. Finally, for different economic sectors, not all products are affected by trade facilitation in the same way at the intensive margin level. By contrast, they are all negatively affected by administrative barriers at the extensive margin level.

JEL Classifications: F13, F15, F14

Keywords: Gravity, Trade Barriers, Firm-level data, Egypt.

ملخص

تتناول هذه الورقة تأثير الحواجز البيروقراطية على صادرات الشركات. موضوع هذه الورقة هو بالغ الأهمية في التجارة الدولية لثلاثة أسباب رئيسية: أولا، من ناحية حواجز التجارة (وكما تجادل منظمة التجارة العالمية) ترتبط إلى حد كبير بالإجراءات التى تستغرق وقتا طويلا وبالبيروقراطية التي تؤثر سلبا على صادرات الشركات. ثانيا، هذه الحواجز مستمرة ومكلفة للغاية في البلدان النامية مثل مصر. ثالثا، أنها تمثل خسارة ثقيلة لأنها لا تولد أي إيجار أو إيرادات. في هذه الدراسة، فإننا نقدر نموذج الجاذبية باستخدام بيانات على مستوى الشركات المصرية لدراسة تأثير هذه الحواجز على صادرات الشركات. والحواجز الإدارية، ونحن نستخدم مجموعة البيانات لممارسة أنشطة الأعمال الذي وضعها البنك الدولي. تظهر النتائج أن الحواجز البيروقراطية تؤثر سلبا على الشركات المصرية. هذا التأثير يبدو أكثر قوة لكل من الهامش الواسع (احتمال تصدير عبر وجهات مختلفة) والمكثف (قيمة الصادرات). تبدو هذه النتيجة قوية أيضا حتى بعد السيطرة على انحياز في الاختيار التي قد تنشأ في انحدارات لدينا. وعلاوة على ذلك، فمن المرجح أن تؤثر هذه الحواجز على المصدرين الصغار والمتوسطين. أخيرا، وعلى مختلف القطاعات الاقتصادية، لا تتأثر جميع المنتجات من قبل تسهيل التجارة بنفس الطريقة على مستوى الهامش المكثف. على النقيض من ذلك، فإن كل تأثرها يكون سلبا من الحواجز الإدارية على مستوى الهامش الواسع النطاق.

1. Introduction

Empirical literature has shown that trade costs are important. This is why Anderson and van Wincoop (2004) argue that "trade costs are large, even aside from trade policy barriers and even between apparently highly integrated economies." Such trade costs may be divided in four categories: first, transaction costs related to transport (including distance) and insurance of traded goods; second, costs induced by trade policies associated with tariff and non-tariff barriers (such as quotas, sanitary and phyto-sanitary measures (SPS) and technical barriers to trade (TBT)); third, local distribution costs from foreign producer to final user in the domestic country; and finally costs due to administrative barriers or red tape costs, i.e. the ones associated with trade facilitation. Thus, trade facilitation, that aims at "making international trade easier", encompasses a large range of facets that can be summarized in four main points: simplification of trade procedures; harmonization of commercial rules; transparent information and procedures; the recourse to new technologies allowing for trade promotion and more secure means of payment.

Several main reasons explain why trade facilitation has increasing policy relevance. First, over the last decades, intra-industry trade and intermediate products trade have significantly increased. These types of trade require quicker and more efficient delivery, especially with a higher interdependency of supply chains. Second, since trade liberalization is not on its own sufficient to ensure the integration of an economy in the globalized world, a particular attention has been turned to understand what are the other impediments that hinder international trade, such as administrative barriers and time to trade (Hummels 2001; Djankov et al. 2006). Third, administrative procedures are complicated, lengthy and redundant and have a high cost. Their cost accounts for 2% to 15% of the value of traded goods (OECD 2002). This is why their elimination is likely to have a highly positive impact on both international trade and welfare.

In addition to these reasons, administrative barriers to trade hinder export diversification. This diversification can be observed at both the intensive (the value of exports) and the extensive (number of products and number of destinations) margins. In fact, theory predicts that lowering administrative barriers to trade, e.g., through trade facilitation measures, would make it profitable even for low-productivity firms to become exporters. Trade facilitation cannot only increase domestic productivity within a country, but also promote the entry of new firms into export markets (extensive margin). Furthermore, lower trade costs may also lead to a higher export intensity and stimulate the growth of exports (intensive margin). The reason behind this is explained by Dennis and Shepherd (2011) who argued that lower fixed costs of export (such as the barriers associated to trade facilitation) expand the range of products that developing countries can export. Fixed costs are perceived as the primary determinants of firm entry into particular overseas product markets. For this reason, they found that a 10% improvement in trade facilitation is associated with product diversity gains of the order of 3%-4%. Moreover, there is evidence that differentiated goods (such as manufactures) have stronger diversification responses to trade facilitation (measured as a uniform proportionate cut in administration costs) than do homogeneous goods (such as agricultural products).

The literature on export performance and trade facilitation using firm level data in MENA region is highly scarce since most of the work has been done for either Asian,

African or Latin American economies. For Asian countries, Li and Wilson (2009) found that improvement in trade facilitation indicators tends to increase the probability that small and medium enterprises (SMEs) will become exporters, as well as their export propensity. As per Latin American economies, Cirera et al. (2012) used a micro dataset that links production, trade and innovation data at the firm level in Brazil and explored the impact of innovation, trade and production dynamics on diversification behavior. In Africa, Yoshino (2008) found that public infrastructure constraints, such as customs delays, seem to have immediate impacts on regional exports in general, implying the relevance of addressing behind-the-border constraints in fostering regional integration. In the same line, Hoekstra (2013) found that trade facilitation can increase African firms' probability to participate in international trade. Moreover, lower trade barriers are associated with a higher growth of exports. Shepherd (2012) proved that licensing times do matter for the ability of firms to access imported intermediates. He provided evidence on the fact that clearance times matter for firm-level export performance and that clearance times affect firms' choice to export directly or through a third party since longer clearance times make use of a third-party distributor more likely. While numerous studies have highlighted MENA's weak performance in aggregate trade and diversification (Dogruel and Tekce 2011), little is known about the impact of administrative barriers on firm-level exporter behavior largely because of a lack of data. For this reason, using a recently-available dataset on firm exports in Egypt, this paper fills a knowledge gap in our understanding of how red tape barriers affect exports performance of Egyptian firms. It is worthy to mention that aggregate data hide a lot of heterogeneity and do not allow us to distinguish which firms drive growth and diversification, nor which margins of adjustments matter most. Understanding exactly how the process of trade facilitation affects export growth happens is necessary to identify the drivers of and constraints to export growth in the region and requires micro-data.

In the present study, we estimate a gravity model using Egyptian firm-level data, for the first time, to examine the impact of these barriers on firm exports. Customs data (coming from the General Organization for Export and Import Control (GOEIC) in Egypt and harmonized by the World Bank) on exporting and importing are merged with administrative barriers that come from the Doing Business dataset developed by the World Bank. The findings show that red tape barriers negatively affect Egyptian firms. This effect seems to be robust for both the intensive margin (the value of exports) and the extensive one (the probability of exporting across different destinations). This result is also consistently robust even after we control for the selection bias that may arise in our regressions.

In what follows, section 2 presents some stylized facts of the Egyptian exports at the macroeconomic as well as the firm levels. Section 3 shows how red tape barriers matter for Egyptian exports. Section 4 exhibits the methodology adopted in our study. Section 5 is devoted to the data presentation. In section 6, we present the empirical results. And, section 7 concludes and presents the policy implications of the study.

2. Exports Landscape

2.1 Aggregate export flows

Both exports and imports in Egypt experienced significant increases since the early 1990s and in a more pronounced way after 2004. Figure 1 plots the evolution of exports and imports from 1990 to 2011. On the one hand, Figure 1 shows that increases in both exports and imports are much higher after 2004 than those before 2004. On average, exports increased annually by 5% before vs. 24% after 2004, while imports increased annually by 2% and 24% respectively. At the same time, Egypt's trade balance was continuously in deficit throughout the period of the study. Imports exceed exports as a result of the upsurge in the volume of imports that are mainly concentrated in raw materials, investment goods or semi-finished products, all of which are used in the production process.

Figure 2 illustrates trade as a share of GDP in Egypt compared to different regions. The Egyptian trade openness seems to increase with time until 2008. Clearly, the trend of the evolution of trade openness is very similar to the one for the Arab world and the MENA region. Percentages went from 40 percent in 2000 to 60 percent in 2008, which shows the effectiveness of trade policies at that time. Since 2008, the figures changed. A drop in trade accompanied the economic crisis in 2008 to reach 40 percent again in 2010. Similar trends have also been observed for aggregate exports for which trade have decreased from 30 percent in 2008 to 15 percent in 2010.

Merchandise trade measures the level, year-over-year changes in total trade in goods exports and imports. For the case of Egypt, as shown in Figure 3, merchandise trade as a share of GDP was continuously increasing during the last decade. It has more than doubled between 2000 and 2008, which is in line with the numbers shown in Figure 2.

As shown in Figure 4, Egypt's performance at the manufacturing sector level is better than the one for the MENA region and the Arab countries. Moreover, starting 2007, the share of manufactured exports in merchandise exports has remarkably increased to reach 50 percent in 2009 compared to only 10 percent for the Arab countries and 20 percent for the MENA region. Yet, the Egyptian economy is still lagging behind the middle income countries.

Egypt's exports are moderately diversified. Figure 5 shows that almost half of Egyptian exports are concentrated in fuel, mineral and oil products. Yet, despite their large share in Egyptian exports, proceeds from fuel, mineral oils and oil products only rose by 2% between FY06[*] and FY10. In the meantime, Egypt managed to diversify its non-oil exports that scaled up due to the increase in exports of raw materials (up by 90.4% over the same period), finished (up by 94.7%) and semi-finished products (up by 36.7%). Clearly, the increase in non-oil exports contributed to the development of the industrial sector that expanded and increased its labor demand for blue-collar workers that are more abundant in Egypt.

The imports structure is a little bit different since fuel and oil products do not represent more than 10% of Egyptian imports. The bulk of imports is concentrated in the categories of raw materials, investment and intermediate goods representing altogether two thirds of

[*] FY is fiscal year.

imports. Yet, the evolution of imports points out another important fact. As shown in Figure 6, both consumer non-durable and durable goods have tripled between FY06 and FY10, especially those coming from China.

The geographical distribution of both exports and imports is relatively the same. The European Union is Egypt's main trade partner, accounting for 35% of total trade on average. The key exports to the European Union (EU) are crude oil and products, cast iron, cotton textiles, cement, iron and steel products, pharmaceuticals, and aluminum products. The main imports from the EU are crude oil and products, iron and steel products, organic and inorganic chemicals, pharmaceuticals, and electric appliances for telephones and telegraphs. Before the financial crisis, the United States of America (USA) occupied the second place for both exports and imports with an average share equivalent to 33% and 22% respectively. The USA chiefly imports crude oil and products, cement, and iron and steel products from Egypt.

Imports from the USA were mainly crude oil and products, iron and steel products, wheat, and maize. Note that starting FY09, the share of imports from Asia outweighed those from the USA and with 20% vs.11% respectively in FY10 (Figures 7 and 8). Moreover, it is important to note that while Egypt's trade with Asia has multiplied fivefold between FY02 and FY10, that with USA has multiplied by just 1.7 over the same period. The main imports from Asian countries are car parts and accessories, animal and vegetable fats, cars, ready-made clothes, and iron and steel products. Finally, the Arab share in Egypt's trade is quite modest since it does not exceed 10% of total trade with crude oil and products, iron and steel products, cast iron, cement, and rice as the main Egyptian exports and crude oil and products, organic and inorganic chemicals, and cars as the main Egyptian imports.

2.2 Firm-level export dynamics

Turning our attention to firms' dynamics in the trade market, Figure 9 clearly illustrates that the number of exporting firms has decreases between 2006 and 2010 from 22.9 to 19.6 thousand firms. Yet, the value of total exports has increased by 65.5% during the same period.

This might reflect the fact that only competitive firms remain in the market, with each firm exporting more on average. Firm entry and exit dynamics show that new entrants as well as exiting firms have decreased between 2006 and 2010, declining by an annual average of 21%. Meanwhile, the number of firms that continued to export, from one year to the other, has increased from the beginning to the end of the period under study by 13.5%, from 6,070 firms in 2007 to 6,887 in 2010 (see Figure 10). Throughout the period of study, the number of continuing firms every year accounted for about two thirds of the market, increasing from 57% in 2007 to 76% in 2010. In tandem, firms exiting and entering the market together accounted for one third of the market, also declining from close to 21.5% each in 2007 to 12% each in 2010.

Figure 11 displays the relationship between the number of exporters and the size of the importer that captures the demand at destination. It is worthy to note that there is a linear positive relationship between both showing that the higher the GDP of the importer, the higher the demand and consequently the higher the number of new exporters. Therefore,

the extensive margin of exports is likely to be positively affected by the demand at the destination.

Looking at the geographic distribution of exports, through inspecting the number of firms serving Egypt's largest trading partners, it can be seen that the number of firms has declined for all five major markets (the United States, Italy, Saudi Arabia, Syria and Ireland) between 2006 and 2010 (Figure 12). Firms exporting to Ireland saw the most decline with an average of about 10%. Meanwhile, firms exporting to the USA and Syria declined by close to 8%, while the number of firms exporting to Italy declined by about 7%. Firms exporting to Saudi Arabia also decline by about 2% between 2006 and 2010, but the number of firms increased by about 4% in 2009. During the period of study, Saudi Arabia was the country served by the highest number of Egyptian exporters, with 1984 firms in 2006.

