

Studies on the dynamics of exports traditionally use a macroeconomic approach, that explains the evolution of external sales on the base of macroeconomic variables such as world demand, gross internal product; terms of trade, real exchange rate, etc. An alternative approach analyze the determinants of exports from a microeconomic perspective. Under this last focus, exporting dynamics is related to the decisions of companies about entering the export business, how long to remain; to what countries to export; what kind of products to export, the relationship between the number of transactions and markets and the modes of transportation.

Given the importance of this microeconomic approach and the new insights it may yield on the determinants of Colombian exports, the Banco de la República decided to promote a research project with these characteristics. The project has brought together outstanding professors of national and international universities, as well as staff of the Banco de la República. The study uses microdata reported by the National Institute of Statistics (DANE), that registers each one of export transactions of Colombian companies between 1996 and 2006.

The results of the project should provide valuable information for the design of the strategy for exports in the next few years. The documents will be widely disseminated by the Central Bank. In fact, in 2007 the Banco de la República published two articles in its monthly Magazine and in its Working Papers series. These articles analyzed the dynamics of firm's exports and its relationship with the total value of exports for the period 1996-2005. In this new publication the results on the relationship between patterns of transactions numbers and shipment modes for the period 1996-2005 are published. The results show great heterogeneity in the patterns of frequency and number of transactions across firms.

Export Dynamics in Colombia: Transactions Level Evidence

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Abstract

We examine Colombian export transaction data from customs records in several dimensions. We begin with some basic statistics on the number and frequency of export transactions by a firm, overall and across individual markets. We then decompose the variation in overall exports into the number of transactions and the size of the average transaction, both at the aggregate level and for individual firms to explore gravity equations, where the patterns of exports and numbers of transactions are related to the distance with respect to the destination. The analysis is carried out both at the aggregate and the firm level. Then we explore the relationship between patterns of transactions numbers and shipment modes. Our results show great heterogeneity in the patterns of frequency and number of transactions across firms; the average firm sent about 75 shipments abroad in 2005, while the firm with largest number of transactions that same year dispatched more than 26,000 shipments. Moreover, while close to 35% of firms in the sample report a single export transaction over the period, for most firms with multiple transactions the average span between two transactions is less than a month. Part of this heterogeneity is shown to be related to the distance with respect to the destination market: firms exporting to more distant destinations make less frequent shipments than firms exporting to markets that are closer. This suggests that there are fixed costs per shipment inducing declining marginal cost of higher shipment volume. These patterns imply that, at the aggregate level, transactions numbers are the primary source of variation in exports. The variability in the numbers of transactions also explains an important part of the well-known negative relationship between aggregate exports and distance to a specific destination.

Keywords: Export transaction frequency; fixed shipment costs and scale economies in transportation; destination distance, average shipment volume and number of shipments

JEL Codes: F10, F12, F14

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1 Introduction

Trade and production data indicate that there are substantial barriers to the movement of goods between countries. Most of what is purchased is produced at home or in nearby countries. Most firms sell only at home while even firms that export tend to limit themselves to one or two foreign destinations. Access to a large number of markets is nonetheless an important component for success for a firm, particularly one operating in a small, low-income economy. Hence understanding the nature of trade barriers and how firms overcome them is becoming a central topic in international trade.

A limitation in understanding trade barriers is the aggregate nature of international trade data. Data are typically available that aggregate across individual producers and over time. Data on the exports of individual firms is becoming increasingly available, and provides important evidence on why some firms export widely and others not at all. But to get to the heart of the nature of trade barriers requires looking at even a finer level of detail, the individual transactions that make up the trade data.

Data on exports at the transaction level are rarely available. Bernard et al. (2007) have recently used a database that records all US international trade transactions for 1992-2000, while in Eaton et al. (2007) we have looked at a similar database for Colombia over the 1996-2005 period. These papers have exploited the transactions information to uncover patterns of firm exporting across destinations and types of products. Data at the transactions level are also an interesting source of information about the nature and origin of costs of exporting. The number and frequency of export transactions by a firm, the contribution of the number of transactions to the total variability of exports, and how these patterns differ across destina-

tions, can potentially shed light on the relative importance of costs to entering the exporting activity in general compared to the costs of each shipment.

To explore the nature of trade barriers at this level of detail we look at administrative records on all export transactions by Colombian firms between 1996 and 2005. Each transaction is recorded separately. A transaction record includes the firm's tax ID (which serves as a time-invariant identifier), the month and year of the transaction, the port of shipment, the mode of transport, a product code, the value of the transaction in US dollars, and the country of destination. Because we use the same data that are used for official statistics, the merchandise exports in our data set aggregate to within one percent of total merchandise exports reported by the Colombian Bureau of Statistics (Departamento Administrativo Nacional de Estadística or DANE).¹

We examine the data from a number of dimensions. We begin with some basic statistics on the number and frequency of export transactions by a firm, overall and across individual markets (Section 2). We then decompose the variation in overall exports into the number of transactions and the size of the average transaction, both at the aggregate level and for individual firms (Section 3). Section 4 explores gravity equations, where the patterns of exports and numbers of transactions are related to the distance with respect to the destination; the analysis is carried out both at the aggregate and the firm level. Then we explore the relationship between patterns of transactions numbers and shipment modes (Section 5).

¹The deviation is due to mistakes in the records of tax identifiers. Since following firms over time is central to our analysis, our database includes only records of transactions in which the tax identifier has the appropriate format. Not satisfying this requirement is a clear indication that the firm is not correctly identified in the record.

Our results show great heterogeneity in the patterns of frequency and number of transactions across firms; the average firm sent about 75 shipments abroad in 2005, while the firm with largest number of transactions that same year dispatched more than 26,000 shipments. Moreover, while close to 35% of firms in the sample report a single export transaction over the period, for most firms with multiple transactions the average span between two transactions is less than a month. Part of this heterogeneity is shown to be related to the distance with respect to the destination market: firms exporting to more distant destinations make less frequent shipments than firms exporting to markets that are closer. This suggests that there are fixed costs per shipment inducing declining marginal cost of higher shipment volume. These patterns imply that, at the aggregate level, transactions numbers are the primary source of variation in exports. The variability in the numbers of transactions also explains an important part of the well-known negative relationship between aggregate exports and distance to a specific destination.

2 Some Basic Statistics

Table 1 presents data on exporting firms and their overall transactions. Note first that the number of exporters declined substantially from 1997 to 1999, slowly recovering to surpass their 1996 level only by 2004. During these years, Colombia underwent one of the most severe recessions in recent history. Nevertheless, the number of export transactions grew in every year except 1999 and 2002, when there were slight declines with respect to the previous year. Over the decade the number of exporting firms grew by around 10 percent while the number of transactions nearly quadrupled. Meanwhile, descriptive statistics on

the number of transactions per firm point to the heterogeneity in transactions (Table 2). The median number of transactions per firm is always in the single digits, while the mean and maximum are substantially higher and have increased markedly over time. Great heterogeneity is observed even when looking at export transactions to a given destination (Panel B of Table 2). A similar finding holds when differentiating sectors (Table 3). Exporters in all sectors show wide variability in the number of export transactions they engage in. Heterogeneity is, however, more pronounced in manufacturing and agriculture. In the former, while the mean firm conducts 47 annual transactions, the median value is 4, and the maximum 8082. Table 3 also show large differences between sectors. Manufacturing is the largest exporter of goods, in terms of either value, number of firms, or number of transactions. Mining is the second largest exporter in terms of value, despite the fact that it has only a few exporting firms, in turn conducting only a few transactions per year..

Figure 1 shows the whole distribution of transactions over the period. As the large difference between the medians and means reported above would suggest, the distributions are highly skewed. The modal firm has a single transaction, and a small number of firms export very widely, with over 10,000 annual transactions in the last years of the sample. Moreover, the distribution has fanned out over the period. If a similar exercise is carried out by destination for the most popular markets, results (not reported) show that the increasing skewness over time is observed for a each of these markets. If transactions by sector are depicted, and consistent with Table 3, highly skewed distributions are observed for all sectors: agriculture, mining, fishing, manufacturing (results not reported but available upon request). That is, a good bit of the variability in transaction frequency occurs within types of products.

