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Exporters Dynamics and the Role of Imports in Argentina

Matias Arnoletto
Sebastian Franco-Bedoya
José-Daniel Reyes

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Abstract

This paper examines the performance of globally engaged firms in Argentina in the past decade. Using highly disaggregated firm-level customs transaction data for imports and exports, the paper documents the progressive retreat of Argentine firms from global markets. Between 2007 and 2017, the number of exporters decreased by 30 percent. Benchmarking the characteristics of these exporters with similar countries reveals that Argentine exporters are disproportionally fewer and individually larger, with export value extremely concentrated in a few firms. Firm churning rates are disproportionately low and survival rates of entrants are high. These findings reflect exceptionally high entry costs of export, which are the result of anti-export bias and import substitution policies that sought unsuccessfully to develop the local industry. The paper shows that exporters that import directly intermediate and capital goods have better export outcomes than other exporters.

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Exporter Dynamics and the Role of Imports in Argentina

Matias Arnoletto[‡], Sebastian Franco Bedoya[+], and José-Daniel Reyes[∗]

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[‡]Ministry of Production in Argentina. Email: matias.a.arnoletto@gmail.com
[+]The World Bank - 1818 H St NW - Washington, DC 20433. Email: sfranco2@worldbank.org
[∗]The World Bank - 1818 H St NW - Washington, DC 20433. Email: danielreyes@worldbank.org

The authors are, respectively, Research Coordinator at the Ministry of Production in Argentina; Analyst at the World Bank; and Senior Economist at the World Bank. We thank Bernardo Dias, Estefanía Lotitto, and Emmanuel Venice from the Ministry of Production in Argentina for their advice and support accessing the information required for the analysis. We are grateful to Ana Fernandes for extensive comments and guidance on a prior version of the paper and to Esteban Ferro for supporting the initial empirical analyses. Chad Syverson, Sebastian Galiani, Gabriel Sanchez, and Peter Siegenthaler provided thoughtful guidance to the authors. We thank Cecile Niang and Daniel Gomez for encouraging us to write this paper. The views expressed here do not necessarily reflect those of the World Bank Group or its member countries. All errors and opinions are our own.

1 Introduction

Argentina would need to internationalize its economy if it wants to pursue a productivity-driven economic growth model. Trade liberalization plays an important role in the within-firm reallocation of resources, recent empirical evidence suggests. Models with multi-product firms by Bernard, Redding and Schott (2010), Nocke and Yeaple (2006), and Eckel and Neary (2010) demonstrate how either trade participation or trade liberalization affects firms' product scope. Increased import competition or fierce competition in export markets pushes firms to rationalize their product scope to favor their best-performing products, which in turn improves firms' performance.

Another channel that affects firm performance through trade is the potential of having access to cheaper and better-quality intermediate inputs through imports. Trade liberalization improves firm-level productivity mainly through increased imported intermediate inputs (Amiti and Konings 2007). Increased imports contribute to product innovation (Goldberg, Khandelwal, and Topolova 2010a). Trade liberalization thus enables firms to benefit from static and dynamic gains from trade. Access to cheaper, better, and more varied imported inputs leads to important productivity gains in the short and medium-term (Broda and Weinstein 2006). Even more important are dynamic gains from new varieties of intermediate inputs, which stimulate product innovation and hence firms' long-term growth. For example, Indian firms achieved significant static and economic gains after trade liberalization through both access to cheaper inputs and the enlarged scope of imported varieties of intermediate products (Goldberg, Khandelwal, and Topolova 2010b). An enlarged scope of imported intermediate products also had a substantial positive impact on firms' productivity and exports for a sample of French firms (Bas and Strauss-Kahn 2014). Greater use, variety, and quality of imported intermediate inputs are also significantly correlated with higher exports, faster export growth, greater diversification of export markets, and higher-quality exports at the firm level in Peru (Pierola, Fernandes, and Farole 2017).

Argentina's trade policy in the past decades has swung from episodes of open trade to episodes of strong protectionism. Periods of protectionism were marked by an anti-export bias and import substitution policies, which have their roots in distribution conflicts that favored industry over agriculture in a country with a fundamental comparative advantage in agriculture (Brambilla, Galiani and Porto 2018 and Galiani and Somaini 2018). The anti-export bias hampered the productivity growth of the agriculture sector, while the import substitution strategy was unsuccessful in promoting industrialization. As a result, Argentina never developed its trade potential.

