Spatial Exporters*

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Abstract

In this paper, we provide evidence that firms tend to serve new markets which are geographically close to their prior export destinations with a higher probability than standard gravity models predict. We quantify the impact of this spatial pattern using a data set of Chinese firms which had never exported to the EU, the United States, and Canada before 2005. These countries imposed import quotas on textile and apparel products until 2005 and experienced a subsequent increase in imports of previously constrained Chinese firms. Controlling for firm-destination specific effects and accounting for potential true state dependence we show that the probability to export to a country increases by about two percentage points for each prior export destination which shares a common border with this country. We find little evidence for other forms of proximity to previous export destinations, like

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common colonizer, language or income group, to matter for the export destination choice.

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JEL-Codes: F12, F13

1 Introduction

Firm exports exhibit a geographical pattern. Not only do different firms serve different numbers of countries but also the spatial distribution of those countries differs across firms. Standard gravity models predict that firms are more likely to export to larger countries and to countries that are closer to the country of origin of the firm. These standard gravity forces generate some degree of unconditional spatial concentration of export destinations of firms. Recently, the literature has highlighted that this observed spatial correlation is larger than what the standard gravity model would predict, a fact which has been labeled 'extended gravity' (see Morales et al., 2011, and Albornoz et al., 2012) or 'spatial exporters' (see Defever et al., 2011).

In this paper, we provide causal evidence for 'extended gravity' or 'spatial exporters', i.e. time-varying firm-specific heterogeneity in export destinations shaped by firms' previous export experience in spatially close countries. We take into account unobserved time-invariant heterogeneity at the firm-country level which may arise because firms can differ in their ability to serve specific markets, e.g. due to differences in language skills of their sales force. We also control for true state dependence at the firm-destination level which captures market-specific sunk costs of exporting (see Das et al., 2007). We show that the probability that a firm exports to a country increases by about 2 percentage points for each additional prior export destination with a common border with this country.

One reason for observing spatial exporter patterns may be the crucial need for gathering local information from trading partners over time. Different local information which has been acquired through previous export experience may then lead to different trade networks across firms.[1] When demand is

[1]For instance, an exporting firm may gain access to a new export market via a multinational retailer which already serves a third country. As the network of subsidiaries of wholesalers and of multinational firms tends to expand spatially (see Basker, 2005 and Defever, 2012), this mechanism also implies a spread of exports to contiguous countries. In addition to geography, cultural closeness can also generate a similar pattern through networks of ethnically related firms. For instance, networks may reduce search costs as firms may learn about potential suitable suppliers within their ethnic community (see for instance

uncertain but correlated across markets, firms may enter new destinations gradually to learn about profits in proximate markets from their previous export experience (see Albornoz et al., 2012; Nguyen, 2012). Also, when firms have to adapt products to specific markets, adaptation costs may be reduced if a firm already has entered markets which are relatively similar (see Morales et al., 2011). As a consequence, when trade barriers fall, firms will expand their export destinations not randomly but following a spatial pattern.

These channels highlight that one has to take into account two different aspects of the firm's problem: i) when to enter a new destination, and ii) where to go. When destination choices of a firm for different destinations are uncorrelated, the decision problem is simple: Every market entry decision can be analyzed on its own. Hence, the two problems of when and where to export can be separated.[2] However, if destination choices are correlated, these two decisions become intrinsically related. Empirically, this leads to a dynamic discrete choice problem. As explained by Morales et al. (2011), this problem is formulated in a straight-forward way theoretically but quickly leads to an empirically de facto unsolvable problem because it involves computing the expected profits for every possible combination of time paths of entries into destinations.[3] Complementary to the structural empirical approach suggested by Morales et al. (2011), we use reduced form regressions exploiting a quasi-

Rauch, 2001). Recently, Chaney (2011) has developed a model describing trade patterns as an international network. Firms tend to build on their network for finding new trading partners, similar to social interactions between individuals (see Jackson and Rogers, 2007).

[2]For instance, Das et al. (2007) structurally estimate the parameters of a firm's dynamic problem of when to start and stop exporting, irrespective of the specific export market choice.

[3]Therefore, Morales et al. (2011) do not solve this dynamic problem explicitly. Instead, they resort to moment inequality estimators to obtain bounds on the parameters of interest in their structural empirical model. Their estimates based on firm-level export data for Chilean manufacturing firms in the chemicals sector show that startup costs of accessing a new country are significantly determined by the countries to which a firm had previously exported. Albornoz et al. (2012) and Nguyen (2012) focus their analysis on the timing of entry only and assume a hierarchy between countries in terms of profitability and a constant correlation of profits across all export destinations. Together, these assumptions elude the question of where to go. Lawless (2013) shows that entry decisions of firms are correlated with their export status in previous geographically close export destinations. However, she does not control for true state dependence nor firm-specific country fixed effects as we do.

natural experiment.

We present evidence for 'spatial exporters' relying on the removal of binding import quotas under the MultiFiber Arrangement/Agreement on Textiles and Clothing (MFA/ATC) regime in 25 EU countries, the United States, and Canada in 2005 to study the export destination choice of a sample of Chinese textile and apparel exporters which never exported to these countries before 2005. This exogenous shock has generated a large entry of firms in a set of potential new destinations and a substantial redistribution of quota rents towards new entrants into these markets (see Khandelwal et al., 2013). We can then study firms' subsequent export destination choices in other countries which were not directly affected by the lifting of the MFA quotas. As the timing of the lifting of the MFA quotas was exogenous to the firms, it helps us to overcome the endogeneity problem introduced by the dynamic nature of the firm's export destination choice.

As a first step, we use the lifting of the MFA quotas as a quasi-natural experiment to study the export destination choice in non-MFA countries employing a differences-in-differences estimator where we define as the treatment group the countries which are contiguous to a previously restricted MFA country. In order to exploit all the available information about firms' export history (not only firms' experience in previously restricted MFA countries), we use the quasi-natural experiment as an instrument to study the effect of previous export experience of firms on subsequent destination choices. Finally, using a dynamic panel estimator, we account for the endogeneity, the persistence, and true state dependence in export destination choices.

Our empirical strategy gauges the relative importance of the time-varying cross-country correlation of a firm's export destination choices resulting from its export history due to both geographical proximity of previous export destinations as well as cultural closeness measured by common language, common colonizer, or similar income levels. As we use reduced form regressions we do not rely on a specific channel imposed by an underlying structural model. Rather, we quantify the effects of any correlation across destination markets resulting from a firm's export history on the probability to export to a specific

country, irrespective of whether it arises from the demand or supply side.

Our paper provides causal evidence of the spatial correlation of export decisions at the firm level that has been put upfront by recent theoretical developments on export dynamics (see Albornoz et al., 2012; Nguyen, 2012, Morales et al., 2011, and Chaney, 2011). It could also contribute to explain the pattern of zero bilateral trade flows observed empirically (see Evenett and Venables, 2002). Understanding exporting firm behavior is also crucial from a policy perspective. If across-country path dependence in firm destination choices is important, it also has ramifications for trade liberalization policies. Then, reducing trade barriers between two countries can lead to more trade with other countries nearby than standard gravity forces would predict, even though they did not lower their trade barriers. This gives rise to externalities across countries.[4] Therefore, our research highlights an additional reason for potential efficiency increases in trade liberalization through policy coordination between countries.

The remainder of the paper is organized as follows: Section 2 describes the data set and our identification strategy. Section 3 presents our baseline empirical results. We start with a differences-in-differences (diff-in-diff) approach which investigates the impact of the lifting of the MFA quotas on the probability of exporting to countries which are contiguous to a previously restricted MFA country. We then investigate the impact of actual export experience in previous markets on a firm's destination choice. As our regressor of interest in the latter specification is potentially endogenous, we present instrumental variable regressions where we use the lifting of the MFA quotas as an instrument. Finally, we present dynamic panel specifications which use an alternative set of internal instruments to control for our potentially endogenous regressor of interest as well as the endogenous lagged dependent variable. Section 4 presents

[4]For instance, Borchert (2008) finds that the growth of Mexican exports to Latin America was higher for products with a large reduction in the preferential U.S. tariff under NAFTA. Similarly, Molina (2010) identifies a strong positive effect of RTAs in promoting exports outside the bloc of liberalized countries. While it is difficult to explain these findings with standard trade models, they can easily be rationalized in the presence of firm-specific cross-country correlations in export destination choices.

evidence at the firm-product-couple level. Section 5 presents robustness checks with respect to including lagged export values, competitor's success, excluding trade agents, state owned firms, foreign owned firms or processing trade firms. The last section concludes.

2 Data and identification

2.1 Sample and dependent variable

To investigate the importance of spatial exporters, we use transaction level customs panel data on the universe of Chinese exporters for the years 2000 to 2006. We only keep products which fall in the Harmonized System (HS) chapters of textile and clothing products, i.e. chapters 50 to 63, as these are the products covered by the MFA regime. We aggregate all transactions of a firm in a country in one year into one observation. The sample is restricted to continuous exporters, i.e. firms that export at least to one country every year.[5] Specifically, we investigate the export destination choice between 150 non-MFA member countries of firms which did not export in any of the MFA restricted countries during the years 2000 to 2004.[6] Hence, our sample includes both firms that enter the MFA member countries after 2004 as well as those who export to other countries between 2000 and 2006. Overall, our sample is composed of 1,295 continuous exporters which never entered the MFA restricted countries before 2005.

Our dependent variable is the firm specific vector of export status $\mathbf{y}_{it} = (y_{i1t}, \ldots, y_{ijt}, \ldots, y_{i\mathcal{J}t})$ which indicates whether a firm i exports to a specific destination j in year t, which also defines the unit of observations. $\mathcal{J}$ is the number of non-MFA countries in our sample. In Table **??** we present the descriptive statistics for our dependent variable.[7] 1.2 percent of our observed

[5] This allows us to abstract from selection into exporting at the firm-extensive margin. See Das et al. (2007) for a structural model of selection into exporting.

[6] The previously restricted MFA countries are the 25 EU countries as of 2005, the United States, and Canada. A comprehensive list of all non-MFA countries in our sample can be found in Appendix **??**.

[7] As we use two lags in our dynamic panel specifications and have to skip one additional

destination choices turn out to be positive. Hence, serving a foreign market is a rare event.

2.2 Identification strategy

Under the MultiFiber Arrangement/Agreement on Textiles and Clothing (MFA/ATC) regime, restrictions were upheld on many products even after China acceded to the WTO on December 11th, 2001. On January 1st, 2005 the removal of import quotas lead to the entry of a large number of firms in the then 25 EU countries, the United States, and Canada.[8] Figure 1 shows the average number of exporters into these markets across all restricted HS-6 products. While around 100 to 150 firms had been exporting a restricted MFA product while the import restrictions were still upheld, this number jumped to more than 300 in 2005.

One possible reason behind the large and rapid entry of firms into MFA countries in 2005 can be seen in the fear that safeguard mechanisms could potentially re-introduce quotas. Actually, the EU countries, the United States, and Canada had product-specific safeguard mechanisms which were not phased out until 2008. The possible use of these safeguard measures was likely and it was unclear which products would be affected. This is corroborated by Figure 1 which shows that the average number of exporters across products did not increase in 2006 so that there is no evidence of a gradual entry of firms into the previously restricted MFA countries, at least on average. This can be explained by the new and transitional license system for textile exports that has been reintroduced in 2005 by the Chinese government. The intention was to limit the growth of Chinese exports of MFA products for the years 2006 to 2008. Looking back, the restrictions imposed in 2005 were by and large ineffective. However, the new restrictions had an impact on the growth of Chinese textile exports for 2006 to 2008.[9]

lag in order to ensure exogeneity of the instrument with the second lag, we use four years for all our specifications for comparability.

[8] See Harrigan and Barrows (2009), Brambilla et al. (2010), Upward et al. (2011), and Khandelwal et al. (2013).

[9] China and the EU agreed in June 2005 to re-impose quotas on some products. Despite

The lifting of the MFA quotas in 2005 exogenously changed the potential profitability of exporting to the previously restricted MFA countries. New entrants could reap part of the quota rents which previously accrued to those firms with an export license, leading to the increase in the number of firms in the EU, the United States, and Canada. If firms are 'spatial exporters', this change should have influenced the subsequent export destination choices in non-MFA countries. The same firms which quickly entered the previously restricted MFA countries *for the first time* could then potentially learn about other profitable export opportunities in countries which are geographically or culturally related to the previously restricted MFA countries.

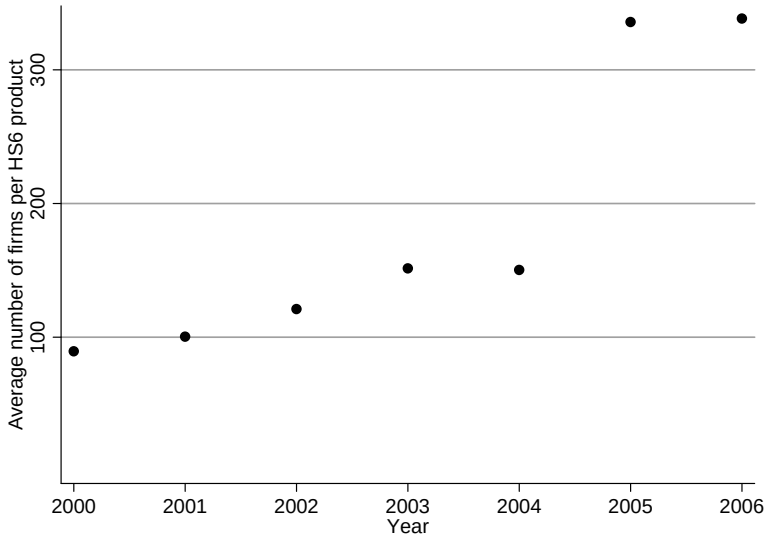
3 Specifications

We have now described our identification strategy in general terms. It is compatible with several complementary empirical specifications which rely on different assumptions about the data-generating process. Specifically, we will use a differences-in-differences (diff-in-diff) strategy, (panel) instrumental variable regressions and dynamic panel estimations. This multitude of specifications provides robust evidence for spatial exporters. We will next discuss in turn our specifications and the corresponding results.