Figure 2, Panel A, shows the distribution of average number of months between two transactions by the same firm, for a sample of all firms that report two or more transactions over the period (close to 27,000 firms). Because the dataset records only the month of a transaction (not the exact date), the span between two transactions cannot be calculated exactly; what we calculate is the span between the months of the two transactions. Panel A of Figure 2 shows that for the majority of firms with multiple transactions, the average pair of transactions occurs within the same month. Yet, it is not infrequent that a firm takes up to ten months to re-export. Spans longer than 20 months are extremely rare. Note also that of the 44,850 firms reporting export transactions over the period, close to 40% report a single transaction. As we suggested in Eaton et al. (2007) the fact that a large number of firms are just one-time exporters points in the direction of substantial experimentation by smaller firms.

Panels B and C of Figure 2 compare the distance between any two consecutive transactions against the distance between the first and second transaction by a firm. Because we want to focus on the first transaction by a firm, but can only observe the first transaction over the period covered by our data, we restrict the sample to firms entering our sample from 1999 on (ensuring at least that there are no transactions by that firm in the previous three years). Panel B shows the average number of months between two consecutive transactions for this sample, while Panel C shows the number of months between the first and second transaction. Notice that the first and second transaction tend to be closer together than the average set of two consecutive transactions. In particular, more firms have their first and second transaction within the same months, compared to the number of firms who have any two transactions

within the same month (9,142 vs. 8,387 firms, out of close to 19,000). It is also the case that most firms have their second transaction within a year of the first. However, close to 1,500 firms (approximately 8% of the total) take more than a year before re-exporting after their first exporting transaction.

Figure 3 reports the distribution of firms with N transactions in an average month. Consistent with Figure 2, most firms report more than two transactions in the average month. Note, however, that close to 70% of the multiple-transaction firms report less than five transactions in a month. Firms with more than 50 transactions per month are less than 1% of the sample.

3 Decomposing Exports: The Transactions Margin

3.1 Aggregate Exports and The Transactions Margin

How does variation in number and size of transactions translate into variation in exports across countries and over time? We can decompose total exports to a destination n in a year t , denoted $X_n(t)$, into the number of transactions $M_n(t)$ and the average size of a transaction $\bar{x}_n(t)$. In logarithms:

$$\ln X_n(t) = \ln M_n(t) + \ln \bar{x}_n(t).$$

A regression of $\ln M_n(t)$ against $\ln X_n(t)$ then tells us the extent to which variation in *total* exports is accounted for by variation in the number of transactions. Figure 4 plots this relationship, and Panel A of Table 4 presents the results of the associated regression, across destinations for the 10 years of the sample. The coefficient of .76 indicates that the transactions margin is the dominant one. Destinations where Colombia exports more receive more

transactions with an elasticity of .76, so to that the average size of a transaction increases with an elasticity of .24. A robustness test including year fixed effects (Panel B) does not affect our estimate of this elasticity. An interesting result of this exercise is that the coefficients on the year dummies grow dramatically over time, indicating a large expansion in the number of transactions even after controlling for the growth in total exports. The elasticity of number of transactions with respect to total exports is similar across sectors, except for mining, where the average size of transactions dominates the variability in total exports.

To what extent does the growth in transactions reflect more firms as opposed to more transactions per firm? We can decompose the total number of transactions $M_n(t)$ to destination n in year t into the number of firms exporting $N_n(t)$ and the average number of transactions per firm, $m_n(t)$. In logarithms:

$$\ln M_n(t) = \ln N_n(t) + \ln m_n(t).$$

A regression of $\ln N_n(t)$ against $\ln M_n(t)$ then tells us the extent to which more transactions represent more exporters as opposed to more transactions per exporter. Figure 5 and Table 5 (Panel A) present results of this exercise. Running the regression over the entire period indicates that the elasticity of the number of firms exporting with respect to export transactions is .70. Hence, variation in participation accounts for the larger part of the variation in transactions. Nevertheless, transactions per firm contribute around 30 percent of the variation. The variation in participation also dominates when the exercise is carried out by sectors, although it is much more pronounced in manufacturing than other sectors. Again, introducing year fixed effects does not change this estimate of the elasticity (Panel B).

3.2 Firm Exports and the Transactions Margin

We can do a similar exercise at the level of individual firms, with over 200,00 observations across firms, destinations, and years. We can take firm j 's sales earnings in market n in year t , $x_n(j, t)$ and decompose it into number of transactions $m_n(j, t)$ and average revenue per transaction $r_n(j, t)$. In terms of logarithms:

$$\ln x_n(j, t) = \ln m_n(j, t) + \ln r_n(j, t).$$

We performed the following regression:

$$\ln m_n(j, t) = \beta_0 + \beta_1 \ln x_n(j, t) + \lambda_n + \mu_j + \nu_t + \varepsilon_{n,j,t}$$

where λ_n is a fixed effect for destination, μ_j for firm j , and ν_t for year. Results are reported in Panel C of Table 4.

The estimated value of β_1 , which represents the elasticity of transactions with respect to sales, is .47 (significant at the 1% level). This is substantially below the aggregate elasticity of .76 from above, but still substantial. The interpretation is that when a firm's sales vary in a market, controlling for the firm and destination, the variation is about equally divided between number of transactions and transaction size. There is variation in this pattern over sectors. Manufacturing firms (which are most exporting firms) as well as firms exporting agricultural products display a behavior that is similar to the aggregate. Meanwhile, consistent with findings above, the transactions margin is dominated by the size margin for mining firms. On the contrary, the variability of exports in firms conducting fishing activities is overwhelmingly explained by the transactions margin, much more than in the case of firms in manufacturing.

4 Transactions, Firms, and Gravity

A well known feature of trade data is that bilateral trade declines systematically with distance, controlling for the sizes of the trade partners. A question we can ask of the transactions data is the extent to which this decline is the consequence of fewer as opposed to smaller transactions. We examine this question by considering how total exports to a destination and the number of export transactions there vary with distance. Table 6 reports results from this exercise. The dependent variable (total exports, number of export transactions) is listed in the corresponding column heading. All regressions include controls for the log of total expenditure and the log of population in the destination country, although results for these variables are not reported to save space. The dependent variable is the log of exports in Table 6.1., the log of number of transactions in Table 6.2. and the log of number of exporting firms in Table 6.3.

From Panel A of Table 6.1., a simple regression of $\ln X_n(t)$ against $\ln D_n$ (controlling for expenditure and population in destination), where D_n is the distance from Colombia to destination n , indicates an elasticity of -2.6 (with a standard error of $.07$).² A regression of $\ln M_n(t)$ against $\ln D_n$ yields a similar, slightly higher estimate of 2.63 (Table 6.2). The implication of these point estimates is that the decline of exports due to distance is entirely accounted for in the number of transactions. Distance must thus increase the cost of doing a transaction rather than the cost of sending a larger shipment.

In a related study based on U.S. exporter data, Bernard et al (2007) explore the effects of distance on the number of exporting firms, number of products per firm, and firm-specific

²A stylized fact from the gravity literature is that the elasticity of export revenues with respect to distance is -1 . Hence our estimate is on the high side.

sales per product. They find that although the number of products falls with distance, the value shipped per product rises. If the number of products a firm sells in a given destination is roughly proportional to the number of shipments it makes to that destination, this finding is closely related to ours.

We can also ask whether and how the number of firms varies with distance (Table 6.3). A regression of $\ln N_n(t)$ against the logarithm of distance yields a coefficient of -2.01 , lower in magnitude than the coefficient emerging from total sales. Hence sales per firm also declines slightly with distance. Here too, our results parallel those of Bernard et al (2007), who find that the elasticity of the number of U.S. exporting firms with respect to distance of the destination market is -1.14 .

We also examine the relationship among export revenue, number of transactions, and number of firms in a two-step procedure, where our measures of exports, number of transactions and number of firms is invariant over time for each destination (Panel B of Table 6). We first regress $\ln X_n(t)$, $\ln M_n(t)$, and $\ln N_n(t)$ against destination fixed effects. We then regress these fixed effects, which capture the time-invariant component of each measure, against distance. The distance elasticities change slightly, but they retain the feature that the elasticities of exports and number of transactions with respect to distance are similar to each other, while the elasticity of the number of firms is lower. Distance has a weaker negative effect on the number of firms, so that sales per firm falls with distance.

