Working Paper

CEPII

Do exporting firms benefit from retail internationalization? Evidence from France

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Highlights

- IFS certified French firms are more likely to export and export larger volumes than non-certified firms to markets where French retailers established outlets.

- Retailers' suppliers (identified by IFS certification) benefits from a trade cost advantage.

- This advantage disappears when French retailers exit from the destination country.

RESEARCH AND EXPERTISE
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▌ Abstract

This paper questions the impact of the globalization of the retail sector on the export activity of origin country agri-food firms. In a previous paper (Cheptea et al. 2015), we showed that the overseas expansion of a country's retailers fostered its exports to foreign markets. This effect can be explained by a reduction in trade costs for retailers' supplying firms in the origin country, or to a change in consumer preferences in the host country that benefits all origin country firms. In this paper, we evaluate which of the two mechanisms dominates. For that, we use an original firm-level database of French agri-food exports, identifying the domestic suppliers of French retailers through certification with the private IFS standard. We find that IFS certified French firms are more likely to export and export larger volumes than non-certified firms to markets where French retailers established outlets. We also show that when French retailers close down their activities in a market, IFS firms face a drop in exports to this market in the subsequent years. The results are robust to the use of different sets of firm- and country-specific fixed effects, are unaffected by possible selection and endogeneity biases, and by the presence in export markets of other retailers. The difference in behavior for certified and non-certified exporting firms on markets where French retailers operate confirms the trade cost advantage of retailers' suppliers, which is lost when French retailers exit from the destination country.

▌ Keywords

Multinational retailers, Firm-level exports, Private standards.

▌ JEL

F12, F14, F23.

Do exporting firms benefit from retail internationalization? Evidence from France[1]

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1. Introduction

Their large size and wide transnational networks of outlets and business connections make multinational retailers major regional and global players. Therefore, the increasing globalization of the retail sector is likely to shape not only retailers' domestic and local economies, as suggested by the traditional literature on foreign direct investment, but also the foreign trade of origin and host countries.

In this paper we explore the impact of the overseas expansion of retailers on the export activity of firms in their origin country. In a previous paper (Cheptea et al., 2015) we find a strong positive effect of the overseas sales of retailers from a given country on its exports to these markets. This effect can reflect two mechanisms. It can be due to a reduction in export costs to these markets for retailers' suppliers, or an increase in foreign consumers' preference for origin country goods from which equally benefit all origin country firms. In this paper, we aim to unravel which of the two mechanisms dominates.

To do so, we compare the impact of retailers' sales in foreign markets on the export patterns of their suppliers and of other origin country firms. We focus our analysis on French agri-food exports. The case of France is particularly appealing for addressing this question. First, it has some of the world's largest retailers with wide transnational networks of outlets (Auchan, Carrefour...). Second, France also sticks out in reporting detailed data on firm-level exports.

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Finally, we identify the domestic suppliers of retailers using original data on the certification of French agri-food firms with the private IFS standard. We find that certified French firms are more likely to export, and export larger amounts, than non-certified firms to markets where French retailers established outlets. This gap between the two types of firms is statistically significant and robust to the use of different sets of firm- and country-specific fixed effects. This first result suggests the presence of a trade cost effect, benefiting only to domestic retail suppliers. The use of natural experiment of French retailers exit from some markets allows us to go further and to test whether the positive impact of retailers' foreign activity on host country export may be driven by a change in foreign demand. Among all French firms exporting to countries where French retailers quit their activity, we find a drop in the volume of exports only for certified firms. This difference in behavior for certified and non-certified exporting firms confirms the trade cost advantage of retailers' suppliers, which is lost when French retailers exit from the destination country.

There are few works analyzing the role of multinational retailers in international trade. Our analysis relates the most to the work of Head et al. (2014) on the impact of multinational retailers established in China on the exports of Chinese cities, and to Nordås et al. (2008)'s case study analysis of the impact of the arrival of multinational retailers on host country export patterns. None of these studies employs firm-level data, nor questions the effect on retailers' supplying firms. Thus, the contribution of this article is threefold. First, we show that the main benefits of retail sector globalization are grasped by the retailers' domestic suppliers. This indicates that the supplying firms benefit from a trade cost advantage on markets served by the domestic retailers. The trade cost channel thus dominates the retailers' effects on foreign demand. Second, our analysis employs an original dataset on French agri-food firms certified with the IFS standard, which permits us to identify retailers' suppliers in home country. Third, we perform several robustness checks, controlling for the sales in foreign markets of retailers from other origin countries, the auto-selection of firms exporting to each market, and the endogeneity of retailers' sales and firms' certification and export decisions. The article is structured as follows. In the next section, we discuss the IFS certification and present stylized facts on French certified and exporting agri-food firms. In section 3 we explain our empirical strategy and employed data and derive our main results. We dedicate sections 3.2 and 3.3 to estimating the impact of the overseas expansion of French retailers on the exports of certified

and non-certified firms at the extensive and intensive margin. Section 3.4 analyzes how the exit of French retailers from some markets affects the evolution of export patters for the two types of firms. In section 4 we test the robustness of our results by controlling for the sales in export markets of retailers from other origins, and potential selection and endogeneity biases. We formulate our conclusions section 5.