3.1 Differences-in-Differences

Viewing the removal of the quota restrictions as a quasi-natural experiment, it seems natural to start with a differences-in-differences (diff-in-diff) specification.

the implementation of a new license system China did not restrict the number of the licenses nor the volume of exports. As a reaction, EU retailers ordered large amounts of Chinese textile products before the quota implementation. Only two months after the signing of this agreement import quotas were exhausted and 75 million items of textile and clothing products were stuck in European ports (see Brambilla et al., 2010; Buckley, 2005, and Wikipedia, 2013). A diplomatic solution was reached at the beginning of September 2005 putting an end to a situation the UK press called the "Bra Wars" (see e.g. White and Gow, 2005 and Wikipedia, 2013).



Notes: Yearly average number of firms exporting to one EU country, the United States or Canada for HS 6-digit products for which the quota fill rate was higher than 90 percent.

Figure 1: Average Number of Exporting Firms to one EU Country, the United States or Canada per Restricted MFA 6-Digit Product

MFA restrictions were removed January 1st, 2005. This lifting opened up new potential export markets but was not influenced by the decisions of individual firms and thus exogenous at the firm level. Beginning from this date, firms in our sample were able to enter the previously restricted MFA countries for the first time. There they could potentially acquire information about contiguous export markets. Therefore, firms should export more to destinations which are contiguous to MFA countries after the removal of the MFA restrictions. Hence, our treatment indicator C_j is defined at the country-level.[10] It is a dummy variable indicating whether a country j is contiguous to a MFA-restricted country. This also renders our treatment exogenous to the firm's choices, as the set of MFA restricted countries is the same for all firms. Similar to Morales et al. (2011), we assume a one year lag to quantify 'spatial exporters', reflecting the fact that the learning or product adaptation processes of the firm take time. Hence, we define the year 2006 as our post-

[10]We therefore use standard errors clustered at the country-level following the recommendation for differences-in-differences estimates by Bertrand et al. (2004).

treatment period. $y2006_t$ is the corresponding dummy variable for the year 2006. The treatment effect, δ, measures whether firms export more frequently to countries that are contiguous to previously restricted MFA countries in 2006 and is captured by the interaction term of $y2006_t$ and C_j.

Specifically, our first empirical specification is therefore given by

$$y_{ijt} = \delta(y2006_t \times C_j) + \theta_{ij} + \theta_t + \epsilon_{ijt}, \tag{1}$$

where y_{ijt} is a dummy variable indicating whether a firm i exported to country $j \in \mathcal{J}$ in year t, where $\mathcal{J}$ is the set of non-MFA countries. We also introduce θ_{ij}, a firm-destination fixed effect, and θ_t, a year fixed effect. ϵ_{ijt} is a remainder error term. Note that this regression is equivalent to a diff-in-diff specification as the year and firm-destination fixed effects control for the treatment period as well as the treatment group dummies. We estimate specification (1) with ordinary least squares which leads to a linear probability model due to our binary dependent variable.[11]

The firm-destination fixed effects capture all country-firm characteristics that do not change over the considered time period. This includes time-constant destination-specific variables generally known to influence bilateral trade flows from the gravity literature such as market size, overall remoteness of a country (multilateral resistance terms), and trade costs. Crucially, it also controls for time-constant firm-specific heterogeneity such as productivity, quality, labor costs, and assortative matching of workers. For example, a firm might employ managers with specific language skills which influence the firm's export destination choice.[12] θ_t captures the general time trend in the

[11] As we are only interested in average effects and not in predictions for individual firms and given the high number of fixed effects, we stick to the linear probability model, see Winkelmann and Boes (2009). As we also control for lagged endogenous variables in later specifications, we can extend our regression framework by using a linear dynamic panel estimator in a straight-forward way, simplifying the interpretation and comparison of results across our different specifications.

[12] In a strict sense, some gravity variables will change over time (such as market size and the multilateral resistance terms). However, note that we only consider one post-treatment year (2006). Hence, to bias our results the gravity variables would have to be considerably different in 2006 and at the same time this change would have to be correlated according to

empirical probability of exporting to a country.

We expect δ to be positive if firms are spatial exporters. δ is identified by firms which start to export to a country in 2006 which is contiguous to a MFA-restricted country. A positive effect can stem from two sources: 1.) A country j which is contiguous to a previously MFA-restricted country now is more attractive as a potential export destination as firms can now reap, in addition to the direct profits of selling in j, the expected profit from gaining some information about the previously restricted MFA countries themselves, *irrespective of whether the firm has exported to a MFA-restricted country or not*. 2.) Firms which actually did export to a MFA-restricted country in 2005 *for the first time* and gained knowledge about potential business opportunities in contiguous country j. We disentangle these two sources in our alternative empirical specifications presented in Sections 3.2 to 3.4. Note that firms which stop exporting to country j in 2006 decrease the estimate of δ (and may even render the coefficient negative).

Table 1 reports estimates of the diff-in-diff specification as given in equation (1). Specifications I to VI give the estimated treatment effects for exporting to a contiguous MFA country one year after the lift of the quota restrictions for different definitions of contiguity. A firm's destination choice can be correlated not only in markets which are geographically proximate to its previous export destinations but also in markets which share some other form of closeness. Specifically, we define contiguity according to whether the countries share a common border, a common language, a common colonizer, a common income group, or are located on the same continent using data provided by CEPII, see Mayer and Zignago (2011). Therefore, our concept of space is general and can refer to geographic as well as cultural cross-country correlation in export destination choices.

Appendix **??** gives a detailed description of the construction of our contiguity variables. Table **??** contains summary statistics for all variables. In our sample, e.g. 1.2 percent of all observations are countries which share a common border with an export destination of the same firm the year before.

the same spatial pattern as our treatment.

Looking at specification I, contiguity is defined according to whether countries share a common border. The coefficient estimate of 0.003 implies an average increase of 0.3 percentage points in the probability of choosing a new export destination that is contiguous to a previously restricted MFA country in 2006. This effect may sound small. We therefore compare this marginal effect to the observed empirical probability of a firm exporting to a particular country in our sample reported. We report these empirical probabilities in Table **??**. For example, this implies about a 14 percent (0.003/0.022) increase in the probability of a firm exporting to Russia in 2006, as Russia shares a common border with Finland, an MFA country.[13]

Specifications II to V run separate regressions where we construct our contiguity measure according to whether countries share the same language (specification II), whether countries have common colonial ties (specification III), whether countries are in the same income group (specification IV), or whether countries are located on the same continent (specification V). Evidently, especially space in the geographic sense (common border and common continent) plays a significant role in firms' export location choice. We do not find evidence for other definitions of contiguity, like common language, common colonizer or common income group, as important determinants for spatial exporters.

In column VI, we include all different contiguity measures at the same time to gauge the relative importance of the different measures. The marginal effects are hardly affected by conditioning on all other contiguity measures. Also the significance stays by and large the same. This hints at the orthogonality of the different contiguity measures and lends credibility to the treatment effects given in columns I to V.

In the specification given in equation (1) we do not condition on whether

[13]Note that we do not compare our estimates to the unconditional observed frequency of exporting to a country (the mean of our dependent variable, 0.012), as this frequency ignores the spatial correlation of exports due to standard gravity forces such as country size and distance between origin and destination countries. Russia is the first country in our list of most frequent export destinations which shares a common border with an MFA country. Also note that the empirical probabilities given in Table **??** are slightly different to those reported in Table **??** as we use all years in our regression data set to calculate the empirical probabilities.

Table 1: Diff-in-Diff

	I	II	III	IV	V	VI
$y2006_t \times C_j$ defined according to...						
common border	0.003***					0.002***
	(0.001)					(0.001)
common language		0.000				0.000
		(0.000)				(0.000)
common colonizer			-0.001			-0.000
			(0.000)			(0.000)
common income group				-0.000		-0.000
				(0.000)		(0.000)
common continent					0.001***	0.001**
					(0.000)	(0.000)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the country level to take into account that the regressor only varies at the country level following the suggestion for differences-in-differences estimates by Bertrand et al. (2004). *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

the firm has exported to a previously restricted MFA country. Hence, we identify a combination of the effects 1.) and 2.) mentioned before. Whereas 1.) increases the profitability of a destination only due to the option value of going to a MFA restricted country and therefore for all firms in our sample without any action from the firm[14], 2.) directly measures actually occurred spatial exporting only for firms that did export to an MFA restricted country first and afterwards to a contiguous one.

While Table 1 provides a first step towards evidence for spatial exporters, an interesting question is to identify how past learning from a country for the first time affects future export decisions, i.e. focus on the second source from above. This is what we do next.

3.2 Fixed effects regression taking into account firm-level history

Until now, we only focused on those countries which were contiguous to previously restricted MFA countries and neglected the impact of a firm's previous export history. In order to capture spatial exporting which takes into account firm-level history, we construct our contiguity measure, $N_{ij,t-1}$, which measures the number of countries which are contiguous to country j and to which firm i has exported in $t-1$ for each firm i and destination j.[15] As the set of the previous export destinations is firm-specific, so are the contiguity variables. Specifically, $N_{ij,t-1} = \mathbf{w}_j' \mathbf{y}^*_{i,t-1}$, where $\mathbf{y}^*_{i,t-1}$ is the $(\mathcal{N} \times 1)$ vector of the export indicators for firm i in $t-1$ whose typical element $y_{i\ell,t-1}$ is 1 if firm i exported to country ℓ in year $t-1$, and zero otherwise. For the construction of our explanatory variable, $N_{ij,t-1}$, we use a set of $\mathcal{N} = 177$ countries, *including* the previously restricted MFA countries. In our regression sample, however, we continue to investigate the choice between $\mathcal{J} = 150$ non-MFA countries as in the previous section. $\mathbf{w}_j$ is the jth row of $\mathbf{W}$, a $(\mathcal{N} \times \mathcal{N})$ contiguity matrix.

[14]Note that this effect is heterogeneous across firms as it depends on a firm's export history.

[15]Note that for this specification, we do not exploit the quasi-natural experiment of the lifting of the MFA quota restrictions. We will use it again in Section 3.3.

The typical entry $w_{\ell m}$ of $\mathbf{W}$ is 1 if countries ℓ and m are contiguous, and zero otherwise.[16]

As with C_j, we measure $N_{ij,t-1}$ by defining contiguity in terms of the countries sharing a common border, sharing a common language, sharing a common colonizer, being in a common income group, or being located on the same continent. For example, $N_{ij,t-1} = 2$ measured in terms of common border means that for firm i, country j shares a common border with two countries to which firm i has exported in $t-1$.

To take into account whether a firm actually has exported to a country in the previous year, we run the following regression:

$$y_{ijt} = \delta \mathbb{I}(N_{ij,t-1} > 0)_{ijt} + \theta_{ij} + \theta_t + \epsilon_{ijt}, \tag{2}$$

where $\mathbb{I}$ is the indicator function taking value one if $N_{ij,t-1} > 0$. In this regression, δ now quantifies the effect of actual experience in a previous export destination on future export decisions to contiguous countries. We expect δ to be positive if previous export experience from contiguous countries matters. Note that in contrast to $y2006_t \times C_j$, $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ varies at the firm-level.

Table 2 gives the result for specification (2) and is organized in the same way as Table 1. Column I shows that the probability of exporting to a country increases by 1.4 percentage points if the firm previously exported to an export destination with a common border. Is this effect large or small? We again compare this marginal effect to the empirical probability of a firm exporting to a particular country in our sample reported in Table **??**. Given these empirical probabilities, this implies e.g. a 20 percent increase in the probability of a firm exporting to Singapore when it has previously exported to Malaysia.[17] This

[16] In principle, one could also think about using $\mathbf{y}_{i,t-1}^{MFA}$ to construct $N_{ij,t-1}$, whose dimension is $(\mathcal{N} \times 1)$ and whose typical element $y_{i\ell,t-1}^{MFA}$ is 1 if firm i exported to country ℓ in $t-1$, and this country is an MFA country, and zero otherwise. By using $\mathbf{y}_{i,t-1}^{*}$ instead of $\mathbf{y}_{i,t-1}^{MFA}$ to construct $N_{ij,t-1}$, we also count previous export destinations of a firm which are not previously restricted MFA countries. We reran all our specifications using this alternative regressor but results hardly changed. Note, however, that focusing on $\mathbf{y}_{i,t-1}^{MFA}$ would potentially bias our coefficient estimates as $\mathbf{y}_{i,t-1}^{MFA}$ sets all those elements of $\mathbf{y}_{i,t-1}^{*}$ equal to 0 which identify positive non-MFA country export flows.

[17] Note that Japan and South Korea, our most frequent export destinations, do not have

effect is larger than the effect identified in Table 1 because we now focus on source 2.), i.e. the effect of actual export experience in contiguous countries.

Again, the effect of sharing a common border is the largest and most significant effect. Also sharing a common language or colonial ties are significant, albeit with smaller magnitudes. For example, the probability of exporting to Australia increases by about 4 percent (0.002/0.054) if the firm has previously exported to Great Britain (or some other English-speaking country). Similarly, the probability of exporting to India increases by about 11 percent (0.002/0.019) if the firm has previously exported to Great Britain with which it shares a language. In column VI we again find that effects are quantitatively very similar when conditioning on all different dimensions of spatial exporters jointly.