This paper examines the characteristics and dynamics of exporters in Argentina between 2007 and 2017, during most of which the country adhered to a protectionist policy stance. Employing highly disaggregated firm-level trade information, we benchmark firm-level export performance in Argentina during the period of 2007 to 2017 with respect to similar countries using the World Bank Exporter Dynamics Database, a catalog of comparable indicators for 70 developing economies (Fernandes, Freund, and Pierola 2016). We also investigate the role of imported inputs in the export performance of firms in Argentina during this period. We estimate premiums for exporting firms that are also direct importers of intermediate and capital goods relative to those that are not direct importers for a wide range of firm-level export outcomes (export value, export growth, number of destinations, unit values) controlling for unobserved firm heterogeneity and temporal cyclical effects. We conduct the analysis for the overall export sector and for individual economic sectors. Our work is complementary to Albornoz, Lembergman, and Juarez (2018), who study the relationship between the real exchange rates and firm-level performance of Argentina's exports between 2003 and 2011, a period of high export growth.

The contribution of our work is threefold. First, to the best of our knowledge, we provide for the first time a systematic benchmarking of firm-level export dynamics in Argentina. Second, we document the important role of intermediate imported inputs in determining export outcomes in Argentina. Third, we contribute to the public good of the World Bank's Exporter Dynamics

Database by computing an array of firm-level measures on Argentine exporters' characteristics and dynamics. The information is computed for (1) all exporters; (2) exporters that import intermediate and capital goods; (3) other exporters; and (4) importers.[1]

This paper shows the progressive retreat of exporters in Argentina from the global economy in the last decade. After controlling for the size and the level of development, Argentina's exporters underperform in comparison with their counterparts in other countries along the following dimensions. First, the number of exporters is lower than in similar countries. Between 2007 and 2017, the number of exporters decreased by 30 percent (around 5,100 firms ceased exporting). Second, export value is disproportionally concentrated in few firms in Argentina. The top 5 percent largest exporters account for 90 percent of the country's overall export value. Third, there is little firm churning in Argentina. Entry and exit rates in export markets are among the lowest in our sample of countries. Fourth, Argentina displays a disproportionally high survival rate for new exporters.

These findings are consistent with an environment of high entry cost into exporting, linked to a wide-ranging and ever-changing array of policies featuring an anti-export bias and import substitution. Simple average most favored nation (MFN) tariffs rose from 10.4 percent in 2006 to 13.7 percent in 2017. Furthermore, Argentina's use of nontariff measures increased during the same period. These measures are mainly related to registration requirements, import and export taxes and procedures, and nonautomatic import licensing.[2] Moreover, the clarity of the trade policy regime has been undermined by the apparent lack of transparency in the application of the regulatory framework governing trade. Surprisingly, the findings on large average firm size, more concentration at the top of the export distribution, low turnover rates, and high survival rates situate Argentina closer to the behavior of higher-income countries. Fernandez, Freund,

[1]The Exporter Dynamics Database is available at https://www.worldbank.org/en/research/brief/exporter-dynamics-database. The indicators for all exporters are part of the database; other partitions of the information are used only for this paper.

[2]Non-automatic import licensing is a procedure introduced, for reasons other than SPS or TBT reasons, where approval is not granted in all cases. The approval may either be granted on a discretionary basis or may require specific criteria to be met before it is granted.

and Pierola (2016) argue that in lower-income countries informational failures lead to wasteful entry into export markets by many non-resilient firms that need to experiment in export markets because that is the only way for them to deal with uncertainty about the profitability of their exports and uncertainty on the part of buyers. Our results indicate that in Argentina export costs are comparatively larger than in similar countries, which leads to many resilient and non-resilient firms never experimenting in export markets.

We also find that being a direct importer and importing more intermediate inputs is positively and significantly correlated to export growth, export diversification (in terms of number of destinations), and export quality. On average, an exporter that directly imports intermediate products has 37.5 percent more exports and 50.9 percent higher export growth, and reaches 1.6 times the number of markets than exporters that do not import directly. More generally, we find that the use of imported inputs is positively associated with firm-level productivity. We are aware of concerns about potential reverse causality in these relationships. However, we do not attempt to determine causality but rather provide evidence about the positive relationship between access to imported inputs and export performance at the firm level.

The remainder of the paper is structured as follows. The next section describes the data. Section 3 presents the benchmarking exercise of export characteristics and dynamics in Argentina. Section 4 estimates the export premiums for exporters-importers. Section 5 concludes.

2 Data and Descriptive Statistics

Our analysis makes use of the transaction-level export and import raw data from Argentina's General Customs Bureau (Dirección General de Aduanas, DGA). The database covers the entire universe of transactions between 1994 and 2018 and contains unique and time-consistent firm identifiers that allows us to merge export and import transactions at the firm level. We collapse exports and imports at the firm-year level, preserving the following variables: exported/imported

products—using the 6-digit Harmonized System (HS) codes—, destinations/origins, and quantity. Export values are Free on Board (FOB) and import values are cost, insurance, and freight (CIF). To benchmark Argentina's export performance, we employ the Exporter Dynamics Database (Fernandes, Freund, and Pierola 2016). The data set contains an array of indicators computed from firm-level information on the characteristics and dynamics of exporters at different levels of disaggregation.