2.   Stylized facts

2.1.   IFS certification to identify retailers' suppliers

Our objective is to see whether retailers' suppliers have better export performance on markets where French retail companies have established outlets. Although information on retailers' suppliers is highly confidential, data on the certification of agri-food firms with the private standards imposed by retailers permits us to overcome this difficulty. French firms willing to sell their products in retailers' outlets have two options: sell them under their own brand, or sell products under a retailer's brand private label. Most firms selling under their own brands, also sell similar products under retailers' brands. This can be explained, for example, by the attempt of firms to optimize their production capacities, which often exceed their sales. To sell their products under the retailer's label, firms need to comply with some private standards imposed by the latter, through a certification obtained from a private independent organism. Consequently, certification is a good proxy for identifying firms supplying retailers. Although retail suppliers include as well non-certified firms selling own-brand products, the impact of retailers of export performance of their suppliers will be underestimated in our analysis.

French retailers use the IFS (International Featured Standard) certification. The standard drew up a quality and food safety standard for retailer branded food products, named the IFS Food, intended to allow the assessment of suppliers' food safety and quality systems, according to a uniform approach. Indeed, under the EU food law, retailers and brand owners have a legal responsibility for their brands. Private standards are, hence, designed to assist retailers and brand owners to produce food products of consistent safety and quality. In particular, they facilitate the standardization of quality, safety and operational criteria, and the fulfillment of legal obligations by manufacturers. Accordingly, these standards are appropriate tools for the application of the due diligence principle, i.e. the obligation to perform an investigation

before contracting. They also increase retailers' knowledge of the production process and the quality of goods they sell, reducing thereby the information asymmetry between retailers and suppliers.

To obtain the IFS certification, firms undergo an audit procedure, which lasts on average two and a half days and costs the firm around 3,500 Euro, according to IFS auditors.[2] To this audit cost, one needs to add complying costs that may vary across firms, depending on where the firm stands with respect to the IFS requirements (e.g. the adjustments and investments for the production line(s), the training of the personnel, etc.). IFS certification is obtained separately for each production line, which usually corresponds to an independent production unit. Accordingly, firms obtaining certification for a larger number of product groups or production units pay a higher IFS audit cost. Although firms exploit their past experience in obtaining the IFS certification by improving internal organization and management, the audit procedure needs to be repeated each year. These elements point out that IFS certification involves an additional annual fixed cost for the firm.

2.2. A French agri-food firms database, distinguishing between certified and non-certified firms

We build an original dataset of French agri-food firms, using different sources. First, we use the AMADEUS database to define a large sample of exporting and non-exporting French agri-food firms, necessary for our empirical analysis of firm-level export behavior.[3] This database provides comparable balance-sheet data, including many financial and business indicators, for public and private firms across Europe. It also permits to restrict our sample to the agri-food industry.[4] This choice is motivated by the fact that goods from this industry are sold in all retailer outlets and, therefore, the investigated effects should be the strongest for international trade in this type of products. Considering a specific industry has also the advantage of limiting the importance of unobserved industry-level factors on firms' export behavior.[5] Second, we

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[2]https://www.ifs-certification.com/images/Food_Checks/FoodCheck_FeeSchedule_EN.pdf

[3]AMADEUS is provided by Bureau van Dijk. We employed the version of the AMADEUS database covering French firms operating in the agri-food sector in 2012.

[4]AMADEUS includes information on firms' primary industry of the NACE Rev.2 4-digit classification. This information is absent in the French Customs Register and therefore unknown for exporting firms not included in the French enterprise surveys. Under these conditions, the AMADEUS data permits us to identify the largest set of French firms agri-food firms whose export behavior is known.

[5]We exclude wholesalers and retailers from the sample.

combine these data with an exhaustive list of certified firms supplied by the IFS organization. This dataset allow us to identify the French firms that were IFS certified since the launching of the certification in 2003. Third, to supplement information on the export behavior of firms, we merged our dataset with the French customs data, through the unique identification number of the firm reported by both data sources. The French Customs Register reports the volume and the quantity (expressed in ton equivalents) of exports of all French exporting firms, by product (at the 8-digit level of the HS classification) and destination country. We aggregate these data at the firm and country level, keeping only exports of edible grocery products sold in supermarkets, corresponding to HS2 chapters 1 to 24. Finally, we combined the obtained dataset with data on the volume of sales of French retailers in each country from the Planet Retail database, grouping together all edible grocery products sold in retailers' outlets.[6]

We end up with a dataset of about 25,000 agri-food firms for each year between 2004 and 2011. The introduction of the IFS certification in 2003 sets the lower limit of the investigated time period. The availability of grocery sales of multinational retailers restricts us from expanding our analysis beyond the year 2011. Figure 1 illustrates the number of firms in our sample, according to their exporting status and to whether they are certified or not. It shows that a vast majority of the firm of our sample do not export (a fact well documented in the literature, e.g. Mayer and Ottaviano, 2008), and, furthermore, that certified firms represent a small share of agri-food firms in each year (4% in average).