Similarly, we can also estimate the impact of an increase in the number of previous contiguous export destinations by omitting the indicator function from equation (3), i.e.:

$$y_{ijt} = \delta N_{ij,t-1} + \theta_{ij} + \theta_t + \epsilon_{ijt}. \tag{3}$$

Table 3 reports the estimates. Results are virtually unchanged, with sharing a common border remaining the regressor with the largest point estimate. The slight change in the specification implies that the probability of exporting to a country that shares a common border with a previous export destination increases by 1.2 percentage points if the firm actually exports to one additional contiguous country in the previous year.

A problem of regressions (2) and (3) is that, contrary to regression (1), now the regressor of interest is potentially endogenous as firms may anticipate that they may learn from previous export destinations and potentially choose their export destinations accordingly. We will therefore present (panel) instrumental variable regressions in the next subsection.

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a common border with any country (the Democratic People's Republic of Korea is not included in our data set). We therefore chose Singapore, the third most frequent export destination. Malaysia shares a common border with Singapore.

Table 2: Fixed Effects Regression Taking into Account Firm-Level History—Dummy

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.014***					0.014***
	(0.003)					(0.003)
common language		0.002***				0.002***
		(0.001)				(0.001)
common colonizer			0.002**			0.001
			(0.001)			(0.001)
common income group				0.001		0.000
				(0.001)		(0.001)
common continent					0.001	-0.000
					(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

Table 3: Fixed Effects Regression Taking into Account Firm-Level History—N

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.012***					0.010***
	(0.003)					(0.003)
common language		0.001**				0.000
		(0.001)				(0.000)
common colonizer			0.003***			0.002*
			(0.001)			(0.001)
common income group				0.002**		0.001
				(0.001)		(0.001)
common continent					0.001*	0.000
					(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

3.3 Instrumental variable regressions

In order to account for the potential endogeneity of our regressor $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$, we instrument it by the exogenous regressor of interest from regression (1), $y2006_t \times C_j$, which is 1 for countries that are contiguous to previously restricted MFA countries in 2006, and zero otherwise. The exogeneity of our instrumental variable is again justified by the fact that the instrument is a country-specific variable and is not influenced by firm decisions. Still, our instrument is relevant as the instrument and the potential endogenous regressor are correlated by construction: C_j indicates countries contiguous to (previously) MFA restricted countries and $N_{ij,t-1}$ is positive if a firm exports to at least one country. As the MFA restricted countries in sum make up a large share of the world market, it is very likely that $N_{ij,t-1} > 0$ if $C_j = 1$. In addition, the regression results from the diff-in-diff specifications clearly show the relevance of the proposed instrument. For our estimation, we use the two-stage least-squares within panel instrumental variables estimator which includes the full set of firm-country fixed effects as used in the previous specification.

Comparing the results from Table 2 which assumes that $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ is exogenous with the instrumental variable regressions that allow $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ to be endogenous given in Table 4 shows that there is no qualitative change in our results. However, the size of the effect of contiguity is approximately seven times larger. Again, sharing a common border has the largest effect (point estimate of 0.104) and only the geographical contiguity measures turn out to be statistically significant. Results also remain largely unchanged when including all contiguity measures simultaneously (see column VI in Table 4).

Table 5 reproduces Table 3 but instruments $N_{ij,t-1}$ with $y2006_t \times N_j$, which counts the number of countries that are contiguous to previously restricted MFA countries in 2006, and is zero otherwise.[18] Comparing results shows that

[18] We use $y2006_t \times N_j$ as this has the same kind of variation at the country level as our potentially endogenous regressor, $N_{ij,t-1}$. In principle, we could also again instrument by $y2006_t \times C_j$, or even use $y2006_t \times N_j$ in our diff-in-diff specification. These choices hardly matter for our results. These estimates are available from the authors upon request.

Table 4: Instrumental Variable Regressions—Dummy

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.104***					0.089**
	(0.029)					(0.045)
common language		0.004				0.005
		(0.004)				(0.012)
common colonizer			-0.128			-0.008
			(0.833)			(0.768)
common income group				0.043		0.154
				(0.280)		(0.364)
common continent					0.009***	-0.001
					(0.002)	(0.033)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). We use the two-stage least-squares within panel instrumental variables estimator where we instrument the endogenous regressor by $y2006_t \times C_j$. Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

the effects of geographical contiguity (common border and common continent) are about seven times larger. Hence, our estimate in specification I implies that the probability of exporting to a country that shares a common border with a previous export destination increases by 8 percentage points if the firm actually exports to one additional contiguous country in 2005.[19]

Even though we rely on panel data for our regressions so far, we have, until now, ignored the persistence and state dependence in the export status of firms. We turn to this issue in the next section.

3.4 Dynamic panel results taking into account state dependence

At least since Roberts and Tybout (1997) and Das et al. (2007) it is well known that whether a firm has exported in the previous period is highly correlated with its current export status. This evidence is provided at the firm level, irrespective of the variation of export destinations within a firm across time. Hence, it is based on persistence at the firm level export status, not at the firm-destination level. In principle, it is possible that this persistence is also evident at the firm-destination level. And indeed in our data set, the correlation between our dependent variable and its one year lag is 0.75.

One can distinguish between two major sources of this observed persistence. First, there maybe some unobserved time-invariant firm-destination component which determines whether a firm enters a specific destination. Second, there can be true state dependence, i.e. the previous export history of a firm in a specific country drives future export destination choices. In other words, export history in export destination choice matters.

Whereas the first persistence is captured in our specification by the firm-

[19] We also experimented with the year 2004 and 2005 to construct our instrument, finding similar but larger effects. The estimate for common border for defining the treatment period to begin in the years 2004 and 2005 are 0.311 and 0.225 for $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ and 0.268 and 0.187 for $N_{ij,t-1}$, respectively. This is consistent with the argument that by focusing on previous years, we would get an upward biased estimate of the effect of contiguity as exporting to contiguous countries would be confounded by other reasons. By using the lifting of the MFA restrictions, we likely minimize these other effects.

Table 5: Instrumental Variable Regressions—N

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.080***					0.075***
	(0.029)					(0.028)
common language		-0.000				0.002
		(0.001)				(0.002)
common colonizer			-0.027			-0.016
			(0.057)			(0.100)
common income group				-0.003		-0.004*
				(0.002)		(0.002)
common continent					0.005***	0.003
					(0.001)	(0.003)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). We use the two-stage least-squares within panel instrumental variables estimator where we instrument the endogenous regressor by $y2006_t \times N_j$. Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

destination fixed effect θ_{ij}, we did not properly account for potential true state dependence in our estimations so far. As has been demonstrated by Nickell (1981), fixed effect estimators are biased in the presence of true state dependence. How does this affect our estimates? In our setting, consider a firm which exports to both Singapore and Malaysia in 2005 and 2006. Then, when not including lags of the dependent variable, our regressor of interest explains the firm's exporting behavior in Malaysia by its previous export experience in Singapore and vice versa.[20] To control for this confounding factor, avoid the Nickel bias, and account for the high persistence in our dependent variable, we employ the dynamic panel estimator from Blundell and Bond (1998).

Specifically, our dynamic panel specification including lags of the dependent variable is given by

$$y_{ijt} = \phi_1 y_{ij,t-1} + \phi_2 y_{ij,t-2} + \delta \mathbb{I}(N_{ij,t-1} > 0)_{ijt} + \theta_{ij} + \theta_t + \epsilon_{ijt}. \tag{4}$$

We include two lags of the dependent variable as Roberts and Tybout (1997) show that typically two lags have a significant and decaying impact on the export decision of a firm.[21]

Table 6 presents our dynamic panel estimates for specification (4), i.e. using dummy variables to indicate contiguity between a destination and previous export destinations. The table is organized in the same way as the previous tables but includes also the estimates for the two lags of the dependent variable. As can clearly be seen, we find true state dependence in all our specifications even at the firm-destination level. Our result that sharing a common border is the largest and most significant contiguity effect is corroborated by the dynamic panel estimates. Note that the dynamic panel estimator allows us to treat our contiguity variable as predetermined, consistent with the fact that

[20] Note that for firms which continuously export to both destinations in all years included in the sample, this will be captured by the firm-destination fixed effects. However, firm-destination fixed effects will not cover this persistence for intermittent exporters.

[21] While most applications of dynamic panel estimators only include one lag, Cameron and Trivedi (2005) show that the dynamic setting can easily be extended to more lags. We also experimented with including only one lag. However, these specifications where clearly rejected by model specification tests such as the autocorrelation tests or Sargan test.

lagged values of our regressor of interest can not be changed by the firm in the current period but future values may be adjusted by the firm, as stressed by the mechanisms in Morales et al. (2011), Albornoz et al. (2012), and Nguyen (2012). Sharing a common language, colonial ties or being in the same income group are all significant but have smaller effects than common border.

Column VI presents results when we include all regressors at the same time. Sharing a common border still has a similar impact on the probability of exporting to a country compared to the specification in column I. The same holds for the two countries sharing a common language or being in the same income group. Interestingly, sharing a common colonizer has a significant and positive effect in column III. This effect vanishes, however, in column VI. Being on the same continent even turns out to have an albeit small but significantly negative effect. Note, however, that a country which is located on the same continent very likely also shares a common border or a common language with a previous export destination. In other words, there is a high correlation between our different contiguity measures conditioning on true state dependence and firm-destination fixed effects. We again compare our estimated marginal effect to the empirical probability of a firm exporting to a particular country from Table **??**. Given the empirical probabilities, this implies e.g. a 33 percent (0.023/0.070) increase in the probability of a firm exporting to Singapore when it has previously exported to Malaysia.

We use the Sargan test and a test for the first and second order autocorrelation of the residuals to test our specifications. The bottom three lines of Table 6 report p-values of the respective tests. While we find evidence for first order autocorrelation in the residuals across all specifications, we do not find evidence for second order autocorrelation, implying that the moment conditions used for the dynamic panel estimator are valid. We re-run our model assuming homoskedastic error terms in order to calculate a Sargan overidentification test, as this test is only valid under homoskedasticity. In most specifications also the Sargan test does not reject our model specification. Only in specifications VI the Sargan test rejects the validity of our internal instruments. Overall, our results suggest a proper model specification.

Table 6: Dynamic Panel Estimates—Dummy

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.024***					0.023***
	(0.004)					(0.004)
common language		0.003***				0.003***
		(0.001)				(0.001)
common colonizer			0.003***			0.001
			(0.001)			(0.001)
common income group				0.003***		0.002***
				(0.001)		(0.001)
common continent					-0.001	-0.005***
					(0.001)	(0.001)
$y_{ij,t-1}$	0.344***	0.344***	0.343***	0.343***	0.344***	0.347***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
$y_{ij,t-2}$	0.077***	0.078***	0.076***	0.078***	0.076***	0.074***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.821	.822	.889	.803	.929	.950
Sargan	.383	.604	.170	.406	.061	.008

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

We again can use the number of contiguous export destinations as an alternative regressor. Hence, the dynamic panel specification in this case is given by

$$y_{ijt} = \phi_1 y_{ij,t-1} + \phi_2 y_{ij,t-2} + \delta N_{ij,t-1} + \theta_{ij} + \theta_t + \epsilon_{ijt}. \tag{5}$$

Results, which are reported in Table 7, are hardly affected by this different measure of contiguity. Again, we find strong evidence for true state dependence, and again sharing a common border has the largest impact on the destination choice. Our specification tests for first and second order autocorrelation again do not invalidate our regressions. However, the Sargan test does reject the validity of our internal instruments in specifications IV-VI. Note however, that this test is only valid under homoskedastic errors, which is normally violated in trade data (see for example Santos Silva and Tenreyro, 2006).

4 Multi-product firms

Until now our analysis considered an export destination as contiguous if the firm previously exported any product to a contiguous market. It is well known that a substantial fraction of firms produce and export multiple products, and that multi-product firms make up for the majority of sales in a given industry, see Arkolakis and Muendler (2010) and Bernard et al. (2010). In our sample, 56 percent of firms export in more than one HS-6 product category. If there exists within-firm correlation of export destination choices between products, then a firm may enter a new export market with a product when it has previously sold a different product in a contiguous market.

There are both supply and demand side reasons which can explain this type of economies of scope. When costs for product adaptation are lower for other products within a firm once they have been incurred for a specific market and product, the additional cost of adapting the product for a similar market may be lower. In addition, when a firm sells its products under a single brand

Table 7: Dynamic Panel Estimates—N

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.023***					0.013***
	(0.004)					(0.004)
common language		0.002***				-0.001**
		(0.000)				(0.000)
common colonizer			0.004***			0.000
			(0.001)			(0.001)
common income group				0.006***		0.005***
				(0.000)		(0.001)
common continent					0.004***	0.002***
					(0.000)	(0.000)
$y_{ij,t-1}$	0.344***	0.348***	0.343***	0.338***	0.342***	0.356***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
$y_{ij,t-2}$	0.077***	0.081***	0.079***	0.081***	0.084***	0.098***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.825	.673	.738	.582	.535	.212
Sargan	.346	.057	.081	.010	.003	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

in order to benefit from brand loyalty of consumers, successful exports in one product category provide information about likely profitable exports across the whole product mix of a firm's brand.

To take into account these effects, we modify our dynamic panel specification given in equation (4) as follows:

$$\begin{aligned} y_{ijt} = \quad & \phi_1 y_{ij,t-1} + \phi_2 y_{ij,t-2} + \delta_1 \mathbb{I}(N_{ij,t-1}^{sameproduct} > 0)_{ijt} \\ & + \delta_2 \mathbb{I}(N_{ij,t-1}^{otherproducts} > 0)_{ijt} + \theta_{ij} + \theta_t + \epsilon_{ijt}, \end{aligned} \tag{6}$$

where i now denotes the firm-product couple at the HS6-digit product category and no longer a single firm, and where $N_{ij,t-1}^{sameproduct}$ is the number of contiguous export destinations where the firm has exported the same product before and $N_{ij,t-1}^{otherproducts}$ is the number of contiguous export destinations where the firm has previously exported products from other HS-6 digit categories. Note that θ_{ij} now captures all unobserved time-invariant firm-product-destination characteristics.