Meanwhile, the top ten importers from Egypt have changed over the years, even though in all years, they accounted for more than 50% of Egypt's exports. The United States, Italy, Saudi Arabia, Syria, Ireland and Libya have remained among Egypt's top importers throughout the period of study (Figure 13). Saudi Arabia became Egypt's largest trading partner, starting 2009. Exports to Saudi Arabia accounted for 8.6% and 8.8% of total exports in 2009 and 2010, respectively, as opposed to 8.2% in 2008 and less in previous years. The reason behind this increase in Saudi Arabia's share of exports is a decrease in Italy's share of exports from an average of 9% from total exports (between 2006 and 2008), to 5.8% (in 2009 and 2010), following a 45% decrease in Egyptian exports to Italy in 2009 upon the global financial crisis. Meanwhile, exports to Saudi Arabia declined only by close to 6% in 2009, with an average exports' growth of 27% throughout the period of study.

Looking at firm dynamics in more recent years, it can be seen in Figure 14 that the number of new firms has been divided by 64 between 2010 and 2012 as a result of uprisings in Egypt. The extensive margin all but disappeared to reach the level of four new firms only in 2012 (Panel a). The total number of exporters has also been reduced by 31 percent. Despite the fact that new as well as total exporters have seen the value of their exports improving between 2010 and 2011, this value has dropped from 1,661 firms in 2011 to become 157 firms in 2012 (Panel b). The political environment has been a disincentive for new investors and start-ups and is the main reason for the deterioration in the status of exporters.

3. Do Red Tape Barriers Matter in Egypt?

Despite Egypt's liberalization efforts, other impediments to trade still exist, especially administrative barriers. Indeed, Egypt has experienced several waves of trade liberalization but its exports and imports are still hindered by either non-tariff measures or implicit barriers to trade.

Concerning trade liberalization, the maximum tariff rate decreased from 110% at the end of the 1980s to 40% in the end of 1990s. In 2004, the government of Egypt launched the second wave of liberalization. Its objectives were twofold: first, to reduce tariffs and rationalize the tariff structure; and second, to reduce the number of products subject to non-tariff barriers. The number of tariff bands was narrowed from 27 tariff brackets to six, tariff dispersion measured by standard deviation declined from 16.1 in 2000 to 12.7

in 2004 and tariff lines were reduced from 8,000 to 6,000. Nominal and effective protection declined in the manufacturing sector from 21.3% to 12.1% and from 23.3% to 14% respectively after the 2004 reform. Those measures combined were meant to simplify procedures, minimize tariff evasion, and remove possibilities of discretion and corruption (Zaki 2013). Therefore, the increase in exports and imports can be attributed to these trade reforms. Yet, some sectors, such as the food and tobacco sectors, remain highly protected, due to tariff escalation and non-tariff barriers on the trade side, and due to energy subsidies on the input side. The effective rate of protection (ERP) decreased from 85.6 percent in 1999 to 45 percent in 2009 for private business and from 122.5 percent to 37 percent for public enterprises over the same period. In addition, they argued that the dispersion of ERP fell between 1999 and 2009 from 192 to 57 percent, but it remains higher than the low dispersion of nominal tariffs due to tariffs and output subsidies and also energy subsidies. Despite a significant liberalization of the manufacturing sector, the primary sector remains relatively protected given the fact that in 2009, its simple average of Most Favored Nation (MFN) tariffs was 41% while that of the manufacturing sector was 9% (Table 1). Finally, the difference between applied and weighted tariff rates was much larger for the primary sector (37.5% and 6% respectively) than for manufacturing (9.3% and 9.12% respectively). This is because some products in the primary sector are subject to high tariffs (such as tobacco and alcohol) whereas their weights in international trade are significantly low.

In Egypt, red tape procedures for exports and imports remain high and costly. In 2010, exports procedures required 12 days and cost US$613 and import procedures also required 12 days and US$698. Figure 15 shows that the number of documents and days to export and to import in Egypt is higher than MENA and OECD averages. Moreover, Table 2 confirms that document preparation is the most time-consuming procedure, requiring almost 60 percent of the total time. Consequently, Egypt still has a long way to reach better rankings in the ease of doing business or best practices in trade facilitation aspects.

All these facts raise some worries about the efficiency of trade procedures in Egypt. For this reason, policymakers should focus on such barriers to boost foreign trade since its customs administration remains inefficient and corruption-ridden.

Egyptian exports to their top importers are a function of each country's domestic demand. Yet, Figure 16 shows that there is a negative correlation between the value of Egyptian exports to these countries, and their average time to import. Egypt exports more to countries with lower time to import. This proves how much red tape barriers matter in international trade since they reduce the value of Egyptian exports.

As shown in Figure 17, the time to import of Egypt's largest trading partners varies widely, ranging from 5 days for the United States, to an average of 63 days for Sudan. Meanwhile, Egypt's time to export declined from 27 days in 2006 to 14 days in 2010. Time to import to Egypt has also declined from 30 days to 16 days, during the same period.

4. Methodology

The methodology used in this paper draws on the pioneering work of Tinbergen (1962) and Anderson (1979): the gravity model, which has become an essential tool in the

empirics of international trade to assess the determinants of trade in goods and services. The gravity model has undergone significant theoretical and empirical improvements over the years (Mac Callum 1995; Fujita et al. 2000; Feenstra et al. 2001; Feenstra 2002; Anderson and van Wincoop 2003; Evenett and Keller 2002; Santos Silva and Tenreyro 2006 and Fontagné and Zignago 2007), enforcing its theoretical base and thus narrowing the gap between theoretical and empirical findings.

To measure the intensive margin of exports, our dependent variable is the value of trade between firm *i* in Egypt and country *j* at year *t* (X_{ijt})[†]. Our explanatory variables are GDP of Egypt and GDP of partner *j*, several variables measuring transaction costs that include transport costs measured by the bilateral distance between Egypt and its partner *j* (d_{ij}), some dummies capturing whether one country was a colony of the other at some point in time, whether the two have been colonized by a same third country ($Comcol_{ij}$) or whether the two countries share a common border ($Conti_{ij}$) or share common language ($Lang_{ij}$). To control for other trade policy variables, we introduce the average applied tarrif in the manufacturing sector (Tar_j). As per our time to trade variable, we use two different variables. First, for the time to import of Egypt's partners, we used the Doing Business dataset (that changes by year and destination). Second, for the time to export, since there is a lack of variability concerning time to export from Egypt (it changes only over time), we use the time to export from the Investment Climate Assessment dataset (Enterprise Survey, 2013) that gives the time to export faced by Egyptian firms at the sectoral level. Thus, this variable changes by sector and by year.

$$Ln(X_{ijt}) = \beta_0 + \beta_1 ln(GDP_{EGY,t}) + \beta_2 ln(GDP_{j,t}) + \beta_3 ln(d_{ij}) + \beta 4\ Col_{ij} + \beta_5 Comcol_{ij} + \beta_6 Conti_{ij} + \beta_7 Lang_{ij} + \beta_8 ln(Time\ to\ Export_{ijt}) + \beta_9 ln(Time\ to\ Import_{ijt}) + \beta_{10} ln(Tar_{jt}) + \varepsilon_{ijt} \quad (1)$$

where ϵ_{ijt} is the discrepancy term.

We run different sets of regressions: first, by pooling our data and then by using panel techniques. Running this linear model with two high-dimensional fixed effects (destinations and firms effects) is a tough task. For this reason, we used the Stata package developed by Guimaraes and Portugal (2009)[‡]. It is worth mentioning that when we use fixed effects, time-invariant variables are automatically dropped from our regressions such as bilateral distance, colonial links, common colonizer, contiguity and common language. Moreover, when we include year dummies, the GDP of Egypt is also dropped given that it changes by year only. It is worth noting that we also dropped all single exporters in order to have only the persistent ones. The equation we run turns to be as follows:

$$Ln(X_{ijt}) = \alpha_0 + \alpha_1 ln(GDP_{j,t}) + \alpha_2 ln(Internet_{ijt}) + \alpha_3 ln(Tar_{jt}) + \alpha_4 ln(Time\ to\ Export_{ijt}) + \alpha_5 ln(Time\ to\ Import_{ijt}) + f_i + d_j + y_t + v_{ijt} \quad (2)$$

[†] For more details on data description, see Appendix 1.

[‡] This package works only with linear models. This is why it was not applied when using fixed effects or models with limited dependent variables.

Where f_i represents firm fixed effects, d_j destination fixed effects, y_t year dummies and v_{ijt} the discrepancy term. Finally, we regress this by pooling different regressions and by using panel techniques.

On another note, we run a similar regression to measure the extensive margin by regressing the probability of serving a new destination as follows:

$$Pr(X_{ijt}) = \gamma_0 + \gamma_1 \ln(GDP_{j,t}) + \gamma_2 \ln(Tar_{jt}) + \gamma_3 \ln(Time\ to\ Export_{ijt}) + \gamma_4 \ln(Time\ to\ Import_{ijt}) + f_i + d_j + y_t + \mu_{ijt} \quad (3)$$

with μ_{ijt} the discrepancy term. This regression is run using both fixed effect and a conditional logit model.

To sum up, in this paper we focus on two margins as shown in Figure 18. The intensive margin shows the value of exports made by existing firms to old destinations (first quadrant). The extensive margin we take into account (in the second quadrant) represents exports made by existing firms to new destinations (market-extensive margin). By contrast, neither the firm's extensive margin (the third quadrant) nor the firm and market's extensive margin (the fourth quadrant) are studied in this paper because our firm-level data does not include non-exporting firms. Thus, we cannot examine whether a firm shifts from being a non-exporter to an exporter.

Last but not least, since the selection bias can be thought of as a form of omitted variable bias (Heckman 1979), we run a Heckman selection model to control for this problem. We adopt a two-stage analysis to tackle this issue. In the first step, we examine the determinants of the probability of exporting to a certain destination using red tape variables that may be perceived as a fixed cost that each firm has to pay (Anderson and van Wincoop 2004), and in the second step we examine the determinants of the Egyptian exports value. In other words, we examine the determinants of exports conditional upon entry[§].

5. Data

We compile our gravity-type variables from different sources. Trade data used for the intensive margin comes from the General Organization for Export and Import Control (GOEIC), the Ministry of Industry and Foreign Trade in Egypt from 2006 to 2010 (at the HS4 level). This dataset has four dimensions: exporting firm, year, destination and product for two variables which are value and quantity of exports. The World Bank has also developed a series of measures classified under different categories reflecting basic characteristics of the export base in each country (size of the exporting sector, exporter size and exporter growth rates), concentration/diversification (Herfindahl index, share of top exporters, number of products and destinations per exporter), firm, product and market dynamics (entry, exit and survival rates) and unit prices (per exporter, product, market). The measures are available at different levels of aggregation, including: a) country-year, b) country-year-product, and c) country-year-destination.

However, one drawback of this dataset is that we cannot explore the link between export behavior and firms' performance measures. Such analysis may be conducted if the

[§] For some additional results, see Appendix 2.

exporter-level transaction data can be merged with industrial census data including key firm characteristics such as employment, profits, gross output per worker and wages. Moreover, since these data does not include non-exporting firms, we constructed a variable that takes the value 1 if a firm exports to a certain destination in a certain year and 0 otherwise. For this reason, our extensive margin captures the probability of exporting across different destinations (market-extensive margin) not the probability of shifting from a non-exporter to an exporter.

As for our time to trade variables, we use two different variables. First, for the time to import of Egypt's partners, we use the Doing Business dataset (that changes by year and destination). Second, for the time to export, since there is a lack of variability concerning time to export from Egypt (it changes only over time), we use the time to export from the Investment Climate Assessment dataset that gives the time to export faced by Egyptian firms at the sectoral level.

The Gross Domestic Product (GDP) for each country comes from the World Development Indicators database online (2011) that provides GDP in constant 2000 USD[**]. Other classic gravitational variables, for instance contiguity, common language, distance, common colonizer, etc. come from the Centre des Etudes Prospectives et d'Information Internationales (CEPII) Distance database (available on http://cepii.fr/CEPII/fr/bdd_modele/bdd.asp).

6. Empirical Results

In order to examine the effect of red tape costs on exports performance, we run several regressions with different techniques. First, to capture the intensive margin of exports, we use the value of total exports per firm and the average exports per destination. Second, for the extensive margin, we use the probability of exporting to more than one destination and the number of firms per destination.

First, as shown in Table 3, when we pool our data and introduce different dummies (firm, destination and product, HS1 or HS2 dummies and interacting those dummies together), the importer GDP, in most of the regressions, has the expected positive sign and is statistically significant pointing out that the larger the importer the higher the value of exports. While most of the gravitational variables are insignificant in these regressions, our policy variable, which is the applied tariffs, has also an insignificant effect on exports in most of the specifications.

As per our variables of interest, we do not find a robust effect of the time to export and to import on the intensive margin of exports. Indeed, we find that the time to import is slightly negative and that time to export is surprisingly positive. This result is robust whether we use pooled (Table 3) or panel (Table 4) techniques and whether we keep or drop single exporters. This unexpected positive sign may be attributed to a selection bias in our estimation.

Since our regressions may suffer from a problem of selection bias that can be thought of as a form of omitted variable bias (Heckman 1979), we run a Heckman selection model. We adopt a two-stage analysis to tackle this issue. In the first step, we examine the determinants of the probability of exporting to a certain destination using administrative

[**] Dollar figures for GDP are converted from domestic currencies using 2000 official exchange rates.

barriers variables that may be perceived as a fixed cost that each firm has to pay to enter a new market (Anderson and van Wincoop 2004). Indeed, the results show that time to export and time to import have a statistically significant impact on the probability of exporting across different destinations (see Table 5). Moreover, while the importer GDP and sharing common borders increase the likelihood of exporting across different destinations, longer bilateral distance discourages exporters to enter a new market. In the second step, we included classical gravity variables. It turns out that bilateral distance reduces the value of exports. Moreover, since tariffs affect the value of trade, we include them in the second step only and we find that, surprisingly, tariffs negatively affect the intensive margin of trade.

