“The buck stops with the executives”: Assessing the impact of workforce composition and cultural distance on French firms’ exports

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Abstract

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JEL Classification: F16, J24
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1 Introduction

Distance is known to be a barrier to the international trade of goods and services. However, the notion of distance remains particularly heterogeneous with, on the one hand, geographical/physical distance, which can easily be used as a proxy for transportation costs and, on the other hand, cultural distance, which refers to the sharing of a common history and values and the definition and measurement of which are much more complex to apprehend.

From this point of view, the ambition and novelty of this article is to set cultural distance at the very heart of the analysis of the link between workers’ qualifications and export performance in order to analyze the impact of French workforce composition on cultural distance and, consequently, on trade performance. Both extensive (number of products exported by destination) and intensive (value of exports) aspects of trade are considered.

Numerous articles have demonstrated the multiple links that can exist between the qualifications of a firm’s employees and its export performance. While some suggest that there is an employment premium between exporting and nonexporting firms (Bernard and Jensen, 1999; Bernard et al., 2007), others highlight that exporting activities require the use of high-quality manufactured inputs and more skilled workers in order to sell high-quality products at higher prices (Verhoogen, 2008; Kugler and Verhoogen, 2012; Brambilla et al., 2012, 2016, 2016; Bastos et al., 2018; Brambilla et al., 2019).

The very nature of these skills is, unsurprisingly, not neutral; as suggested by Matsuyama (2007), international trade activities involve the use of more skilled labor trained in international business and in languages. The type of employees is also not without impact on the export performance of firms. Following the pioneering work of Rauch (1991), Mion and Opromolla (2014) demonstrate that a firm with a manager having experience related to a specific foreign market exhibits a higher probability of entering this market. Moreover, better managed firms tend to export more products to more destination countries at higher prices and with higher quality (Bloom et al., 2018).

This requires a modern - and therefore extensive - definition of the concept of distance to be taken into account by including cultural distance within the conventional determinants of trade costs. Most articles, however, do not refer to this concept. In other words, this line of research is developed alongside gravity models of international trade. A reconciliation effort is therefore necessary, which we perform in our article. From this perspective, our approach contributes not only to the scarce literature on the identification of dark trade costs and their impacts on trade (Guiso et al., 2009; Felbermayr and Toubal, 2010; Lawless, 2013; Gokmen, 2017; Carrère and Masood, 2018;
Bargain et al., 2019) but also to a growing empirical literature on workforce composition and trade (Luong and Chen, 2016; Brambilla et al., 2019) by revealing how hiring executives affects the impact of dark trade costs on firms’ export performance. Our comprehensive approach is all the more important because, unlike trade barriers which have declined sharply with the liberalization process, dark trade costs are highly persistent over time.

This paper is, to the best of our knowledge, the only one that not only considers these two determinants alongside the conventional variables used in recent gravity models but also combines a novel measure of cultural distance with firm-level characteristics, especially workforce composition. Indeed, most recent studies have compared the use of skilled and nonskilled workers in exporting and domestic firms (Brambilla et al., 2012, 2016) or linked workforce composition with trade only through the high quality products channel (Kugler and Verhoogen, 2012 and Bastos et al., 2018). Moreover, the current study is the only one to consider the case of French firms, using a unique employer-employee database from the French D’eclaration annuelle des donn’ees sociales (DADS), which is an annual census covered by statistical confidentiality that details information of French firm demand for employment categories such as blue collar workers, employees, executives, and other intellectual professions. Approximately 59,606 firms and 72 destination markets over the period 2000-2015 are considered in our article.

The structural gravity model we use to analyze the triptych “skilled labor, cultural distance and export performance” remains conventional but undisputed. Based on the previous works of Anderson and Van Wincoop (2003) and Chaney (2008), multilateral resistance, as well as firm-level productivity, are taken into account. The recent measure of cultural distance that we use is derived from the World Value Survey (WVS), which was developed by Spoilaore and Wacziarg (2016). This dataset and that of the DADS are combined with international trade data from French Customs and FICUS and FARES Databases on the performance of French firms, which are provided by the Institut National de la Statistique et des Etudes Economiques (INSEE), the French National Statistical Institute.

We obtain several results that are a useful contribution to the theory of international trade. The most important is that an increased proportion of executives reduces the effect of cultural distance on the value of exports, i.e., the trade-intensive margin, which, to our knowledge, has not been demonstrated previously. This important effect is also robust to the introduction of firms’ production technology, as it is verified for high-technology firms. Our results also confirm, in the French case, previous study findings. First, we show that workforce composition influences both firm-level intensive and extensive margins of trade, i.e., the value and the volume of exports. Firms
with a higher share of executives have a higher probability of exporting to a given country and recording higher levels of exports, while the share of blue collar workers negatively affects the extensive margin of French firms. Second, as with physical distance, we find that greater cultural differences between countries affect not only the level of exports but also the likelihood of exporting. Our results are not only of interest to the academic sphere but also offer key insights for French policy-makers on strategies to be implemented to promote exports. France’s market share in world trade, in value terms, has been stagnating since 2012, after declining over the 1990-2012 period. In 2018, French exports accounted for 3.0% of the world’s exports of goods and 3.5% of the exports of goods and services. While many macroeconomic factors can explain this modest performance, the argument of France’s deindustrialization is often put forward. However, our study points out that microeconomic factors are also at stake and that the implementation of incentive mechanisms to encourage the recruitment of workers with international business skills is one of the keys to increasing the value of exports. We also advocate to promote higher education internationalization processes and to further strengthen the lifelong learning programs and, within them, the teaching modules on global markets.

The remainder of the paper is organized as follows. Section 2 reviews the main findings of empirical studies on the impact of cultural distance and labor force composition on export performance. Section 3 presents the data, the measure of cultural distance and the empirical model. Section 4 presents some stylized facts and intuitions of the results. Section 5 provides the empirical results, while the last section concludes the paper and suggests important economic policy recommendations.