We compute the following corresponding indicators for Argentina at the country-year level: number of exporters; average/median size of exporters; number of destinations per exporter; export market shares concentration; entry and exit rates; and survival rates.[3] This is the information used in the next section. In order to estimate the export premiums of exporters-importers, we split the sample between only-exporters and exporter-importers. Following recent literature (Arkolis, Costinot, and Rodriguez-Claire 2012; Pierola, Fernandez, and Farole 2018), we identify exporters that directly import intermediate products or capital goods, identified according the United Nations Broad Economic Classification (BEC). The rest of exporters are considered only-exporters. Figure 1, panel a, shows the evolution over time of the number of firms, by type. The total number of exporters declined significantly between 2007 and 2015. The total fell by 30 percent—around 5,100 firms stopped exporting altogether. Since 2015 the total number of exporters has stagnated at around 9,500 firms.

Exporter-importers dominate the trade landscape in Argentina, in terms of both number of firms and export value. The share of firms that export and import increased from 57 percent in 2007 to 63 percent in 2018. These firms represent the bulk of export value. In 2007 they accounted for 92 percent of export value, whereas in 2017 they represented 94 percent of the export value (figure 1, panel b).

[3]Details on the cleaning procedures for the Argentina raw data are presented in appendix A. The definitions of the indicators employed in the analysis are shown in appendix B. Countries included in the sample are listed in appendix C.

3 Benchmarking Exporter Dynamics in Argentina

This section describes and benchmarks aggregate export patterns in Argentina. We rely on estimates from cross-country regressions whose dependent variables are different indicators of export performance to benchmark exporters in Argentina against those in comparator countries. The regression controls for the size (GDP) and the level of development (GDP per capita) of each country and for time trends, which are critical to consider given that the sample period encompasses commodity price shocks that have affected many of the countries in the sample. The cross-country regressions are estimated on a panel of country-year exporter competitiveness indicators covering the 2000–17 period and encompassing all developing and developed countries included in the Exporter Dynamics Database. Each regression includes a dummy variable identifying the observations for Argentina, whose estimate will determine how Argentina performs relative to the benchmark countries. Table 1 displays the results from the cross-country regressions that provide the foundation for the analysis described in this section.

We begin by characterizing the export sector in Argentina in terms of the number of firms and their size. The results indicate that after controlling for country size and level of development, Argentina has significantly fewer exporters than comparator countries (column 1, table 1), as shown in the previous section. The average size of exporters is statistically higher (columns 2) than in similar countries, whereas the median is not statistically different, indicating a higher concentration of export value in Argentina than in other countries. This is confirmed when using the Herfindahl index of exporter shares (column 4).[4] Indeed, Argentina is one of the most concentrated countries in the region, with a Herfindahl index similar to that in Peru but higher than those in all other comparators. The same result is obtained when considering the share of exports accounted for by the top 1 percent or top 5 percent of exporters as the measure of concentration (columns 5–6).

Next, we examine export diversification. The average number of exported products

[4]The Herfindahl Index is calculated as the sum across all exporters of the squared export shares per exporter.

(with 6-digit HS codes) per exporter in Argentina is significantly lower than in comparator countries (column 7). Argentinean firms export 5.6 products, on average, which is 12 percent less than comparable countries. The average number of destinations reached by Argentina's exporters does not differ significantly from other countries (column 8). Argentinean firms export to 3.8 destinations, on average, while most comparator countries' exporters serve 3 to 4 destinations.

We now turn to examine export dynamics. Table 2 displays the results from the same cross-country regressions when the dependent variable is different measures of exporter dynamics. After controlling for size and the level of development, exporter entry and exit rates are significantly lower in Argentina (columns 1–2). In a given year in Argentina, 20 percent of exporters enter international markets for the first time, while 23 percent exit. There is significantly less firm churning of exporters in Argentina than in comparable countries. The size of entrants (in relation to overall export value) is also significantly lower in Argentina (column 3). A potential explanation for this low export share of entrants is the skewed distribution of export values in Argentina: The country has comparatively larger exporters than other countries (columns 2–3).

Although firm churning in Argentina is low, entrants are more successful in surviving in international markets. The one-year, two-year, and three-year survival rates of new exporters are significantly higher in Argentina (column 4–6). On average in a given year, 48 percent of new exporters remain active in export markets the next year. After the third year of entry, only 18 percent remain exporting.