A number of bilateral variables other than distance have been shown to affect trade flows. Contiguity typically has a large positive effect on trade, as does having a common official language. The appendix lists several such variables. Panel C of Table 6 expands the gravity

equations reported in Panel B to include controls for these variables. Including all of them in the estimation changes the point estimates of the elasticities of the dependent variables with respect to distance, but they all continue to be large and negative. Including these controls also generates a distance elasticity of the number of transactions that is lower than the distance elasticity of exports (-2.11 vs. -2.69). This estimation thus assigns some role for a decrease in the size of transactions in the reduction of exports with distance. It is still the case, however, that most of contraction of exports with distance is due to a decline in the number of transactions rather than a reduction in transaction size. We do not find significant effects on exports from Colombia's membership in different treaty agreements.³

Comparing different sectors we find that the gravity patterns described above for the aggregate also hold for manufacturing exports. Although exports in other sectors also show a reduction of exports with distance, mainly explained by a reduction in the number of transactions, decreases in the size of export transactions are relatively more important for these sectors, compared to manufacturing.

³The ATPDEA dummy in our sample is equivalent to a US dummy, as ATPDEA preferences were in place over the whole span of our sample period. Therefore, our estimations cannot capture the effect of having ATPDEA vs not for exports to the US, only whether the size of exports to US is different from others once the size of that market and the distance to it have been controlled for.

5 Transactions and Shipment Modes

5.1 Overall Patterns

The transactions data present some striking features. They are the primary source of variation in exports, both at the aggregate and at the firm level. Moreover, transactions have been rising rapidly, outpacing growth in the number of firms exporting and even total exports.

Do the trends in transactions reflect trends in the modes of transport that exporters use? Our transactions data identify four transport modes: (1) sea and rivers, (2) surface, (3) air, and (4) multiple and other. The last account for only a miniscule share of total transactions or total value of transactions, so we focus on the other three.

Table 7 indicates the fraction of transactions accounted for by each of the modes. Somewhat surprisingly the share of air shipments has fallen while that of sea and rivers has increased. Surface has remained stable. At the beginning of our period more than half of transactions were by air while at the end only 37.8 were. Exports by water grew from under 20 percent of the total to 35 percent, almost as high as air's share. In value terms the numbers are more stable. Sea and Rivers stays between 69 and 74 percent and air between 12.8 and 16.

From these numbers we can conclude the following: (1) The average sea and river shipment is around three times more valuable than the average shipment not conditioning on shipment mode; and, (2) The value of the average air shipment has been rising relative to the average while the value of the average sea and river shipment has been falling relative to the average.

Not surprisingly the mode of shipment differs substantially depending on the specific destination. Table 8 and Table 9 show how the number of transactions and the value of those

transactions, respectively, vary by shipment mode in different important destinations. The surface mode predominates in shipments to neighbors (Ecuador and Venezuela) but is hardly used at all elsewhere. In terms of numbers the breakdown between the United States and European Union is similar, both exhibiting the decline in air relative to water shipments. In terms of value, however, air occupies a much larger fraction of shipments to the United States than to the EU.

5.2 Sectoral Patterns

Table 10 breaks these figures down into major sectors (Panel A for numbers of transactions, and Panel B for value of exports). Results indicate that agriculture (agriculture, livestock, forestry, and fishing) rely heavily on air transport, in terms of numbers of shipments, and over half of exports in this category in terms of value leave by air. For manufacturing, the number of air shipments has fallen from 44 percent to 30 percent. Surface shipments represent about one third of the total, while water transport shipments have grown in number. In terms of value air shipments have fallen as a share from 18 to 14 percent having been replaced by surface.

The table also reveals that the size of shipments in minerals (exploitation of mines and quarries) are typically much bigger than for agricultural or mineral products. The average shipment in minerals was US\$3.38 million at the beginning of the period, down to US\$1.89 million at the end. For agriculture the average shipment size started at US\$20 thousand ending at US\$14 thousand. while in manufacturing it moved from US\$ 33 thousand to US\$ 17 thousand. Hence transaction size fell across the three major sectors.

Turning to some specific products (Table 11), flowers rely exclusively on air and coffee and minerals on water (in terms of value). Textiles and especially Apparel use air to a surprising extent. Except for minerals, the average shipment size is remarkably similar across these commodities, between US\$10 and US\$30 thousand dollars. In all categories except coal and oil the average transactions size has fallen.

6 Conclusions

We have described basic patterns of exports revealed by export transactions data. Our data cover all such transactions by Colombian firms between 1996 and 2005. We find enormous heterogeneity in the patterns of frequency and number of transactions across firms; the average firm sent about 75 shipments abroad in 2005, while the firm with largest number of transactions that same year dispatched more than 26,000 shipments. Moreover, while close to 35% of firms in the sample report a single export transaction over the period, for most firms with multiple transactions the average span between two transactions is less than a month. Part of this heterogeneity is shown to be related to the distance with respect to the destination market: firms exporting to more distant destinations make less frequent shipments, than firms exporting to markets that are closer. Transactions numbers are thus the primary source of variation in exports. The variability in the numbers of transactions also explains an important part of the well-known negative relationship between aggregate exports and distance to a specific destination.

7 Appendix

This appendix lists definitions and sources for a few measures being used in the estimation of gravity equations in Table 6.

Distance

D_n is the distance between Colombia and market n . We take weighted averages of the distances between the largest cities of the two countries, inter-city distances being weighted by the share of the city in the overall country's population. Source: CEPII (Centre D'études Prospectives Et D'informations Internationales) http://www.cepii.org/distance/noticedist_en.pdf.

Contiguity dummy

1 if Colombia shares border with destination country (1 for Panama, Peru, Venezuela, Ecuador and Brazil), and 0 otherwise.

Dummy for Spanish as official language at destination n

1 if Spanish is the official language of destination n or is spoken by at least 20% of the n 's population, and 0 otherwise. Source: CEPII (Centre D'études Prospectives Et D'informations Internationales) http://www.cepii.org/distance/noticedist_en.pdf.

Trade agreement dummies

The dummies ATPDEA, ALADI, CAN-Mercosur, GSP, and G3 take the value of 1 when the destination country was part of the respective trade agreement anytime between 1996 and 2005. ATPDEA (treaty with the US first signed in 1992) assigns 1 to US and 0 to any other destination. For other treaties, member countries (other than Colombia) are listed below (year country signed the treaty in parentheses).

ATPDEA (TA between Colombia and United States): Created in 1992.

ALADI: Argentina, Bolivia, Brazil, Chile, Ecuador, Mexico, Paraguay, Peru, Uruguay, Venezuela (all in 1980) and Cuba (1999).

CAN-Mercosur: Bolivia, Ecuador, Peru (all in 1969), Venezuela (1973), Brazil (2000) and Argentina (2001).

GPS: Austria, Finland, Sweden (all in 1995); Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Netherlands, United Kingdom (all in 1991); Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Rep., Slovenia (all in 2004).

G3: Colombia, Mexico and Venezuela (all in 1994).

References

- Arkolakis, Konstantinos (2007) "Market Access Costs and the New Consumers Margin in International Trade," University of Minnesota, Department of Economics, Working Paper.
- Bernard, Andrew and J. Bradford Jensen (1999) "Exceptional Exporter Performance: Cause, Effect, or Both?" *Journal of International Economics* , 47: 1-25.
- Bernard, Andrew, J. Bradford Jensen, Samuel Kortum and Jonathan Eaton (2003) "Plants and Productivity in International Trade," *American Economic Review* 93(4), 1268-1290
- Bernard, Andrew, J. Bradford Jensen, J. Stephen J. Reading, and Peter K. Schott (2007) "Firms in International Trade," *Journal of Economic Perspectives* 21(3), 105-130.
- Besedes, Tibor. 2006. "A Search Cost Perspective on Duration of Trade," working Paper, Louisiana State University.