2 Related literature

Although the gravity equation is known to be one of the most stable relationships observed in economics (Chaney; 2013), the conventional variables on which it is based (transport costs, economic size, tariff and nontariff barriers, common borders, common language, common history and colonial ties) have proven to be insufficient to capture the full reality of trade flows between countries. Something was missing, and “dark trade costs” were introduced to account for this fact. According to Head and Mayer (2013), dark trade costs account for 50%-80% of the negative impact of geographical distance on trade and are, therefore, one of the main explanations of the “distance puzzle” (Disdier and Head, 2008). The notion of “dark trade costs” tends to
refer to something that is not precisely measurable or explainable, which is why a number of countries have endeavored to identify measurable variables and thus better account for the factors explaining international trade. Cultural distance has been at the heart of this approach. Guiso et al. (2009) build a measure of bilateral trust based on the Eurobarometer survey for 15 countries and control for transportation costs to show that a higher level of bilateral trust results in more cross-country trade than structural gravity models of trade can explain. Their results also indicate that bilateral trust is strongly linked to cultural components, such as genetic and somatic distances between countries, commonality of religion and history of wars.

This conclusion is also supported by Beestermöller and Rauch (2018), who demonstrate that the intensity of trade between the countries that had belonged to the Austro-Hungarian monarchy was actually much higher after the fall of the Berlin Wall than could be explained by standard gravity models. Although it disappeared in only one or two decades, the surplus trade that mainly benefited Austria was due to the trust and information sharing that resulted from the common legacy of the Habsburg rule. Of course, the weight of history does not always play favorably. Indeed, the authors show that Germany did not enjoy the same favorable reputation as Austria among the countries of the former Habsburg monarchy and did not experience this period of surplus trade. This historical perspective and the relations of trust between countries naturally raise the question of the influence of past colonial ties on the intensity of intercountry trade. From this perspective, Head et al. (2010) show that the access to independence of colonized countries has always resulted in a reduction in the intensity of trade. This is true for “friendly” or hostile separations, the contraction of trade being faster in the first case. The authors suggest that one of the probable explanations for this phenomenon lies in the depreciation of trade-creating capital. Michaels and Zhi (2010) question the impact of a change in attitudes between nations (without the risk of war, violence, economic sanctions or the introduction of tariff barriers) on the bilateral sourcing of inputs. Focusing on the deterioration of relations between the US and France, which took place between 2002-2003 and 2009, they find evidence that worsening attitudes between these two countries not only reduced trade but also had substantial financial consequences: an erosion of the stock market value of French companies that was greater for those exporting to the US market.

The notion of cultural distance is not easy to define and is even more difficult to measure. That is why a variety of variables have been set up, such as by Felbermayr and Toubal (2010), who estimate cultural differences based on scores from the Eurovision Song Contest. The main advantage of this vari-

5
able is that it changes over time and within country pairs. They show that it can increase trade between countries even after controlling for both transportation costs and other standard measures of cultural proximity, such as common language or adjacency. In a similar vein, Melitz and Toubal (2014) build an indicator of linguistic proximity for 195 countries and show that linguistic proximity increases trade flows, not only because it reflects cultural proximity between countries but also because it reduces communication costs. Gokmen (2017) measures cultural differences using differences in civilization, religion, language and ethnicity and shows that the negative effect of cultural differences on trade has evolved over time and that it was more prominent in the post-Cold War period. More recently, Bargain et al. (2019) suggest that genetic variation can be a proxy for biological taste/preference heterogeneity across countries and that genetic distance reduces trade flows.

Since cultural distance is an important factor in explaining trade flows, how does it interact with the composition of the labor force and, more specifically, the presence of skilled workers and executives? Few, if any, answers to this question have been found in the literature. Indeed, almost all articles on this subject address the direct impact of employees’ skills and the composition of the labor force on export margins, and not the more indirect impact on cultural distance. Indeed, most recent studies compare the use of skilled and nonskilled workers in exporting and domestic firms (Brambilla et al., 2012, 2016) or link workforce composition with trade only through the high quality products channel (Kugler and Verhoogen, 2012 and Bastos et al., 2018). Luong and Chen (2016) investigate how changes in skilled labor supply impact margins of exports. They rely on bilateral trade data recorded at the sectoral level for 34 countries over the period 1995-2010. Their results highlight that skilled labor exerts a strong effect on the intensive margin, while nonskilled labor affects the extensive margin of trade. Brambilla et al. (2019) rely on firm-level rather than sector-level data and show that Chilean exporting firms demand the services of engineers as opposed to skilled administrative workers and managers. However, this analysis does not directly link skilled labor with trade frictions within global markets.

3 Empirical model and data

3.1 Firm-level gravity model

To empirically analyze the impact of cultural distance on trade flows, we rely on a theory-consistent estimation of the gravity model of trade. In its first general formulation, this model states that bilateral trade flows depend
positively on countries’ gross domestic product (GDP) and negatively on distance (representing trade costs). The standard model that is widely used in the empirical literature to evaluate the effects of policy or trade cost variables (see Head and Mayer, 2014) is based on Armington’s (1969) hypothesis that products are differentiated by place of origin and CES preferences, as in Anderson (1979). Anderson and Van Winccop (2003, 2004) refine this model and present the structural gravity system of trade that includes inward and outward multilateral resistances. However, this standard trade model is based on two important assumptions. First, all firms are supposed to export to all destinations. Thus, this model only allows conclusions for the intensive margin of trade. However, Helpman et al. (2008) reveal that there is a large proportion of zeroes in the trade matrix, even at the aggregate level, suggesting that the extensive margin is of great importance. Second, all firms are assumed to be identical.

To address these issues, Melitz (2003) developed a standard trade model in which firms are heterogeneous in terms of productivity and concluded that only the most productive firms are able to export. Chaney (2008) derived a structural gravity model equation following this international trade model and assumed a continuum of heterogeneous firms in terms of productivity, monopolistic competition across firms and countries and iceberg trade costs. He shows that both the intensive and extensive margins of trade can be modeled by a gravity equation. Crozet and Koenig (2010) empirically confirm that both margins of trade at the firm level are affected by trade costs. Following Chaney (2008) and Baier et al. (2018), the structural gravity model from the Melitz model can be expressed as follows:

$$X_{kj} = \left( \frac{t_{kj}}{\Pi_k \bar{P}_j} \right)^{-\kappa} \left( f_{kj}^X \right)^{\frac{1}{1+\sigma}} (W_j L_j) (W_k L_k)$$

where $W_j M_j$ and $W_k L_k$ represent sizes of the importer and the exporter, $\Pi_k$ and $\bar{P}_j$ denote multilateral resistance terms of exporter and importer, $(f_{kj}^X)^{\frac{1}{1+\sigma}}$ represent the fixed export cost components, and $t_{kj}$ denotes bilateral trade costs.