Drawing on a recent theoretical and empirical model of firm-heterogeneity in international trade (Bernard, Redding, and Schott 2011), we conclude that the evidence presented is consistent with an environment with high fixed costs to enter export markets, possibly linked to a wide range of policies featuring an anti-export bias and import substitution that increase the firm-level fixed cost and uncertainty of entering export markets. If the distribution of productivity across firms were the same in all countries, the higher export costs in Argentina would imply a higher minimum productivity threshold for firms to enter export markets. This fact would

explain the low number of exporters, the limited firm churning, and the high survival rates found in Argentina. Theoretical models of firm dynamics predict that high fixed cost to export also constrain innovation. As described in Bonfiglioli, Crino, and Gancia (2018), although the success in starting a new enterprise or launching a new product is inherently uncertain, firms can deliberately choose between investing in smaller projects with less variable outcomes and more ambitious projects with higher variance. The incentives to take investment risks in Argentina seems to be low. This is also consistent with the finding by di Giovanni and Levchenko (2012) that volatility is higher in sectors that are more open to trade.

Argentina's export dynamics resemble those in higher-income countries. Large average firm size, more concentration at the top of the export distribution, low turnover rates, and high survival rates predominate in developed countries, Fernandez, Freund, and Pierola (2018) find. The authors argue that in higher-income countries, informational failures are lower than in developing countries—and, therefore, less churning and more resilience is observed in these markets. In lower-income countries, high uncertainty leads to wasteful entry into export markets by many non-resilient firms that need to experiment in export markets because that is the only way for them to deal with uncertainty about their profitability. We argue that the level of trade distortions that increase the cost to export dominates the effects of uncertainty in Argentina. However, more research is needed to understand this phenomenon.

4 Export Performance Premiums for Exporters-Importers

4.1 Empirical Strategy

To investigate the importance of imports of intermediate inputs for exporters in Argentina, we build on Fernandez, Freund, and Pierola (2018). We regress different export performance measures on different indicators of import behavior. Our benchmark econometric strategy is the following:

$$Y_{it} = \beta M_{it} + \gamma_i + \gamma_t + \varepsilon_{it} \tag{1}$$

where i stands for a firm (which may be an exporter only or an exporter–importer); t stands for a year; Y_{it} is an export performance measure; γ_i and γ_t are firm and year fixed effects respectively; and ε_{it} is an independent and identically distributed (i.i.d.) error. Firm fixed effects control for unobserved firm heterogeneity due to time-invariant firm characteristics that might be correlated with export performance but also with the exporter–importer status. In particular, the inclusion of firm fixed effects mitigates the potential concern that an estimated performance premium for exporter–importers could simply be due to the larger size and higher productivity of those firms.

To understand how the relationship between imports and exports changes at the sectoral level, we interact the variable of interest with sectoral dummies (indexed by s). This implies using even more disaggregated data, with firms potentially exporting goods in different sectors.[5] The estimation equation in this case is as follows:

$$Y_{it} = \sum_{s=1}^{S} \beta_s M_{it} \times I_s + \gamma_i + \gamma_t + \varepsilon_{it} \tag{2}$$

The coefficient of interest in equations (1) and (2) is that on the indicator variable of firm import behavior (M_{it}). We consider the following four alternative variables for imports: (1) a dummy variable for current exporter-importer status (1 if the firm exports and imports in year t, 0 otherwise); (2) the logarithm of total value of imports (adding 1 before taking the log to be able to include those firms that start importing during the sample period); (3) the number of imported products; and (4) a dummy variable capturing whether more than 50 percent of inputs are imported from advanced economies (as a proxy for the knowledge and technology embedded

[5]The exports of multiproduct firms are classified into different sectors following the HS classification groups explained in the results section.

in inputs).[6] We check the robustness of our results to the use of the Poisson Pseudo Maximum Likelihood (PPML) estimator when both the dependent and explanatory variables are in logs (Santos and Tenreyro 2006). In these cases, the regression is the following:

$$X_{it} = \exp\left(\beta \log M_{it} + \gamma_i + \gamma_t + \varepsilon_{it}\right) \tag{3}$$

To ensure that the interpretation of the coefficient on the exporter-importer status dummy variable shows how export performance improves when a firm starts to import intermediate inputs—that is, when it switches from being an exporter only to being an exporter-importer—we exclude firms that stop being an exporter-importer and become an exporter only for all our specifications. However, the results are qualitatively similar if we include those firms in the estimating sample.

Finally, we are aware that an important caveat of our study is that we do not capture the effect of imports on exporting performance for firms that do not directly import. Firms that export may have access to imported intermediates through third-party transactions or purchases from wholesalers. In addition, even firms that purchase domestic inputs exclusively may benefit from increased openness if import competition drives domestic suppliers to reduce their prices or improve the quality of their products. Therefore, the effect of imported intermediates on firm export performance may be more extensive than what the data allow us to capture.