- Brooks, Eileen (2006) "Why don't firms export more? Product Quality and Colombian Plants" *Journal of Development Economics*, 80: 160-178.
- Clerides, Sofronis, Saul Lach and James Tybout (1998) "Is Learning-by-Exporting Important? Micro-dynamic Evidence from Colombia, Mexico and Morocco," *Quarterly Journal of Economics*, pp. 903-947.
- Das, Mita, Mark Roberts and James Tybout (2007) "Market Entry Costs, Producer Heterogeneity and Export Dynamics," *Econometrica* 75(3), pp. 837-874.
- Eaton, Jonathan, Samuel Kortum, and Francis Kramarz (2004) "Dissecting Trade: Firms, Industries, and Export Destinations," *American Economic Review Papers and Proceedings*, 94: 150-154.
- Eaton, Jonathan, Samuel Kortum, and Francis Kramarz (2007) "An Anatomy of International Trade: Evidence from French Firms," Working Paper, New York University, Department of Economics.
- Eslava, Marcela, John Haltiwanger, Adriana Kugler, and Maurice Kugler (2004) "The Effects of Structural Reforms on Productivity and Profitability Enhancing Reallocation: Evidence from Colombia," *Journal of Development Economics*, 75: 333-371.
- Irrazabal, Alfonso A. and Luca David Oromolla (2006) "Hysteresis in Export Markets," New York University, Working Paper.
- Kugler, Maurice (2006) "Spillovers from foreign direct investment: within or between industries?" *Journal of Development Economics*, 80(2): 444-477.

- Jovanovic, Boyan (1982) "Selection and the Evolution of Industry," *Econometrica*, 50: 649-670.
- Luttmer, Erzo (2006) "Selection, Growth, and the Size Distribution of Firms," forthcoming, *Quarterly Journal of Economics*.
- Melitz, Marc (2003) "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica* 71, 1695-1725.
- Rauch, James and Joel Watson (2003) "Starting Small in an Unfamiliar Environment," *International Journal of Industrial Organization* 21: 1021-1042.
- Roberts, Mark and James Tybout (1997a) "The Decision to Export in Colombia: An Empirical Model of Entry with Sunk Costs," *American Economic Review* 87(4), pp. 545-563.
- Roberts, Mark and James Tybout (1997b) *What Makes Exports Boom?* Directions in Development Monograph Series, The World Bank, Washington, DC.

Table 1. Number of firms that export and number of export transactions, per year

Years	Total N. firms	Total N. transactions	Average N. trans by firm
1996	10,517	238,998	23
1997	10,463	274,692	26
1998	7,697	302,001	39
1999	6,765	300,093	44
2000	7,637	372,152	49
2001	8,837	459,125	52
2002	9,102	445,689	49
2003	10,099	574,364	57
2004	11,334	627,667	55
2005	11,720	885,669	76
Full Period	44,850	4,480,450	100

Table 2. Descriptive statistics on number of transactions per firm

Panel A. Firm export transactions to any destination					
Years	Median	Mean	Std dev.	Min	Max
1996	2	23	94	1	2916
1997	2	26	111	1	2752
1998	3	39	140	1	2693
1999	5	44	149	1	4114
2000	5	49	180	1	4791
2001	6	52	217	1	8510
2002	5	49	203	1	6080
2003	5	57	273	1	9529
2004	4	55	291	1	13576
2005	4	76	474	1	26907
Full period	2	100	894	1	61257

Panel B. Firm export transactions to a given destination					
Years	Median	Mean	Std dev.	Min	Max
1996	2	11	39	1	1561
1997	2	12	46	1	2327
1998	3	15	51	1	1491
1999	4	16	51	1	1767
2000	4	18	70	1	4506
2001	4	19	85	1	5049
2002	4	18	73	1	4133
2003	4	22	89	1	3728
2004	4	21	97	1	5555
2005	4	28	142	1	9566
Full period	3	42	302	1	33191

Table 3. Descriptive statistics on annual exports and transactions, by sector**(Average year in 1996-2005)**

Sector	Total exports (US\$ million)	Total N. firms	Average value of exports per firm (US\$ thousands)	Total N. transactions	Average value of individual transaction (US\$ thousands)	Transactions per firm				
						Median	Mean	Std. Dev.	Min	Max
Agriculture	1233	1402	930	73032	17.5	7	55	159	1	2585
Fishing	10	90	122	2577	3.7	7	32	56	1	310
Mining	4120	201	20644	2409	1848.0	2	12	34	1	284
Manufacturing	7902	7759	1019	368676	23.7	4	47	224	1	8082

Table 4 Number of export transactions and value of exports to a particular destination by sector, 1996-2005

Panel A. Pooled regression by sector

Dependent Variable: $\ln M_{nt}$

Regressor	All sectors	Agriculture	Fishing	Mining	Manufacturing
Intercept	-6.465 (0.13)	-4.567 (0.18)	-4.182 (0.17)	-1.711 (0.20)	-6.739 (0.13)
$\ln X_{nt}$	0.761 (0.01)	0.666 (0.01)	0.664 (0.02)	0.287 (0.01)	0.772 (0.01)
R^2	0.81	0.69	0.78	0.45	0.81
N.obs.	1744	968	442	551	1680

Panel B. Pooled regression with year dummies by sector

Dependent Variable: $\ln M_{nt}$

Regressor	All sectors	Agriculture	Fishing	Mining	Manufacturing
Intercept	-6.68 (0.15)	-4.88 (0.24)	-4.32 (0.20)	-2.09 (0.27)	-6.98 (0.16)
d1997	0.01 (0.14)	0.05 (0.21)	0.08 (0.18)	-0.11 (0.24)	-0.02 (0.14)
d1998	0.22 (0.14)	0.13 (0.21)	0.20 (0.18)	0.01 (0.24)	0.22 (0.14)
d1999	0.01 (0.13)	0.23 (0.22)	0.02 (0.18)	0.08 (0.23)	0.08 (0.13)
d2000	0.20 (0.13)	0.38 (0.22)	0.14 (0.18)	0.31 (0.24)	0.14 (0.13)
d2001	0.26 (0.13)	0.52 (0.21)	0.24 (0.17)	0.37 (0.24)	0.31 (0.13)
d2002	0.23 (0.13)	0.35 (0.21)	0.22 (0.18)	0.42 (0.24)	0.18 (0.13)
d2003	0.35 (0.13)	0.29 (0.21)	0.17 (0.17)	0.47 (0.23)	0.39 (0.13)
d2004	0.35 (0.13)	0.39 (0.21)	-0.04 (0.17)	0.63 (0.23)	0.44 (0.13)
d2005	0.55 (0.13)	0.45 (0.20)	0.22 (0.17)	0.71 (0.23)	0.66 (0.13)
$\ln X_{nt}$	0.76 (0.01)	0.67 (0.01)	0.67 (0.02)	0.29 (0.01)	0.77 (0.01)
R^2	0.82	0.69	0.79	0.48	0.82
N.obs.	1744	968	442	551	1680

Panel C. Firm level regression by sector

Dependent Variable: $\ln m_n(j,t)$

Regressor	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln X_{nt}$	0.47 (0.00)	0.51 (0.00)	0.80 (0.02)	0.21 (0.01)	0.49 (0.00)
R^2	0.66	0.82	0.98	0.90	0.66
N.obs.	232965	33474	2445	3727	193622
Firm effects			Yes		
Year effects			Yes		
Dest. Effects			Yes		

Note: Sector estimations include only transactions of products classified in each sector. Standard error in parentheses. Panel C excludes transactions to Special Export Zones and destinations with no distance measure available.