We assume that trade costs ($t_{kj}$) are a function of (i) transport costs, proxied by geographic distance ($D_{kj}$) and the existence of a common border ($\text{contig}_{kj}$) between France and country $j$; (ii) trade policies, proxied by a dummy variable ($EU_{kj}$) denoting whether country $j$ is a member of the European Union; (iii) historical ties, proxied by a dummy capturing whether country $j$ has been in a colonial relationship with France ($\text{colony}_{kj}$) and (iv) cultural costs of exporting, proxied by the cultural distance index ($\text{CultDist}_{kj}$) developed by Spolaore and Wacziarg (2016) and a dummy vari-
able that equals one for French-speaking partners ($CL_{kj}$). Hence, following Carrère and Masood (2018), the trade costs function can be defined as follows:

$$t_{kj} = e^\phi_1 CultDist_{kj} - \phi_2 CL_{kj} D_{kj}^{\gamma_1} e^{-\gamma_2 contig_{kj}} - \gamma_3 EU_{kj} - \gamma_4 colony_{kj}$$

(2)

Based on Eqs. (1) and (2), we estimate the following baseline equation\(^1\):

$$y_{ijt} = \alpha + \beta_1 \ln(TFP)_{it-1} + \beta_2 \ln(Emp)_{it-1} + \beta_3 \ln(Age)_{it-1}$$
$$+ \beta_4 \ln(Workforce)_{it-1} + \eta_1 \ln(GDP)_{jt} + \eta_2 \ln(Pop)_{jt}$$
$$- \gamma_1 \ln(D)_{jt} + \gamma_2 contig_{jt} + \gamma_3 EU_{jt} + \gamma_4 colony_{jt}$$
$$- \phi_1 CultDist_{jt} + \phi_2 CL_{jt} + \lambda_i + \lambda_t + \epsilon_{ijt}$$

(3)

With $\phi_g = \kappa \phi_g \forall k = 1, 2$ and $\gamma_l = \kappa \gamma_l \forall l = 1, 2, 3$.

The subscripts $i, j$ and $t$ denote firm, destination country and year, respectively. The dependent variables ($y_{ijt}$) are as follows:

- The value of exports (in logs) at the destination $j$ level;
- The number of products (in HS4) exported by a firm at the destination $j$ level; and
- A dummy variable for positive trade flows into a certain destination market.

$TFP$ is the firm-level total factor productivity estimated using the methodology proposed by Wooldridge (2009) relying on a translog production function; $Emp$ is the level of employment of firm $i$; $Age$ is the age of firm $i$; and $Workforce$ represents the workforce composition of firm $i$: namely, the share of executives and intellectual professionals (cs3), the share of employees (cs5) or the share of blue-collar workers (cs6). It is important to note that, as suggested by the literature on employment premiums, hiring more skilled workers could be the consequence of firms’ trading activities. Therefore, all the firm-level characteristics are lagged one period to avoid these endogeneity problems.

$GDP$ is the gross domestic product of the destination country, and $Pop$ is the total population of the destination country. $\lambda_i$ represents firm-level fixed effects, while $\lambda_t$ indicates time fixed effects. $\epsilon_{ijt}$ is an error term that is assumed to be statistically independent of the regressors.

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\(^1\)The subscript $k$ is removed because it represents only one exporting country in our analysis: France
Note that in some specifications, country-time fixed effects are included to account for the multilateral resistance term\textsuperscript{2}. In this case, all time-varying and time-invariant variables at the destination level are captured by these fixed effects. Similar to previous studies (Fontagné et al., 2015; Martin and Mayneris, 2015), we estimate Eq. (3) using ordinary least squares (OLS) for the period 2000-2015, even if one dependent variable is dichotomous\textsuperscript{3}

3.2 A novel measure of cultural distance

Measuring cultural differences is a challenge because it involves nonmetric variables, such as values or habits. As a consequence, there is no consensus in the literature regarding this concept. For instance, Zou et al. (2019) refer to the six dimensions of cultural differences proposed by the Dutch psychologist Hofstede (1984) to construct a measure of cultural distance and assess its impact on volatility of the international stock market. Nevertheless, the choice of a measure can affect the accuracy of the empirical results. Therefore, we rely on two measures of cultural difference/proximity to test the robustness of our results.

The first and main metric of cultural differences used in this study is from Spolaore and Wacziarg (2016). As in some previous studies (Guiso et al., 2009; Ahern et al., 2015), the main idea is to rely on questions asked in a survey about individual values. However, in contrast to studies that focus on specific questions relying on bilateral trust (Guiso et al., 2009) or on hierarchy and individualism (Ahern et al., 2015), we choose to focus on all the value-related questions from the World Value Survey 1981-2010 Integrated Questionnaire to avoid arbitrary choices. The WVS consists of nationally representative surveys conducted in almost 100 countries using a common questionnaire. It measures cultural values, attitudes and beliefs towards gender, family, and religion, attitudes and experiences of poverty, education, health, and security, social tolerance and trust, attitudes towards multilateral institutions, cultural differences and similarities between regions and societies. Spolaore and Wacziarg (2016) retain 98 questions for 74 countries

\textsuperscript{2}See Anderson and Van Wincoop (2003), Baldwin and Taglioni (2006) and Yotov et al. (2016) for an in-depth discussion on the importance of controlling for multilateral resistance.

\textsuperscript{3}We use a simple linear probability model rather than nonlinear models such as Probit or Logit models in this case because it avoids the incidental parameter problem due to the sizable set of fixed effects we include in all regressions and provides simple direct estimates of average marginal effects. We follow guidelines of previous papers estimating gravity models on a similar dataset such as Fontagné and Orefice (2018) or Martin and Mayneris (2015).
to compute the measure of cultural distance between countries. Questions retained from the WVS are classified into 7 different categories: perceptions of life (A), environment (B), work (C), family (D), politics and society (E), religion and morale (F), and national identity (G). For example, one of the first questions asked in the survey concerning people’s perceptions of life is “Taking all things together, would you say you are: 1-Very happy, 2-Rather happy, 3-Not very happy, 4-Not at all happy.” One other question asked, for instance, about the religion and morale category is “Do you believe in God? 1-Yes, 2-No”.