When we examine the impact of administrative barriers on the average value of exports by product and by destination, we also find an insignificant impact of these barriers on the intensive margin of exports (see Table 6). For this reason, such barriers are likely to be perceived as a fixed cost that must be borne by exporters before they enter into any market.

If we disentangle the incidence of administrative barriers on exporter by size, we notice that small exporters (<10% or <25%) are more negatively affected by these barriers than larger firms (>90%). Indeed, while time to export matters for the smallest 10% of exporters, time to import matters for the smallest 25%, both time to export and time to import do not matter at all for the largest 90% of exporters. Thus, it is clear that SMEs gain much more from trade facilitation than large multinational companies. These gains are amplified when taking into account the fact that the vast majority of firms in developing countries are small and medium ones and that such companies create more jobs (National Board of Trade 2003). Such gains are important since the costs incurred by SMEs are much higher than those incurred by multinationals. In a study on European customs procedures Ernst and Whinney (1987) found that the cost of compliance is 30% to 45% higher for firms whose staff is less than 250 employees. One of the elements that increases the cost incurred by SMEs coming from developing countries is the fact that they do not have a good historical experience with customs of rich countries, or enough manpower to deal with extensive and complex trade formalities. Frequent transactions allow firms to participate in “simplified procedures”, decreasing their transaction costs by 50% (Ernst and Whinney 1987). In addition, SMEs are sometimes classified as high-risk firms. Hence, their flows with developed economies are subject to numerous physical checks and more complicated documentation, compared to larger firms. A study conducted by the International Trade Center (ITC, 2012) found that in Peru, 23% of SME export flows faced burdensome regulation in importing countries compared to 11% of large company flows, while 33% of SME export flows face less domestic non-tariff measures (NTMs), as opposed to 41% for large firms (ITC, 2012). Similarly, a survey conducted by the World Bank in 1999-2000 involving more than 10,000 companies in 80 countries found that SMEs are more likely to find customs and foreign trade regulations difficult to comply with (OECD 2009; Batra et al. 2003).

As for the extensive margin (Table 8) first, the effect of GDP of importer is positive. Moreover, both time to export and time to import have a statistically negative impact on the probability of exporting a certain product to a certain destination in most of the econometric specification (including different dummies).

The same result remains robust when we take advantage of the panel dimension of our dataset. Table 9 shows that fixed and random effects yields a statistically significant and negative effect of the administrative barriers to trade on the extensive margin of exports.

Finally, the extensive margin of exports can also be measured by the number of firms by product and by destination (Table 10). We find that time to export and time to import have also a significant and negative impact on the number of firms, especially in the fixed effects and the pooled regressions (with year, product and destination dummies). This result confirms the previous results where administrative barriers are more relevant for the extensive margin of exports than the intensive margin.

At the sectoral level, not all products are affected by trade facilitation in the same way at both the intensive and the extensive margins. Some products are more sensitive to trade facilitation than others, such as perishable goods (foods and agricultural goods), seasonal products (garments), products with short market lifetime (high technology products) and intermediate goods used in the production process. For this reason, we run sectoral regressions at the industry level (HS1) and find that, at the intensive margin level, only vegetables and food products (which are perishable products), textile and garments (which are seasonal products) and chemicals are significantly affected by either the time to export or that to import. By contrast, time-insensitive products (such as rubber and wood or equipment are not affected by time to trade (Table 10). However, Table 11 shows that, at the extensive margin level, all the products are affected by time to trade regardless of the product characteristics. This confirms our previous finding that administrative barriers have a higher significant impact on the extensive margin than the intensive margin.

7. Conclusion and Policy Implications

This paper tackles the impact of red tape barriers on firms' exports. The topic of this paper is crucial in international trade for three main reasons: first, trade barriers—as argued by the WTO—are highly correlated to lengthy, bureaucratic and time consuming trade procedures that do negatively affect firms' exports. Second, these barriers are significantly highly persistent and costly in developing countries such as Egypt. Third, they represent a deadweight loss as they do not generate any rent or revenue. This is why removing these barriers is likely to boost trade and increase exports diversification.

The literature on export performance and trade facilitation using firm level data on the MENA region is highly scarce since most of the work has been done for Asian, African or Latin American economies. For this reason, in the present study, we estimate a gravity model using Egyptian firm-level data to examine the impact of these barriers on firms' exports. For administrative barriers, we use the Doing Business dataset developed by the World Bank. The findings show that red tape barriers negatively affect Egyptian firms. This effect seems more robust for the extensive margin (the probability of exporting across different destinations) more than the intensive one (the value of exports). This result is also consistently robust even after we control for the selection bias that may arise in our regressions. Moreover, small and medium exporters are more likely to be affected by such barriers. Finally, for different economic sectors, not all products are affected by trade facilitation in the same way at the intensive margin level. By contrast, they are all negatively affected by administrative barriers at the extensive margin level.

The findings based on firm-level data have several implications for policy-makers in the region. First, one way to diversify exports would be to remove red tape barriers. Indeed, this result is in line with Zaki (2014) who finds that developing countries experience a significant diversification of exported products after implementing trade facilitation measures. The majority of gains are to be reaped by Sub-Saharan Africa and MENA because the exports of electronics, machinery, metallic products, textiles and garments are highly boosted. Second, policies that lower trade costs and favor access to export markets are likely to increase the number of destinations served by new exporters. In a general equilibrium framework, more destinations mean more exports, more production and consequently a higher demand for labor. This would in turn be beneficial for productivity and job creation, since exporters perform better. Finally, these red tape barriers may explain why the MENA region is underperforming in terms of export performance. In fact, improving customs authorities by reducing redundant trade procedures should increase both the value and the number of destinations served by each firm. It is important to note that this improvement does not only depend on the reforms that take place in a country's partner but in the country itself as well.

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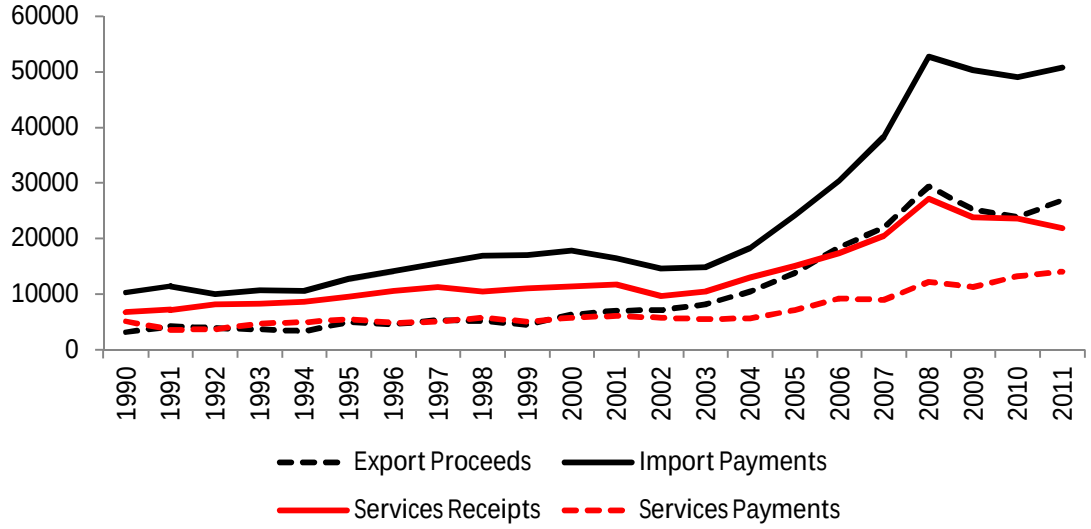
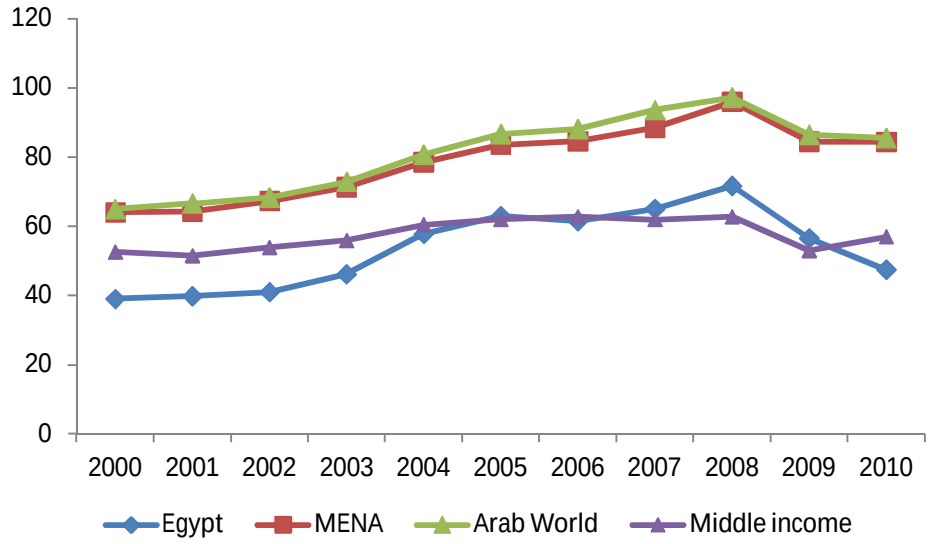
Figure 1: Egypt's Total Exports and Imports of Goods and Services (in million USD)



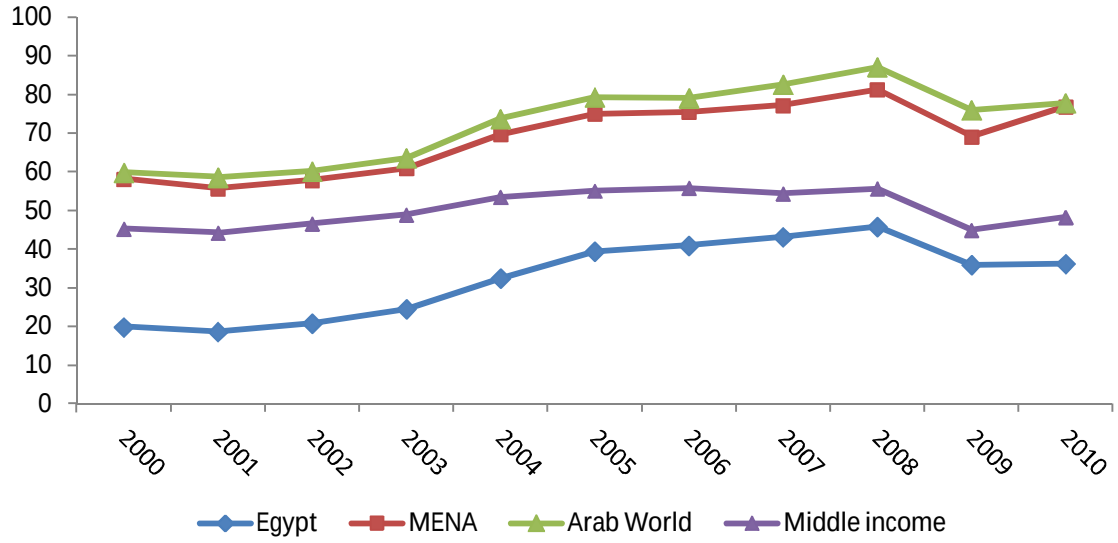
Source: Central Bank of Egypt, 2013.

Figure 2: Trade (% of GDP)



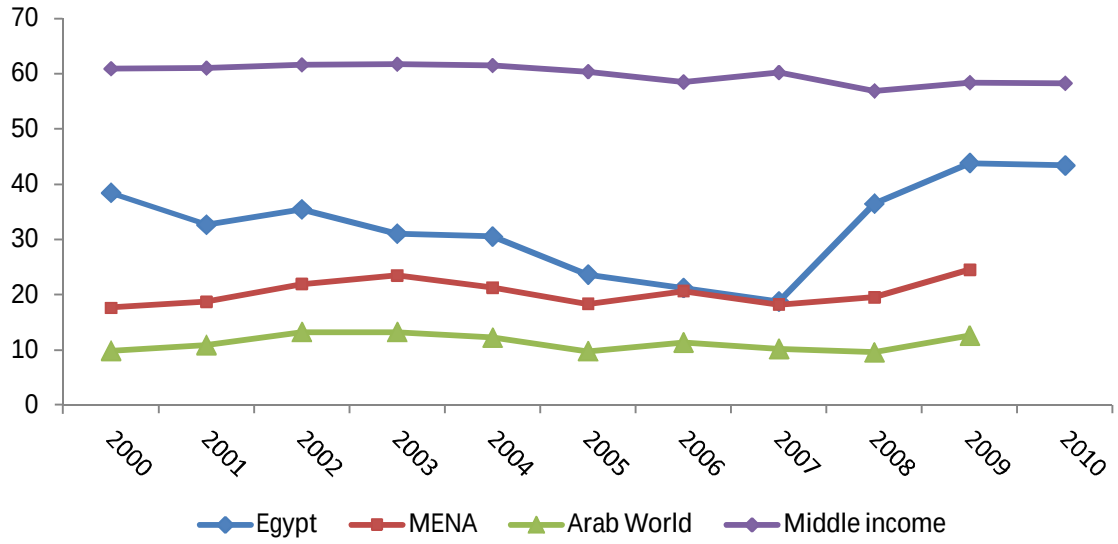
Source: World Development Indicators online dataset.