2.3. IFS certified firms are more export oriented, in particular to countries hosting French retail companies

Combining the French custom database with the Planet Retail data permits to compare the export performance of French agri-food firms according to whether the destination country hosts French retail companies or not. Figure 2 depicts the number of exporting markets and the mean exported value by French exporting firms, distinguishing between markets with and without French retailers.[7]

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[6]Planet Retail records data on the activity (sales, outlets, sales area) of individual retail companies in each country. Data is provided by large groups of products, food products being aggregated under a single group: edible grocery. The database covers twelve French retail companies selling food products in foreign markets, including the giants Carrefour, Auchan, Casino, Intermarche, Leclerc, Picard and Systeme U.

[7]The trends depicted in Figure 2(a) remains unchanged when we control for the fact that the overall number of foreign markets where invested French retailers has increased from 56 in 2004 to 83 in 2011, while the

(a) non-certified firms   (b) IFS certified firms
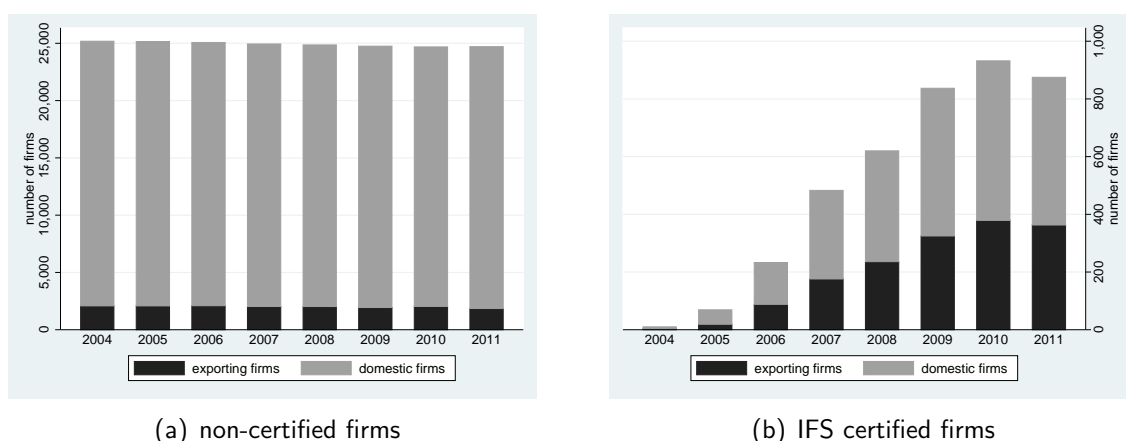
Figure 1 – Number of French agri-food firms in our sample

Notes: Authors' computation using Amadeus, Planet retail and French Customs.

(a) average number of destination markets   (b) mean exported value, USD 1000

Figure 2 – French agri-food firms' exports according to the destination country

Notes: Authors' computation using Amadeus, Planet retail and French Customs.

What we observe is in line with the main finding of Cheptea et al. (2015): the internationalization of retail companies increases the competitiveness of origin country exports, both at the extensive (number of destinations) and at the intensive (value exported) margin.

The exhaustive annual lists of IFS certified firms permits to identify the firms with preferential relationships with retailers, from the rest of French firms. Again, we assess the extensive margin of trade by looking at the number of destination markets by firm. According to Figure 3(a), the average number of destinations is higher for certified firms over the entire period. Figure 3(b) shows that exporting certified firms also exhibit in average higher export values per destination (the intensive margin). High values at the beginning of the period are explained by the fact that very few exporting firms were certified in these years. The evidence presented

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overall number of bypassed markets dropped from 123 to 97.