4.2 Results

Our results confirm that access to, a greater use of, and variety of imports is positively and significantly associated with better export performance for firms in Argentina. Table 3 presents the initial results. In all regressions, the firm export variable is regressed using ordinary least

[6] Advanced economies are defined as those countries classified as high-income by the World Bank, with all other countries are classified as emerging.

squares (OLS) and PPML on indicators of firms' imports of inputs.

Looking first at the effect of importing status on the value of exports (column 1) reveals that becoming an importer of intermediate inputs raises firms' exports by 45.7 percent, on average.[7] The coefficient is robust to the use of a PPML estimator (column 2), and becomes stronger (50.6 percent). Being an importer is also positively correlated with faster export growth. It adds 22 percentage points, on average (column 3), potentially explained by productivity gains thanks to the use of intermediate inputs. Being a direct importer of intermediate and capital products also allow exporters to reach a larger number of destinations, with 1.6 additional destinations, on average (column 4). The coefficient on the average unit value (a proxy for quality) is not significantly correlated with the import status. The insignificance of this coefficient may be primarily driven by the challenges of measuring product quality accurately.

We also check the correlation between the level of imports of capital and intermediate products (in logs) and export performance (column 1). The results are qualitatively similar to the ones found for changing the status from only exporter to exporter-importer. We find that the coefficient for the level of imports is positively correlated to and statistically significant with all export performance measures—in this case also indicating that the level of imports does contribute to the quality of the exported product.

We further investigate the robustness of our estimates to alternative measures of the characteristic of importing capital and intermediate products (table 3). Specifically, we examine the impact of the variety (proxied by the number of imported products) and the quality of the firms' imports (proxied by a dummy that takes the value of 1 when more than 50 percent of imports of inputs come from advanced economies). The results show a positive and statistically significant relationship between the variety of imports and the value of exports, export growth, and the number of destinations. These correlations are robust to the use of a PPML estimator but yield smaller coefficients.[8] The quality of imports is found to be positively correlated with

[7] That is, $\exp(0.376) - 1 = 0.4564$.

[8] The coefficient on the average unit value is not significant.

export value and export growth, but not for export quality or the number of export destinations reached. These results suggest that the imported technology channel is an important determinant of export performance in Argentina, consistent with what has been previously found for France by Bas and Strauss-Kahn (2014).

Finally, we unpack how these relationships vary across economic sectors. We group the 2-digit HS codes into 15 sectors in table 4. The sectors that show the greatest importance of imports are animal and animal products; foodstuffs; vegetable products; and transportation. The bulk of exports from Argentina are concentrated in these sectors. The coefficients of interest are not significant in other sectors or even yield nonintuitive signs. Interestingly, the only exception to this is transportation, which includes all kinds of vehicles and motor cars. These products represent more than 6 percent of Argentinian exports and are the core of bilateral trade between Brazil and Argentina.

5 Concluding Remarks

This paper examines the performance of globally engaged firms in Argentina in the past decade. We assembled a wide array of firm-level export indicators for Argentina to match those in the World Bank Exporter Dynamics Database. Employing this information, we document the progressive retreat of Argentine firms from global markets.

Benchmarking the characteristics of these exporters with similar countries, Argentine exporters are found to be disproportionally fewer and individually larger, with export value highly concentrated in few firms. Firm churning rates are disproportionally low and survival rates of entrants are high. These findings reflect exceptionally high entry costs of export, which are likely the result of anti-export bias and import substitution policies. However, we show that exporters that import intermediate inputs have better export outcomes than those that source their inputs exclusively from Argentina.

The policy implications of these results are important. In a globalized world where many production processes are staggered across nations, protectionist policies that intend to protect local industries to make them more competitive often fail. Trade openness allows firms to have access to better and cheaper inputs that have the potential to increase their productivity and, therefore, to boost their competitiveness in the global economy.