Table 5 Number of exporting firms and number of export transactions to a given destination, 1996-2005

Panel A. Pooled regression by sector

Regressor	Dependent Variable: $\ln N_{nt}$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
Intercept	-0.225 (0.02)	-0.180 (0.03)	-0.136 (0.03)	-0.065 (0.04)	-0.253 (0.02)
$\ln M_{nt}$	0.702 (0.00)	0.615 (0.01)	0.541 (0.01)	0.573 (0.01)	0.703 (0.00)
R^2	0.95	0.89	0.84	0.78	0.94
N.obs.	1744	968	442	551	1680

Panel B. Pooled regression with year dummies by sector

Regressor	Dependent Variable: $\ln N_{nt}$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
Intercept	-0.04 (0.04)	0.04 (0.06)	-0.14 (0.07)	0.10 (0.08)	-0.08 (0.04)
d1997	-0.06 (0.05)	0.00 (0.08)	0.10 (0.09)	-0.01 (0.10)	-0.08 (0.05)
d1998	-0.16 (0.05)	-0.14 (0.08)	-0.02 (0.09)	-0.11 (0.10)	-0.18 (0.05)
d1999	-0.18 (0.05)	-0.27 (0.08)	-0.12 (0.09)	-0.09 (0.10)	-0.17 (0.05)
d2000	-0.22 (0.05)	-0.30 (0.09)	-0.15 (0.09)	-0.14 (0.10)	-0.18 (0.05)
d2001	-0.17 (0.05)	-0.29 (0.08)	-0.08 (0.09)	-0.21 (0.10)	-0.14 (0.05)
d2002	-0.19 (0.05)	-0.31 (0.08)	0.02 (0.09)	-0.19 (0.10)	-0.15 (0.05)
d2003	-0.28 (0.05)	-0.30 (0.08)	0.13 (0.09)	-0.37 (0.09)	-0.25 (0.05)
d2004	-0.23 (0.05)	-0.28 (0.08)	0.06 (0.08)	-0.32 (0.09)	-0.20 (0.05)
d2005	-0.42 (0.05)	-0.31 (0.08)	0.07 (0.09)	-0.31 (0.09)	-0.48 (0.05)
$\ln M_{nt}$	0.71 (0.00)	0.62 (0.01)	0.54 (0.01)	0.58 (0.01)	0.71 (0.00)
R^2	0.95	0.89	0.85	0.79	0.95
N.obs.	1744	968	442	551	1680

Note: Sector estimations include only transactions of products classified in each sector. Standard errors in parentheses.

Table 6.1 Gravity Equations by sector

Value of exports vs. distance. Controlling for expenditure and population.

Panel A. Basic Model					
	Dependent Variable: $\ln X_n(t)$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-2.60 (0.07)	-1.13 (0.12)	-1.22 (0.13)	-1.93 (0.21)	-2.67 (0.07)
R^2	0.77	0.44	0.32	0.28	0.74
N.obs.	1146	697	361	386	1105

Panel B. No time variation (dependent variables are fixed effects)					
	Dependent Variable: $\ln X_n$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-2.67 (0.15)	-1.17 (0.28)	-1.07 (0.28)	-2.23 (0.54)	-2.74 (0.15)
R^2	0.86	0.50	0.34	0.32	0.85
N.obs.	163	121	65	65	162

Panel C. No time variation and additional controls					
	Dependent Variable: $\ln X_n$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-2.69 (0.21)	-1.18 (0.42)	-0.96 (0.57)	-2.75 (0.95)	-2.64 (0.20)
Contiguity dummy	-1.16 (0.87)	0.84 (1.50)	-0.80 (1.23)	1.22 (2.41)	-1.07 (0.85)
Dummy for Spanish as official language at destination	0.05 (0.50)	-0.29 (0.95)	0.89 (1.02)	-0.70 (1.82)	0.30 (0.48)
ATPDEA Dummy	-1.26 (1.42)	3.36 (2.45)	2.84 (1.95)	4.17 (3.89)	-1.36 (1.38)
ALADI Dummy	0.25 (0.68)	-1.10 (1.18)	-2.65 (0.90)	0.50 (2.17)	0.39 (0.67)
CAN – Mercosur Dummy	1.61 (1.00)	1.36 (1.68)	2.05 (1.22)	-1.88 (2.70)	1.42 (0.97)
G3 Dummy	-1.40 (1.07)	1.72 (1.80)	1.05 (1.32)	-2.28 (2.82)	-1.22 (1.04)
GSP Europe Dummy	0.07 (0.35)	1.85 (0.62)	-0.05 (0.55)	3.45 (1.20)	-0.33 (0.34)
R^2	0.86	0.55	0.49	0.44	0.85
N.obs.	163	121	65	65	162

Notes: Standard errors in parentheses. Trade agreement dummies take a value of 1 if the destination country had a trade agreement with Colombia anytime between 1996 and 2005 and 0 otherwise. All panels control for annual averages of expenditure and population in the destination country, but coefficients are not reported.

Table 6.2 Gravity Equations by sector
N.transactions vs. Distance. Controlling for expenditure and population.

Panel A. Basic Model					
	Dependent Variable: $\ln M_n(t)$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-2.63 (0.05)	-1.01 (0.08)	-0.67 (0.09)	-1.32 (0.08)	-2.86 (0.05)
R^2	0.82	0.58	0.48	0.47	0.82
N.obs.	1146	697	361	386	1105

Panel B. No time variation (dependent variables are fixed effects)					
	Dependent Variable: $\ln M_n$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-2.54 (0.13)	-0.91 (0.18)	-0.57 (0.19)	-1.23 (0.18)	-2.73 (0.13)
R^2	0.85	0.64	0.46	0.53	0.83
N.obs.	163	121	65	65	162

Panel C. No time variation and additional controls					
	Dependent Variable: $\ln M_n$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-2.11 (0.17)	-0.81 (0.27)	-0.51 (0.39)	-0.89 (0.31)	-2.19 (0.17)
Contiguity dummy	-0.36 (0.72)	1.43 (0.97)	-0.84 (0.83)	1.20 (0.78)	-0.28 (0.70)
Dummy for Spanish as official language at destination	1.16 (0.41)	-0.11 (0.61)	0.60 (0.69)	0.32 (0.59)	1.37 (0.40)
ATPDEA Dummy	0.40 (1.17)	3.22 (1.58)	2.80 (1.32)	2.43 (1.26)	0.74 (1.14)
ALADI Dummy	0.23 (0.56)	-0.28 (0.76)	-1.60 (0.61)	-0.90 (0.70)	0.41 (0.55)
CAN – Mercosur Dummy	1.47 (0.82)	0.20 (1.09)	1.40 (0.83)	1.45 (0.87)	1.23 (0.80)
G3 Dummy	-0.70 (0.88)	0.39 (1.17)	0.49 (0.89)	-0.27 (0.91)	-0.58 (0.86)
GSP Europe Dummy	0.14 (0.29)	1.32 (0.40)	0.25 (0.37)	0.75 (0.39)	-0.42 (0.28)
R^2	0.87	0.69	0.60	0.63	0.86
N.obs.	163	121	65	65	162

Notes: Standard errors in parentheses. Trade agreement dummies take a value of 1 if the destination country had a trade agreement with Colombia anytime between 1996 and 2005 and 0 otherwise. All panels control for annual averages of expenditure and population in the destination country, but coefficients are not reported.

Table 6.3 Gravity Equations by sector
N. firms vs. Distance. Controlling for expenditure and population.

Panel A. Basic Model					
	Dependent Variable: $\ln N_n(t)$				
	All sectors	Agriculture	Fishing	Mining	Industry
$\ln D_n$	-2.01 (0.04)	-0.72 (0.05)	-0.36 (0.05)	-0.96 (0.05)	-2.17 (0.04)
R^2	0.82	0.57	0.53	0.54	0.81
N.obs.	1146	697	361	386	1105

Panel B. No time variation (dependent variables are fixed effects)					
	Dependent Variable: $\ln N_n$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-1.93 (0.09)	-0.67 (0.12)	-0.26 (0.10)	-0.85 (0.10)	-2.06 (0.09)
R^2	0.85	0.66	0.55	0.59	0.84
N.obs.	163	121	65	65	162

Panel C. No time variation and additional controls					
	Dependent Variable: $\ln N_n$				
	All sectors	Agriculture	Fishing	Mining	Manufacturing
$\ln D_n$	-1.54 (0.12)	-0.44 (0.17)	-0.18 (0.19)	-0.44 (0.16)	-1.58 (0.12)
Contiguity dummy	-0.15 (0.49)	1.05 (0.61)	-0.22 (0.42)	1.37 (0.42)	-0.10 (0.48)
Dummy for Spanish as official language at destination	1.20 (0.28)	0.36 (0.39)	0.45 (0.35)	0.46 (0.32)	1.35 (0.28)
ATPDEA Dummy	0.45 (0.81)	2.36 (1.00)	1.50 (0.66)	2.07 (0.68)	0.73 (0.79)
ALADI Dummy	0.19 (0.39)	-0.19 (0.48)	-0.98 (0.31)	-0.44 (0.38)	0.29 (0.38)
CAN – Mercosur Dummy	0.72 (0.57)	0.13 (0.69)	0.57 (0.41)	0.45 (0.47)	0.61 (0.55)
G3 Dummy	-0.78 (0.61)	0.20 (0.73)	0.18 (0.45)	-0.20 (0.49)	-0.67 (0.59)
GSP Europe Dummy	0.12 (0.20)	0.87 (0.25)	0.04 (0.19)	0.31 (0.21)	-0.34 (0.19)
R^2	0.88	0.71	0.68	0.72	0.88
N.obs.	163	121	65	65	162

Notes: Standard errors in parentheses. Trade agreement dummies take a value of 1 if the destination country had a trade agreement with Colombia anytime between 1996 and 2005 and 0 otherwise. All panels control for annual averages of expenditure and population in the destination country, but coefficients are not reported.