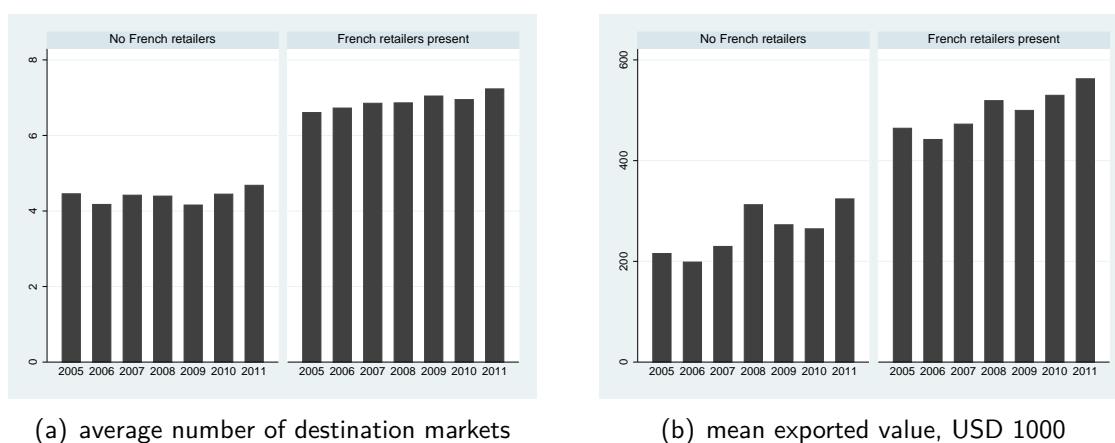(a) average number of destination markets   (b) mean exported value, USD 1000
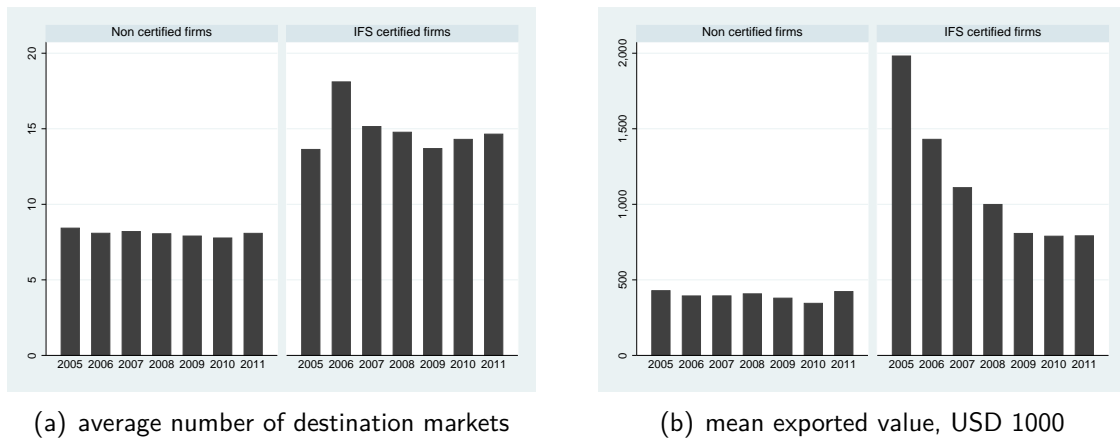
Figure 3 – French agri-food firms' exports according to their certification

Notes: Authors' computation using Amadeus, Planet retail and French Customs.

in these Figures suggests that for French agri-food firms the benefits from a certification are linked with a better export performance. This result is confirmed when extend the analysis to the whole sample of firms in the Amadeus database (not only exporting firms). While IFS certified firms represent on average 4% of the firm of the sample for the whole period, they constitute 15% of the number of exporting firms and account for 33% of the value of French agri-food exports.

Finally, we investigate the trade performance of firms according to the presence of French retailers in the destination countries and to their certification. Figures 4(a) and 4(b) displays the average export value and number of markets for IFS and non-certified firms, on markets with and without French retailers. The previous result concerning the impact of French retailers of exports holds when distinguishing certified and non-certified firms: the presence of French retailers encourages exports for all the firms, whether certified or not. On the other side, the higher export performance observed for certified firms as compared to non-certified firms is only confirmed on markets hosting French retail companies, both at the extensive margin and at the intensive margin. No significant difference appears between IFS certified and non-certified firms on markets without French retailers.

Descriptive statistics suggest that the installation of French retailers abroad benefits to all French agri-food firms, offering then an improved market access, both in terms of entry and of value of trade. These positive impact of retailers appears to be greater for certified firms, that exhibit higher export performance on these markets.

3.   Estimation of the impact of the foreign sales of French retailers on the exports of French agri-food firms

3.1.   Empirical strategy and data

In this section we estimate the impact of French retailers' sales on the exports of French agri-food firms to the host country, distinguishing the effect on the export of retailers' suppliers from the effect on other firms' exports. To this end, we employ data on the IFS certification of French firms to identify retailers' domestic suppliers.

We estimate the impact of retailers' overseas activity separately on the probability of firm f to export to country j (the extensive margin), and on the volume of its exports to this destination (the intensive margin). We use the same explanatory variables to estimate the effect on both export margins. These include in particular, the certification status of the firm, IFS_{ft}, the activity of French retailers in export market j, $\ln Sales_{jt}$, and an interaction (product) of these two variables. The impact of this interaction term points out whether the probability to export and the volume of exports to markets where French retail companies established outlets is higher for retailers' suppliers. This is the main variable of the analysis that catches the link between retailers and their suppliers we are looking for.