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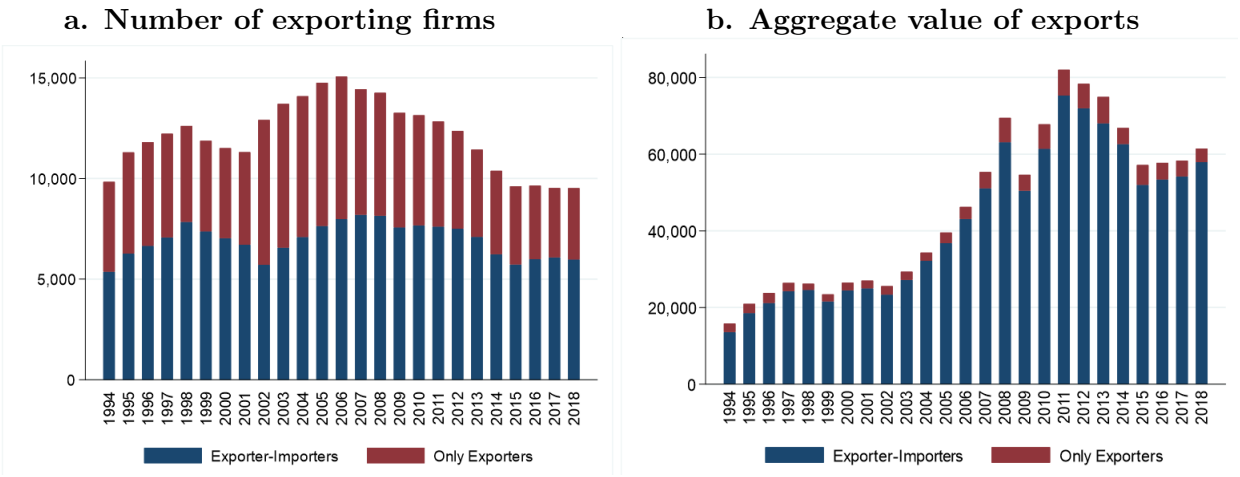
Figure 1: Number of firms and value of exports by type of exporter



Source: Authors computation using information from DGA.
Note: The value of exports is in millions of US dollars.

Table 1: Cross-country regressions for exporter competitiveness indicators

	(1) Log number of exporters	(2) Log average exporter size	(3) Log median exporter size	(4) Herfindahl Index	(5) Share of top 1% exporters	(6) Share of top 5% exporters	(7) Log number of products per exporter	(8) Log number of destinations per exporter
Argentina dummy	-0.373***	0.114*	0.077	0.014***	0.148***	0.072***	-0.127***	-0.053
	(0.100)	(0.065)	(0.093)	(0.004)	(0.009)	(0.007)	(0.037)	(0.032)
Log GDP per capita	0.123***	0.058***	-0.217***	0.005*	0.036***	0.025***	0.078***	0.030***
	(0.024)	0.021	(0.035)	(0.003)	(0.005)	(0.004)	(0.014)	(0.011)
Log GDP	0.745***	0.268***	0.345***	-0.024***	0.006	-0.002	0.082***	0.117***
	(0.025)***	(0.022)	(0.003)	(0.003)	(0.004)	0.003	(0.015)	(0.011)
Observations	749	749	747	749	741	741	749	749
R-squared	0.785	0.283	0.189	0.202	0.172	0.120	0.234	0.362

Source: Authors' calculations based on data for the Exporter Dynamics Database.
Note: All countries included in the Export Dynamics Database with available data for the 2000–17 period are included in the regression. Robust standard errors in brackets. ***p<0.01 level, **p<0.05, and *p<0.10.

Table 2: Cross-country regressions for exporter dynamic indicators

	(1) Exporter entry rate	(2) Exporter exit rate	(3) Share of entrants in total exports	(4) One-year survival rate	(5) Two-year survival rate	(6) Three-year survival rate
Argentina dummy	-0.073***	-0.046***	-0.018***	0.042***	0.022**	0.036**
	(0.011)	(0.009)	(0.003)	(0.011)	(0.011)	(0.015)
Log GDP per capita	-0.018***	-0.009***	-0.007***	-0.021***	-0.018***	-0.015***
	(0.004)	(0.003)	(0.002)	(0.005)	(0.005)	(0.005)
Log GDP	-0.019***	-0.021***	-0.005***	0.026***	0.024***	0.020***
	(0.003)	(0.003)	(0.002)	(0.004)	(0.005)	(0.005)
Observations	682	681	682	601	519	484
R-squared	0.263	0.212	0.095	0.138	0.152	0.269

Source: Authors' calculations based on data for the Exporter Dynamics Database.
Note: All countries included in the Export Dynamics Database with available data for the 2000–17 period are included in the regression. Robust standard errors in brackets. ***p<0.01 level, **p<0.05, and *p<0.10.