Figure 3: Merchandise Trade (% of GDP)



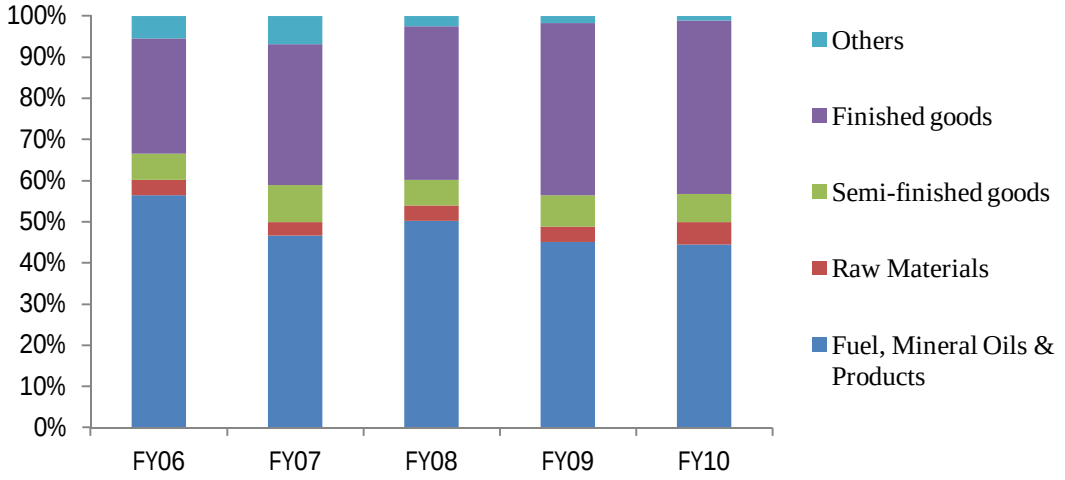
Source: World Development Indicators online dataset.

Figure 4: Manufactured Exports (% of merchandise exports)



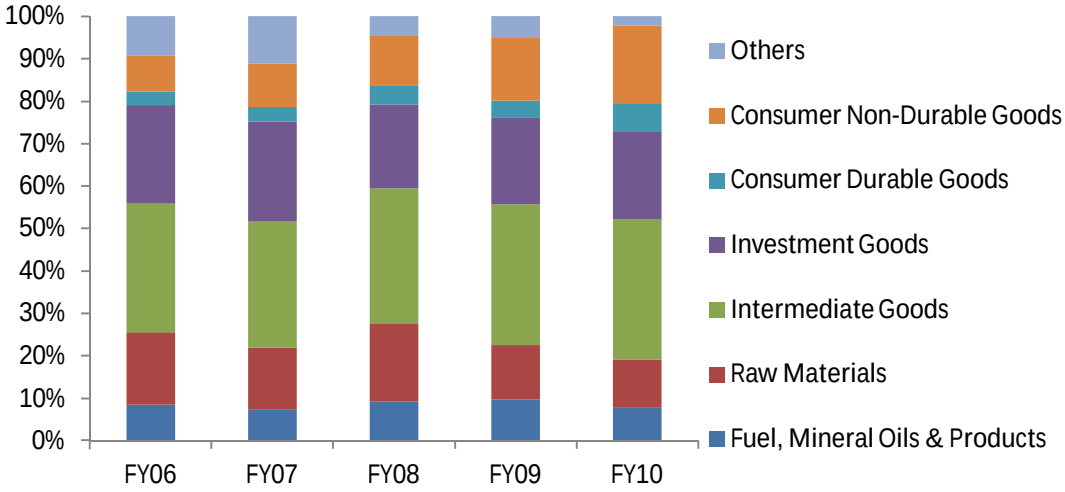
Source: World Development Indicators online dataset.

Figure 5: Proceeds of Merchandise Exports by Degree of Processing



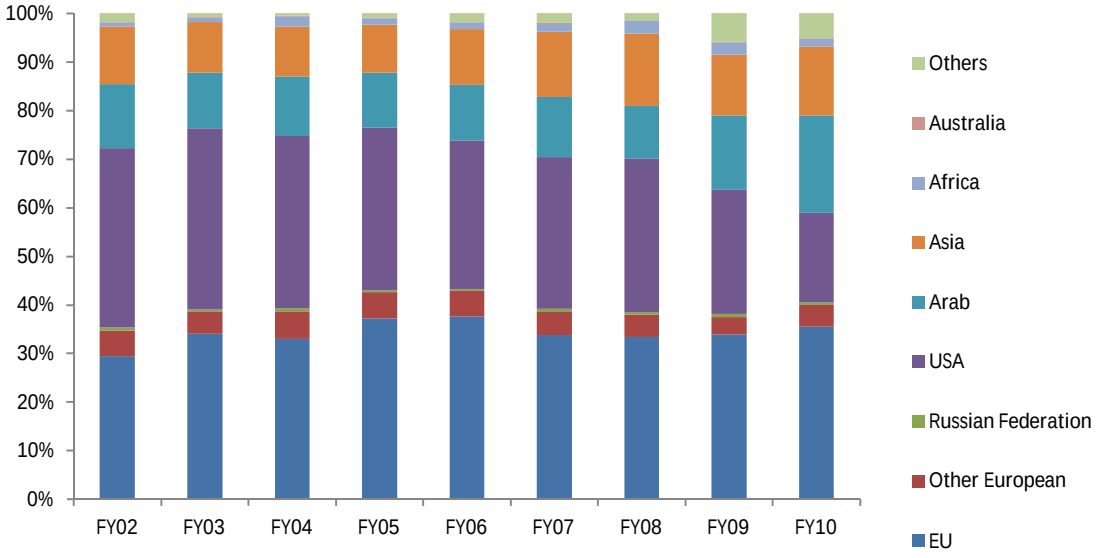
Source: The Central Bank of Egypt, 2013.

Figure 6: Payments for Merchandise Imports by Degree of Use



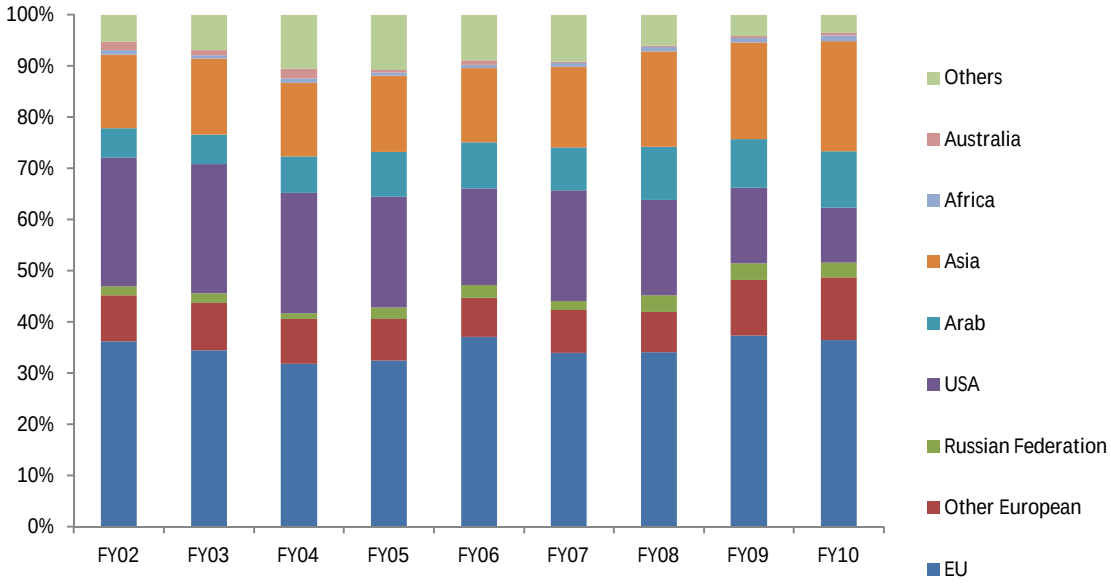
Source: The Central Bank of Egypt, 2013.

Figure 7: Geographical Distribution of Exports



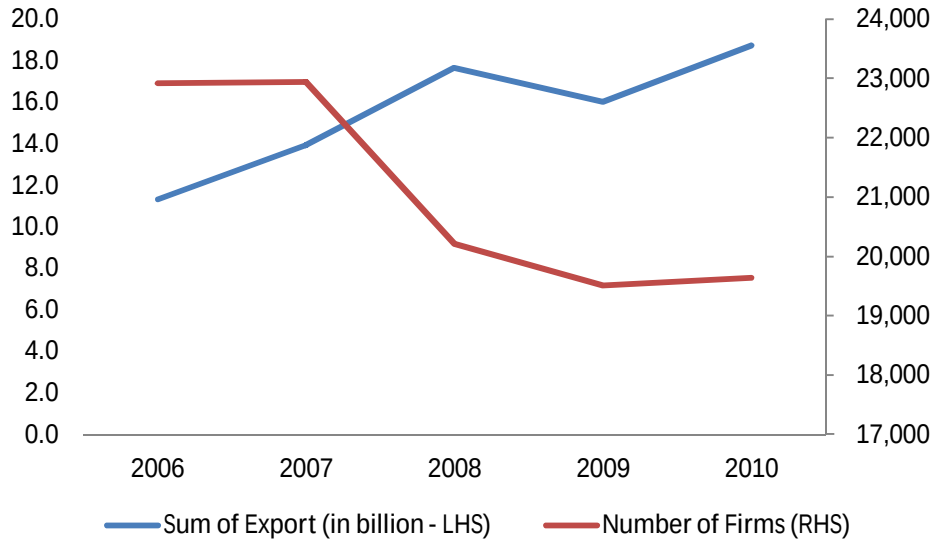
Source: The Central Bank of Egypt, 2013.

Figure 8: Geographical Distribution of Imports



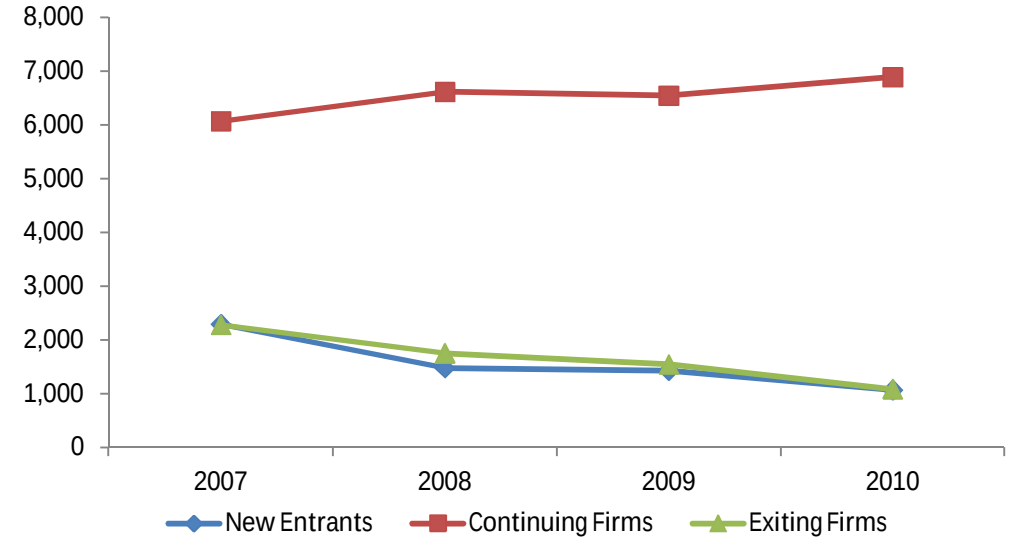
Source: The Central Bank of Egypt, 2013.

Figure 9: Exports (in billion USD) and Number of Firms



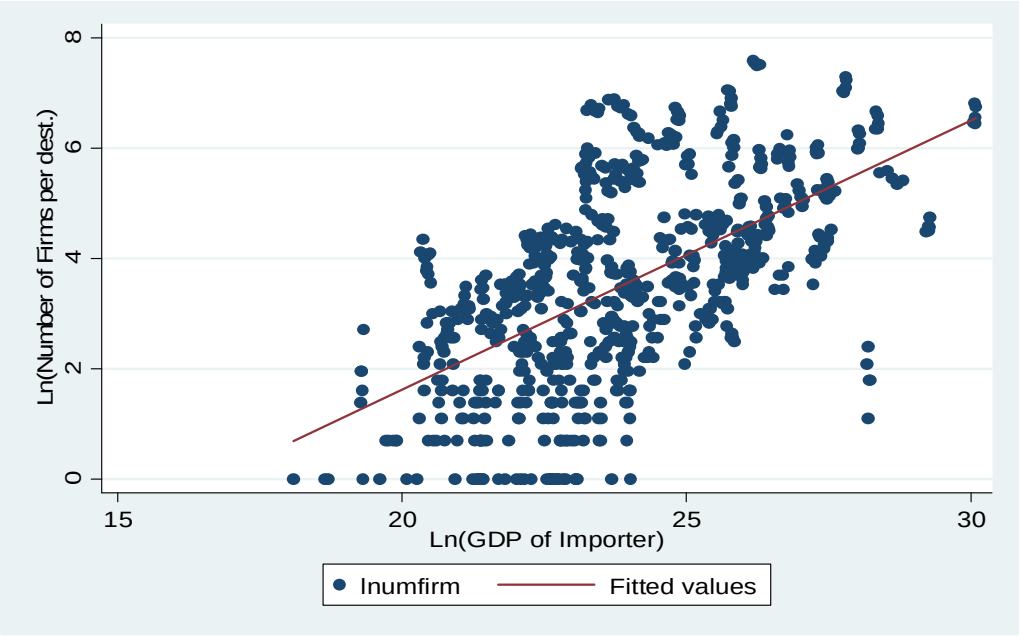
Source: Constructed by the authors using the customs dataset.