In the model for the extensive export margin, the dependent variable is binary: $I(Exports_{fjt} > 0)$

(a) average number of destination markets   (b) mean exported value
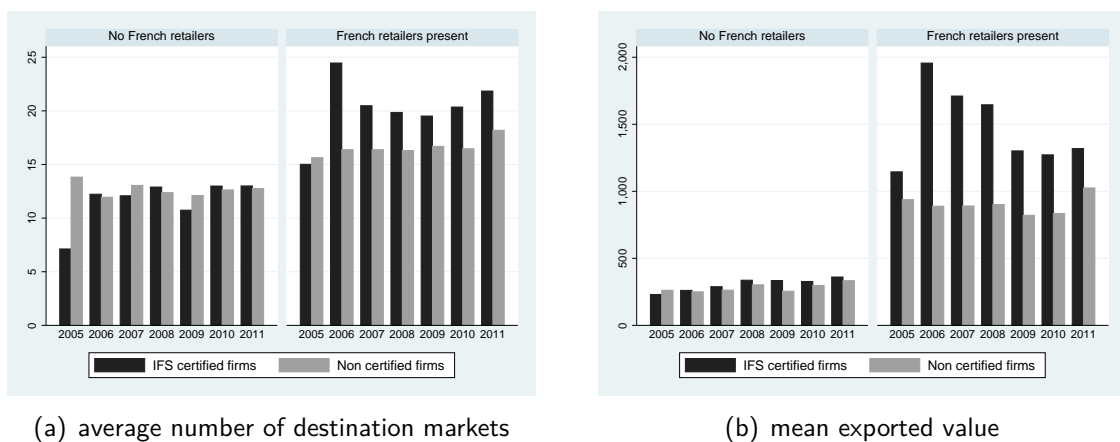
Figure 4 – French agri-food firms' exports according to their certification and their destination country

Notes: Authors' computation using Amadeus, Planet retail and French Customs.

is equal to one for observations with positive export flows and to zero otherwise:

$$I(Exports_{fjt} > 0) = \beta_0 + \beta_1 IFS_{ft} + \beta_2 \ln Sales_{jt} + \beta_3 (\ln Sales_{jt} \times IFS_{ft}) \quad (1)$$
$$+ \Delta X_{ft} + \Theta Y_{jt} + \varepsilon_{fjt}$$

X_{ft} and Y_{jt} are the full sets of firm- and, respectively, country-specific fixed effects, Δ and Θ are the associated vectors of parameters, and ε is a zero-mean error term.

We estimate a similar model for the intensive margin. In this case the explanatory variable is strictly positive. We express it in logarithms and interpret coefficients α_2 and α_3 as elasticities.

$$\ln Exports_{fjt} = \alpha_0 + \alpha_1 IFS_{ft} + \alpha_2 \ln Sales_{jt} + \alpha_3 (\ln Sales_{jt} \times IFS_{ft}) \quad (2)$$
$$+ \Gamma X_{ft} + \Xi Y_{jt} + \epsilon_{fjt}$$

The data panel used for estimations covers the exports of French agri-food firms of edible grocery products sold in supermarkets between 2004 and 2010. The data sources and the construction of the panel are explained in detail in section 2. We aggregate the export data across products in order to obtain the overall value of agri-food exports of each firm to each country. The volume of sales of all French retailers in each importing country are obtained by summing the sales of individual French retail companies. For 23% of our sample this figure is equal to zero. In order to keep the observations corresponding to exports to countries where French retailers did not invest, we replace $\ln Sales_{jt} = 0, \forall Sales_{jt} = 0$. The empirical strategy proposed to properly measure the impact of the interaction term is to use alternative sets of fixed effects. Mixing time-invariant and time-varying fixed effects for each firm and/or country in the estimations provides results within or across firms, within or across countries (following Kruger and Verhoogen, 2009). This strategy helps to fully understand the way retailers' suppliers benefit from retailers overseas expansion. The use of fixed effects is also a relevant way to avoid selection biases linked to the availability and observability of firm characteristics for non-random (selected) sub-panels of firms. Equation (1) is estimated using a linear probability model because of capacity constraints of estimating a Probit or Logit model with a large set of fixed effects.[8] Equation (2) is estimated with OLS. Robustness checks,

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[8]Our data panel covers 25,726 firms, of which 3,459 export at least once, and 204 destination markets.

controlling for the auto-selection of firms exporting to each market, and for the endogeneity of retailers' sales and firms' certification and export decisions will be detailed in section 4.

3.2. Extensive export margin

We start by investigating the impact of certification and retailers' foreign activity on the extensive export margin, i.e. the probability of a firm to export to a given market. Table 1 displays the results of the estimation of equation (1) using a linear probability model. Our dependent binary variable takes the value one for all observations with positive exports, and the value zero otherwise. In order to correctly estimate the impact on the extensive margin, we need to include nil exports of each firm in our panel. Therefore, our estimation panel corresponds to the full matrix of French firms, years, and destination markets reached by at least one French firm. As we use a linear probability model, the size of estimated coefficients is not directly interpretable as a change in firms' probability to export, but the sign of coefficients is a plausible indicator of a positive or negative change in export probability. Certification and export decisions are taken at the level of the firm, while our estimation panel includes multiple observations (destinations) for each firm. For this reason, we cluster standard errors by firm in all regressions.