Table 3: Export premiums of exporter-importer in Argentina

	(1) Log Exports	(2) Exports (PPML)	(3) Export Growth	(4) Number Destinations	(5) Average Unit Value
Exporter - Improter	0.376***	0.409***	0.221***	1.607***	0.122
	(11.69)	(5.43)	(4.81)	(8.34)	(0.84)
N	64649	64649	64649	64649	64649
R-sq	0.828		0.138	0.888	0.589
Log Imports + 1	0.179***	0.120***	0.0727***	1.144***	0.0867**
	(21.48)	(7.01)	(6.90)	(13.22)	(2.23)
N	55595	55595	55595	55595	55595
R-sq	0.833		0.125	0.888	0.596
Log Number Imported products	0.255***	0.183***	0.0763***	2.442***	0.0663
	(20.83)	(7.61)	(4.96)	(16.37)	(1.12)
N	55595	55595	55595	55595	55595
R-sq	0.833		0.124	0.888	0.596
Advance source	0.0534***	-0.1101**	0.0480**	0.047	0.0138
	(2.79)	(-2.18)	(1.99)	(1.15)	(0.13)
N	55595	55595	55595	55595	55595
R-sq	0.830		0.123	0.887	0.596

Note: All countries included in the Export Dynamics Database with available data for the 2000–17 periodare included in the regression. ***p<0.01 level, **p<0.05, and *p<0.10. PPML = Poisson Pseudo Maximum Likelihood. Robust standard errors in brackets.

Table 4: Export premiums of exporter-importer in Argentina, by sector

	(1) log exp Exp-imp	(2) exp (PPML) Exp-imp	(3) log exp log(imports+1)	(4) exp (PPML) log(imports+1)	(5) log exp log N imported prod	(6) exp (PPML) log N imported prod	(7) log exp Advance source	(8) exp (PPML) Advance source
[01-05] Animal & Animal Products	4.155***	0.465***	0.387***	0.0856***	1.115***	0.0835*	6.700***	2.745***
	(37.23)	(2.77)	(31.53)	(3.00)	(30.72)	(1.85)	(59.85)	(15.60)
[06-15] Vegetable Products	1.803***	0.910***	0.204***	0.120***	0.401***	0.182***	4.194***	3.193***
	(22.79)	(7.48)	(19.39)	(4.29)	(15.32)	(4.96)	(52.84)	(23.63)
[16-24] Foodstuffs	3.253***	0.772***	0.309***	0.111***	0.828***	0.160***	5.660***	3.054***
	(43.63)	(6.29)	(30.16)	(4.03)	(34.08)	(4.37)	(81.49)	(23.42)
[25-27] Mineral Products	-1.294***	0.310*	-0.0103	0.0846***	-0.267***	0.0684	0.959***	2.586***
	(-13.10)	(1.94)	(-0.93)	(2.99)	(-9.84)	(1.59)	(10.38)	(15.01)
[28-38] Chemicals & Allied Industries	0.986***	-0.764***	0.147***	0.0234	0.272***	-0.142***	3.254***	1.515***
	(16.52)	(-6.08)	(15.32)	(0.84)	(14.39)	(-3.80)	(67.32)	(11.91)
[39-40] Plastics / Rubbers	-0.980***	-1.832***	0.0112	-0.0345	-0.187***	-0.315***	1.264***	0.442***
	(-18.97)	(-12.57)	(1.20)	(-1.23)	(-11.33)	(-7.65)	(34.00)	(3.07)
[41-43] Raw Hides, Skins, Leather, & Furs	-1.418***	-1.145***	-0.0382***	0.000759	-0.417***	-0.187***	0.795***	1.130***
	(-17.96)	(-6.08)	(-3.65)	(0.03)	(-16.78)	(-4.21)	(11.22)	(6.11)
[44-49] Wood & Wood Products	-2.232***	-2.273***	-0.0806***	-0.0623**	-0.524***	-0.386***		
	(-40.41)	(-13.96)	(-8.51)	(-2.18)	(-29.79)	(-8.73)		
[50-63] Textiles	-1.155***	-2.597***	-0.0161*	-0.0843***	-0.340***	-0.508***	1.069***	-0.325**
	(-18.60)	(-18.19)	(-1.66)	(-3.01)	(-17.54)	(-12.67)	(20.94)	(-2.31)
[64-67] Footwear / Headgear	-2.274***	-4.032***	-0.104***	-0.179***	-0.649***	-0.841***	-0.0691	-1.774***
	(-27.87)	(-14.99)	(-10.01)	(-5.79)	(-26.48)	(-12.27)	(-0.95)	(-6.61)
[68-71] Stone / Glass	-1.409***	-0.939***	-0.0242**	0.0138	-0.326***	-0.134***	0.824***	1.337***
	(-22.07)	(-5.07)	(-2.48)	(0.48)	(-16.59)	(-2.98)	(15.46)	(7.48)
[72-83] Metals	-0.707***	-1.159***	0.0288***	0.00878	-0.118***	-0.149***	1.538***	1.116***
	(-13.59)	(-6.63)	(3.08)	(0.30)	(-7.07)	(-3.41)	(40.41)	(6.29)
[84-85] Machinery / Electrical	1.100***	-1.849***	0.156***	-0.0399	0.340***	-0.329***	3.355***	0.424***
	(21.61)	(-14.48)	(16.64)	(-1.43)	(20.83)	(-8.64)	(88.58)	(3.33)
[86-89] Transportation	1.189***	0.955***	0.162***	0.120***	0.311***	0.177***	3.447***	3.232***
	(17.35)	(6.30)	(16.25)	(4.22)	(15.24)	(4.53)	(57.26)	(21.80)
[90-97] Miscellaneous	-0.254***	-3.019***	0.0536***	-0.109***	-0.0441***	-0.558***	1.988***	-0.746***
	(-4.84)	(-22.30)	(5.71)	(-3.89)	(-2.65)	(-14.00)	(50.99)	(-5.53)
N	158028	158031	142709	142709	142709	142709	142709	142709
R-sq	0.407		0.396		0.382		0.397	