Table 7. Number and value of export transactions, by shipment modes

Panel A. N. Transactions (%Total N. transactions)

Year	Sea and rivers	Surface	Air	Multiple and Others
1996	19.4	25.7	54.8	0.1
1997	20.5	28.8	50.6	0.0
1998	20.2	28.5	51.3	0.0
1999	23.6	25.2	51.1	0.0
2000	22.3	30.9	46.8	0.0
2001	22.0	34.0	43.8	0.2
2002	24.6	28.7	46.4	0.3
2003	30.4	22.5	46.9	0.2
2004	26.2	24.0	49.8	0.0
2005	36.0	24.2	39.8	0.0

Panel B. Value of exports (%Total Exports)

Year	Sea and rivers	Surface	Air	Multiple and Others
1996	74.0	9.9	15.9	0.3
1997	74.4	11.2	14.3	0.2
1998	72.3	12.7	14.9	0.1
1999	76.2	8.6	15.1	0.1
2000	74.7	11.1	14.1	0.1
2001	68.9	15.0	15.1	1.0
2002	71.3	11.3	16.1	1.2
2003	73.1	8.6	17.4	0.4
2004	72.1	11.6	15.7	0.0
2005	73.7	12.6	13.0	0.0

Notes: Surface includes land and railway, air includes cargo and mail air shipment

Table 8. Number of export transactions to specific destinations, by shipment modes

(% Total N. transactions)

Panel A. European Union					Panel B. Neighbors				
Year	Sea and rivers	Surface	Air	Others	Year	Sea and rivers	Surface	Air	Others
1996	19.9	0.0	80.0	0.0	1996	2.1	78.8	19.1	0.0
1997	19.5	0.0	80.5	0.0	1997	4.6	77.0	18.4	0.0
1998	20.5	0.0	79.5	0.0	1998	4.8	75.7	19.5	0.0
1999	25.2	0.0	74.8	0.0	1999	6.4	73.2	20.4	0.0
2000	25.6	0.0	74.4	0.0	2000	5.4	79.1	15.4	0.0
2001	26.9	0.0	73.0	0.0	2001	5.8	77.0	16.7	0.4
2002	31.4	0.0	68.6	0.0	2002	6.7	73.7	19.1	0.5
2003	36.4	0.0	63.5	0.0	2003	8.0	72.2	19.5	0.3
2004	34.0	0.0	66.0	0.0	2004	8.7	66.9	24.4	0.0
2005	50.2	0.0	49.8	0.0	2005	10.6	71.1	18.3	0.0

Panel C. United States					Panel D. Latin America and Caribe				
Year	Sea and rivers	Surface	Air	Others	Year	Sea and rivers	Surface	Air	Others
1996	17.1	0.0	82.7	0.2	1996	43.6	0.7	55.6	0.0
1997	18.9	0.0	80.9	0.2	1997	46.1	0.4	53.5	0.0
1998	17.2	0.0	82.7	0.1	1998	45.0	0.1	54.9	0.0
1999	20.8	0.0	79.1	0.1	1999	45.9	0.0	54.0	0.0
2000	20.7	0.0	79.1	0.2	2000	45.7	0.1	54.2	0.0
2001	24.3	0.0	75.4	0.3	2001	46.0	0.0	54.0	0.0
2002	25.5	0.0	74.1	0.4	2002	46.2	0.0	53.8	0.0
2003	28.4	0.0	71.2	0.4	2003	51.7	0.0	48.2	0.0
2004	26.3	0.3	73.5	0.0	2004	45.1	0.1	54.8	0.0
2005	40.4	0.1	59.6	0.0	2005	56.4	0.1	43.6	0.0

Panel E. Other destinations				
Year	Sea and rivers	Surface	Air	Others
1996	15.3	20.4	64.3	0.0
1997	13.8	27.9	58.2	0.0
1998	13.6	31.2	55.2	0.0
1999	18.2	26.7	55.1	0.0
2000	19.0	25.8	55.2	0.0
2001	18.6	28.9	52.5	0.0
2002	21.6	22.2	56.1	0.1
2003	25.0	25.9	48.9	0.3
2004	20.9	29.7	49.4	0.0
2005	28.4	30.1	41.5	0.0

Notes: Surface includes land and railway, air includes cargo and mail air shipment. Group Neighbors constituted by Venezuela and Ecuador, Latin America and Caribe excludes Neighbors.

Table 9. Value of export transactions to specific destinations, by shipment modes

(% Total value of exports)

Panel A. European Union					Panel B. Neighbors				
Year	Sea and rivers	Surface	Air	Others	Year	Sea and rivers	Surface	Air	Others
1996	90.9	0.0	8.8	0.3	1996	10.6	80.8	8.6	0.0
1997	94.4	0.0	5.5	0.1	1997	14.7	75.5	9.8	0.0
1998	94.9	0.0	5.1	0.0	1998	19.7	70.4	9.9	0.0
1999	94.3	0.0	5.7	0.0	1999	18.2	71.6	10.2	0.0
2000	92.9	0.0	7.1	0.0	2000	15.4	76.2	8.3	0.1
2001	93.0	0.0	7.0	0.1	2001	17.1	69.7	8.5	4.6
2002	93.1	0.0	6.9	0.0	2002	21.5	63.3	8.4	6.8
2003	93.1	0.0	6.9	0.0	2003	21.4	63.5	8.7	6.4
2004	92.4	0.3	7.4	0.0	2004	24.9	62.0	9.6	3.5
2005	93.0	0.0	7.0	0.0	2005	23.6	65.6	6.2	4.6

Panel C. United States					Panel D. Latin America and Caribe				
Year	Sea and rivers	Surface	Air	Others	Year	Sea and rivers	Surface	Air	Others
1996	77.4	0.0	22.2	0.4	1996	86.5	1.0	12.3	0.3
1997	78.0	0.0	21.7	0.3	1997	86.5	0.4	12.9	0.2
1998	76.4	0.0	23.3	0.3	1998	82.7	0.0	17.2	0.1
1999	80.2	0.0	19.6	0.2	1999	83.0	0.0	17.0	0.0
2000	82.3	0.0	17.6	0.1	2000	85.0	0.1	14.9	0.0
2001	80.2	0.0	19.6	0.2	2001	82.3	0.1	17.6	0.0
2002	79.3	0.0	20.4	0.3	2002	84.1	0.0	15.9	0.0
2003	74.4	0.0	25.3	0.3	2003	86.9	0.0	13.1	0.0
2004	76.0	0.3	23.7	0.0	2004	89.0	0.1	10.9	0.0
2005	79.7	0.4	20.0	0.0	2005	90.0	0.4	9.6	0.0

Panel E. Other destinations				
Year	Sea and rivers	Surface	Air	Others
1996	73.3	5.2	21.4	0.2
1997	75.9	9.3	14.8	0.0
1998	74.4	14.5	11.1	0.0
1999	78.9	9.4	11.6	0.0
2000	76.0	11.3	12.7	0.0
2001	68.3	14.8	16.9	0.0
2002	67.6	9.9	22.5	0.0
2003	72.9	11.5	15.5	0.1
2004	72.9	12.6	14.5	0.0
2005	76.0	13.3	10.6	0.0

Notes: Surface includes land and railway, air includes cargo and mail air shipment. Group Neighbors constituted by Venezuela and Ecuador, Latin America and Caribe excludes Neighbors.

Table 10. Number and value of export transactions, by shipment modes, for specific sectors.