The five columns of Table 1 correspond to five different specifications, using different sets of firm- and country-specific fixed effects. In the regression reported in column 1 we use time-varying country fixed effects alone. This permits us to compare effects across firms, for a given destination and year. In this specification, the sales of French retailers on the import market are collinear with the importer fixed effects and are dropped from the estimation. We find a positive significant coefficient for the IFS certification variable and for the interaction term. This indicates that certified firms have a higher probability to export, and this probability increases with the sales of French retailers on the destination market.

In column 2 we add time-invariant firm fixed effects. This permits us to compare the effects of the overseas activity of French retailers within the firm, for a given destination market and year. We find a significant effect only for the interaction term. Results show that becoming certified does not increase the firm's probability to export on markets without French retailers (the coefficient of the IFS certification dummy is not significantly different from zero), but it

does increase the probability to export to markets where French retailers operate. Moreover, the second coefficient shows that certified firms benefit more from an increase in the foreign sales of French retailers.

The estimation reported in column 3 includes only time-varying firm-specific fixed effects. This enables us to evaluate the effects across different export destinations for a given firm and year. The IFS certification dummy is dropped from the specification due to collinearity with fixed effects. Results show that the foreign sales of French retailers increase the probability to export for all French firms in the agri-food sector. This finding is in line with Cheptea et al. (2015), who show that the overseas expansion of retailers fosters the exports of their country of origin to the retailers' host countries. The effect is larger for certified firms, as pointed by the positive and significant coefficient for the interaction term.

In column 4 we use time-varying firm effects together with time-invariant country fixed effects. Compared to the estimation in column 3, we now control for the main differences between import markets (the ones that remain constant in time). The coefficient of the interaction term is again positive and statistically significant, confirming that certified firms are more likely to export to foreign countries where French retailers invest. The effect is stronger the larger the sales of French retailers. The coefficient on the sales of French retailers in the import market corresponds to the effect on the export probability of non-certified firms. The negative value of this coefficient indicates that non-certified firms are less likely to export to countries where French retailers have established outlets than certified firms, although the magnitude of the effect is very small. These findings indicate that certified firms rip off most of the benefits generated by the overseas activity of French retailers.

In column 5 we use time-varying fixed effects for firms and import countries. This permits us to control for all possible observable and non-observable firm- and country-specific factors. The only coefficient estimated in this specification is that of the interaction term. The certification dummy and retailers' sales in the import country are dropped because of collinearity with the included fixed effects. Results validate our finding from the previous columns that certified firms have a higher probability to export to destinations with high sales of French retailers.

To sum up, in all columns of Table 1 the coefficient of our variable of interest (the interaction

Table 1 – Extensive margin

	(1)	(2)	(3)	(4)	(5)
Certification IFS	0.0214***	-0.0006			
	(0.0019)	(0.0010)			
ln Sales			0.0087***	-0.0009***	
			(0.0002)	(0.0002)	
Certification IFS × ln Sales	0.0528***	0.0528***	0.0514***	0.0525***	0.0528***
	(0.0031)	(0.0031)	(0.0031)	(0.0031)	(0.0031)
Firm FE	no	yes	no	no	no
Country FE	no	no	no	yes	no
Firm × time FE	no	no	yes	yes	yes
Country × time FE	yes	yes	no	no	yes
Nb observations	36,563,641	36,563,641	36,563,641	36,563,641	36,563,641
R^2	0.0219	0.1540	0.1530	0.1630	0.1640

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

term $\ln Sales_{jt}t \times IFS_{ft}$) is always positive and statistically significant. The magnitude of the effect almost does not change, proving the robustness of the effect. This supports our prediction that certified firms benefit more than their non-certified counterparts from the activity of French retailers on foreign markets. Certified firms that can sell their products via retailers' network of outlets are more likely to export to countries where are located these outlets than non-certified firms from the same country of origin.

3.3. Intensive export margin

We turn now to the analysis of the intensive margin of trade and evaluate how multinational retailers and certification affect firms' volume of exports to each market. We estimate the intensive export margin equation (2) and report results in Table 2. The five columns of Table 2 correspond to the same specifications displayed in the five columns of Table 1. As in the case of the extensive margin (Table 1), the coefficient of the interaction term variable is positive and statistically significant for all specifications. Hence, the activity of French retailers on foreign markets increases not only the probability of French certified firms to export to these destinations, but also the value of their exports.