Note: Robust t-statistics in brackets. ***, **, and * indicates statistical significance at the 1%, 5%, and 10% confidence levels, respectively.
The HS code groups are indicated with the industry name.

Appendix

Appendix A. Data Cleaning Procedures

Exporter-level data sets of each country (including Argentina) were subjected to uniform reformatting and to a series of cleaning procedures.[9] Firms are identified by their actual names, their tax identification number, or an artificial unique code randomly created by the local customs agency, which allows us to create a panel of firms for each country. For products, we use a time-consistent consolidated Harmonized System (HS) classification at the 6-digit level that concords and harmonized product codes across the HS 1996, 2002, and 2007 versions (used in the raw exporter-level data sets). Export values are Free on Board (FOB) figures measured in US dollars, converted from local currency to US dollars when necessary, using exchange rates taken from the IMF's *International Financial Statistics*.

Appendix B. Export Competitiveness Indicators

The indicators by country-year are built from country-firm-HS6 product-destination-year data and are defined as follows:

1. Number of exporters: total number of exporting firms in year t.
2. Average (median) size of exporter: Average (median) export value per exporter in current US dollars in year t.
3. Average number of destinations/products per exporter: Average number of destination/products served/exported per firm in year t, where products are defined according to the HS Classification at 6 digits whereby 4,767 products are available and destinations are 246 countries,

[9] All details on reformatting and cleaning are provided in Cebeci et al. (2012).

as described in Cebeci, Fernandes, Freund, and Pierola (2012).

4. Entrant = exporter in year t but not in $t-1$.

5. $Entry \;\; ratet = Entrants_t/number \;\; of \;\; exporters_t$, where $entrants_t$ is the number of exporters that are in the sample in year t but not in year $t-1$.

6. $Exit \;\; rate_t = Exiters_t/numberofexporters_t$, where $exiters_t$ is the number of exporters that are in the sample in year t but not in year $t+1$.

7. $Share \; of \; entrants_t = total \; export \; valueof \; entrants_t/total \; export \; value \; of \; exporters_t$, where $entrants_t$ is the number of exporters that are in the sample in year t but not in year $t-1$.

8. $One-year \;\; survival \;\; rate_t = Stayers_{t+1}/Entrants_t$, where $stayers_{t+1}$ is the number of exporters that entered in year t and did not exit in year $t+1$.

9. $Two-year \;\; survival \;\; rate_t = Stayers_{t+2}/Entrants_t$, where $stayers_{t+2}$ is the number of exporters that entered in year t and did not exit in year $t+1$ or year $t+2$.

The indicators by country-sector-year and by country-destination-year are calculated based on the formulas above, but doing the calculations considering the exporters in each sector and the exporters in each destination separately.

Appendix C. Countries Covered in the Export Dynamics Database

The database covers 70 countries across all geographic regions and income levels: Albania, Bangladesh, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cambodia, Cameroon, Chile, Colombia, Costa Rica, Côte d'Ivoire, Croatia, Denmark, Dominican Republic, Ecuador, the Arab Republic of Egypt, El Salvador, Estonia, Ethiopia, Gabon, Georgia, Germany, Guatemala, Guinea, the Islamic Republic of Iran, Jordan, Kenya, Kosovo, Kuwait, Kyrgyz Republic, Lao PDR, Lebanon, North Macedonia, Madagascar, Malawi, Mali, Mauritius, Mexico, Morocco, Myanmar, Nepal, New Zealand, Nicaragua, Niger, Norway, Pakistan, Paraguay, Peru, Portugal, Romania, Rwanda, São Tomé and Príncipe, Senegal, Slovenia, South Africa, Spain, Sri Lanka, Eswatini, Sweden, Tanzania, Thailand, Timor-Leste, Turkey, Uganda, Uruguay, the Republic of Yemen, and Zambia.