Panel A. N. Transactions by transport (%Total N. of sector transactions)

Sector	Year	Sea and rivers	Surface	Air	Others	Total N. Transactions
Agriculture, livestock, forestry and fishing	1996	4.9	1.2	93.9	0.0	51,592
	2005	11.1	1.2	87.8	0.0	118,940
Exploitation of mines and quarries	1996	61.4	17.9	8.5	12.2	1,410
	2005	53.7	34.3	12.0	0.1	3,556
Manufacture industry	1996	22.9	32.6	44.5	0.0	185,129
	2005	39.6	27.9	32.5	0.0	758,546
Wholesale and retail trade, restaurants and hotels	1996	93.9	4.9	1.2	0.0	769
	2005	97.6	1.4	1.0	0.0	2,494
Financial, insurance, real-state and entrepreneurship services	1996	33.3	0.0	66.7	0.0	3
	2005	8.7	17.4	73.9	0.0	23
Community, social and personal services	1996	0.0	9.5	90.5	0.0	95
	2005	19.3	2.7	78.0	0.0	223

Panel B. Value of exports by transport (%Total Value of sector exports)

Sector	Year	Sea and rivers	Surface	Air	Others	Total Value exports (US\$ millions)
Agriculture, livestock, forestry and fishing	1996	45.7	1.6	52.7	0.0	1,043.0
	2005	31.9	12.1	56.0	0.0	1,717.9
Exploitation of mines and quarries	1996	99.0	0.1	0.1	0.8	3,349.7
	2005	98.7	0.8	0.5	0.0	6,538.1
Manufacture industry	1996	65.2	16.5	18.3	0.0	6,239.5
	2005	67.1	19.0	13.9	0.0	12,653.2
Wholesale and retail trade, restaurants and hotels	1996	98.3	1.1	0.6	0.0	17.9
	2005	99.6	0.2	0.2	0.0	116.1
Financial, insurance, housing and entrepreneurship services	1996	1.0	0.0	99.0	0.0	0.1
	2005	0.8	3.1	96.0	0.0	0.1
Community, social and personal services	1996	0.0	1.5	98.5	0.0	1.2
	2005	9.6	0.3	90.2	0.0	1.6

Notes: Sectors are defined at the one-digit level (ISIC classification, Revision 2). Transactions classified as services correspond to artistic and cultural activities.

Table 11. Number and value export transactions, by shipment modes. Groups of products.

Panel A. N. Transactions by shipment modes (%Total N. of group transactions)						
Sector	Year	Sea and rivers	Surface	Air	Others	Total N. group transactions
Flowers	1996	0.0	0.0	100.0	0.0	30,315
	2005	0.1	0.2	99.7	0.0	89,451
Coffee and its products	1996	91.8	3.6	4.7	0.0	1,286
	2005	97.5	1.5	1.0	0.0	22,171
Coal, oil, natural gas and its derivatives	1996	56.2	33.8	1.2	8.8	1,965
	2005	67.2	31.0	1.7	0.1	3,537
Textiles	1996	21.3	38.5	40.2	0.0	16,801
	2005	21.4	36.5	42.1	0.0	64,588
Apparel	1996	2.9	16.1	80.9	0.0	36,621
	2005	9.4	24.4	66.1	0.0	134,805
Paper, pulp, publishing and printing	1996	17.0	36.0	47.0	0.0	18,218
	2005	35.0	27.8	37.1	0.0	62,365
Chemical products	1996	36.5	37.7	25.8	0.0	29,987
	2005	43.7	25.0	31.3	0.0	132,477

Panel B. Value of exports by shipment modes (%Total value of group exports)						
Sector	Year	Sea and rivers	Surface	Air	Others	Total value group exports (US\$ millions)
Flowers	1996	0.0	0.0	100.0	0.0	513
	2005	0.3	0.2	99.4	0.0	910
Coffee and its products	1996	99.4	0.4	0.2	0.0	1,715
	2005	99.3	0.6	0.0	0.0	1,631
Coal, oil, natural gas and its derivatives	1996	99.0	0.2	0.0	0.7	3,794
	2005	99.3	0.7	0.0	0.0	8,157
Textiles	1996	46.3	37.5	16.2	0.0	288
	2005	38.0	42.6	19.4	0.0	446
Apparel	1996	13.0	10.0	77.1	0.0	429
	2005	35.9	18.3	45.8	0.0	792
Paper, pulp, publishing and printing	1996	41.3	39.0	19.8	0.0	236
	2005	48.7	36.8	14.5	0.0	554
Chemical products	1996	58.0	25.6	16.5	0.0	910
	2005	66.4	22.6	11.0	0.0	1,595

Notes: Groups defined using the ISIC classification, Revision 3.