Figure 10: Number of New Entrants, Continuing and Exiting Firms



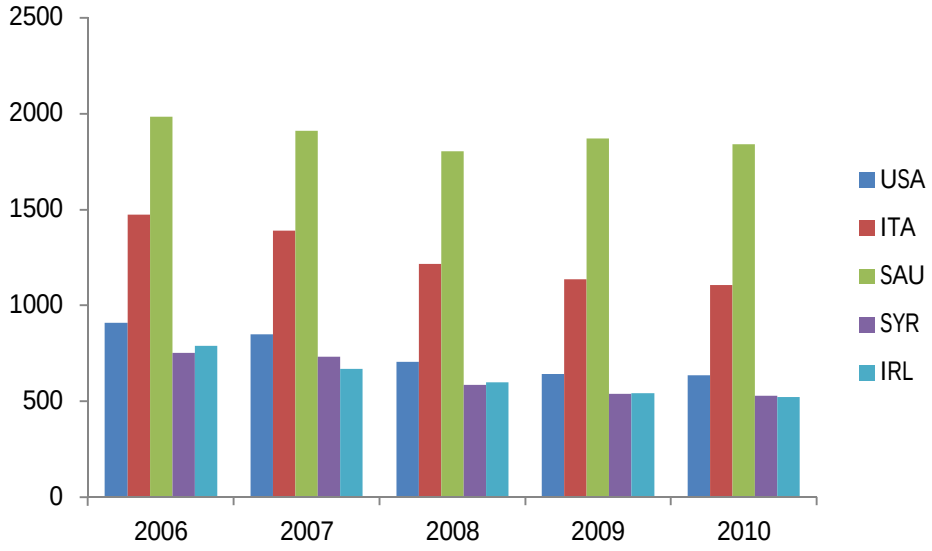
Source: Constructed by the authors using the customs dataset.

Figure 11: Number of Firms per Destination and Size of Importers



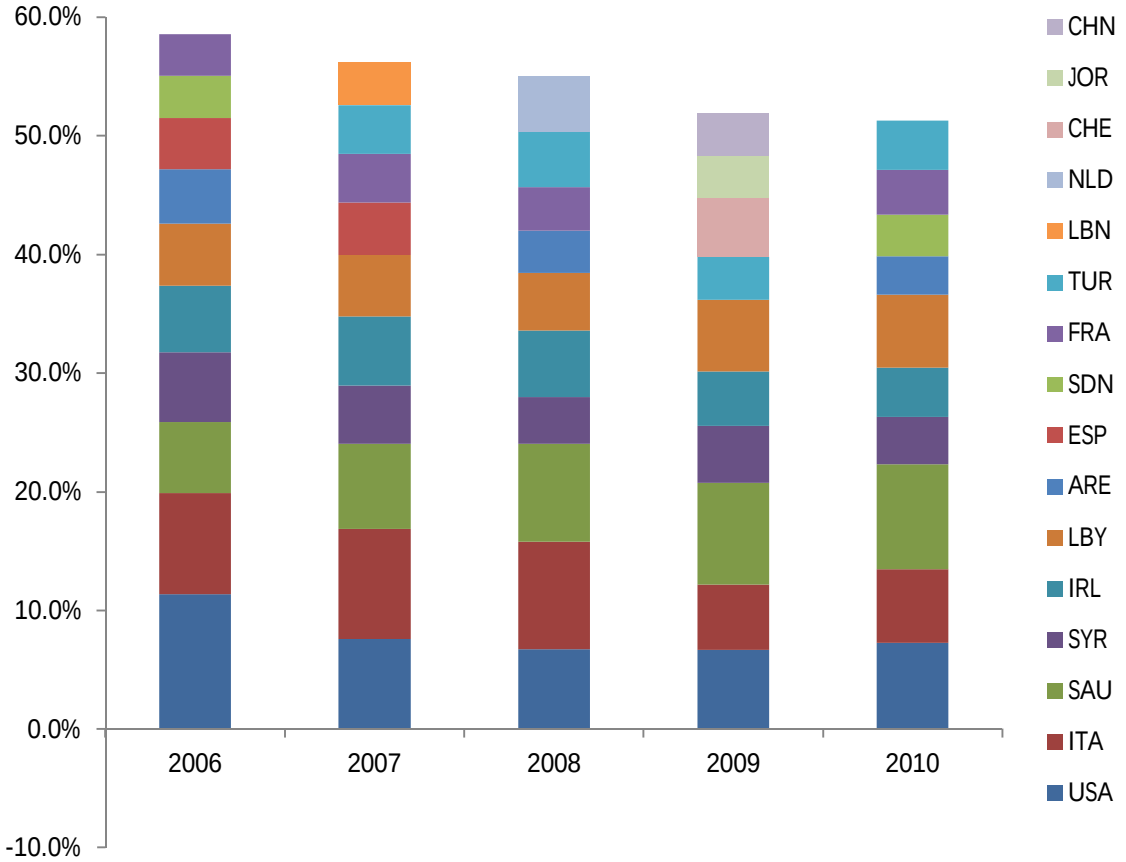
Source: Constructed by the authors using the customs data.

Figure 12: Number of Firms per Destination between 2006 and 2010



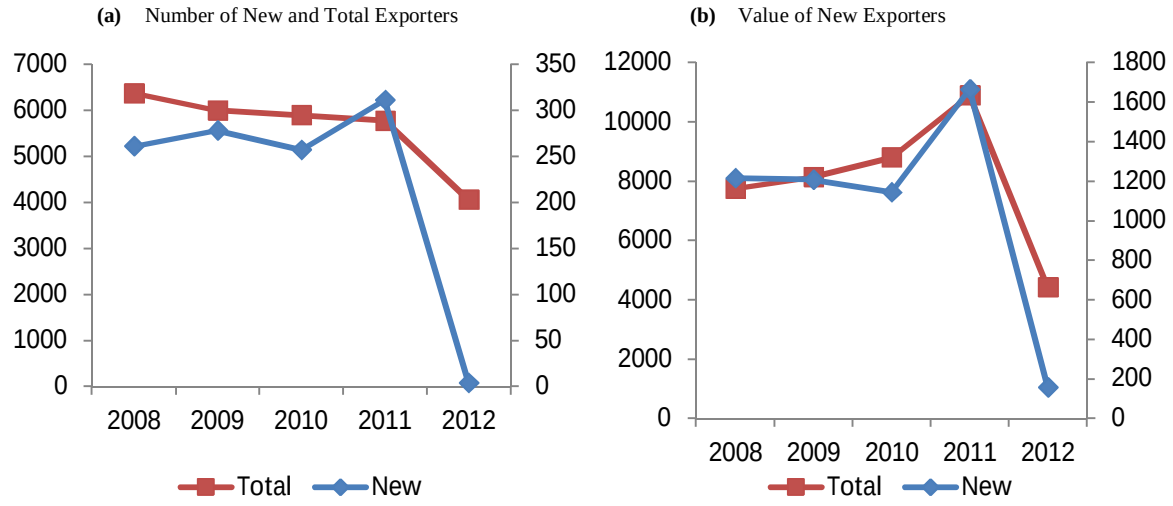
Source: Constructed by the authors using the customs dataset.

Figure 13: Egypt's Top Importers (2006-2010)



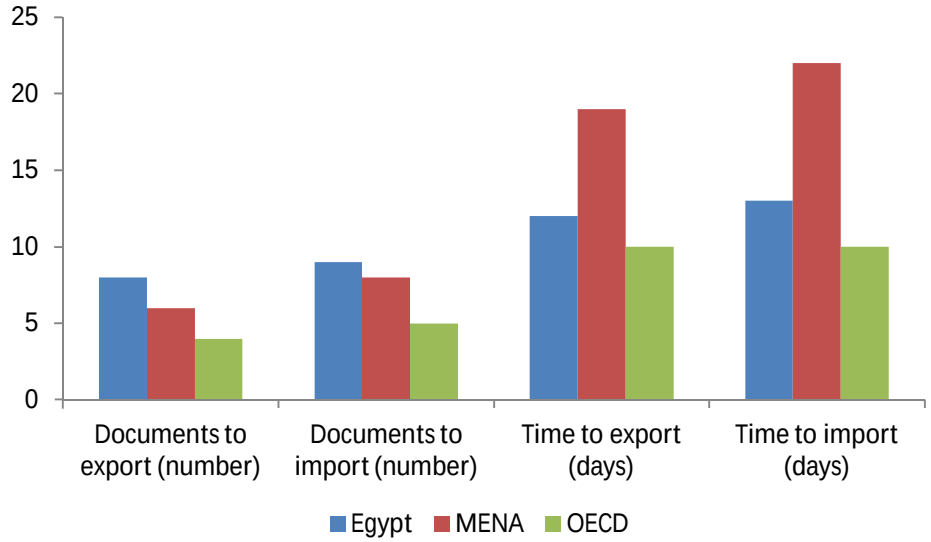
Note: For the sake of clarity, we removed the share of other partners. Consequently, the rest of the 100% for each bar represents the other importers.
Source: Constructed by the authors using the customs dataset.

Figure 14: New Exporters (by year)



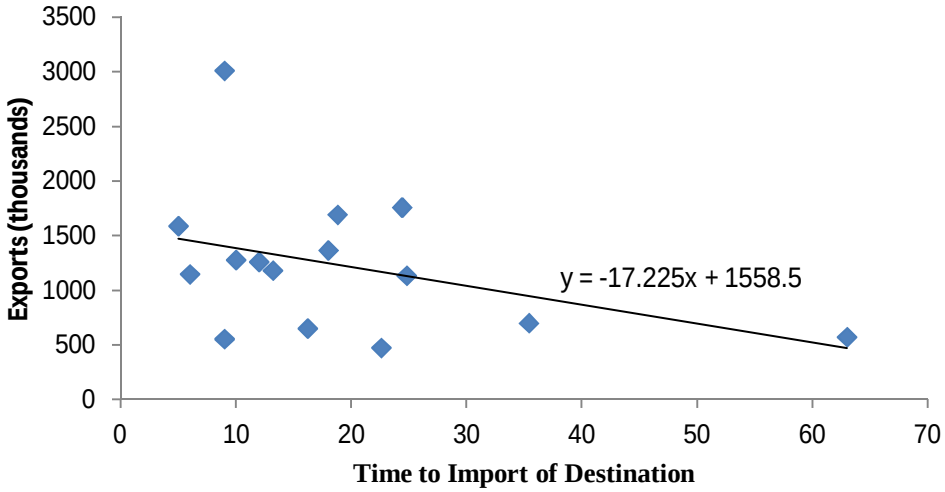
Note: (i) A new exporter is defined one who did not export for the last three years, provided that the value of annual exports is a million LE or more.
(ii) In Panel a, the left hand side axis shows the total number of exporters and the right hand side one shows the new exporters. In Panel b, the left hand side axis shows the total value of exports and the right hand side one shows the exports value of new exporters.
Source: Constructed by the authors from the Ministry of Industry and Foreign Trade, General Organization for Exports & Imports Control (GOEIC), Monthly Digest (2012).

Figure 15: Trading Across Borders: Egypt vs. MENA and OECD



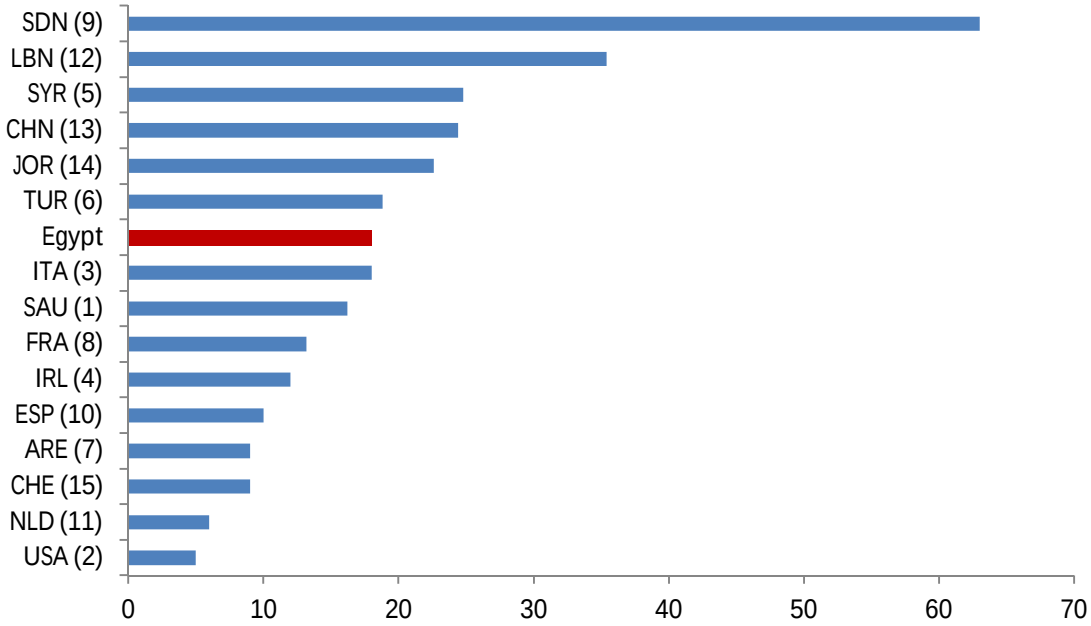
Source: Constructed by the authors using the Doing Business Dataset (2013).

Figure 16: Exports and Time to Import of Top Destinations (in days)



Source: Constructed by the authors using customs data set and Doing Business data (2013).