As we now focus on firm-product couples, we use all firm-product couples which have never entered the previously restricted countries before 2005. In our sample, there are 6,573 firm-product couples of 1,965 firms, implying that a firm exports about 3.3 products on average.[22] In our previous regression, we kept only those firms that never exported any product into the previously restricted MFA countries. As firms may have entered into the previously restricted MFA countries only with a subset of their products, we now keep all other firm-product couples where we do not observe exports into the previously restricted MFA countries before 2005. Hence, there are more firms in our multi-product sample than in the previous regressions.[23]

In Table 8, we present the results for the multi-product specification. Even at the firm-product couple level, we find a very similar pattern of true state

[22]Descriptive statistics of the firm-product couple level data set can be found in Table **??** in the Appendix.

[23]Imagine a firm which has exported panties to an MFA country in 2004 but not bras. In our firm level regressions, this firm is dropped from the sample. However, in our multi-product regressions we will keep the bra observations.

dependence in the export status with significant but decaying effects of the two lags of the dependent variable. Overall we find hardly any evidence that exporting to a country is more likely after a previous entry into contiguous export destinations across products, the only exception being the common border coefficient in specifications I and VI. We find that the probability of choosing a country increases by 1.8 percentage points when a firm previously has exported the same HS-6 product to a contiguous country, and by 0.2 percentage points if it has exported other HS-6 products. For the other contiguity measures, our results indicate no (economically) significant effect of across product learning for sharing a common language with at least one previous export destination or being in the same income group. Interestingly, we find small significant negative effects for common colonizer and common continent. This may hint at a potential for diversification in a firm's export portfolio by selling different products to different contiguous countries when they share a colonial past or are located on the same continent. Note that our results for the same HS-6 product are in line with the effects found at the firm-level in Section 3.4. As found in the firm level regressions, when including all different contiguity measures at the same time, we find very similar marginal effects (see specification VI).

Concerning the specification tests, we find that the tests for autocorrelation in the disturbances in first differences indicate a well-specified model. However, contrary to the firm-level regressions, the Sargan test now rejects the validity of the overidentifying restrictions. Remember, however, that this test assumes homoskedasticity and that the total number of observations has increased by a factor of more than five. With nearly four million observations based on 6,573 firm-product couples, the amount of heteroscedasticity is substantially higher by construction as compared to the firm-level regressions. This may very well explain the rejection of the overidentifying restrictions by the Sargan test based on the assumption of homoskedasticity.

In Table 9 we present multi-product regressions with the number of con-

Table 8: Multi-Product Firms: Dynamic Panel Estimates—Dummy

		I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1}>0)_{ijt}$ defined according to...							
common border	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$	0.018***					0.018***
		(0.002)					(0.002)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$	0.002***					0.004***
		(0.001)					(0.001)
common language	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$		0.002***				0.001***
			(0.000)				(0.000)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$		-0.000**				-0.000
			(0.000)				(0.000)
common colonizer	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$			0.002***			0.001**
				(0.001)			(0.001)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$			-0.001**			-0.001
				(0.000)			(0.000)
common income group	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$				0.001***		0.001*
					(0.000)		(0.000)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$				-0.000		-0.000
					(0.000)		(0.000)
common continent	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$					-0.000	-0.003***
						(0.000)	(0.000)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$					-0.003***	-0.003***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.309***	0.315***	0.311***	0.310***	0.325***	0.338***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
$y_{ij,t-2}$		0.076***	0.081***	0.076***	0.077***	0.093***	0.106***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations		3,943,800	3,943,800	3,943,800	3,943,800	3,943,800	3,943,800
# of firm-product couples		6,573	6,573	6,573	6,573	6,573	6,573
# of firms		1,965	1,965	1,965	1,965	1,965	1,965
AR(1)		0	0	0	0	0	0
AR(2)		.693	.964	.657	.705	.219	.016
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

tiguous export destinations as an alternative regressor:

$$\begin{aligned} y_{ijt} = \quad & \phi_1 y_{ij,t-1} + \phi_2 y_{ij,t-2} + \delta_1 N_{ij,t-1}^{sameproduct} \\ & + \delta_2 N_{ij,t-1}^{otherproducts} + \theta_{ij} + \theta_t + \epsilon_{ijt}. \end{aligned} \tag{7}$$

By and large, results are very similar when compared to Table 8. Common border for the same product has again the largest marginal effect. We again do not find evidence for across product learning. Interestingly, we now find a small but significant effect of having exported to a common continent.

To sum up, we hardly find evidence for across product learning of spatial exporters. This probably hints at only small economies of scope for multi-product firms when entering new export markets with several products, at least across markets.

5 Robustness checks

We now discuss several effects that could influence our results and which are unrelated to the cross-country correlation in export destination choices of firms due to spatial exporters. Specifically, we investigate the role of lagged export values at the firm level, the impact of competitors' success in previous contiguous export destinations, trading agents, state-owned firms, foreign-owned firms, and processing trade. Regression results pertaining to these robustness checks can be found in the online Appendix. All robustness checks use specification VI from Table 7 as a starting point.

Lagged export values: In addition to learning from its previous export experience, a firm may also exhibit increasing returns to scale via a learning by doing mechanism in textile and apparel production. Since the quotas of the MFA represent an artificial quantity restriction, removing it should result in a large increase in the volume of export sales. As our regressor of interest is correlated with a firm's export volume by construction and this might bias our results, we include the lagged export value as an additional control variable. Contiguity between export destinations still has a significant positive impact

Table 9: Multi-Product Firms: Dynamic Panel Estimates—N

		I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...							
common border	$N_{ij,t-1}^{sameproduct}$	0.017***					0.010***
		(0.002)					(0.002)
	$N_{ij,t-1}^{otherproducts}$	0.001***					-0.000
		(0.000)					(0.000)
common language	$N_{ij,t-1}^{sameproduct}$		0.002***				-0.000
			(0.000)				(0.000)
	$N_{ij,t-1}^{otherproducts}$		-0.000***				-0.000***
			(0.000)				(0.000)
common colonizer	$N_{ij,t-1}^{sameproduct}$			0.004***			0.001**
				(0.000)			(0.000)
	$N_{ij,t-1}^{otherproducts}$			0.000			-0.000***
				(0.000)			(0.000)
common income group	$N_{ij,t-1}^{sameproduct}$				0.005***		0.003***
					(0.000)		(0.000)
	$N_{ij,t-1}^{otherproducts}$				0.000***		0.000***
					(0.000)		(0.000)
common continent	$N_{ij,t-1}^{sameproduct}$					0.004***	0.002***
						(0.000)	(0.000)
	$N_{ij,t-1}^{otherproducts}$					0.000***	0.000***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.310***	0.309***	0.312***	0.312***	0.308***	0.349***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
$y_{ij,t-2}$		0.078***	0.075***	0.078***	0.085***	0.080***	0.124***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations		3,943,800	3,943,800	3,943,800	3,943,800	3,943,800	3,943,800
# of firm-product couples		6,573	6,573	6,573	6,573	6,573	6,573
# of firms		1,965	1,965	1,965	1,965	1,965	1,965
AR(1)		0	0	0	0	0	0
AR (2)		.876	.597	.816	.605	.948	0
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as year dummies and a constant (all not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

on a firm's exporting decision even when controlling for the lagged export value.

Competitors' success: Krautheim (2012) theoretically investigates the importance of spillover effects from competing firms on exporting fixed costs. The number of exporting firms of the same product or the number of export markets already entered by close competitors may influence a firm's ability to export to a specific destination. Wen (2004) shows that Chinese firms producing in the same industry tend to cluster geographically across Chinese regions. We therefore use the sum of the number of previously entered contiguous export destinations over all competitors in the same Chinese prefecture, $N_{-ij,p,t-1}$, to control for these spillover effects. We can construct this control variable using again all of our different contiguity measures. Controlling for spillover effects from close competitors hardly affects our results.

Trading agents: The raw data contains a number of trading agents ("intermediary firms") which mediate trade for other firms but do not directly engage in production. Including these firms could cause problems as their behavior is probably different from that of manufacturing firms. To exclude the possibility that our results are driven by these trading agent business networks, we exclude trading firms which are identified by certain keywords in their names. Ahn et al. (2011) use the Chinese characters for "importer", "exporter", and "trading" to identify "intermediary firms". By contrast, we follow Upward et al. (2011) and use a more comprehensive list of keywords which are typically used by various kinds of trading agents in China. These trading companies represent about 4 percent of our observations. Dropping trading agents does not change our conclusions.

State-owned firms: Khandelwal et al. (2013) argue that state-owned firms seem to have been more likely to obtain a license before the MFA quota restrictions were lifted. This makes them potentially different from privately-owned firms. We therefore re-run our regressions excluding state-owned firms. Again, our results hold up.

Foreign-owned firms: We exclude all foreign-owned firms and processing trade exports as the choice of destinations of Chinese firms could be influenced

by the foreign headquarters location or by the location of other foreign direct investments realized by the parent company. While the qualitative results are similar, our results lose some of their significance. This may well be due to the large drop in the number of firms and observations to about a tenth of the full sample.

Processing trade: Our data set allows us to distinguish between processing and ordinary exports. The former refers to exports that are assembled in an export processing zone and use a high share of imported intermediate inputs. Note that foreign owned firms often engage in processing exports but not necessarily so. Processing exports may be special with respect to the export locations choice because they could be influenced by a third foreign party. In addition, Chinese processing trade firms may have less liberty in their export destination choice. Excluding processing trade export transactions leads again to a substantial drop in the number of observations to around a fifth of the original sample. Our results are again qualitatively similar but lose some of their statistical significance.

6 Conclusion

How do firms choose new export destinations? While there are many factors that are important for this decision, one empirical regularity strikes out: Firms tend to choose new export markets that are geographically close to their prior export destinations more often than standard gravity models would predict.

We quantify the effect of this spatial pattern using Chinese customs data and the quasi-natural experiment of the end of the import quota restrictions on Chinese textile exports which generates an exogenous set of potential new destinations (25 EU countries, the US, and Canada). We use the sample of firms which have never exported to the 27 previously restricted MFA countries before 2005 to identify the effect of previous export history in contiguous countries on the probability of exporting to one of the 150 countries which were not covered by the MFA import restrictions. This allows us to quantify the importance of 'extended gravity' or 'spatial exporters', i.e. the time-varying

firm-specific heterogeneity in export destinations shaped by firms' previous export experience in spatially close countries taking into account unobserved time-invariant heterogeneity at the firm-country level as well as true state dependence.

Our baseline results show that the probability to export to a country increases by about 2 percentage points for each prior export destination with a common border with this country. For example, this implies a 33 percent increase in the probability of a firm exporting to Singapore, one of the top export destinations in our data set of non-MFA countries, when it has previously exported to Malaysia, a country which shares a common border with Singapore. Our results are robust across multiple specifications (differences-in-differences, instrumental variables, and dynamic panel estimators). We also conduct a battery of robustness checks which control for lagged export values, competitor's success, multi-product firms, the role of direct transactions, trading agents, state-owned firms, foreign-owned firms, and processing trade.

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Supplemental Material for Spatial Exporters*

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Abstract

This document presents supplemental material for the paper "Spatial Exporters". It contains further descriptive evidence for firm-specific heterogeneity in export destinations, detailed first stage regression results, further dynamic panel estimates using only a one-period lag, an additional external instrument as well as results using the difference-GMM estimator from Arellano and Bond (1991), further multi-product firm regressions, miscellaneous robustness checks, all regressions from the main text including country-specific time trends, dynamic panel results for a sample including firms which entered MFA-restricted countries between 2000 and 2004, as well as the empirical probabilities of exporting to a country and descriptive statistics of the samples used in the main text.

Keywords: export destination choice; spatial correlation; extended gravity; firm-level customs data; MFA/ATC quota removal

JEL-Codes: F12, F13

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Appendix

A.1 Evidence for firm-specific heterogeneity in export destinations

In order to shed light on the entry of firms into different markets in our sample of firms, we follow Eaton et al. (2011) and first assume that firms follow a common hierarchy, meaning that a firm that sells to the $k+1$st most popular export destination necessarily sells to the kth most popular destinations as well. We present the top seven export destinations of the Chinese exporters in our sample, excluding the MFA-restricted countries. In Table A.1 we report the number of firms exporting to each of the seven most popular destinations, as well as the unconditional empirical probability of Chinese exporters selling there. We clearly see that common gravity variables, like distance and country size, matter.

Again following Eaton et al. (2011), in Table A.2 we report strings of the top-seven destinations that obey a hierarchical structure, alongside the number of firms selling to each string. For example, the export string JPN means that the firm exports to Japan but to no other destination among the top 7 non-MFA destinations. Similarly, the string JPN-KOR means that the firm exports to Japan and South Korea but no other destination among the top 7 non-MFA destinations, and so forth. Overall, 66 percent (861/1295) of all firms in our sample adhere to the hierarchy given by the top seven non-MFA export destinations. Hence, about a third of the firms export to a different set of countries, implying a substantial amount of heterogeneity across firms in terms of the set of export destinations they serve. The column labeled "Independence" in Table A.2 reports, based on the unconditional probabilities presented in Table A.1, the number of firms selling to each hierarchical string assuming independence across destination choices of a firm. If a firm chose export destinations independently, the number of firms sticking to the common hierarchy would be 770, implying that only 59 percent (770/1295) would follow a common hierarchy. In the data, we observe 861 firms which stick to

Table A.1: Chinese Textile and Apparel Firms Exporting to the Seven Most Popular Non-MFA Destinations in 2006

Export destination	Number of exporters	Fraction of exporters
Japan (JPN)	973	0.751
South Korea (KOR)	328	0.253
Singapore (SGP)	81	0.063
Australia (AUS)	70	0.054
Vietnam (VNM)	62	0.048
Thailand (THA)	57	0.044
Malaysia (MYS)	46	0.036
All Chinese exporters*	1,295	

Notes: *in our sample. Table shows the seven most popular export destinations of the 1,295 textile and apparel firms in our sample excluding the 27 MFA/ATC restricted export destinations for the year 2006. The table follows closely Table I in Eaton et al. (2011). We describe the construction of the sample in detail in Section **??**.

the common hierarchy, i.e. 12 percent more than what independence would imply. Hence, in our empirical specification we will have to take into account that export destinations within firms are clustered spatially, and that there is considerable heterogeneity in export destinations across firms. We therefore allow for time-invariant firm-specific attractiveness of export destinations.