To obtain a distance in values between countries, we compute a simple Euclidean distance between the shares of respondents in the two countries who give a specific answer to a particular question. If $s_{ab}^k$ is the share of respondents in country $k$ (k=Italy, Sweden) who give answer $b$ to question $a$, then for binary questions, the cultural distance between Italy and Sweden ($CD_{I-S}^a$) is calculated as follows:

$$CD_{I-S}^a = |s_{a1}^I - s_{a1}^S| \quad (4)$$

For nonbinary questions (meaning that the question allows more than two answers), the cultural distance is calculated as follows:

$$CD_{I-S}^a = \sqrt{\sum_{b=1}^{8} (s_{a1}^I - s_{a1}^S)^2} \quad (5)$$

To obtain a reliable measure of cultural distance, a standardization procedure is used so that the distances computed for each specific question have a mean of zero and a standard deviation of one. Then, all of the indexes are summed across all 98 questions, and we obtain a measure of cultural distance between countries.

We use this measure to obtain the cultural distance between France and 72 other countries. For instance, according to the measure, Belgium and Luxembourg are the closest countries to France in terms of culture, while Jordan and Egypt are the most distant countries from France.

As a robustness check, we use a second measure of cultural differences based on the genetic distance metric developed by Cavalli-Sforza et al. (1994). Their method allows identification of relatedness in populations based on classic genetic markets. Spolaore and Wacziarg (2016) match populations to countries and provide a comprehensive dataset for genetic distance at the country level.

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4See the list in Table A1.
3.3 Data

Our empirical analysis relies on six different databases. First, we use French Customs data that provide individual information regarding the exports of French firms for the period 2000-2015. This dataset includes export records at the firm, product and destination level for all exporting firms located in France. All product-level transactions are classified at the 8-digit level of the combined nomenclature (CN). Therefore, the potential number of observations could be very large. To obtain a relevant dataset, we sum all exports by destination market over all firms. We restrict our sample to 72 destination countries for which we have information on cultural distance in relation to France. We also restrict our analysis to firms that have a median size (total employment) of at least 10 over the period 1995-2015.

Second, we use the FICUS and FARE databases provided by the French National Institute of Statistics (INSEE), which gathers accounting and performance variables at the firm level and covers all French firms, with the exception of firms with no employees or in the agricultural and financing sectors. Specifically, the database contains information about firm value added, nominal gross output, number of employees, intermediate inputs, tangible and intangible capital, investment goods and date of creation. These variables are used to compute the total factor productivity (TFP), size and age of French firms.

Third, we use employer-employee data from the Declarations of Social Data (DADS) to compute the share of executives and intellectual professionals (cs3), the share of employees (cs5) and the share of blue-collar workers (cs6) in total employment for each firm. The category “employees” includes administrative employees in firms, for example secretaries. In contrast, the category of executives and intellectual professionals includes engineers or white collar workers in firms. These three categories of workers are mutually exclusive.

Fourth, we rely on the World Development Indicators (WDIs) provided by the World Bank to obtain information on country population and GDP. Fifth, all time-invariant gravity variables, such as geographical distance and dummy variables for colonial links, common border, common language and European Union membership, are obtained from the CEPII GeoDist and Gravity databases. Finally, for the aforementioned measure of cultural distance, based on the World Values Survey, we rely on the database provided by Spolaore and Wacziarg (2016). We obtain unbalanced panel data for the intensive margin of more than 59,606 firms and 72 destination markets during the period 2000-2015.
4 Stylized facts and intuitions about the results

In this section, we provide firm-level descriptive statistics on workforce composition of French exporters. We also analyze the relationship between this workforce composition and firms’ margins of trade.

4.1 Descriptive statistics

In this subsection, we provide raw data evidence regarding the distribution of skilled workers in French exporting firms. Figure 1 shows the kernel density of the share of skilled labor distribution (cs3, cs5 or cs6) over the period 2000-2015.

![Figure 1: Kernel density of the share of executives and intellectual professionals (cs3), the share of employees (cs5) or the share of blue-collar workers (cs6) distribution over the period 2000-2015 (Source: DADS and author’s calculation).](image)

The results clearly reveal that French firms employ more blue collar workers than executives or employees. Indeed, we can assess that a very large proportion of firms in our sample employ less than 20% executives and employees. This observation is confirmed by summary statistics provided in Table A2 in the Appendix. On average, over the period 2000-2015, French firms employ 17% executives and 15% employees.

4.2 Intuitions of the results

Before discussing the estimation results, we provide graphical illustration of two aspects of the correlation between workforce composition and exports (Figure 2): between cultural distance and with respect to both margins of trade (Figure 3). As shown in Figure 2, a positive correlation seems to exist between the share of executives and intellectual professionals in total
employment and the number of markets (destination countries) covered by French exporting firms (i.e., a measure of the extensive margin of trade). In contrast, Figures 2 appears to illustrate a negative relationship between the extensive margin of trade and the share of employees and blue-collar workers. If we focus on the relationship between cultural differences and the level of exports per firm and by destination (Figure 3), we observe a negative relationship between cultural distance and exports. A similar pattern can be observed for the extensive margin. Indeed, the relationship between the average number of products exported by a firm to a certain market and cultural distance seems to be negative.
Figure 2: Share of executives and intellectual professions (cs3), share of employees (cs5), share of blue collar workers (cs6) and number of foreign markets per firm (Sources: Customs data, FARE, DADS and author’s calculation).
5 Empirical results

5.1 Baseline results

We first present our main results, namely, the estimation of the model presented in Eq. (3) for the exports of our unbalanced panel data of 59,506 firms to 72 destinations over the period 2000-2015, representing 2,970,581 observations. We also address the robustness of our results through a battery of checks using an alternative measure of cultural differences and alternative specifications.