Figure 17: Average Time to Import of Top Destinations Compared to Egypt



Note: The number between brackets on the Y-axis represents the rank of each destination in terms of the value of Egyptian imports.
Source: Constructed by the authors using Doing Business data (2013).

Figure 18: Intensive vs. Extensive Margins

	Old destinations	New Destinations
Existing Firms	**(1)** **Intensive margin**	**(2)** **Market-extensive margin**
New Entrants	**(3)** **Firm-extensive margin**	**(4)** **Firm and market extensive margin**

Source: Constructed by the authors.

Table 1: Tariff Rate by Sector, 1995-2009

		1995	1998	2002	2004	2009
Total	Applied simple	24.3	19.65	47.92	20.29	12.56
	Applied weighted	16.65	14.17	23.69	13.1	7.98
	MFN simple	34.65	25.23	61.76	19.94	17.21
	MFN weighted	16.65	14.17	23.69	13.1	8.67
Primary	Applied simple	25.88	23.3	19.06	88.27	37.53
	Applied weighted	7.65	8.86	9.33	18.07	6.18
	MFN simple	52.88	34.79	18.56	41.61	41.05
	MFN weighted	7.65	8.86	9.33	18.07	7.22
Manufacturing	Applied simple	24.02	19.15	50.58	12.96	9.3
	Applied weighted	22.2	17.53	30.71	11.41	9.12
	MFN simple	28.92	22.1	72.79	13.53	9.95
	MFN weighted	22.2	17.53	30.71	11.41	9.63

Source: World Development Indicators online dataset.

Table 2: Cost and Duration of Import Procedures

Nature of Import Procedures	**Duration (days)**	**US$ Cost**
Documents preparation	8	215
Customs clearance and technical control	1	90
Ports and terminal handling	2	220
Inland transportation and handling	2	230
Totals	13	755

Source: Doing Business Dataset (2013).

Table 3: The Incidence of Administrative Barriers on the Value of Exports (Intensive Margin) – Pooled Regressions

	Ln(Exp.)	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**
Ln(GDP imp)	0.158***	0.625***	0.505***	1.040***	0.889***	0.952***	1.024***
	(0.00647)	(0.182)	(0.175)	(0.177)	(0.191)	(0.190)	(0.196)
Ln(Distance)	-0.198***	0.0206	0.148	3.223	-2.772	0.503	1.437
	(0.0169)	(6,285)	(4,954)	(1,425)	(1,096)	(7,289)	(4,592)
Contig	-0.0764	0.364	-0.0534	-0.957	4.686	0.674	-0.101
	(0.0740)	(14,536)	(9,211)	(2,011)	(1,267)	(558.6)	(8,513)
Com. Lang	-0.0935***	-0.263	-0.887	3.707	-2.476	-0.0252	-0.229
	(0.0282)	(4,395)	(5,189)	(2,103)	(1,104)	(6,994)	(7,010)
Colony	0.260***	0.124	-0.0137	2.172	-0.813	0.0556	-0.839
	(0.0472)	(6,449)	(2,129)	(1,060)	(1,012)	(2,273)	(9,318)
Ln(Tariff)	3.222***	0.345	0.167	0.313	-0.352	-0.301	0.0210
	(0.304)	(1.090)	(1.057)	(1.057)	(1.100)	(1.097)	(1.143)
Ln(Time to Import)	**0.00593**	**-0.139****	**-0.136****	**-0.0976***	**-0.0232**	**-0.0764**	**-0.103***
	(0.0197)	**(0.0606)**	**(0.0586)**	**(0.0566)**	**(0.0591)**	**(0.0590)**	**(0.0614)**
Ln(Time to Export)	**0.117*****	**0.265*****	**0.400*****	**0.0970*****	**-**	**-**	**0.282*****
	(0.0281)	**(0.0249)**	**(0.0207)**	**(0.0275)**	-	-	**(0.0417)**
Year dummies	YES	YES	YES	YES			
Firm dummies	YES	YES	YES				
Product dummies	YES			YES			
Destination dummies		YES	YES				
HS1 dummies		YES					
Firm-destination dummies				YES	YES	YES	YES
Year-product dummies					YES		
Year-HS2 dummies						YES	
Year-HS1 dummies							YES
Observations	98003	92276	98003	98003	98003	98003	92276
R-squared	0.507	0.490	0.477	0.661	0.678	0.641	0.637

Table 4: The Incidence of Administrative Barriers on the Value of Exports (Intensive Margin) – Panel Estimation

	FE Ln(Exp.)	**RE Ln(Exp.)**	**FE Ln(Exp.)**	**RE Ln(Exp.)**
Ln(GDP imp)	1.335***	0.113***	1.471***	0.123***
	(0.150)	(0.00866)	(0.158)	(0.00903)
Ln(Distance)	-	-0.286***	-	-0.319***
	-	(0.0226)	-	(0.0232)
Contig	-	-1.485***	-	-1.418***
	-	(0.0917)	-	(0.0943)
Com. Lang	-	-1.141***	-	-1.093***
	-	(0.0322)	-	(0.0335)
Colony	-	0.784***	-	0.687***
	-	(0.0669)	-	(0.0684)
Ln(Tariff)	1.260	8.125***	1.519	7.462***
	(0.893)	(0.359)	(0.932)	(0.376)
Ln(Time to Import)	**-0.178*** **	**0.0480** **	**-0.208*** **	**0.0433* **
	(0.0478)	**(0.0238)**	**(0.0499)**	**(0.0246)**
Ln(Time to Export)	**0.148*** **	**0.0939*** **	**0.147*** **	**0.117*** **
	(0.0230)	**(0.0169)**	**(0.0232)**	**(0.0204)**
Constant	-24.62***	8.643***	-28.18***	8.221***
	(3.956)	(0.284)	(4.163)	(0.294)
Year dummies	YES	YES	YES	YES
HS1 dummies			YES	YES
Observations	98003	98003	92276	92276
R-squared	0.020		0.020	
Number of codes	42250	42250	39879	39879

Note: i. Standard errors in parentheses. ii. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Two-Step Heckman Selection Model

	Ln(Exp.)	Prob(Exp)
Ln(GDP imp)	0.136***	0.0328***
	(0.00214)	(0.00113)
Contig	-1.261***	0.268***
	(0.0173)	(0.0122)
Com. Lang	-1.238***	-0.159***
	(0.00817)	(0.00423)
Colony	0.536***	-0.196***
	(0.0136)	(0.00907)
Ln(Distance)	-0.329***	-0.0425***
	(0.00376)	(0.00290)
Ln(Tariff)	9.681***	
	(0.0487)	
Constant	6.352***	-0.845***
	(0.106)	(0.0403)
Ln(Time to Export)		-0.0609***
		(0.00297)
Ln(Time to Import)		-0.0828***
		(0.00320)
Year dummies	YES	YES
Observations	860699	860699

Note: i. Standard errors in parentheses. ii. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: The Incidence of Administrative Barriers on the Average Value of Exports (Intensive Margin) – Pooled And Panel Estimation

	Pooled				Panel	
					FE	RE
	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	0.217	0.155	0.0744	0.149	0.631***	0.0676***
	(0.258)	(0.270)	(0.280)	(0.297)	(0.211)	(0.0139)
Ln(Distance)	0.534	0.461	-0.322	-0.180	-	-0.292***
	(103,202)	(171,154)	(462,717)	(541,403)	-	(0.0361)
Contig	0.113	0.147	1.180	-0.0414	-	-1.764***
	(120,611)	(66,707)	(1.190e+06)	(106,259)	-	(0.172)
Com. Lang	-0.648	-2.338	-0.328	0.466	-	-0.756***
	(152,862)	(197,459)	(456,617)	(986,012)	-	(0.0582)
Colony	0.153	1.082	0.961	2.210	-	0.752***
	(74,653)	(94,036)	(649,291)	(2.922e+06)	-	(0.119)
Ln(Tariff)	-0.253	-1.270	-0.842	-0.502	-0.152	5.105***
	(1.476)	(1.522)	(1.588)	(1.700)	(1.180)	(0.537)
Ln(Time to Import)	-0.000750	-0.0214	-0.0120	-0.00413	0.0371	0.146***
	(0.0970)	(0.100)	(0.104)	(0.112)	(0.0760)	(0.0397)
Ln(Time to Export)	0.271***	-	-	0.0299	0.306***	0.294***
	(0.0607)	-	-	(0.0482)	(0.0465)	(0.0339)
Constant					-6.976	9.184***
					(5.449)	(0.463)
Year dummies	YES				YES	YES
Firm dummies						
Product dummies	YES					
Destination dummies	YES	YES	YES	YES		
HS1 dummies						
Firm-destination dummies						
Year-product dummies		YES				
Year-HS2 dummies			YES			
Year-HS1 dummies				YES		
Observations	31540	31540	31540	29408	31540	31540
R-squared	0.309	0.380	0.197	0.141	0.028	
Number of codes					10145	10145

Note: i. Standard errors in parentheses. ii. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: The Incidence of Administrative Barriers on Exporters by Size (Intensive Margin) – Pooled Estimation

Dummies included	Exp < 10%		Exp < 25%		25% < Exp < 50%		Exp > 90%	
	Time to Import	Time to Export	Time to Import	Time to Export	Time to Import	Time to Export	Time to Import	Time to Export
Year - Product – Dest.	0.0115	-0.137***	-0.104	-0.0374	-0.122*	0.0644**	0.0530	0.0314
Year - Product - Firm	-0.00227	-0.113**	0.0255	-0.0448	0.00539	0.118***	-0.00669	0.0111
Year - HS1- Dest. - Firm	-0.0570	-0.0636	-0.169*	-0.000674	-0.142**	0.265***	-0.0232	0.0388
Year – Dest. - Firm	-0.0289	-0.118***	-0.187**	-0.0315	-0.139**	0.401***	0.0228	0.0223
Product - Firm*Dest.	-0.0555	-0.172**	-0.215**	-0.0418	-0.100*	0.0965***	0.0360	-0.0441
Year*Product - Firm*Dest.	0.117	-	-0.197*	-	-0.0258	-	-0.0216	-
Year*HS2 - Firm*Dest.	-0.0597	-	-0.269**	-	-0.0787	-	0.0394	-
Year*HS1 - Firm*Desti.	-0.124	-0.00917	-0.251**	0.0355	-0.106*	0.284***	0.0248	0.0223

Note: i. *** p<0.01, ** p<0.05, * p<0.1. (ii) Each row represents a regression. It is important to note that all regressions include the following explanatory variables: Ln(GDP.imp), Contiguity, Common language, ln(Distance), Colony and ln(Tariffs). Full regression results are available in Appendix 2. (iii) The smallest 10% (25%) exporters are determined based on the tenth (25^{th}) percentile of the value of exports.

Table 8: The Incidence of Administrative Barriers on the Probability of Exporting (Extensive Margin) – Pooled Regressions

	Prob(Exp)	Prob(Exp)	Prob(Exp)	Prob(Exp)	Prob(Exp)	Prob(Exp)	Prob(Exp)
Ln(GDP imp)	0.226***	0.00739***	0.216***	0.219***	0.243***	0.262***	0.269***
	(0.0117)	(0.000427)	(0.0113)	(0.0114)	(0.0114)	(0.0115)	(0.0117)
Ln(Distance)	-0.0318	-0.0183***	-	-0.125	-2.222	-0.0331	-0.0826
	(1,369)	(0.00110)	-	(654.4)	(193.1)	(379.4)	(745.0)
Contig	-0.000987	0.0762***	-	-0.0560	1.341	-0.102	-0.0708
	(926.1)	(0.00460)	-	(2,085)	(330.7)	(460.7)	(964.4)
Com. Lang	1.079	0.00813***	-	0.556	0.609	-0.108	0.0152
	(1,565)	(0.00170)	-	(750.5)	(819.8)	(475.8)	(576.7)
Colony	0.309	-0.0593***	-	0.165	-0.0550	-0.00692	-0.0855
	(812.3)	(0.00289)	-	(925.1)	(360.3)	(599.6)	(310.8)
Ln(Tariff)	0.258***	0.0538***	0.261***	0.246***	0.252***	0.237***	0.280***
	(0.0673)	(0.0197)	(0.0647)	(0.0656)	(0.0644)	(0.0648)	(0.0668)
		-					
Ln(Time to Import)	-0.0788***	0.00603***	-0.0743***	-0.0748***	-0.0764***	-0.0797***	-0.0835***
	(0.00394)	(0.00127)	(0.00379)	(0.00385)	(0.00379)	(0.00381)	(0.00391)
Ln(Time to Export)	-0.0317***	-0.0418***	-0.0425***	-0.0118***	-	-	-0.0265***
	(0.00151)	(0.00178)	(0.00178)	(0.00118)	-	-	(0.00262)
Year dummies	YES	YES	YES	YES			
Firm dummies	YES	YES		YES			
Product dummies		YES	YES				
Destination dummies	YES			YES			
HS1 dummies	YES						
Firm-destination dummies			YES		YES	YES	YES
Year-product dummies					YES		
Year-HS2 dummies						YES	
Year-HS1 dummies							YES
Observations	704691	740514	740514	740514	740514	740514	704691
R-squared	0.070	0.074	0.157	0.069	0.194	0.163	0.151

Note: i. Standard errors in parentheses. ii. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: The Incidence of Administrative Barriers on the Probability of Exporting (Extensive Margin) – Panel Regressions

	FE	RE	FE	RE
	Prob(Exp)	Prob(Exp)	Prob(Exp)	Prob(Exp)
Ln(GDP imp)	1.260***	0.0348***	0.216***	0.00557***
	(0.0708)	(0.00258)	(0.0112)	(0.000423)
Ln(Distance)	-	-0.0931***	-	-0.0147***
	-	(0.00659)	-	(0.00108)
Contig	-	0.399***	-	0.0610***
	-	(0.0273)	-	(0.00434)
Com. Lang	-	-0.0846***	-	-0.0130***
	-	(0.00922)	-	(0.00150)
Colony	-	-0.443***	-	-0.0682***
	-	(0.0196)	-	(0.00306)
Ln(Tariff)	1.657***	0.524***	0.261***	0.0854***
	(0.410)	(0.115)	(0.0646)	(0.0187)
Ln(Time to Import)	-0.471***	-0.0308***	-0.0743***	-0.00549***
	(0.0241)	(0.00764)	(0.00379)	(0.00125)
Ln(Time to Export)	-0.260***	-0.131***	-0.0432***	-0.0211***
	(0.0110)	(0.00610)	(0.00178)	(0.000996)
Constant	-0.995***	-0.935***	-5.055***	0.281***
	(0.0850)	(0.0163)	(0.295)	(0.0140)
Year Dummies	YES	YES	YES	YES
Observations	551540	740514	740514	740514
Number of identifiers	105044	151424	151424	151424
R-squared			0.006	

Note: i. Standard errors in parentheses. ii. *** p<0.01, ** p<0.05, * p<0.1.