Table A.2: Chinese Textile and Apparel Firms Exporting to Strings of Top-Seven Non-MFA Destinations in 2006

Export String[a]	Number of Exporters	
	Data	Independence
JPN	676	565
JPN-KOR	175	191
JPN-KOR-SGP	8	13
JPN-KOR-SGP-AUS	1	1
JPN-KOR-SGP-AUS-VNM	0	0
JPN-KOR-SGP-AUS-VNM-THA	0	0
JPN-KOR-SGP-AUS-VNM-THA-MYS	1	0
Total	861	770

Notes: [a]The export string JPN means exporting to Japan but no other destination among the top 7 non-MFA destinations; JPN-KOR means exporting to Japan and South Korea but no other destination among the top 7, and so forth. The table follows closely Table II in Eaton et al. (2011). We describe the construction of the sample in detail in Section **??**.

A.2 Detailed first stage regression results

We present detailed results of the first stage regressions for the instrumental panel regressions present in Section XX in the main manuscript in Tables A.3 and A.4.

Even though there are no clear results for testing for weak instruments if errors are not *iid*, Baum et al. (2007) propose to use these statistics and compare them to the Stock and Yogo (2005) critical values or the Staiger and Stock (1997) rule of thumb of an F-statistic for the excluded instruments in the first stage regression to be larger than 10. In our case, all the tests reject that we have a weak instrument problem.

We also provide the partial R^2 (i.e. the R^2 of the instrument in the first stage regression, netting out the explanatory power of exogenous regressors). It measures the explanatory power of our instruments. Admittedly, these are very low. However, this has to be put in perspective: We use a discrete choice panel of export decisions at the firm level. R^2 measures of demeaned panel models such as ours for firm-level studies tend to be low, even more so for discrete choice data sets of export destination choices, see Albornoz et al. (2012). Therefore, even though low partial R^2s are not exactly good news, we would like to stress that a low partial R^2 is only a problem if we had weak instruments which are not strictly exogenous. If one believes in our instruments, then we get consistent estimates even if the explanatory power of the instrument is weak. Also, please note that our instruments only vary at the country level by construction; actually, this is the motivation behind our instrument.

Table A.3: Instrumental Variable Regressions First Stage—Dummy

dependent variable $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...	I_first common border	II_first common language	III_first common colonizer	IV_first common income group	V_first common continent	VI_first_1 common border	VI_first_2 common language	VI_first_3 common colonizer	VI_first_4 common income group	VI_first_5 common continent
$y2006_t \times C_j$ defined according to...										
common border	0.025***					0.024***	-0.029***	-0.001*	0.001	0.008
	(0.002)					(0.002)	(0.003)	(0.001)	(0.002)	(0.007)
common language		0.079***				0.001*	0.075***	0.001	0.000	-0.001
		(0.006)				(0.001)	(0.006)	(0.001)	(0.000)	(0.003)
common colonizer			0.004			-0.001***	-0.003	0.004	-0.001	0.001
			(0.005)			(0.000)	(0.004)	(0.005)	(0.000)	(0.001)
common incomegroup				-0.005		0.004***	0.012***	-0.000	-0.006	-0.002
				(0.005)		(0.001)	(0.001)	(0.001)	(0.005)	(0.002)
common continent					0.129***	0.001	0.019***	-0.004**	0.004	0.128***
					(0.008)	(0.001)	(0.004)	(0.002)	(0.003)	(0.008)
Observations	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000
R^2	0.003	0.028	0.001	0.004	0.058	0.004	0.029	0.001	0.004	0.058
# of firms	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295
Shea (1997) R^2	0.002	0.009	0.000	0.000	0.037	0.002	0.010	0.000	0.000	0.015
partial R^2	0.002	0.009	0.000	0.000	0.037	0.003	0.010	0.000	0.000	0.037
F-statistic	1,355.691	5,561.175	37.753	24.381	22,181.220	301.55	1,208.86	17.02	8.55	4,442.68

Notes: This table shows the first stage regressions for the instrumental variable regressions shown in the main text. The dependent variable is the potentially endogenous regressor $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined as in the columns I-VI in the main text. As column VI contains five potentially endogenous regressors, there are five according first stage regressions which are labelled using arabic numbers. All regressions include firm-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. F-statistic denotes the value of the F-statistic of excluding the endogenous regressor from the first stage regression and partial R^2 reports the explanatory power of the instrument, netting out exogenous regressors from the first stage regression. Shea (1997) generalizes the partial R^2 to the case of multiple endogenous regressors but is identical to the partial R^2 in the case of a single endogenous regressor.

Table A.4: Instrumental Variable Regressions First Stage—N

dependent variable $N_{ij,t-1}$ defined according to...	I_first common border	II_first common language	III_first common colonizer	IV_first common income group	V_first common continent	VI_first_1 common border	VI_first_2 common language	VI_first_3 common colonizer	VI_first_4 common income group	VI_first_5 common continent
$y2006_t \times N_j$ defined according to...										
common border	0.013***					0.014***	-0.009***	0.002	0.000***	-0.011***
	(0.002)					(0.001)	(0.001)	(0.002)	(0.000)	(0.001)
common language		0.053***				0.000	0.052***	0.001**	-0.002***	0.001*
		(0.004)				(0.000)	(0.004)	(0.000)	(0.000)	(0.001)
common colonizer			0.008			-0.001***	0.005**	0.009	-0.001	-0.007***
			(0.005)			(0.000)	(0.002)	(0.006)	(0.001)	(0.001)
common income group				0.021***		0.000***	0.000***	0.000	0.021***	0.001***
				(0.002)		(0.000)	(0.000)	(0.000)	(0.002)	(0.000)
common continent					0.011***	-0.000*	-0.000***	-0.001	0.001**	0.012***
					(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000
R^2	0.004	0.055	0.002	0.038	0.028	0.004	0.055	0.002	0.038	0.028
# of firms	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295
Shea (1997) R^2	0.003	0.025	0.000	0.026	0.013	0.002	0.022	0.000	0.027	0.012
partial R^2	0.003	0.025	0.000	0.026	0.013	0.003	0.025	0.000	0.026	0.013
F-statistic	1,616.722	15,094.530	192.476	15,703.310	7,770.398	342.941	3,038.046	57.262	3,151.390	1,576.371

Notes: This table shows the first stage regressions for the instrumental variable regressions shown in the main text. The dependent variable is the potentially endogenous regressor $N_{ij,t-1}$ defined as in the columns I-VI in the main text. As column VI contains five potentially endogenous regressors, there are five according first stage regressions which are labelled using arabic numbers. All regressions include firm-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. F-statistic denotes the value of the F-statistic of excluding the endogenous regressor from the first stage regression and partial R^2 reports the explanatory power of the instrument, netting out exogenous regressors from the first stage regression. Shea (1997) generalizes the partial R^2 to the case of multiple endogenous regressors but is identical to the partial R^2 in the case of a single endogenous regressor.

A.3 Dynamic Panel Estimates Using Only One-Period Lag with Country-Specific Time Trends

In Tables A.5 and A.6 we present results for System-GMM estimates of the dynamic panel model using only one lag. As can be seen, while coefficient estimates remain similar to our preferred specification, the specifications with only one lag are clearly rejected by all model specification tests. Note that the number of observations increases as we lose one year less when creating the lagged dependent variable.

Table A.5: Dynamic Panel Estimates Using Only One-Period Lag—Dummy with Country-Specific Time Trends

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.024***					0.025***
	(0.004)					(0.004)
common language		0.003***				0.002***
		(0.001)				(0.001)
common colonizer			0.003***			0.001
			(0.001)			(0.001)
common income group				0.003***		0.002***
				(0.001)		(0.001)
common continent					-0.001	-0.005***
					(0.001)	(0.001)
$y_{ij,t-1}$	0.302***	0.302***	0.299***	0.300***	0.309***	0.314***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	971,250	971,250	971,250	971,250	971,250	971,250
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	0	0	0	0	0	0
Sargan	0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.6: Dynamic Panel Estimates Using Only One-Period Lag—N with Country-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.024***					0.015***
	(0.004)					(0.004)
common language		0.003***				-0.001***
		(0.000)				(0.000)
common colonizer			0.005***			0.000
			(0.001)			(0.001)
common income group				0.008***		0.005***
				(0.001)		(0.001)
common continent					0.005***	0.002***
					(0.001)	(0.001)
$y_{ij,t-1}$	0.304***	0.303***	0.300***	0.302***	0.307***	0.316***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)
Observations	971,250	971,250	971,250	971,250	971,250	971,250
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	0	0	0	0	0	0
Sargan	0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.4 Dynamic Panel Estimates Using an Additional External Instrument

Dynamic panel models have been developed to provide consistent parameter estimates when only internal instruments are available. However, they also allow to include external instruments to receive additional moment conditions for estimation. We present results where we include our proposed instruments ($y2006_t \times C_j$ and $y2006_t \times N_j$, respectively) from the instrumental variable regressions from Section 3.3 in the main manuscript in Tables A.7 and A.8. Qualitatively, results remain similar, but model specification tests perform considerably better, as the Sargan test for the validity of our instruments cannot be rejected for the majority of specifications in Table A.7. This provides further indirect evidence in favor of our external instrumental variables.

Table A.7: Dynamic Panel Estimates Using $y2006_t \times C_j$ as an Additional External Instrument—Dummy with Continent-Specific Time Trends

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.038**					0.044***
	(0.015)					(0.015)
common language		0.001				0.002
		(0.002)				(0.002)
common colonizer			0.010***			0.008**
			(0.003)			(0.003)
common income group				0.000		-0.003
				(0.003)		(0.003)
common continent					-0.005*	-0.008***
					(0.002)	(0.003)
$y_{ij,t-1}$	0.342***	0.348***	0.343***	0.347***	0.350***	0.350***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
$y_{ij,t-2}$	0.078***	0.080***	0.078***	0.082***	0.083***	0.078***
	(0.013)	(0.013)	(0.013)	(0.012)	(0.012)	(0.012)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.742	.733	.789	.648	.628	.821
Sargan	.352	.038	.215	.298	.193	.171

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as continent-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. In addition, we use $y2006_t \times C_j$ as an additional external instrument. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.8: Dynamic Panel Estimates Using $y2006_t \times N_j$ as an Additional External Instrument—N with Continent-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.038***					0.042***
	(0.012)					(0.012)
common language		0.002***				-0.002*
		(0.001)				(0.001)
common colonizer			0.006***			0.003**
			(0.001)			(0.001)
common income group				0.005***		0.001
				(0.001)		(0.001)
common continent					0.006***	0.002**
					(0.001)	(0.001)
$y_{ij,t-1}$	0.341***	0.354***	0.344***	0.353***	0.353***	0.357***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
$y_{ij,t-2}$	0.077***	0.088***	0.080***	0.094***	0.098***	0.100***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.012)	(0.013)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.756	.433	.653	.254	.178	.135
Sargan	.159	0	.007	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as continent-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. In addition, we use $y2006_t \times N_j$ as an additional external instrument. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.5 Dynamic Panel Estimates Using the Arellano and Bond (1991) Difference-GMM-Estimator with Continent-Specific Time Trends

In Tables A.9 and A.10 we use the Difference-GMM estimator from Arellano and Bond (1991) instead of the System-GMM estimator from Blundell and Bond (1998) used in the main manuscript. The Difference-GMM estimator has the main advantage of being more robust in the sense that less restrictive moment conditions are used for estimation. However, it may suffer from severe finite sample bias if the persistence of the dependent variable is high. Note that using the difference-GMM estimator we lose an additional year of our dataset for the estimation. Results stay very similar. In addition, the model specification tests perform considerably better compared to the System-GMM estimates as they do not reject the model in the majority of cases, including the Sargan test.