Workforce composition. Table 1 summarizes the results of the estimation of Eq. (3), including country-by-year fixed effects to control for multilateral resistance. In this case, all time-varying variables at the destination level are removed from the equation.
<table>
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<tr>
<th></th>
<th>Exports (log)</th>
<th># Products (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\ln(TFP)_{it-1}$</td>
<td>0.266*** 0.265*** 0.265*** 0.266*** 0.264***</td>
<td>0.0246*** 0.0236*** 0.0257*** 0.0244*** 0.0245***</td>
</tr>
<tr>
<td></td>
<td>(0.0211) (0.0210) (0.0209) (0.0211) (0.0208)</td>
<td>(0.00682) (0.00683) (0.00666) (0.00666) (0.0067)</td>
</tr>
<tr>
<td>$\ln(Empl)_{it-1}$</td>
<td>0.259*** 0.262*** 0.260*** 0.260*** 0.263***</td>
<td>0.0786*** 0.0806*** 0.0783*** 0.0827*** 0.0827***</td>
</tr>
<tr>
<td></td>
<td>(0.0086) (0.0086) (0.0085) (0.0085) (0.0082)</td>
<td>(0.0025) (0.0025) (0.0024) (0.0026) (0.0024)</td>
</tr>
<tr>
<td>$\ln(Age)_{it-1}$</td>
<td>0.00623 0.00626 0.00666 0.00625 0.00670</td>
<td>-0.00365 -0.00362 -0.00389* -0.00357 -0.00377</td>
</tr>
<tr>
<td></td>
<td>(0.0081) (0.0081) (0.0081) (0.0080) (0.0080)</td>
<td>(0.0023) (0.0023) (0.0023) (0.0023) (0.0023)</td>
</tr>
<tr>
<td>$Sharecs3_{it-1}$</td>
<td>0.0687*** 0.0687***</td>
<td>0.0504* 0.0504* 0.0504*</td>
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<tr>
<td></td>
<td>(0.0224) (0.0224)</td>
<td>(0.0026) (0.0026) (0.0026)</td>
</tr>
<tr>
<td>$Sharecs5_{it-1}$</td>
<td>-0.072** -0.073**</td>
<td>0.042*** 0.042*** 0.042***</td>
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<tr>
<td></td>
<td>(0.0291) (0.0358)</td>
<td>(0.0140) (0.0140) (0.0140)</td>
</tr>
<tr>
<td>$Sharecs6_{it-1}$</td>
<td>-0.00895 -0.0184</td>
<td>-0.066*** -0.066*** -0.066***</td>
</tr>
<tr>
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<td>(0.0177) (0.0243)</td>
<td>(0.00639) (0.00639) (0.00639)</td>
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</table>

**Notes:**
- This table presents the regressions of the log of exported values at the firm-destination level (cols. 1-5) and of the log of the number of products exported to each country (cols. 6-10).
- Cs3 corresponds to the category “Executives and intellectual professionals”, cs4 corresponds to the category “Employees” and cs6 corresponds to the category “Blue-collar workers”.
- The data are for the period 2000-2015.
- Clustered standard errors by destination-year are in parentheses.
- *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. 
Columns 1 to 5 report the OLS estimates for the logarithm of exports (i.e., the intensive margin) as the dependent variable, while columns 6 to 10 show the results for the number of products exported at the firm-destination level (i.e., the extensive margin). First, we notice that coefficient estimations are stable and robust to the inclusion of other firm-level determinants of trade such as TFP, employment or age of firm. Second, we find that total factor productivity (TFP) positively affects both the level of exports and the number of products exported at the firm-destination level. Our results also reveal that the size of a firm positively influences both margins of trade. This is consistent with previous studies at the firm level (Lawless, 2013) and with the prediction of the theoretical model of Melitz (2003). More interestingly, we find that the share of executives and intellectual professionals in total firm employment has a positive and significant impact on the level of exports and the number of products exported. An increase of one percentage point in the share of executives and intellectual professionals leads to an increase in French firms’ exports of 5% to 7%. In contrast, our results highlight that the share of employees has a negative impact on the intensive margin of trade, while the share of blue-collar workers negatively influences the extensive margin of trade. These results confirm those from Luong and Chen (2016) for sector-level data and extend those of Brambilla et al. (2016) for Chilean firms. Furthermore, they provide evidence that workforce composition is an important factor in explaining firms’ export behavior. Indeed, exporting activities involve expertise in terms of international business, language skills or the legal environment of destination markets, and therefore require more skilled workers.

Cultural distance. To evaluate the effect of cultural distance on both margins of trade, we re-estimate Eq. (3) without country-by-year fixed effects. Table 2 displays the results. Notably, the estimated coefficients of firm-level determinants are similar to those estimated in Table 1. Moreover, as expected, we find that market size, measured by GDP, has a positive impact on French firms’ levels of exports and on the number of products exported by French firms. The same applies to the population level. Furthermore, standard gravity variables, representing trade costs, have the expected sign for both margins of trade. Indeed, we find that adjacency to France, speaking French, being a former colony of France and being a member of the European Union (EU) strongly increase the French firms’ levels of export and the numbers of products that they export. The negative effect of transportation costs on the intensive and the extensive margins of trade of French firms,
<table>
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<th># Products (log)</th>
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<th># Products (log)</th>
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<td>0.0449***</td>
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<td>0.0361***</td>
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<td>(0.0282)</td>
<td>(0.00845)</td>
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<td><strong>Sharescs5_{it-1}</strong></td>
<td>-0.0723**</td>
<td>-0.00706</td>
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<tr>
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<td>(0.0300)</td>
<td>(0.0345)</td>
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<td><strong>Sharescs6_{it-1}</strong></td>
<td></td>
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<td>-0.0607***</td>
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<td>(0.0074)</td>
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<tr>
<td><strong>Ln(GDP)_{jt}</strong></td>
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<td>0.0735***</td>
<td>0.137***</td>
<td>0.0256***</td>
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<td>(0.00275)</td>
<td>(0.0154)</td>
<td>(0.0044)</td>
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<td><strong>Ln(Pop)_{jt}</strong></td>
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<td>0.0097***</td>
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<td>(0.00279)</td>
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<td><strong>Ln(D)_{j}</strong></td>
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<td>-0.0593***</td>
<td>-0.238***</td>
<td>-0.0741***</td>
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<td>(0.0142)</td>
<td>(0.0048)</td>
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<tr>
<td><strong>CultDist_{j}</strong></td>
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<td>(0.0005)</td>
<td>(0.0001)</td>
<td>(0.0004)</td>
<td>(0.0001)</td>
</tr>
<tr>
<td><strong>CL_{j}</strong></td>
<td>0.201***</td>
<td>0.125***</td>
<td>0.340***</td>
<td>0.07916***</td>
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<td><strong>contig_{j}</strong></td>
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<td>0.123***</td>
<td>0.451***</td>
<td>0.1417***</td>
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<td>(0.0337)</td>
<td>(0.00784)</td>
<td>(0.0311)</td>
<td>(0.00915)</td>
</tr>
<tr>
<td><strong>colony_{j}</strong></td>
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<td>0.0900***</td>
<td>-0.304***</td>
<td>0.0628***</td>
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<tr>
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<td>(0.0512)</td>
<td>(0.0137)</td>
<td>(0.0448)</td>
<td>(0.02273)</td>
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<td><strong>EU_{j}</strong></td>
<td>0.227***</td>
<td>0.167***</td>
<td>0.105***</td>
<td>0.0785***</td>
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<td>(0.0093)</td>
<td>(0.0391)</td>
<td>(0.0119)</td>
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<tr>
<td><strong>Ln(REER)_{jt}</strong></td>
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<td>-0.0191***</td>
<td>-0.0066***</td>
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<tr>
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<td>(0.0053)</td>
<td>(0.0014)</td>
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</table>