Figure 1 Number of firms with L or more export transactions, by year. 1996-2005

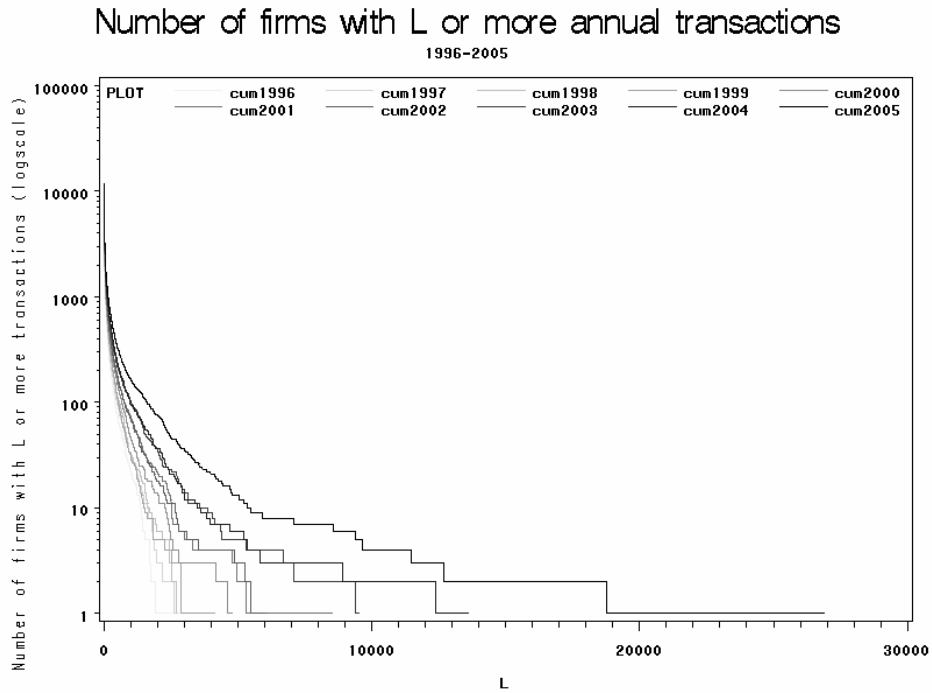


Figure 2. Frequency of firms re-exporting in M months

Panel A. Average N. months between any two transactions done in 1996–2005

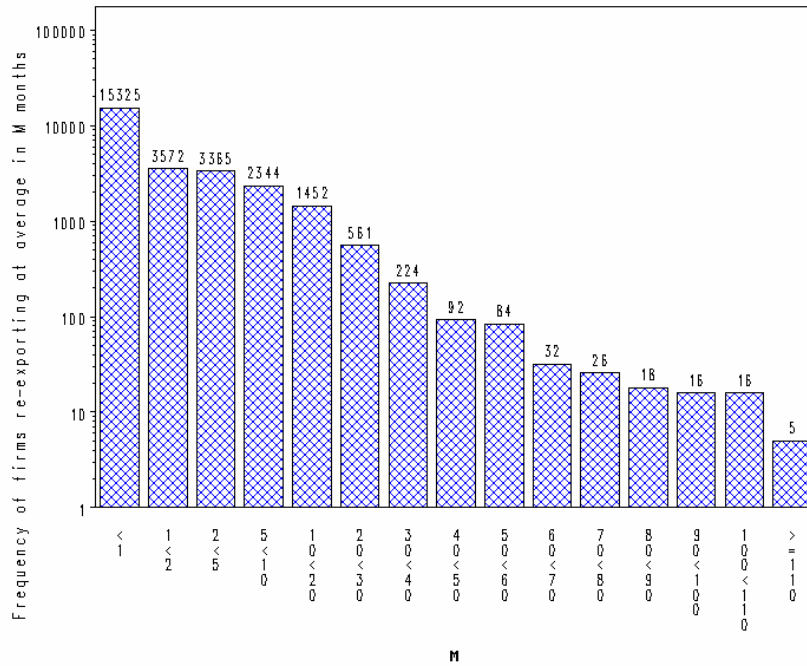
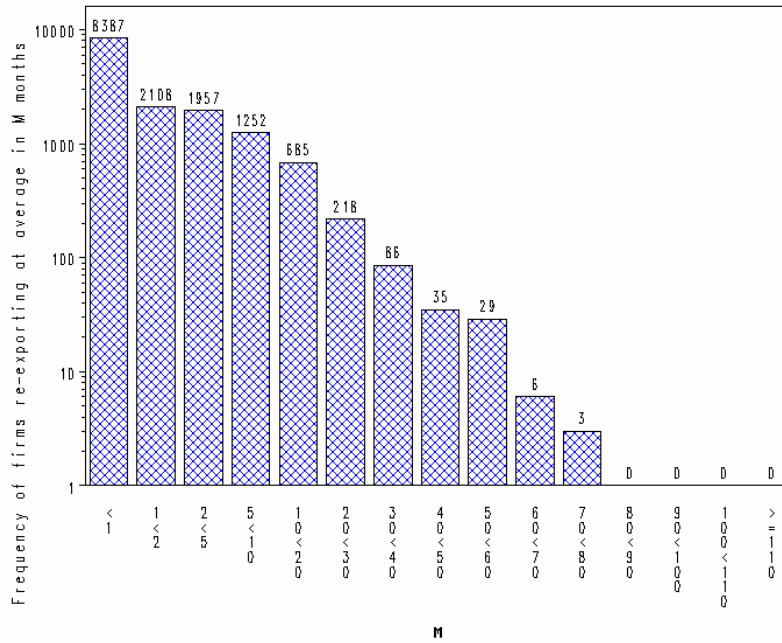
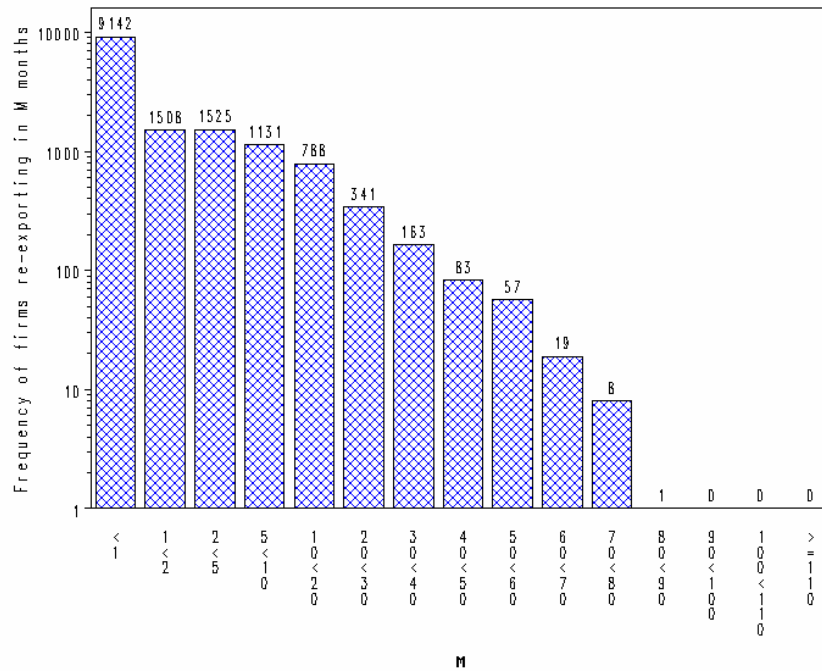


Figure 2. (continued) Frequency of firms re-exporting in M months

Panel B. Average N. months between any two consecutive transactions done in 1999–2005
 Only firms entering after 1999 included



Panel C. N. months between the first and the second transaction done in 1999–2005
 Only firms entering after 1999 included



Note: Sample in Panel A consists of all firms reporting more than one transaction between 1996 and 2005. We exclude 17,718 firms (39.5% of total number of firms) reporting only one transaction over the sample period. Sample in Panels B and C consists of all firms reporting their first transaction after 1999 and reporting more than one transaction between 1999 and 2005. The N. of months between two sequential transactions is defined as the distance between the months of the two transactions; we report the average value of that distance for a firm.

Figure 3 Frequency of firms with N transactions in the average month. 1996-2005

(Only firms with multiple transactions over the period)

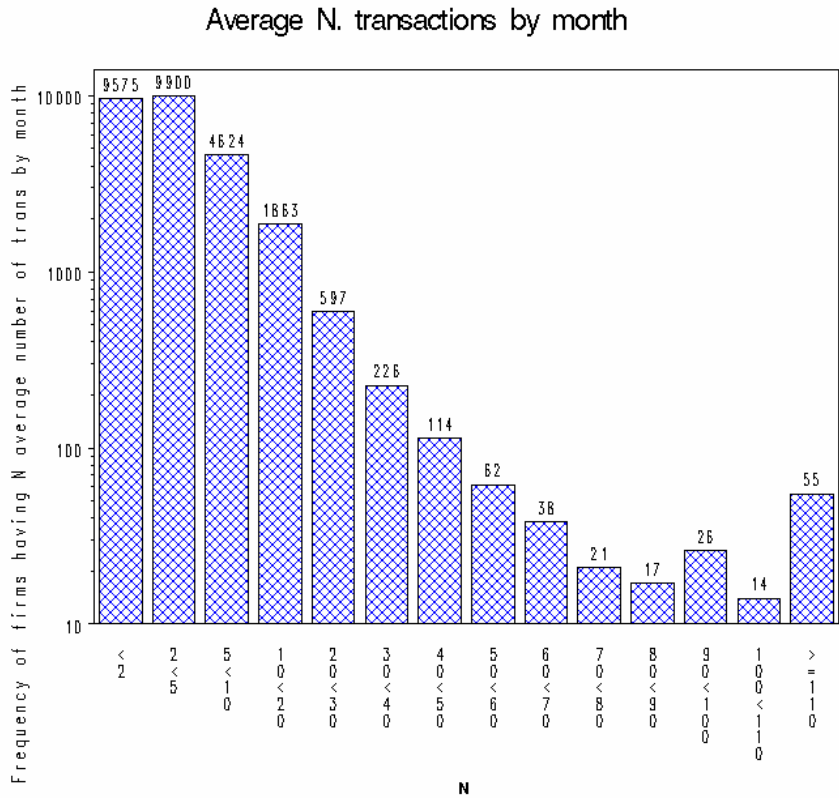


Figure 4 Number of export transactions and value of exports to a particular destination, 1996-2005

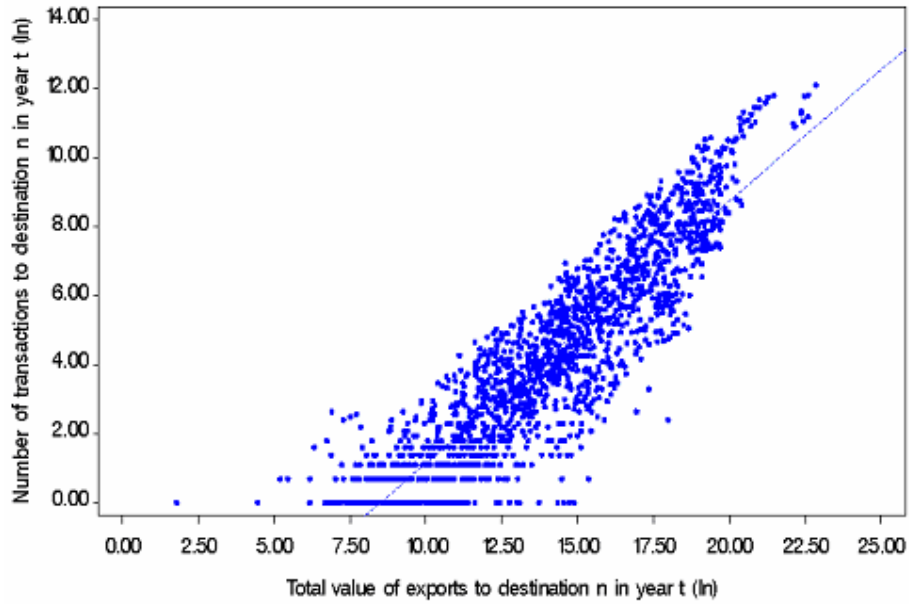


Figure 5 Number of exporting firms and number of export transactions to a given destination, 1996-2005