Comparing these results to those on the probability to export shows some differences in the coefficient of the IFS certification dummy and of French retailers' sales in import countries. For the specification in column 2, which places the analysis within the firm, for a given destination market and year, we find that becoming certified decreases the volume of exports to countries

Table 2 – Intensive margin

	(1)	(2)	(3)	(4)	(5)
Certification IFS	0.55***	-0.10***			
	(0.09)	(0.03)			
$\ln$ Sales			0.45***	0.02	
			(0.02)	(0.02)	
Certification IFS $\times$ $\ln$ Sales	0.22***	0.18***	0.19***	0.19***	0.20***
	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)
Firm FE	no	yes	no	no	no
Country FE	no	no	no	yes	no
Firm $\times$ time FE	no	no	yes	yes	yes
Country $\times$ time FE	yes	yes	no	no	yes
Nb observations	147,625	147,625	147,625	147,625	147,625
R^2	0.093	0.469	0.373	0.502	0.505

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

where French retailers are absent relative to destinations hosting French retailers.[9]

Certified firms increase their exports to markets where French retailers operate, leading to a decrease of exports to other markets. In other words, they concentrate their international activity on markets with French retailers. This trade diversion effect is found only for the volume of exports, but not the export probability. The overall impact of IFS certification on firms' exports to a specific market depends on the activity of French retailers in that market. Becoming certified leads to a $10\% \ [= (1 - \exp(-0.10)) * 100]$ drop in firm's exports to all markets not served by French retailers. The IFS impact on exports to countries hosting French retailers is proportional to retailers' sales in each of these countries: $-0.10 + 0.18 * \ln Sales$. As French retailers enter a foreign market, the IFS effect increases gradually and becomes positive when the volume of sales reaches USD 1.82 million. IFS certification has a positive overall effect on exports only for the largest sixteen destination countries served by French retailers (out of the 92 foreign countries hosting a French retailer), absorbing 15% of French agri-food exports in 2011. Figure 5 in the Appendix illustrates this effect graphically.

In column 4, where we analyze the effect within destination countries for a given firm and

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[9]If certification and firm fixed effects are positively correlated (a firm that obtained certification in one year is likely to obtain it in the future), certification leads to an increase in the firm's fixed effect. Accordingly, if after obtaining certification firms increase their exports to countries where invest French retailers, and have steady exports to other destinations, this can also yield a negative effect of certification. The correlation between the certification dummy and firm fixed effects is quite weak in our panel: 0.16. It is, therefore, unlikely for the negative coefficient in column (2) to reflect the above situation; it should be rather interpreted as a evidence of a *trade diversion effect*.

year, the sales of French retailers' in the import market does not have a significant impact. Thus, although non-certified firms are less likely to export to countries where French retailers invest, the volume of their exports is unaffected. The "driving effect" is positive for certified firms, as revealed by the positive and statistically significant coefficient of the interaction term. Firms that already supply French retailers on their domestic market benefit more from retailers' internationalization, which opens them the access to new markets and allows them to export more in value terms.

3.4. A natural experiment: exits of French retailers

In sections 3.2 and 3.3, we found that that firms supplying French retailers have a different export behavior from other French firms on markets with French retailers. By contrast, their exports do not significantly differ on markets with no French retail sales. In this subsection we question whether certified firms behave differently from non-certified firms on markets that used to host French retailers, but where the latter closed down their activity.[10]

To answer this question, we compare the evolution of exports of certified and non-certified firms the before, during, and after the exit of French retailers. We estimate the following equation:

$$
\begin{aligned}
\ln\left(\frac{Exports_{fj,t}}{Exports_{fj,t-1}}\right) \; = \;\; & \lambda_0 + \lambda_1 Before_{jt} + \lambda_2 Exit_{jt} + \lambda_3 After_{jt} \qquad\qquad (3)\\
& +\lambda_4\left(IFS_{jt} \times Before_{jt}\right) + \lambda_5\left(IFS_{jt} \times Exit_{jt}\right) \\
& +\lambda_6\left(IFS_{jt} \times After_{jt}\right) + \Phi X_{ft} + \Psi Y_{jt} + v_{fjt}
\end{aligned}
$$

The explained variable is the annual evolution of firm-level exports, expressed in logarithms. We use a differences-in-differences approach to separate the effect of exits on firms' exports to each market from the systematic differences in their exports to different markets. Accordingly, we estimate how the exit of French retailers affects the evolution of firms' exports, not their level.

We use three dummy variables to compare the evolutions of exports to countries from which

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[10]During the period covered by our study, French retailers exited from ten countries: Chile in 2004, Norway in 2006, Mexico and South Korea in 2007, Latvia, Lithuania, and Slovakia in 2008, Algeria in 2009, Ireland and Venezuela in 2010.

French retailers exited: $Before_{jt}$ corresponds to the years before French retailers' exit from the country, $Exit_{jt}$ stands for the year of exit, and $After_{jt}$ captures the years after exit. For countries where French retailers continued to operate, or never entered, the three dummies are always equal to zero. To compare the export behavior of certified and non-certified firms, we interact the IFS certification dummy with each of these three variables. Thus, $IFS_{jt} \times Before_{ft}$ reflects the evolution of certified firms' exports before exit, $IFS_{jt} \times Exit_{ft}$ the evolution in the year of the exit, and $IFS_{jt} \times After_{ft}$ the evolution in the subsequent years. In this specification the benchmark are the evolution of firms' exports to markets never concerned by an exit.