| Observations                   | 2,970,581    | 2,970,581       | 2,119,923    | 2,111,923       |
| R2                             | 0.382        | 0.440           | 0.428        | 0.524           |
| Firm FE                        | Yes          | Yes             | Yes          | Yes             |
| Year FE                        | Yes          | Yes             | Yes          | Yes             |
| Destination-year FE            | No           | No              | No           | No              |

*Note:* This table presents the regressions of the log of exported values at the firm-destination level (cols. 1 and 3) and of the log of the number of products exported to each country (cols. 2 and 4). Cs3 corresponds to the category “Executives and intellectual professionals”, cs4 corresponds to the category “Employees” and cs6 corresponds to the category “Blue-collar workers”. The data are for the period 2000-2015. Clustered standard errors by destination-year are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.
reflected by the estimated coefficient of distance, are also highlighted in Table 2. Finally, we find that the cultural distance index introduced in the gravity model of trade has a negative and significant impact on the level of exports of French firms. This confirms that cultural distance between France and its trading partners impedes exports by French firms. At first glance, it could be argued that the estimated coefficient is rather small, especially compared to the coefficient associated with physical distance. However, the estimated coefficient exhibits semi-elasticity, and the values of the cultural distance index range between -100 and +100. To obtain a better sense of the actual effect of cultural distance on the intensive margin of French firms, we can increase the index from zero to its standard deviation value. In this case, when the cultural distance index increases from one standard deviation of 35, it decreases French firms’ exports to approximately 4.2% (35*-0.0012*100). Note that cultural distance does not seem to affect the number of products exported by French firms. This counterintuitive result for the extensive margin of trade could be related to the level of aggregation that we consider for the number of products (HS4).

In the last two columns of Table 2, we introduce a measure of cost competitiveness by constructing a bilateral real exchange rate using data on the unit labor costs (ULC) of the whole economy provided by the OECD. An increase of this indicator represents a real appreciation of French currency, and therefore a decrease in cost competitiveness. This measure restricts our sample to 2,119,923 observations, as we have data for this variable for only 31 countries. Our results for cultural distance and workforce composition are robust to the inclusion of a measure of competitiveness. Furthermore, we find that cost competitiveness negatively affects both the intensive and the extensive margins of French firms. Surprisingly, when our sample is restricted to 31 OECD trading partners of France, we find that cultural distance also has a negative and significant impact on the extensive margin of trade. As a consequence, our results not only confirm previous studies on aggregate data, such as Guiso et al. (2009), Felbermayr and Toubal (2010) and Bargain et al. (2019) but also enrich the literature by using a novel measure of cultural distance and exploring its negative impact on firms’ export behavior.

Robustness check 1: Alternative measure of culture. To ensure the accuracy of our results with respect to cultural differences, we estimate Eq. (3) using an alternative measure of cultural proximity, the genetic distance

\[ REER_{jt} = e_{FRjt} \cdot \frac{ULC_{FR}}{ULC_j}, \]

with \(e_{FRjt}\) as the bilateral nominal exchange rate of the Euro against the currency of country \(j\) and \(ULC_j\) unit labor costs of country \(j\).
metric developed by Cavalli-Sforza et al. (1994). This measure has been used in several recent studies on different topics such as trade (Bargain et al., 2019) or inequalities (Saha and Mishra, 2020) to measure cultural differences. The regression results are reported in Table 3. The results are very stable and robust to an alternative measure of cultural differences. Indeed, we find that genetic distance has a negative and significant impact on the intensive margin of trade for the whole sample and a negative impact on the extensive margin of trade for the restricted sample (32 countries).

**Robustness check 2: Another measure of the extensive margin.**

To obtain a better idea of the cross-country heterogeneity of the impact of cultural and genetic distances on the extensive margin of trade, we adopt a different vision of the latter. We define it as the probability that a firm exports to a given country in 2015\(^6\). We therefore construct a balanced panel of firms’ export behavior to 70 countries for 2015 (19,960 exporting firms). Hence, we obtain 1,367,200 observations, and we compute a dummy variable reflecting the export status of firm \(i\) to destination market \(j\) in 2015. We then estimate Eq. (3) using a linear probability model. The results are summarized in Table 4. Our previous results for workforce composition and the extensive margin of trade of French firms are all confirmed. Indeed, the share of executives and intellectual professionals increases the likelihood that a firm will export to a certain market, while the share of blue-collar workers has a negative impact on this likelihood. Nevertheless, in contrast with our previous findings regarding the number of products exported by a firm to a given country, we show that cultural distance affects the probability that a firm will export to a certain market. Therefore, both the intensive and extensive margins of trade of French firms are affected by cultural distance.