Table A.9: Dynamic Panel Estimates Using the Arellano and Bond (1991) Difference-GMM-Estimator—Dummy with Continent-Specific Time Trends

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.027***					0.021**
	(0.009)					(0.009)
common language		0.003**				0.001
		(0.001)				(0.001)
common colonizer			0.004*			0.002
			(0.002)			(0.002)
common income group				0.004**		0.003*
				(0.002)		(0.002)
common continent					0.004*	-0.001
					(0.003)	(0.002)
$y_{ij,t-1}$	0.363***	0.366***	0.357***	0.369***	0.369***	0.357***
	(0.026)	(0.026)	(0.026)	(0.025)	(0.026)	(0.025)
$y_{ij,t-2}$	0.083***	0.087***	0.081***	0.090***	0.088***	0.077***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Observations	582,750	582,750	582,750	582,750	582,750	582,750
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.794	.616	.858	.542	.643	.953
Sargan	.413	.129	.092	.175	.127	.025

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as continent-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step difference GMM estimator from Arellano and Bond (1991) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.10: Dynamic Panel Estimates Using the Arellano and Bond (1991) Difference-GMM-Estimator—N with Continent-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.029***					0.013
	(0.009)					(0.008)
common language		0.005**				-0.000
		(0.002)				(0.002)
common colonizer			0.006***			0.004
			(0.002)			(0.002)
common income group				0.006***		0.002
				(0.002)		(0.002)
common continent					0.006***	0.001
					(0.002)	(0.002)
$y_{ij,t-1}$	0.363***	0.357***	0.350***	0.352***	0.351***	0.336***
	(0.026)	(0.026)	(0.026)	(0.025)	(0.025)	(0.024)
$y_{ij,t-2}$	0.083***	0.083***	0.079***	0.082***	0.082***	0.071***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.015)
Observations	582,750	582,750	582,750	582,750	582,750	582,750
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.765	.674	.797	.736	.736	.925
Sargan	.465	.206	.060	.324	.291	.060

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as continent-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step difference GMM estimator from Arellano and Bond (1991) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.6 Multi-Product Firms: Dynamic Panel Estimates—N

In Table A.11 we present multi-product regressions with the number of contiguous export destinations as an alternative regressor:

$$\begin{aligned} y_{ijt} = \quad & \phi_1 y_{ij,t-1} + \phi_2 y_{ij,t-2} + \delta_1 N_{ij,t-1}^{sameproduct} \\ & + \delta_2 N_{ij,t-1}^{otherproducts} + \theta_{ij} + \theta_t + \epsilon_{ijt}. \end{aligned} \tag{1}$$

By and large, results are very similar when compared to Table **??** in the main text. Common border for the same product has again the largest marginal effect. We again do not find evidence for across product learning. Interestingly, we now find a small but significant effect of having exported to a common continent.

Table A.11: Multi-Product Firms: Dynamic Panel Estimates—N

		I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...							
common border	$N_{ij,t-1}^{sameproduct}$	0.017***					0.010***
		(0.002)					(0.002)
	$N_{ij,t-1}^{otherproducts}$	0.001***					-0.000
		(0.000)					(0.000)
common language	$N_{ij,t-1}^{sameproduct}$		0.002***				-0.000
			(0.000)				(0.000)
	$N_{ij,t-1}^{otherproducts}$		-0.000***				-0.000***
			(0.000)				(0.000)
common colonizer	$N_{ij,t-1}^{sameproduct}$			0.004***			0.001**
				(0.000)			(0.000)
	$N_{ij,t-1}^{otherproducts}$			0.000			-0.000***
				(0.000)			(0.000)
common income group	$N_{ij,t-1}^{sameproduct}$				0.005***		0.003***
					(0.000)		(0.000)
	$N_{ij,t-1}^{otherproducts}$				0.000***		0.000***
					(0.000)		(0.000)
common continent	$N_{ij,t-1}^{sameproduct}$					0.004***	0.002***
						(0.000)	(0.000)
	$N_{ij,t-1}^{otherproducts}$					0.000***	0.000***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.310***	0.309***	0.312***	0.312***	0.308***	0.349***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
$y_{ij,t-2}$		0.078***	0.075***	0.078***	0.085***	0.080***	0.124***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations		3,943,800	3,943,800	3,943,800	3,943,800	3,943,800	3,943,800
# of firm-product couples		6,573	6,573	6,573	6,573	6,573	6,573
# of firms		1,965	1,965	1,965	1,965	1,965	1,965
AR(1)		0	0	0	0	0	0
AR (2)		.876	.597	.816	.605	.948	0
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.7 Miscellaneous robustness checks

Table A.12 presents the regression results for the first five robustness checks discussed in Section 5 in the main manuscript concerning lagged export values, competitors' success, trading agents, state-owned firms, foreign-owned firms, and processing trade.

In Table A.13, we present results for the diff-in-diff specification excluding Russia as an export destination, as also discussed in Section 5 in the main manuscript.

Table A.12: Dynamic Panel Estimates—N—Miscellaneous Robustness Checks

	I	II	III	IV	V	VI
	lagged export value	competitors' success	drop trading agents	drop state owned firms	drop foreign owned firms	drop processing trade firms
$N_{ij,t-1}$ defined according to...						
common border	0.013***	0.011**	0.014***	0.017***	0.007	0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)	(0.007)
common language	-0.001*	-0.000	-0.001*	-0.001*	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
common colonizer	0.000	0.001	0.000	0.000	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
common income group	0.005***	0.003***	0.005***	0.005***	0.002*	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
common continent	0.002***	0.002***	0.002***	0.001**	0.002*	0.002*
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
$\text{firmvalue}_{i,t-1}$	-0.000					
	(0.000)					
$N_{-ij,p,t-1}$ defined according to...						
common border		-0.000*				
		(0.000)				
common language		-0.000*				
		(0.000)				
common colonizer		-0.000***				
		(0.000)				
common income group		0.000***				
		(0.000)				
common continent		0.000***				
		(0.000)				
$y_{ij,t-1}$	0.357***	0.480***	0.363***	0.368***	0.370***	0.344***
	(0.013)	(0.012)	(0.014)	(0.015)	(0.024)	(0.026)
$y_{ij,t-2}$	0.101***	0.218***	0.100***	0.096***	0.115***	0.077**
	(0.013)	(0.013)	(0.014)	(0.014)	(0.023)	(0.025)
Observations	770,000	770,000	738,750	727,800	88,800	160,200
# of firms	1,295	1,295	1,236	1,213	148	547
AR(1)	0	0	0	0	0	0
AR(2)	.156	0	.065	.034	.718	.252
Sargan	0	0	0	0	.033	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.13: Diff-in-Diff Excluding Russia

	I	II	III	IV	V	VI
$y2006_t \times C_j$ defined according to...						
common border	0.001***					0.001***
	(0.000)					(0.000)
common language		0.000				0.000
		(0.000)				(0.000)
common colonizer			-0.000			-0.000
			(0.000)			(0.000)
common income group				-0.000		-0.000*
				(0.000)		(0.000)
common continent					0.000***	0.000
					(0.000)	(0.000)
Observations	771,820	771,820	771,820	771,820	771,820	771,820
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the country level to take into account that the regressor only varies at the country level following the suggestion for differences-in-differences estimates by Bertrand et al. (2004). *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

A.8 Controlling for country-specific time trends

Tables A.14 to A.25 present all the tables from the main manuscript including country-specific time trends. To prevent cluttering of the tables, these coefficients are not reported.

We also experimented with including country×year dummies. However, while our specification in principle allows the inclusion of these dummies, the variation in our data renders the variance covariance matrix of the estimates near singular and hence does not allow to calculate standard errors. We therefore followed the suggestion of a referee and only included country-specific time trends.

A.8.1 Diff-in-Diff

Table A.14 reports the difference in difference estimates. Clearly, we cannot identify any significant effect of spatial exporters when including country-specific time trends. This is not too surprising, however, as our treatment only varies at the country-level and does not use any firm-specific information for identification.

Table A.14: Diff-in-Diff with Country-Specific Time Trends

	I	II	III	IV	V	VI
$y2006_t \times C_j$ defined according to...						
common border	-0.000**					-0.000
	(0.000)					(0.000)
common language		-0.000***				-0.000
		(0.000)				(0.000)
common colonizer			-0.000			0.000
			(0.000)			(0.000)
common income group				-0.000***		-0.000**
				(0.000)		(0.000)
common continent					-0.000	0.000
					(0.000)	(0.000)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the country level to take into account that the regressor only varies at the country level following the suggestion for differences-in-differences estimates by Bertrand et al. (2004). *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

A.8.2 Fixed effects regression taking into account firm-level history

Tables A.15 and A.16 present the fixed effects regressions taking into account firm-level history. In this specifications, results are robust and even become more significant when including country-specific time trends.

Table A.15: Fixed Effects Regression Taking into Account Firm-Level History—Dummy with Country-Specific Time Trends

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.014***					0.014***
	(0.003)					(0.003)
common language		0.002***				0.001**
		(0.001)				(0.001)
common colonizer			0.002**			0.001
			(0.001)			(0.001)
common income group				0.001		0.000
				(0.001)		(0.001)
common continent					0.001	-0.001
					(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

Table A.16: Fixed Effects Regression Taking into Account Firm-Level History—N with Country-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.011***					0.010***
	(0.003)					(0.003)
common language		0.001**				0.000
		(0.001)				(0.000)
common colonizer			0.003***			0.002**
			(0.001)			(0.001)
common income group				0.002**		0.001
				(0.001)		(0.001)
common continent					0.001	0.000
					(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

A.8.3 Instrumental variable regressions

Tables A.17 to A.20 present instrumental variable regressions including country-specific time trends alongside the accompanying first stage regression results. Here, results seem not to be robust, with the majority of all estimated coefficients being negative and significant. The unrealistically large coefficient estimates for column III in both Tables A.17 and A.19 hint at very high multicollinearity between the country-specific time trends and our regressors of interest. Evidently, identifying coefficients becomes difficult.

Table A.17: Instrumental Variable Regressions—Dummy with Country-Specific Time Trend

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	-0.033					-0.144
	(0.041)					(0.288)
common language		-0.011***				-0.045
		(0.004)				(0.109)
common colonizer			-3.371***			-1.666
			(0.779)			(1.614)
common income group				-0.125		0.054
				(0.200)		(0.942)
common continent					-0.003	0.031
					(0.002)	(0.064)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
First stage F-statistic	642.7	5,046	0.0344	66.39	13,599	($\diamond$)
First stage partial R^2	0.001	0.009	0.000	0.000	0.023	($\diamond$)

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). We use the two-stage least-squares within panel instrumental variables estimator where we instrument the endogenous regressor by $y2006_t \times C_j$. Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. First stage F-statistic denotes the value of the F-statistic of excluding the endogenous regressor from the first stage regression and first stage partial R^2 reports the explanatory power of the instrument, netting out exogenous regressors from the first stage regression. ($\diamond$): The five first stage regressions and statistics for the five endogenous variables for column VI are reported in the online Appendix in Table A.18.

Table A.18: Instrumental Variable Regressions First Stage —Dummy with Country-Specific Time Trend

dependent variable $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...	I_first common border	II_first common language	III_first common colonizer	IV_first common income group	V_first common continent	VI_first_1 common border	VI_first_2 common language	VI_first_3 common colonizer	VI_first_4 common income group	VI_first_5 common continent
$y2006_t \times C_j$ defined according to...										
common border	0.026***					0.023***	-0.030***	-0.001	0.002	0.004
	(0.002)					(0.002)	(0.003)	(0.001)	(0.003)	(0.009)
common language		0.072***				0.001**	0.066***	-0.002	0.002	-0.004
		(0.007)				(0.001)	(0.007)	(0.002)	(0.004)	(0.005)
common colonizer			0.000			-0.003***	-0.010**	0.001	0.002	0.001
			(0.007)			(0.001)	(0.004)	(0.007)	(0.003)	(0.003)
common income group				0.011**		0.004***	0.009***	0.000	0.009	0.003
				(0.005)		(0.001)	(0.002)	(0.001)	(0.006)	(0.002)
common continent					0.130***	0.001	0.024***	0.001	-0.001	0.130***
					(0.007)	(0.001)	(0.004)	(0.002)	(0.004)	(0.010)
Observations	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000
R^2	0.008	0.030	0.002	0.005	0.059	0.008	0.031	0.002	0.005	0.059
# of firms	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295
Shea (1997) R^2	0.001	0.009	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000
partial R^2	0.001	0.009	0.000	0.000	0.023	0.001	0.009	0.000	0.000	0.023
F-statistic	642.666	5,046.303	0.034	66.387	13,598.650	145.213	1,060.290	0.762	14.609	2,724.242

Notes: This table shows the first stage regressions for the instrumental variable regressions shown in the main text. The dependent variable is the potentially endogenous regressor $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined as in the columns I-VI in the main text. As column VI contains five potentially endogenous regressors, there are five according first stage regressions which are labelled using arabic numbers. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. F-statistic denotes the value of the F-statistic of excluding the endogenous regressor from the first stage regression and partial R^2 reports the explanatory power of the instrument, netting out exogenous regressors from the first stage regression. Shea (1997) generalizes the partial R^2 to the case of multiple endogenous regressors but is identical to the partial R^2 in the case of a single endogenous regressor.

Table A.19: Instrumental Variable Regressions—N with Country-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	-0.032					-0.011
	(0.035)					(0.076)
common language		-0.004***				0.001
		(0.001)				(0.022)
common colonizer			0.551			0.271
			(0.750)			(1.008)
common income group				-0.006**		-0.006
				(0.003)		(0.007)
common continent					-0.001	-0.001
					(0.001)	(0.009)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
First stage F-statistic	754.3	10,923	0.316	8,485	5,357	($\diamond$)
First stage partial R^2	0.001	0.018	0.000	0.014	0.009	($\diamond$)

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies (not reported). We use the two-stage least-squares within panel instrumental variables estimator where we instrument the endogenous regressor by $y2006_t \times N_j$. Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. First stage F-statistic denotes the value of the F-statistic of excluding the endogenous regressor from the first stage regression and first stage partial R^2 reports the explanatory power of the instrument, netting out exogenous regressors from the first stage regression. ($\diamond$): The five first stage regressions and statistics for the five endogenous variables for column VI are reported in the online Appendix in Table A.20.