Table 10: The Incidence of RTC on the Number of Firms per Product and per Destination (Extensive Margin) – Panel Regressions

	Pooled				Panel	
					FE	RE
	Ln(Num. Firms)	Ln(Num. Firms)	Ln(Num. Firms)	Ln(Num. Firms)	Ln(Num. Firms)	Ln(Num. Firms)
Ln(GDP imp)	0.130**	0.125*	0.0749	0.0863	0.232***	0.0477***
	(0.0626)	(0.0674)	(0.0723)	(0.0777)	(0.0381)	(0.00323)
Ln(Distance)	-0.774	-0.152	-0.266	-0.0327	-	-0.0558***
	(25,996)	(50,752)	(98,440)	(136,405)	-	(0.00844)
Contig	0.257	-0.0242	0.0439	-0.0187	-	0.102**
	(29,369)	(16,637)	(295,200)	(20,097)	-	(0.0404)
Com. Lang	1.027	0.482	0.226	0.117	-	0.206***
	(38,401)	(58,501)	(98,749)	(162,254)	-	(0.0137)
Colony	0.145	-0.0402	0.113	-0.245	-	0.00183
	(18,093)	(23,754)	(162,549)	(574,502)	-	(0.0279)
Ln(Tariff)	0.394	0.373	0.144	0.165	0.309	-0.295**
	(0.358)	(0.380)	(0.410)	(0.444)	(0.213)	(0.117)
Ln(Time to Import)	-0.0371	-0.0421*	-0.0318	-0.0443	-0.0440***	-0.0223***
	(0.0235)	(0.0251)	(0.0270)	(0.0292)	(0.0137)	(0.00853)
Ln(Time to Export)	-0.0344**	-	-	0.0821***	-0.0206**	0.00799
	(0.0147)	-	-	(0.0126)	(0.00839)	(0.00685)
Constant					-4.740***	0.156
					(0.984)	(0.106)
Year dummies	YES				YES	YES
Firm dummies						
Product dummies	YES					
Destination dummies	YES	YES	YES	YES		
HS1 dummies						
Firm-destination dummies						
Year-product dummies		YES				
Year-HS2 dummies			YES			
Year-HS1 dummies				YES		
Observations	31541	31541	31541	29409	31541	31541
R-squared	0.414	0.443	0.227	0.148	0.023	
Number of identifiers					10146	10146

Note: i. Standard errors in parentheses. ii. *** p<0.01, ** p<0.05, * p<0.1.

Table 11: The Incidence of Administrative Barriers on the Value of Exports by Industry (Intensive Margin) – Panel Estimation

	Vegetables	Food Products	Beverages	Chemicals	Rubber and Wood	Textiles	Garments	Equipment	Others
	Ln(Exp.)	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**
Ln(GDP imp.)	0.977**	-0.358	2.508***	0.257	1.764***	1.391***	2.842***	0.697	0.727
	(0.419)	(0.628)	(0.507)	(0.318)	(0.501)	(0.417)	(0.373)	(1.513)	(0.652)
Ln(Tar.)	-1.217	1.967	-1.550	3.917**	-2.952	0.159	0.637	15.66*	-4.731
	(2.776)	(3.161)	(2.951)	(1.534)	(2.439)	(2.725)	(3.028)	(8.911)	(3.536)
Ln(Time to Imp.)	-0.354***	-0.381**	0.133	-0.218**	-0.101	-0.275*	-0.0424	0.534	0.273
	(0.107)	(0.192)	(0.179)	(0.102)	(0.159)	(0.146)	(0.130)	(0.466)	(0.196)
Ln(Time to Exp.)	0.211**	-0.448*	-0.329	0.0290	0.0308	-	-0.483***	0.808	-0.415***
	(0.0897)	(0.232)	(0.348)	(0.299)	(0.136)	-	(0.124)	(0.705)	(0.123)
Constant	-15.65	20.95	-53.47***	4.255	-34.99***	-25.48**	-65.42***	-12.91	-8.994
	(10.95)	(16.30)	(13.23)	(8.134)	(13.04)	(11.18)	(10.25)	(39.24)	(17.26)
Year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	23703	6570	6479	13438	5887	8594	18151	2868	6586
R-squared	0.059	0.051	0.019	0.019	0.021	0.020	0.011	0.030	0.012
Number of identifiers	11452	2785	2689	5733	2592	3196	7011	1484	2937

Note: i. *** p<0.01, ** p<0.05, * p<0.1. ii. These regressions are run using fixed effects estimations.

Table 12: The Incidence of Administrative Barriers on the Probability of Exports by Industry (Extensive Margin) – Panel Estimation

	Vegetables	Food products	Beverages	Chemicals	Rubber and Wood	Textiles	Garments	Equipments	Others
	Prob(Exp)	**Prob(Exp)**	**Prob(Exp)**	**Prob(Exp)**	**Prob(Exp)**	**Prob(Exp)**	**Prob(Exp)**	**Prob(Exp)**	**Prob(Exp)**
Ln(GDP imp.)	0.277***	0.214***	0.250***	0.0913***	0.259***	0.279***	0.346***	0.252***	0.458***
	(0.0233)	(0.0461)	(0.0405)	(0.0308)	(0.0395)	(0.0420)	(0.0322)	(0.0404)	(0.0419)
Ln(Tar)	-1.242***	-0.129	0.431*	0.499***	1.015***	0.281	0.741***	0.730***	0.230
	(0.156)	(0.234)	(0.241)	(0.151)	(0.199)	(0.238)	(0.213)	(0.219)	(0.231)
Ln(Time to Imp.)	-0.135***	-0.0581***	0.00457	-0.0421***	-0.0630***	-0.0784***	-0.0452***	-0.164***	-0.0725***
	(0.00719)	(0.0150)	(0.0150)	(0.0104)	(0.0136)	(0.0148)	(0.0109)	(0.0129)	(0.0150)
Ln(Time to Exp.)	-0.123***	-0.0971***	-0.187***	0.0493	-0.0140	-	-0.0491***	-0.0195	-0.0129*
	(0.00706)	(0.0192)	(0.0342)	(0.0309)	(0.0129)	-	(0.0127)	(0.0270)	(0.00688)
Year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	-6.199***	-4.855***	-5.829***	-2.113***	-6.278***	-6.836***	-8.843***	-5.769***	-11.47***
	(0.609)	(1.197)	(1.056)	(0.791)	(1.032)	(1.118)	(0.870)	(1.052)	(1.104)
Observations	190748	41227	41220	91014	55333	54372	111301	58641	60835
R-squared	0.035	0.017	0.021	0.002	0.004	0.004	0.005	0.026	0.015
Nb of identifiers	38842	8808	8711	19720	11525	10554	21024	12308	12234

Note: i. *** p<0.01, ** p<0.05, * p<0.1. ii. These regressions are run using fixed effects estimations.

Appendix 1: Data Description

Dependent Variables

Value of exports is our first dependent variable. It measures the intensive margin and it represents the value of trade between firm *i* in Egypt and country *j* at year *t* (X_{ijt}). This variable comes from the General Organization for Export and Import Control (GOEIC), the Ministry of Industry and Foreign Trade in Egypt.

Probability of exporting to a new destination measures the extensive margin. It was constructed using the Customs dataset.

Explanatory Variables

Gross domestic product (GDP) represents the sum of value added by all its producers. Growth rates of GDP and its components are calculated using the least squares method and constant price data in the local currency. Constant price U.S. dollar series are used to calculate regional and income group growth rates. Local currency series are converted to constant U.S. dollars using an exchange rate in the common reference year. This variable comes from the World Development Indicators dataset.

Simple mean applied tariff is the unweighted average of effectively applied rates for all products subject to tariffs calculated for all traded goods. Manufactured products are commodities classified in SITC revision 3 sections 5-8 excluding division 68. This variable comes from the World Development Indicators dataset.

Time to export and time to import have been used in the first step estimation. It is recorded in calendar days. The time calculation for a procedure starts from the moment it is initiated and runs until it is completed. If a procedure can be accelerated for an additional cost, the fastest legal procedure is chosen. It is assumed that neither the exporter nor the importer wastes time and that each commits to completing each remaining procedure without delay. Procedures that can be completed in parallel are measured as simultaneous procedures but with the same time frame for completion.

Distance variable comes from the distance database developed by the CEPII. The methods used in this database allow to generate many indicators on internal distance, weighted distance, etc.

Other classical gravitational variables come from the CEPII dataset, namely dummy variables indicating whether the two countries are contiguous, share a common language, have had a common colonizer after 1945, have ever had a colonial link. Some other variables are not bilateral but country specific. They are dummies indicating whether a country is landlocked or an island. The variable of belonging to the same PTA comes from the dataset developed by Martin et al. (2008) available on http://team.univ-paris1.fr/ teamperso/mayer/data/data.htm.

Appendix 2: Quintile Regressions

Table A2.1: The Impact of Administrative Barriers on the Value of Exports for the Smallest 1% Exporters

	Ln(Exp.)	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**	**Ln(Exp.)**
Ln(GDP imp)	0.0487	0.210	-0.232	-0.766	-0.482	7.594	0.279	2.432
	(1.359)	(0.136)	(2.857)	(2.584)	(4.359)	(9.777)	(4.442)	(3.498)
Ln(Distance)	-0.0455	-0.382*	-	-	-4.067	35.39	-3.240	-1.107
	(10,476)	(0.219)	-	-	(2,548)	(12,218)	(7,488)	(10,936)
Contig	-11.00	-0.0395	-	-	-3.881	115.0	8.232	-0.267
	(9,885)	(2.230)	-	-	(32,856)	(38,740)	(18,403)	(24,621)
Com. Lang	5.335	0.0561	-	-	2.747	-135.2	-0.759	-12.45
	(9,556)	(0.373)	-	-	(18,486)	(14,005)	(6,709)	(64,689)
Colony	-4.886	-0.334	-	-	-6.542	127.8	4.920	-15.37
	(9,552)	(0.656)	-	-	(26,176)	(31,570)	(19,107)	(78,537)
Ln(Tariff)	-22.16**	-1.003	19.05	13.59	-17.74	-98.50	-29.14	6.538
	(10.73)	(5.713)	(37.20)	(35.14)	(46.80)	(166.2)	(69.58)	(59.46)
Ln(Time to Import)	0.780**	0.200	1.000	1.064	1.742*	4.627*	1.688	1.048
	(0.350)	(0.222)	(0.723)	(0.689)	(1.014)	(2.589)	(1.049)	(0.884)
Ln(Time to Export)	-0.0588	-0.147	-0.0885	-0.0907	-0.333	-	-	-0.140
	(0.169)	(0.383)	(0.266)	(0.189)	(0.469)	-	-	(0.419)
Observations	612	612	582	612	612	612	612	582
R-squared	0.430	0.805	0.769	0.754	0.869	0.964	0.867	0.822
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) The smallest 1% exporters are determined based on the first percentile of the value of exports.

Table A2.2: The Impact of Administrative Barriers on the Value of Exports for the Smallest 10% Exporters

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	-0.211	0.00781	0.243	0.240	0.197	-0.0668	0.210	0.0121
	(0.420)	(0.0198)	(0.502)	(0.492)	(0.688)	(0.853)	(0.723)	(0.686)
Ln(Distance)	1.403	-0.0534	-	-	-1.275	0.0432	-0.0640	-0.731
	(23,608)	(0.0549)	-	-	(379.5)	(1,452)	(1,931)	(14,431)
Contig	-0.0816	0.191	-	-	-2.226	3.318	-1.909	0.633
	(44,942)	(0.260)	-	-	(6,334)	(9,553)	(2,736)	(9,500)
Com. Lang	-2.946	-0.0204	-	-	-0.998	-3.254	1.618	-0.959
	(12,120)	(0.0728)	-	-	(5,571)	(6,587)	(2,000)	(10,025)
Colony	4.312	-0.121	-	-	0.219	-0.872	-3.106	0.101
	(16,627)	(0.213)	-	-	(7,064)	(6,924)	(2,345)	(10,455)
Ln(Tariff)	-2.887	0.417	-4.223	-4.117	-4.536	-4.740	-8.561	-5.603
	(3.124)	(1.019)	(3.989)	(3.925)	(5.881)	(7.235)	(6.225)	(5.903)
Ln(Time to Import)	0.0115	-0.00227	-0.0570	-0.0289	-0.0555	0.117	-0.0597	-0.124
	(0.110)	(0.0492)	(0.128)	(0.126)	(0.156)	(0.191)	(0.163)	(0.155)
Ln(Time to Export)	-0.137***	-0.113**	-0.0636	-0.118***	-0.172**	-	-	-0.00917
	(0.0496)	(0.0560)	(0.0448)	(0.0361)	(0.0675)	-	-	(0.0847)
Observations	5527	5527	5360	5527	5527	5527	5527	5360
R-squared	0.164	0.497	0.461	0.461	0.627	0.712	0.619	0.584
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1 (iii) The smallest 10% exporters are determined based on the tenth percentile of the value of exports.