\(^6\)\(P(X_{ij}^j = 1|x_{ij})\), with \(x_{ij}\) representing determinants of international trade.
Table 3: Workforce composition, genetic distance and firm-level trade margins

<table>
<thead>
<tr>
<th></th>
<th>Exports (log)</th>
<th># Products (log)</th>
<th>Exports (log)</th>
<th># Products (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln(TFP)$_{it-1}$</td>
<td>0.250***</td>
<td>0.0234***</td>
<td>0.293***</td>
<td>0.0301***</td>
</tr>
<tr>
<td></td>
<td>(0.0205)</td>
<td>(0.00680)</td>
<td>(0.0263)</td>
<td>(0.00788)</td>
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<tr>
<td>Ln(Emp)$_{it-1}$</td>
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<td>0.0823***</td>
<td>0.297***</td>
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<td>(0.00860)</td>
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<td>(0.00275)</td>
</tr>
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<td>0.0191</td>
<td>0.00102</td>
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<tr>
<td>Sharecs3$_{it-1}$</td>
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<td>0.0450***</td>
<td>0.0592**</td>
<td>0.0480***</td>
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<td>(0.0244)</td>
<td>(0.00717)</td>
<td>(0.0281)</td>
<td>(0.0113)</td>
</tr>
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<td>Sharecs5$_{it-1}$</td>
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<td>-0.00606</td>
<td>0.0432**</td>
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<td>(0.0191)</td>
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<td>(0.00621)</td>
<td>(0.0101)</td>
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<tr>
<td>Ln(GDP)$_{jt}$</td>
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<td>0.0714***</td>
<td>0.171***</td>
<td>0.0287***</td>
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<tr>
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<td>(0.0137)</td>
<td>(0.00293)</td>
<td>(0.0204)</td>
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<td>0.0114***</td>
<td>0.414***</td>
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<td>(0.0173)</td>
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<td>(0.00903)</td>
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<tr>
<td>Ln(D)$_{j}$</td>
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<td>-0.0624***</td>
<td>-0.231***</td>
<td>-0.0747***</td>
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<td>(0.00497)</td>
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<td>Ln(GenDist)$_{j}$</td>
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<td>(0.0282)</td>
<td>(0.00867)</td>
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<tr>
<td>colony$_{j}$</td>
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<td>0.0952***</td>
<td>-0.319***</td>
<td>0.0601***</td>
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<td>(0.0128)</td>
<td>(0.0492)</td>
<td>(0.0230)</td>
</tr>
<tr>
<td>EU$_{j}$</td>
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<td>0.165***</td>
<td>0.216***</td>
<td>0.0872***</td>
</tr>
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<td>(0.0253)</td>
<td>(0.00915)</td>
<td>(0.0415)</td>
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<td>Ln(REER)$_{jt}$</td>
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<td>(0.00536)</td>
<td>(0.00151)</td>
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Observations 2,970,581 2,970,606 2,119,923 2,119,934
R-squared 0.378 0.440 0.427 0.524
Firm Fixed effects Yes Yes Yes Yes
Year fixed effects Yes Yes Yes Yes
Firm-year fixed effects No No No No

Note: This table presents the regressions of the log of exported values at the firm-destination level (cols. 1 and 3) and of the log of the number of products exported to each country (cols. 2 and 4). Cs3 corresponds to the category “Executives and intellectual professionals” and cs6 corresponds to the category “Blue-collar workers”. The data are for 2015. Clustered standard errors by destination-year are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.2 Executives and other intellectual professions defying dark trade costs

While we stressed the important role played by dark trade costs, such as cultural distance, in the previous section, their impact on both margins of trade
Table 4: Workforce composition, cultural distance and firms’ exporting behavior

<table>
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<th>Exp. status</th>
<th>Exp. status</th>
<th>Exp. status</th>
<th>Exp. status</th>
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<td>0.0034***</td>
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<td>(0.000439)</td>
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<td>0.0179***</td>
<td>-0.0102</td>
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<td>0.0413***</td>
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<td>0.0413***</td>
<td>-0.00239</td>
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<td>(0.0003)</td>
<td>(0.0003)</td>
<td>(0.0003)</td>
<td>(0.0137)</td>
</tr>
<tr>
<td>( \text{Ln}(Pop)_j )</td>
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<td>-0.00130***</td>
<td>-0.00134**</td>
<td>-0.00134**</td>
<td>-0.0134**</td>
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<td>(0.0004)</td>
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<td>(0.106-05)</td>
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<td>0.0268***</td>
<td>0.0268***</td>
<td>0.0268***</td>
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<td>(0.0469)</td>
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<td>( \text{contig}_j )</td>
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<td>0.156***</td>
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<td>-0.0186</td>
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<td>0.0167***</td>
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<td>( \text{Ln}(REER)_j )</td>
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Observations 1,397,200 1,397,200 1,397,200 1,397,200 618,76

R2 0.171 0.170 0.171 0.153 0.134
Firm FE No No No No No
Destination FE Yes Yes Yes No No

Note: This table presents the LPM of a dummy equal to one if there is a positive export flow to a country, and zero otherwise at the firm level. Cs3 corresponds to the category “Executives and intellectual professionals”, cs4 corresponds to the category “Employees” and cs6 corresponds to the category “Blue-collar workers”. The data are for the period 2000-2015. Robust standard errors are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

of French firms could be nonlinear and depend on the share of executives and intellectual professionals in each firm. To test this hypothesis, we interact the variable capturing cultural distance (or genetic distance) with the variable measuring the share of executives and intellectual professionals of total
employment at the firm level. In doing so, our aim is to test whether the relationship between cultural distance and exports of French firms is nonlinear and conditional on the workforce composition. Table 5 summarizes the results for the intensive margin of trade.

Columns (1) and (2) present the results for the cultural distance index, while columns (3) and (4) show the outcomes for the genetic distance metric. Note that in columns (2) and (4), we control for multilateral resistance using destination-year fixed effects. In this case, destination-level variables are removed from the estimation. The nonlinear impact of cultural distance on the level of exports is confirmed in the first two columns of Table 5. Indeed, we find that the interaction between the share of executives and intellectual professionals in total employment and the cultural distance index is significant and positive. The results reveal that the positive impact of the share of executives and intellectual professionals on the intensive margin of trade increases with the level of the cultural distance index. In other words, when a destination country is far from France in terms of culture, the benefits of hiring executives to export increase. The reverse is also true: when the share of executives in total employment is high, it decreases the negative impact of cultural distance on the intensive margin. This result is highly important because it appears that hiring more skilled workers is a way to escape from hidden sources of trade frictions. The results concerning genetic distance are very similar and support previous conclusions.