Table A.20: Instrumental Variable Regressions First Stage—N with Country-Specific Time Trend

dependent variable $N_{ij,t-1}$ defined according to...	I_first common border	II_first common language	III_first common colonizer	IV_first common income group	V_first common continent	VI_first_1 common border	VI_first_2 common language	VI_first_3 common colonizer	VI_first_4 common income group	VI_first_5 common continent
$y2006_t \times N_j$ defined according to...										
common border	0.014***					0.014***	-0.008***	-0.000	0.001*	-0.012***
	(0.002)					(0.001)	(0.001)	(0.002)	(0.000)	(0.001)
common language		0.049***				0.000***	0.048***	-0.001	-0.004*	0.007***
		(0.005)				(0.000)	(0.005)	(0.001)	(0.002)	(0.002)
common colonizer			-0.000			-0.001***	0.003	0.000	-0.003	-0.005**
			(0.006)			(0.000)	(0.002)	(0.007)	(0.002)	(0.002)
common income group				0.021***		0.000***	0.000***	0.000	0.022***	0.002***
				(0.002)		(0.000)	(0.000)	(0.000)	(0.002)	(0.000)
common continent					0.014***	-0.000	-0.000	0.000	0.000	0.014***
					(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000
R^2	0.008	0.057	0.003	0.041	0.031	0.008	0.057	0.003	0.041	0.031
# of firms	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295	1,295
Shea (1997) R^2	0.001	0.018	0.000	0.014	0.009	0.000	0.000	0.000	0.001	0.000
partial R^2	0.001	0.018	0.000	0.014	0.009	0.001	0.018	0.000	0.014	0.010
F-statistic	754.3398	10922.77	0.31565	8484.718	5356.873	164.4725	2188.267	0.7944504	1710.127	1122.998

Notes: This table shows the first stage regressions for the instrumental variable regressions shown in the main text. The dependent variable is the potentially endogenous regressor $N_{ij,t-1}$ defined as in the columns I-VI in the main text. As column VI contains five potentially endogenous regressors, there are five according first stage regressions which are labelled using arabic numbers. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. F-statistic denotes the value of the F-statistic of excluding the endogenous regressor from the first stage regression and partial R^2 reports the explanatory power of the instrument, netting out exogenous regressors from the first stage regression. Shea (1997) generalizes the partial R^2 to the case of multiple endogenous regressors but is identical to the partial R^2 in the case of a single endogenous regressor.

A.8.4 Dynamic panel results taking into account state dependence

Tables A.21 and A.22 present dynamic panel estimates including country-specific time trends. Results are very similar to the dynamic panel estimates presented in the main manuscript.

Table A.21: Dynamic Panel Estimates—Dummy with Country-Specific Time Trends

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.023***					0.025***
	(0.004)					(0.004)
common language		0.003***				0.002***
		(0.001)				(0.001)
common colonizer			0.003***			0.001
			(0.001)			(0.001)
common income group				0.003***		0.002***
				(0.001)		(0.001)
common continent					-0.002**	-0.006***
					(0.001)	(0.001)
$y_{ij,t-1}$	0.343***	0.344***	0.342***	0.343***	0.346***	0.348***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)
$y_{ij,t-2}$	0.077***	0.079***	0.076***	0.079***	0.078***	0.075***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.780	.730	.837	.734	.819	.992
Sargan	.385	.475	.223	.249	.025	.012

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.22: Dynamic Panel Estimates—N with Country-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.022***					0.013***
	(0.004)					(0.004)
common language		0.002***				-0.001***
		(0.000)				(0.000)
common colonizer			0.004***			0.000
			(0.001)			(0.001)
common income group				0.007***		0.005***
				(0.001)		(0.001)
common continent					0.004***	0.002***
					(0.001)	(0.001)
$y_{ij,t-1}$	0.343***	0.347***	0.342***	0.340***	0.340***	0.358***
	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)
$y_{ij,t-2}$	0.077***	0.082***	0.079***	0.085***	0.084***	0.101***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295
AR(1)	0	0	0	0	0	0
AR(2)	.786	.614	.701	.449	.492	.161
Sargan	.367	.060	.105	.002	.002	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.8.5 Multi-product firms: country-specific time trends

We present results for multi-product firm regressions including country-specific time trends in Tables A.23 and A.24. Again, results remain similar to those from specifications without time trends.

Table A.23: Multi-Product Firms: Dynamic Panel Estimates—Dummy with Country-Specific Time Trends

		I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1}>0)_{ijt}$ defined according to...							
common border	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$	0.018***					0.019***
		(0.002)					(0.002)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$	0.002**					0.004***
		(0.001)					(0.001)
common language	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$		0.002***				0.001***
			(0.000)				(0.000)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$		-0.000*				-0.000
			(0.000)				(0.000)
common colonizer	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$			0.002***			0.001**
				(0.001)			(0.001)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$			-0.001**			-0.000
				(0.000)			(0.000)
common income group	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$				0.001***		0.001*
					(0.000)		(0.000)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$				-0.000		-0.000
					(0.000)		(0.000)
common continent	$\mathbb{I}(N^{sameproduct}_{ij,t-1}>0)_{ijt}$					-0.001	-0.003***
						(0.000)	(0.001)
	$\mathbb{I}(N^{otherproducts}_{ij,t-1}>0)_{ijt}$					-0.003***	-0.004***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.307***	0.314***	0.308***	0.308***	0.327***	0.336***
		(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
$y_{ij,t-2}$		0.076***	0.081***	0.076***	0.077***	0.096***	0.105***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations		3,943,800	3,943,800	3,943,800	3,943,800	3,943,800	3,943,800
# of firms		1,965	1,965	1,965	1965	1,965	1,965
AR(1)		0	0	0	0	0	0
AR(2)		.738	.915	.703	.790	.106	.014
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.24: Multi-Product Firms: Dynamic Panel Estimates—N with Country-Specific Time Trends

		I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...							
common border	$N_{ij,t-1}^{sameproduct}$	0.017***					0.010***
		(0.002)					(0.002)
	$N_{ij,t-1}^{otherproducts}$	0.001***					-0.000
		(0.000)					(0.000)
common language	$N_{ij,t-1}^{sameproduct}$		0.002***				-0.001***
			(0.000)				(0.000)
	$N_{ij,t-1}^{otherproducts}$		-0.000***				-0.000***
			(0.000)				(0.000)
common colonizer	$N_{ij,t-1}^{sameproduct}$			0.004***			0.001**
				(0.000)			(0.000)
	$N_{ij,t-1}^{otherproducts}$			-0.000			-0.000***
				(0.000)			(0.000)
common income group	$N_{ij,t-1}^{sameproduct}$				0.006***		0.003***
					(0.000)		(0.000)
	$N_{ij,t-1}^{otherproducts}$				0.000***		0.000***
					(0.000)		(0.000)
common continent	$N_{ij,t-1}^{sameproduct}$					0.004***	0.003***
						(0.000)	(0.000)
	$N_{ij,t-1}^{otherproducts}$					0.000***	0.000***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.308***	0.307***	0.309***	0.313***	0.305***	0.347***
		(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
$y_{ij,t-2}$		0.078***	0.075***	0.077***	0.088***	0.079***	0.122***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations		3,943,800	3,943,800	3,943,800	3,943,800	3,943,800	3,943,800
# of firms		1,965	1,965	1,965	1,965	1,965	1,965
AR(1)		0	0	0	0	0	0
AR(2)		.912	.649	.85	.348	.966	0
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.8.6 Country-specific time trends for miscellaneous robustness checks

In this Section, we present the results of including country-specific time trends in the specifications presented in Table A.7.

Table A.25: Dynamic Panel Estimates—N—Miscellaneous Robustness Checks with Country-Specific Time Trends

	I	II	III	IV	V	VI
	lagged export value	competitors' success	drop trading agents	drop state owned firms	drop foreign owned firms	drop processing trade firms
$N_{ij,t-1}$ defined according to...						
common border	0.012**	0.012**	0.014***	0.016***	0.007	0.007
	(0.004)	(0.004)	(0.004)	(0.004)	(0.007)	(0.007)
common language	-0.001**	0.000	-0.001**	-0.001**	-0.001	-0.002*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
common colonizer	0.001	0.001	0.001	0.001	0.002	0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
common income group	0.005***	0.003***	0.005***	0.005***	0.002*	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
common continent	0.002**	0.002***	0.002**	0.001**	0.002*	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\text{firmvalue}_{i,t-1}$	-0.000					
	(0.000)					
$N_{-ij,p,t-1}$ defined according to...						
common border		-0.000***				
		(0.000)				
common language		-0.000***				
		(0.000)				
common colonizer		-0.000***				
		(0.000)				
common income group		0.000***				
		(0.000)				
common continent		0.000***				
		(0.000)				
$y_{ij,t-1}$	0.358***	0.441***	0.365***	0.370***	0.371***	0.348***
	(0.014)	(0.012)	(0.015)	(0.015)	(0.024)	(0.027)
$y_{ij,t-2}$	0.105***	0.178***	0.103***	0.099***	0.116***	0.081**
	(0.013)	(0.013)	(0.014)	(0.014)	(0.023)	(0.025)
Observations	777,000	777,000	738,750	727,800	88,800	160,200
# of firms	1,295	1,295	1,236	1,213	148	547
AR(1)	0	0	0	0	0	0
AR(2)	.102	0	.048	.022	.683	.188
Sargan	0	0	0	0	.033	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.9 Different specification for fixed effects regression taking into account firm-level history

We follow up on **footnote 16** and introduce $N_{ij,t-1}^{MFA}$, the number of contiguous previous export destinations which are MFA countries, and $N_{ij,t-1}^{nonMFA}$, the number of contiguous previous export destinations which are not MFA countries, instead of our default regressor $N_{ij,t-1}$, the total number of contiguous previous export destinations, in our regressions from **Section 3.2** which present fixed effects regressions which take into account firm-level history. Note that $N_{ij,t-1} = N_{ij,t-1}^{MFA} + N_{ij,t-1}^{nonMFA}$. As always, we begin by presenting results where we apply $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ to each definition of $N_{ij,t-1}$. Evidently, evidence for spatial exporters in our sample comes predominantly from entering in previously restricted MFA-countries if we define our regressor of interest as sharing a common border, consistent with our identification and sample selection strategy as explained in the main text.

Table A.26: Different Specification for Fixed Effects Regression Taking into Account Firm-Level History—Dummy

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border and MFA member	0.043***					0.042***
	(0.014)					(0.014)
common border but no MFA member	0.011***					0.011***
	(0.004)					(0.003)
common language and MFA member		0.002*				0.001
		(0.001)				(0.001)
common language but no MFA member		0.002***				0.001**
		(0.001)				(0.001)
common colonizer and MFA member			-0.028			-0.029
			(0.032)			(0.031)
common colonizer but no MFA member			0.002**			0.001
			(0.001)			(0.001)
common income group and MFA member				0.000		-0.001
				(0.003)		(0.003)
common income group but no MFA member				0.001		0.001
				(0.001)		(0.001)
common continent and MFA member					0.003**	0.001
					(0.001)	(0.001)
common continent but no MFA member					0.000	-0.002
					(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

Table A.27: Different Specification for Fixed Effects Regression Taking into Account Firm-Level History—N

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border and MFA member	0.031**					0.027**
	(0.013)					(0.011)
common border but no MFA member	0.009***					0.008**
	(0.003)					(0.003)
common language and MFA member		0.000				-0.000
		(0.001)				(0.001)
common language but no MFA member		0.002**				0.001
		(0.001)				(0.001)
common colonizer and MFA member			-0.029			-0.031
			(0.028)			(0.028)
common colonizer but no MFA member			0.003***			0.002**
			(0.001)			(0.001)
common income group and MFA member				0.001		0.000
				(0.002)		(0.002)
common income group but no MFA member				0.002**		0.001**
				(0.001)		(0.001)
common continent and MFA member					0.002*	0.001
					(0.001)	(0.001)
common continent but no MFA member					0.001	-0.000
					(0.001)	(0.001)
Observations	777,000	777,000	777,000	777,000	777,000	777,000
# of firms	1,295	1,295	1,295	1,295	1,295	1,295

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as year dummies (not reported). Standard errors are in parentheses. All regressions use robust standard errors clustered at the firm level to take into account the potential autocorrelation in the export destination choice at the firm level. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively.

A.10 Dynamic Panel Estimates Including Firms Which Entered MFA-Restricted Countries between 2000 and 2004—N with Country-Specific Time Trends

As in principle the dynamic panel regressions take account of the previous export experience of a firm by the lagged dependent variable, we follow the suggestion of a referee and re-estimate our model by including also those firms which entered in MFA-restricted countries between 2000 and 2004, i.e. those which did have an export license. We present results in Tables A.28 to A.31. Estimated coefficients remain similar. However, the model specification tests clearly reject all regressions, hinting at the endogeneity bias introduced by not restricting the sample to firms who have never exported to MFA-restricted countries between 2000 and 2004.