Table A2.3: The Impact of Administrative Barriers on the Value of Exports for the Smallest 25% Exporters

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	-0.427	0.00164	-0.358	-0.450	-0.301	-0.435	-0.274	-0.309
	(0.311)	(0.0130)	(0.352)	(0.346)	(0.436)	(0.485)	(0.444)	(0.442)
Ln(Distance)	0.162	-0.0731**	-	-	2.404	1.352	5.757	-0.110
	(4,199)	(0.0353)	-	-	(7,982)	(1,771)	(3,159)	(9,108)
Contig	-3.970	0.0417	-	-	-0.406	-0.569	0.933	0.0446
	(11,732)	(0.171)	-	-	(2,814)	(2,487)	(4,110)	(9,887)
Com. Lang	2.427	-0.0446	-	-	1.754	-0.0995	-1.335	0.439
	(8,581)	(0.0522)	-	-	(10,054)	(2,045)	(4,004)	(6,957)
Colony	-0.662	-0.134	-	-	3.994	0.145	0.291	-3.685
	(740.0)	(0.132)	-	-	(5,483)	(1,985)	(4,272)	(17,663)
Ln(Tariff)	-0.852	1.590**	-2.703	-3.319	-2.264	-4.201	-3.726	-2.848
	(2.295)	(0.678)	(2.666)	(2.619)	(3.400)	(3.796)	(3.523)	(3.490)
Ln(Time to Import)	-0.104	0.0255	-0.169*	-0.187**	-0.215**	-0.197*	-0.269**	-0.251**
	(0.0856)	(0.0352)	(0.0931)	(0.0919)	(0.105)	(0.118)	(0.109)	(0.107)
Ln(Time to Export)	-0.0374	-0.0448	-0.000674	-0.0315	-0.0418	-	-	0.0355
	(0.0375)	(0.0400)	(0.0328)	(0.0268)	(0.0464)	-	-	(0.0562)
Observations	15416	15416	14907	15416	15416	15416	15416	14907
R-squared	0.105	0.399	0.366	0.363	0.531	0.586	0.519	0.499
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) The smallest 25% exporters are determined based on the 25th percentile of the value of exports.

Table A2.4: The Impact of Administrative Barriers on the Value of Exports for the Exporters Comprised between the 25th and the 50th Percentile

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	-0.0804	0.157***	0.622***	0.502***	1.030***	0.879***	0.945***	1.016***
	(0.190)	(0.00647)	(0.182)	(0.175)	(0.177)	(0.191)	(0.190)	(0.196)
Ln(Distance)	1.358	-0.198***	-	-	2.716	-3.132	0.714	1.138
	(100,889)	(0.0169)	-	-	(1,425)	(1,618)	(7,291)	(4,594)
Contig	-4.705	-0.0719	-	-	-1.215	3.829	0.767	-0.235
	(163,791)	(0.0740)	-	-	(2,011)	(1,056)	(558.7)	(8,516)
Com. Lang	-0.938	-0.0941***	-	-	3.427	-4.589	-0.356	-0.343
	(114,182)	(0.0282)	-	-	(2,103)	(2,030)	(6,996)	(7,012)
Colony	3.538	0.260***	-	-	1.970	0.732	0.0690	-0.197
	(107,087)	(0.0472)	-	-	(1,060)	(672.4)	(2,274)	(9,321)
Ln(Tariff)	-0.312	3.233***	0.411	0.228	0.377	-0.312	-0.255	0.0925
	(1.168)	(0.304)	(1.091)	(1.057)	(1.057)	(1.100)	(1.098)	(1.143)
Ln(Time to Import)	-0.122*	0.00539	-0.142**	-0.139**	-0.100*	-0.0258	-0.0787	-0.106*
	(0.0642)	(0.0197)	(0.0606)	(0.0586)	(0.0566)	(0.0591)	(0.0590)	(0.0614)
Ln(Time to Export)	0.0644**	0.118***	0.265***	0.401***	0.0965***	-	-	0.284***
	(0.0318)	(0.0281)	(0.0249)	(0.0207)	(0.0275)	-	-	(0.0417)
Observations	98003	98003	92276	98003	98003	98003	98003	92276
R-squared	0.233	0.507	0.490	0.477	0.661	0.677	0.641	0.637
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) These exporters are comprised between the 25th and the 50th percentile of the value of exports.

Table A2.5: The Impact of Administrative Barriers on the Value of Exports for the Exporters Comprised between the 50th and the 75th Percentile

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	-0.0804	0.157***	0.622***	0.502***	1.030***	0.879***	0.945***	1.016***
	(0.190)	(0.00647)	(0.182)	(0.175)	(0.177)	(0.191)	(0.190)	(0.196)
Ln(Distance)	1.358	-0.198***	-	-	2.716	-2.624	0.714	1.138
	(100,889)	(0.0169)	-	-	(1,425)	(1,629)	(7,291)	(4,594)
Contig	-4.705	-0.0719	-	-	-1.215	2.703	0.767	-0.235
	(163,791)	(0.0740)	-	-	(2,011)	(651.8)	(558.7)	(8,516)
Com. Lang	-0.938	-0.0941***	-	-	3.427	-4.922	-0.356	-0.343
	(114,182)	(0.0282)	-	-	(2,103)	(2,027)	(6,996)	(7,012)
Colony	3.538	0.260***	-	-	1.970	0.0494	0.0690	-0.197
	(107,087)	(0.0472)	-	-	(1,060)	(741.0)	(2,274)	(9,321)
Ln(Tariff)	-0.312	3.233***	0.411	0.228	0.377	-0.312	-0.255	0.0925
	(1.168)	(0.304)	(1.091)	(1.057)	(1.057)	(1.100)	(1.098)	(1.143)
Ln(Time to Import)	-0.122*	0.00539	-0.142**	-0.139**	-0.100*	-0.0258	-0.0787	-0.106*
	(0.0642)	(0.0197)	(0.0606)	(0.0586)	(0.0566)	(0.0591)	(0.0590)	(0.0614)
Ln(Time to Export)	0.0644**	0.118***	0.265***	0.401***	0.0965***	-	-	0.284***
	(0.0318)	(0.0281)	(0.0249)	(0.0207)	(0.0275)	-	-	(0.0417)
Observations	98003	98003	92276	98003	98003	98003	98003	92276
R-squared	0.233	0.507	0.490	0.477	0.661	0.677	0.641	0.637
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) These exporters are comprised between the 50th and the 75th percentile of the value of exports.

Table A2.6: The Impact of Administrative Barriers on the Value of Exports for the Largest 25% Exporters

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	0.337**	0.166***	0.472***	0.464***	0.687***	0.573***	0.732***	0.625***
	(0.152)	(0.00592)	(0.162)	(0.154)	(0.156)	(0.180)	(0.175)	(0.179)
Ln(Distance)	-0.151	-0.140***	-	-	-0.218	4.549	-0.668	-1.155
	(24,663)	(0.0158)	-	-	(3,346)	(4,686)	(6,303)	(6,626)
Contig	0.590	0.0637	-	-	-0.0440	8.722	0.989	1.268
	(19,808)	(0.0623)	-	-	(6,356)	(5,351)	(8,023)	(4,540)
Com. Lang	0.0206	0.0851***	-	-	0.363	-1.225	0.222	-0.405
	(32,998)	(0.0271)	-	-	(4,197)	(5,910)	(2,068)	(6,798)
Colony	0.0486	0.142***	-	-	0.0395	-0.369	-0.158	1.522
	(16,032)	(0.0358)	-	-	(171.9)	(544.9)	(1,369)	(1,965)
Ln(Tariff)	-0.883	0.395	-0.688	-0.966	-0.916	-1.030	-1.410	-1.282
	(0.932)	(0.274)	(0.948)	(0.908)	(0.922)	(0.992)	(0.972)	(1.020)
Ln(Time to Import)	-0.0992*	0.0134	-0.140**	-0.128**	-0.184***	-0.183***	-0.159***	-0.178***
	(0.0564)	(0.0188)	(0.0585)	(0.0556)	(0.0543)	(0.0585)	(0.0580)	(0.0608)
Ln(Time to Export)	0.122***	0.0737**	0.113***	0.120***	0.0356	-	-	-0.00963
	(0.0339)	(0.0337)	(0.0305)	(0.0259)	(0.0327)	-	-	(0.0524)
Observations	34955	34955	32703	34955	34955	34955	34955	32703
R-squared	0.174	0.419	0.402	0.393	0.645	0.680	0.613	0.599
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) The largest 25% exporters are determined based on the 75th percentile of the value of exports.

Table A2.7: The Impact of Administrative Barriers on the Value of Exports for the Largest 10% Exporters

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	0.557***	0.126***	0.616***	0.661***	0.780***	0.873***	1.043***	0.635***
	(0.189)	(0.00791)	(0.206)	(0.196)	(0.193)	(0.233)	(0.221)	(0.219)
Ln(Distance)	-0.359	-0.121***	-	-	-0.207	-0.349	-0.123	-0.0168
	(11,846)	(0.0216)	-	-	(4,053)	(12,119)	(4,470)	(3,697)
Contig	0.192	0.129	-	-	0.188	-0.330	0.527	0.0577
	(28,394)	(0.0808)	-	-	(7,874)	(10,167)	(10,228)	(12,424)
Com. Lang	0.0962	0.00110	-	-	-0.357	0.437	0.458	-0.0253
	(17,092)	(0.0371)	-	-	(2,562)	(12,077)	(5,600)	(7,650)
Colony	-1.039	0.0835**	-	-	0.0603	0.0324	0.0481	0.0885
	(4,644)	(0.0421)	-	-	(155.9)	(473.9)	(1,658)	(1,374)
Ln(Tariff)	-1.306	0.0235	-0.462	-0.689	-0.726	-0.422	-0.495	-0.272
	(1.214)	(0.370)	(1.257)	(1.204)	(1.176)	(1.338)	(1.261)	(1.297)
Ln(Time to Import)	0.0530	-0.00669	-0.0232	0.0228	0.0360	-0.0216	0.0394	0.0248
	(0.0719)	(0.0252)	(0.0762)	(0.0719)	(0.0684)	(0.0778)	(0.0749)	(0.0775)
Ln(Time to Export)	0.0314	0.0111	0.0388	0.0223	-0.0441	-	-	0.0223
	(0.0463)	(0.0468)	(0.0429)	(0.0352)	(0.0444)	-	-	(0.0717)
Observations	15100	15100	14175	15100	15100	15100	15100	14175
R-squared	0.213	0.474	0.448	0.443	0.695	0.741	0.668	0.648
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) The largest 10% exporters are determined based on the 90th percentile of the value of exports.

Table A2.8: The Impact of Administrative Barriers on the Value of Exports for the Largest 1% Exporters

	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)	Ln(Exp.)
Ln(GDP imp)	-0.531	0.0663***	0.329	0.426	0.485	2.090***	1.716**	0.182
	(0.449)	(0.0214)	(0.524)	(0.509)	(0.501)	(0.778)	(0.672)	(0.546)
Ln(Distance)	0.716	0.0817	-	-	0.352	-0.288	-0.465	3.840
	(7,230)	(0.0650)	-	-	(1,777)	(2,438)	(2,332)	(18,667)
Contig	0.769	0.480	-	-	0.361	-0.270	0.113	0.262
	(9,835)	(0.318)	-	-	(6,056)	(4,350)	(10,238)	(17,382)
Com. Lang	-0.360	0.0938	-	-	-0.199	1.904	3.850	0.226
	(3,454)	(0.131)	-	-	(1,708)	(2,949)	(2,207)	(24,668)
Colony	5.780	0.104	-	-	0.511	1.737	1.049	0.196
	(10,604)	(0.0907)	-	-	(5,707)	(4,722)	(7,471)	(15,857)
Ln(Tariff)	4.816	-2.504**	0.512	0.772	-0.337	-1.358	-2.227	4.182
	(3.843)	(1.205)	(4.271)	(4.238)	(3.931)	(5.141)	(4.724)	(4.257)
Ln(Time to Import)	-0.219	-0.0341	-0.277	-0.231	-0.336**	-0.286	-0.0788	-0.170
	(0.169)	(0.0712)	(0.182)	(0.177)	(0.168)	(0.245)	(0.198)	(0.185)
Ln(Time to Export)	0.0243	-0.164	-0.0345	0.00512	-0.0992	-	-	0.0249
	(0.133)	(0.150)	(0.131)	(0.102)	(0.138)	-	-	(0.182)
Observations	1490	1490	1445	1490	1490	1490	1490	1445
R-squared	0.377	0.545	0.550	0.546	0.738	0.842	0.783	0.725
Year dummies	YES	YES	YES	YES	YES			
Firm dummies		YES	YES	YES				
Product dummies	YES	YES			YES			
Destination dummies	YES		YES	YES				
HS1 dummies			YES					
Firm*Destination dummies					YES	YES	YES	YES
Year*Product dummies						YES		
Year*HS2 dummies							YES	
Year*HS1 dummies								YES

Note: (i) Standard errors in parentheses. (ii) *** p<0.01, ** p<0.05, * p<0.1. (iii) The largest 1% exporters are determined based on the 99th percentile of the value of exports.