To obtain a clearer idea of the nonlinear impact of both cultural and genetic distances on the intensive margin of trade, we plot, in Figure 4, the response of the intensive margin to the cultural distance index (or genetic distance metric) for different values of the share of executives in total employment. The results for the cultural distance index are displayed on the left side of Figure 4, while those for the genetic distance are shown on the right side of Figure 4.
Table 5: Nonlinear effect of dark costs on firms’ intensive margin

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<td>0.258***</td>
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<td>(0.00803)</td>
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<td>Sharecs3$_{it-1}$</td>
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<td>0.132***</td>
<td>0.236***</td>
<td>0.340***</td>
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<td>Sharecs3$_{it-1}$ * CultDist$_j$</td>
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<td>0.0033***</td>
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<td>0.237***</td>
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<td>(0.0120)</td>
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<tr>
<td>$\ln(Pop)$_{jt}$</td>
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<td>(0.0164)</td>
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<td>$\ln(D)_{j}$</td>
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<td>-0.302***</td>
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<td>Contig$_j$</td>
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<td>0.559***</td>
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<td>(0.0329)</td>
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<td>CL$_j$</td>
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<td>0.0571***</td>
<td>0.0377***</td>
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Observations: 2,970,581 2,970,581 2,970,581 2,970,581
R2: 0.382 0.393 0.383 0.393
Firm FE: Yes Yes Yes Yes
Year FE: Yes No Yes No
Destination-year FE: No Yes No Yes

Note: This table presents the regressions of the log of exported values at the firm-destination level. Cs3 corresponds to the category “Executives and intellectual professionals”. $\text{Sharecs3}_{it-1}$ * CultDist$_j$ is the interaction variable between the share of cs3 in total employment and the cultural distance index. $\text{Sharecs3}_{it-1}$ * $\ln(GenDist)_{jt}$ is the interaction variable between the share of cs3 in total employment and the genetic distance. The data are for the period 2000-2015. Clustered standard errors by destination-year are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Figure 4: Predictive margins of cultural and genetic distances on firms' intensive margin
We can clearly observe the nonlinear effect of both measures of dark trade costs on trade. Indeed, we remark that for low values of the share of executives in total employment, the depressive effect of cultural distance on the intensive margin is important. In contrast, for values equal to at least 80% of executives in total employment, the negative effect of cultural distance on trade disappears. Similar conclusions can be derived for genetic distance.

5.3 High-technological versus low-technological sectors

It is important to notice that technological change exerts a strong impact on labor composition in favor of highly educated workers, and thus in favor of white collar workers (Morrison and Siegel, 2001; Autor et al., 2003). Therefore, the workforce composition of a firm is closely related to its production technology, and firms operating in high technological sectors tend to have a higher share of white-collar workers. Therefore, it is important to test the heterogeneity of the nonlinear effect of dark trade costs on trade based on the technological intensity of the sector in which firms operate. Following the OECD categorization for the definition of high-tech and low-tech industries, we divide our sample into two categories of firms: high-tech firms, which correspond to firms operating in high and medium-high R&D industries, and low-tech firms, which correspond to firms operating in low and medium-low R&D industries (see Table 1 in Galindo-Rueda and Verger, 2016). Table 6 presents estimation results for high-tech and low-tech firms.
Table 6: High-tech versus low-tech firms

<table>
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<th>High-tech firms</th>
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<td>Cultural distance</td>
<td>Genetic distance</td>
<td>Cultural distance</td>
<td>Genetic distance</td>
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<td>(0.0384)</td>
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<td>Ln(Empl)$_{it-1}$</td>
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<td>0.238***</td>
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<tr>
<td>CultDist$_j$</td>
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<td>-0.000622***</td>
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Observations 1,185,286 1,185,286 875,894 875,373
R-squared 0.380 0.380 0.264 0.375
Additional controls Yes Yes Yes Yes
Firm FE Yes Yes Yes Yes
Year FE Yes Yes No Yes

Note: This table presents the regressions of the log of exported values at the firm-destination level. Cs3 corresponds to the category “Executives and intellectual professionals”. Sharecs3$_{it-1}$ * CultDist$_j$ is the interaction variable between the share of cs3 in total employment and the cultural distance index. Sharecs3$_{it-1}$ * Ln(GenDist)$_j$ is the interaction variable between the share of cs3 in total employment and the genetic distance. Additional control variables used in Table 5 are included in all regressions. The data are for the period 2000-2015. Clustered standard errors by destination-year are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Columns (1) and (2) display results for low-tech firms, while columns (3) and (4) present results for high-tech firms. We can remark that the nonlinear effect of cultural distance (or genetic distance) on trade flows is only valid for high-tech firms. For low-tech firms, it does not seem to be verified. This means that even when the production technology is controlled for by focusing on high-tech firms, hiring more skilled workers decreases the negative impact of cultural costs on firms’ exports. Therefore, this result is robust to the firm’s production technology.

6 Concluding remarks

In this article, we explore the link between workforce composition, cultural distance and firms’ margins of trade using a firm-destination-level analysis relying on data for French firms’ exports to 72 trading partners during the 2000-2015 period. We demonstrate that workforce composition, reflecting labor skills, has a significant impact on both firms’ margins. Indeed, exporting activities involve certain skills, such as understanding foreign languages, understanding foreign markets, and understanding international business, which can be synthesized through the concept of an “export culture”. Therefore, firms with a higher share of skilled workers have a higher probability of exporting, exporting more products and recording higher values of exports. Second, we confirm that cultural differences between countries negatively affect both the probability that a firm will export to a certain destination and the level of its exports. It is important to consider that these trade frictions are persistent because, in contrast to transportation costs, they decrease only slowly over time because they involve differences in tastes, bilateral trust or habits. Most importantly, our results highlight that hiring more executives allows firms to diminish the negative effect of cultural distance on export performance. Indeed, the negative impact on trade made by cultural distance can be reduced by a labor force that engages in a “culture” of international business, which is reflected by better language skills and better expertise in the international environment. We show that this is not linked to firms’ production technology, as it holds for high-tech firms. This result is related to the previous analysis of Bakas et al. (2020) that shows that culture increases countries’ labor productivity. In our analysis, hiring executives and white collar workers that benefit from a better “culture” of international markets increases firms’ exports through a decrease in trade costs linked to cultural differences between countries. Our findings have important implications for public policy measures. In-
deed, as our results suggest, the development of a “culture” of international business that eases exporting activities requires more skilled workers. As a consequence, the skilled upgrading of the labor force is necessary to achieve better export performance. This can be achieved through the increased promotion of programs for the internationalization of university curricula but also by strengthening, through information and subsidy campaigns, employees’ access to lifelong learning programs, particularly those with a strong international dimension. The development of incentive mechanisms for the recruitment of international employees or those with international knowledge and experience should also be encouraged.

References


History, 78(2): 358-393.


# Appendix

## Table A1: List of destination countries retained in the analysis

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