Table A.28: Dynamic Panel Estimates Including Firms Which Entered MFA-Restricted Countries between 2000 and 2004—Dummy with Country-Specific Time Trends

	I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ defined according to...						
common border	0.032***					0.031***
	(0.001)					(0.001)
common language		0.004***				0.001*
		(0.001)				(0.001)
common colonizer			0.004***			0.003***
			(0.000)			(0.001)
common income group				0.002***		0.001***
				(0.000)		(0.000)
common continent					-0.001**	-0.004***
					(0.000)	(0.000)
$y_{ij,t-1}$	0.334***	0.336***	0.336***	0.335***	0.337***	0.335***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$y_{ij,t-2}$	0.082***	0.083***	0.082***	0.082***	0.084***	0.084***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	2,923,800	2,923,800	2,923,800	2,923,800	2,923,800	2,923,800
# of firms	4,873	4,873	4,873	4,873	4,873	4,873
AR(1)	0	0	0	0	0	0
AR(2)	.006	.006	.013	.009	.004	.003
Sargan	0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.29: Dynamic Panel Estimates Including Firms Which Entered MFA-Restricted Countries between 2000 and 2004—N with Country-Specific Time Trends

	I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...						
common border	0.035***					0.018***
	(0.001)					(0.001)
common language		0.007***				0.002***
		(0.000)				(0.000)
common colonizer			0.007***			-0.001***
			(0.000)			(0.000)
common income group				0.010***		0.008***
				(0.000)		(0.000)
common continent					0.008***	0.002***
					(0.000)	(0.000)
$y_{ij,t-1}$	0.331***	0.330***	0.334***	0.309***	0.318***	0.306***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$y_{ij,t-2}$	0.081***	0.080***	0.081***	0.074***	0.079***	0.073***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	2,923,800	2,923,800	2,923,800	2,923,800	2,923,800	2,923,800
# of firms	4,873	4,873	4,873	4,873	4,873	4,873
AR(1)	0	0	0	0	0	0
AR(2)	.004	.010	.010	.033	.005	.040
Sargan	0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm i exported to country j in year t. All regressions include firm-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.30: Multi-Product Firms: Dynamic Panel Estimates Including Firms Which Entered MFA-Restricted Countries between 2000 and 2004—Dummy with Country-Specific Time Trends

		I	II	III	IV	V	VI
$\mathbb{I}(N_{ij,t-1}>0)_{ijt}$ defined according to...							
common border	$\mathbb{I}(N_{ij,t-1}^{sameproduct}>0)_{ijt}$	0.019***					0.019***
		(0.001)					(0.001)
	$\mathbb{I}(N_{ij,t-1}^{otherproducts}>0)_{ijt}$	0.003***					0.003***
		(0.000)					(0.000)
common language	$\mathbb{I}(N_{ij,t-1}^{sameproduct}>0)_{ijt}$		0.002***				0.001***
			(0.000)				(0.000)
	$\mathbb{I}(N_{ij,t-1}^{otherproducts}>0)_{ijt}$		-0.000**				-0.001***
			(0.000)				(0.000)
common colonizer	$\mathbb{I}(N_{ij,t-1}^{sameproduct}>0)_{ijt}$			0.002***			0.001***
				(0.000)			(0.000)
	$\mathbb{I}(N_{ij,t-1}^{otherproducts}>0)_{ijt}$			-0.001***			-0.001***
				(0.000)			(0.000)
common income group	$\mathbb{I}(N_{ij,t-1}^{sameproduct}>0)_{ijt}$				0.001***		0.001***
					(0.000)		(0.000)
	$\mathbb{I}(N_{ij,t-1}^{otherproducts}>0)_{ijt}$				-0.001***		-0.000
					(0.000)		(0.000)
common continent	$\mathbb{I}(N_{ij,t-1}^{sameproduct}>0)_{ijt}$					-0.001***	-0.002***
						(0.000)	(0.000)
	$\mathbb{I}(N_{ij,t-1}^{otherproducts}>0)_{ijt}$					-0.002***	-0.001***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.285***	0.285***	0.285***	0.286***	0.286***	0.288***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$y_{ij,t-1}$		0.072***	0.072***	0.072***	0.072***	0.073***	0.075***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations		11,997,000	11,997,000	11,997,000	11,997,000	11,997,000	11,997,000
# of firm-product couples		19,995	19,995	19,995	19,995	19,995	19,995
# of firms		3,524	3,524	3,524	3,524	3,524	3,524
AR(1)		0	0	0	0	0	0
AR(2)		.116	.109	.165	.104	.06	.01
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

Table A.31: Multi-Product Firms: Dynamic Panel Estimates Including Firms Which Entered MFA-Restricted Countries between 2000 and 2004—N with Country-Specific Time Trends

		I	II	III	IV	V	VI
$N_{ij,t-1}$ defined according to...							
common border	$N_{ij,t-1}^{sameproduct}$	0.020***					0.011***
		(0.001)					(0.001)
	$N_{ij,t-1}^{otherproducts}$	0.000***					0.000***
		(0.000)					(0.000)
common language	$N_{ij,t-1}^{sameproduct}$		0.004***				0.001***
			(0.000)				(0.000)
	$N_{ij,t-1}^{otherproducts}$		-0.000***				-0.000***
			(0.000)				(0.000)
common colonizer	$N_{ij,t-1}^{sameproduct}$			0.004***			-0.000
				(0.000)			(0.000)
	$N_{ij,t-1}^{otherproducts}$			-0.000***			-0.000***
				(0.000)			(0.000)
common income group	$N_{ij,t-1}^{sameproduct}$				0.008***		0.006***
					(0.000)		(0.000)
	$N_{ij,t-1}^{otherproducts}$				0.000***		0.000***
					(0.000)		(0.000)
common continent	$N_{ij,t-1}^{sameproduct}$					0.005***	0.001***
						(0.000)	(0.000)
	$N_{ij,t-1}^{otherproducts}$					0.000***	-0.000***
						(0.000)	(0.000)
$y_{ij,t-1}$		0.284***	0.283***	0.285***	0.274***	0.278***	0.276***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$y_{ij,t-2}$		0.072***	0.071***	0.072***	0.072***	0.072***	0.075***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations		11,997,000	11,997,000	11,997,000	11,997,000	11,997,000	11,997,000
# of firm-product couples		19,995	19,995	19,995	19,995	19,995	19,995
# of firms		3,524	3,524	3,524	3,524	3,524	3,524
AR(1)		0	0	0	0	0	0
AR(2)		.060	.200	.127	.038	.083	.003
Sargan		0	0	0	0	0	0

Notes: The dependent variable is y_{ijt} which is a dummy variable indicating whether a firm-product couple i exported to country j in year t. All regressions include firm-product-destination fixed effects, as well as country-specific time trends (not reported). Standard errors are in parentheses. All regressions use robust standard errors and treat the lags of the dependent variable as well as the regressors of interest as predetermined. We use the two-step system GMM estimator from Blundell and Bond (1998) and, due to the two-step estimation, we use the Windmeijer (2005) finite sample correction for the standard errors. *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations. The row for the Sargan reports the p-values for the null hypothesis of validity of the overidentifying restrictions and can only be computed assuming homoskedasticity. To report this statistic, we re-estimate the model accordingly.

A.11 Empirical probability of exports

Table A.32 presents the empirical probabilities of exporting to a country which are used to interpret the size of the estimated coefficients in the main manuscript.

Table A.32: Empirical Probability of Exports—Firm Level Sample

Rank	Country	Probability	Rank	Country	Probability
1	Japan	0.75695	16	New Zealand	0.01853
2	South Korea	0.25367	17	Republic of South Africa	0.01718
3	Singapore	0.07008	18	Switzerland	0.01602
4	Australia	0.05367	19	Sri Lanka	0.01467
5	Vietnam	0.04691	20	Chile	0.01293
6	Thailand	0.04305	21	Panama	0.01236
7	Malaysia	0.03552	22	Egypt	0.01120
8	United Arab Emirates	0.03185	23	Cambodia	0.01062
9	Indonesia	0.03127	24	Mexico	0.00965
10	Philippines	0.02529	25	Pakistan	0.00907
11	Saudi Arabia	0.02201	26	Israel	0.00888
12	Russia	0.02162	27	Kuwait	0.00753
13	Bangladesh	0.02143	28	Brazil	0.00714
14	Myanmar	0.02124	29	Norway	0.00676
15	India	0.01873	30	Ukraine	0.00579

Turkey, Guatemala, Morocco, Madagascar, Jordan, Kenya, Algeria, Honduras, Venezuela, Romania, Ghana, El Salvador, Sudan, Mongolia, Togo, Peru, Nigeria, Mozambique, Lebanon, Nepal, Djibouti, Yemen, Tanzania, Benin, Nicaragua, Jamaica, Croatia, Zimbabwe, Congo (Republic of), Sierra Leone, Argentina, Iran, Syria, Mauritius, Mauritania, Papua New Guinea, Colombia, Kazakstan, Bermuda, Bahrain, Tunisia, Iceland, Angola, Fiji, Senegal, Mali, Uganda, Liberia, Ecuador, Serbia, Oman, Costa Rica, Azerbaijan, Guinea Bissau, Guinea, Gabon, Afghanistan, Gambia, Trinadad and Tabago, Ethiopia, Iraq, Laos, Congo (Democratic Republic), Swaziland, Cameroon, Côte d'Ivoire, Cuba, Paraguay, Lesotho, Dominican Republic, Brunei, Puerto Rico, Niger, Rwanda, Bulgaria, Samoa, Guyana, Suriname, Uruguay, Central African Republic, Botswana, Barbados, Bolivia, Zambia, Tajikistan, Comoros Islands, Libya, Micronesia (Federated States of), Antigua and Barbuda, Malawi, Albania, Eritrea, Chad, New Caledonia, Macedonia, Maldive Islands, Belize, Kiribati and Tuvalu, Moldova, São Tomé and Principe, Grenada, Haiti, Palau, Bahamas, Vanuatu and New Hebrides, Burundi, Solomon Islands, Bhutan, Tonga, Burkina, Turkmenistan, Cape Verde Islands, Namibia, Marshall Islands, Georgia, Uzbekistan, Bosnia Herzegovina, Seychelles, Dominica, Armenia.

Notes: Table gives the observed frequencies of exporting firms in the firm-level regression sample for the top 30 export destinations outside the MFA countries in descending order. The rest of the 150 export destinations considered in our sample are given, again in descending order. A detailed description of our sample is provided in Section **??**.

A.12 Explanatory variables

We construct different contiguity indicators $\mathbb{I}(N_{ij,t-1} > 0)_{ijt}$ using common border, common language, common colonizer, common income group, and common continent contiguity indicators from data provided by CEPII, see Mayer and Zignago (2011). For the different contiguity measures $\mathbb{I}(N_{ij,t-1} > 0)_{ijt} = 1$ is defined as follows:

Common border: $\mathbb{I}(N_{ij,t-1} > 0)_{ijt} = 1$ for firm i if country j shares a land border with at least one export destination of firm i in $t-1$ and 0 otherwise.

Common language: $\mathbb{I}(N_{ij,t-1} > 0)_{ijt} = 1$ for firm i if country j shares a language with at least one export destination of firm i in $t-1$ and 0 otherwise which is spoken by at least 9 percent of the population in both countries.

Common colonizer: $\mathbb{I}(N_{ij,t-1} > 0)_{ijt} = 1$ for firm i if country j shares a common colonizer after 1945 with at least one export destination of firm i in $t-1$ and 0 otherwise.

Common income group: $\mathbb{I}(N_{ij,t-1} > 0)_{ijt} = 1$ for firm i if country j is in the same income group with at least one export destination of firm i in $t-1$ and 0 otherwise. The four different categories (very low income, low income, medium income, and high income) follow the World Bank's 2006 World Development Indicators (WDI) classification.

Common continent: $\mathbb{I}(N_{ij,t-1} > 0)_{ijt} = 1$ for firm i if country j is located on the same continent as at least one export destination of firm i in $t-1$ and 0 otherwise.

C_j is defined accordingly.

A.13 Descriptive statistics

Table A.33: Descriptive Statistics—Firm Level Sample

Variable	Mean	Std. Dev.	Min.	Max.
y_{ijt}	0.01189	0.10837	0	1
C_j defined according to...				
common border	0.08000	0.27129	0	1
common language	0.64000	0.48000	0	1
common colonizer	0.36667	0.48189	0	1
common income group	0.27333	0.44567	0	1
common continent	0.34000	0.47371	0	1
N_j defined according to...				
common border	0.15333	0.64017	0	5
common language	2.48667	2.30575	0	7
common colonizer	0.78667	1.05569	0	3
common income group	3.38667	6.45785	0	20
common continent	3.74667	8.37392	0	25
$\mathbb{I}(N_{ij,t-1} > 0)$ defined according to...				
common border	0.01176	0.10781	0	1
common language	0.15567	0.36254	0	1
common colonizer	0.06478	0.24614	0	1
common income group	0.20637	0.40470	0	1
common continent	0.26975	0.44383	0	1
$N_{ij,t-1}$ defined according to...				
common border	0.01344	0.13153	0	5
common language	0.23624	0.72363	0	22
common colonizer	0.10450	0.52529	0	20
common income group	0.32240	0.84828	0	17
common continent	0.41640	0.93765	0	20
# of firms				1,295
# of observations				770,000

Notes: Table gives descriptive statistics of the dependent and the explanatory variables used in our empirical analysis at the firm level. A detailed description of our sample is provided in Section **??**.

Table A.34: Descriptive Statistics—Firm-Product Couple Level Sample

Variable	Mean	Std. Dev.	Min.	Max.
y_{ijt}	0.00987	0.09885	0	1
$\mathbb{I}(N_{ij,t-1}^{sameproduct} > 0)$ defined according to...				
common border	0.00763	0.08699	0	1
common language	0.11944	0.32431	0	1
common colonizer	0.04459	0.20640	0	1
common incomegroup	0.17092	0.37644	0	1
common continent	0.26266	0.44008	0	1
$\mathbb{I}(N_{ij,t-1}^{otherproducts} > 0)$ defined according to...				
common border	0.01420	0.11831	0	1
common language	0.07914	0.26995	0	1
common colonizer	0.03716	0.18916	0	1
common incomegroup	0.06440	0.24547	0	1
common continent	0.05955	0.23666	0	1
$N_{ij,t-1}^{sameproduct}$ defined according to...				
common border	0.00839	0.10025	0	4
common language	0.17192	0.57271	0	19
common colonizer	0.06833	0.38434	0	15
common incomegroup	0.24435	0.68145	0	17
common continent	0.35050	0.74127	0	19
$N_{ij,t-1}^{otherproducts}$ defined according to...				
common border	0.05293	0.73395	0	45
common language	1.02048	4.73813	0	98
common colonizer	0.49207	4.37562	0	131
common incomegroup	1.91062	8.16292	0	135
common continent	2.73516	9.17680	0	154
# of firms				6,573
# of firms-product-couples				1,965
# of observations				3,943,800

Notes: Table gives descriptive statistics of the dependent and the explanatory variables used in our empirical analysis at the firm-product couple level. A detailed description of our sample is provided in Section **??**.

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