We estimate equation (3) with OLS and using the same sample as in section 3.3.[11] We follow the same empirical strategy as above, and include alternatively different sets of firm- and country-specific fixed effects. Results are reported in Table 3. The five columns of Table 3 correspond to the same specifications displayed in the five columns of Tables 1 and 2. The coefficients of dummy variables $Before_{jt}$, $Exit_{jt}$, and $After_{jt}$ are never significant. This means that the evolution of exports of non-certified firms to markets where French retailers shut down their activity was not different from the evolution of exports of any firm to other markets. This affirmation holds for years prior to the exit of French retailers, the years marked by and following the exit. A different story emerges when we focus on IFS certified firms. Variable $IFS_{jt} \times Exit_{ft}$, reflecting the evolution of exports of IFS firms after the exit of French retailers is negative and significant in all specifications. The effect of the other two interaction variables is statistically non-significant. This result suggests that certified firms decrease their exports after French retailers exit the market, compared to non-certified firms, or to firms exporting to other markets.

3.5. Discussion

Our estimations show that agri-food French firms have a higher probability to export and export larger amounts to markets where operate French retailers. This first result confirms the finding of (Cheptea et al., 2015), obtained with country-level data. (Cheptea et al., 2015) argue that foreign direct investment in the retail sector can impact trade through two channels:

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[11]The drop in the number of observation is explained by the annual evolution of firm-level exports: the explained variable can be computed only for firms exporting two subsequent years on a given market.

Table 3 – Retailers' exits from foreign markets

| | Explained variable: the annual evolution of firm-level exports | | | | |
	(1)	(2)	(3)	(4)	(5)
Before exit			0.04	-0.04	
			(0.02)	(0.05)	
Exit			0.00	-0.05	
			(0.04)	(0.05)	
After exit			0.00	-0.07	
			(0.02)	(0.05)	
IFS × Before exit	0.12	0.09	0.01	0.03	0.08
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
IFS × Exit	0.10	0.09	0.11	0.12	0.11
	(0.08)	(0.08)	(0.08)	(0.08)	(0.09)
IFS × After exit	-0.07*	-0.07*	-0.10***	-0.09**	-0.10**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Firm FE	no	yes	no	no	no
Country FE	no	no	no	yes	no
Firm × time FE	no	no	yes	yes	yes
Country × time FE	yes	yes	no	no	yes
Nb observations	120911	120911	120911	120911	120911
R^2	0.02	0.06	0.20	0.20	0.22

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(i) by reducing the bilateral trade cost for exporting firms in retailers' origin country of origin, or (ii) by changing the preferences of consumers in the host country. The *trade cost effect* can result from different sources: a reduction of costs relative to market prospecting, grouping shipments (allowing cuts in transport, packaging, and distribution costs), sharing experience and knowledge on foreign markets (concerning demand, profit margin, infrastructure and delivery procedures), etc. Only retailers' domestic suppliers can grasp these benefits through their preferential relationship with retailers, and obtain a trade cost advantage over other origin country firms. Differently, a *shift in foreign demand* equally benefits all firms in retailers' country of origin. Through repeated and frequent interaction with foreign consumers, retailers may change the latter's "taste" in favor of products from the retailers' origin.

In sections 3.2 and 3.3 (Tables 1 and 2), we show that the impact of French retailers' foreign sales on exports is stronger for certified firms, i.e. the domestic suppliers of French retailers. This result provides evidence supporting the presence of a trade cost effect, arising only for retailers' suppliers. As suppliers of French retailers, certified firms enjoy lower export costs to foreign markets where French retailers operate. Another possible interpretation of this result is that private standards reduce the information asymmetry between retailers and suppliers,

determining retailers to source more from certified firms for their overseas outlets. Since access to information can be assimilated to a decrease in retailers' import costs, we attribute both explanations to the *trade costs channel*.

Results from section 3.4 on the natural experiment of French retailers' exit from several markets can be interpreted as a test of the foreign demand channel. If French retailers' presence in foreign markets increased the local consumers' preference of French products, the evolution of exports to these markets should be similar for both certified and non-certified French firms. We found that the exit of French retailers induces a drop in the volume of exports only for certified firms. The evolution of exports to these markets of non-certified firms remain unaffected. This difference in behavior for the two types of firms rules suggests that the positive impact of retailers' overseas activity comes mainly from an export cost advantage for retailers' suppliers rather than from a in consumer preferences.

These results echo some papers that consider the relationship between retailers and their suppliers, in particular in the case of an overseas expansion (Wrigley and Lowe, 2010; Dawson, 2007). The implementation of retail private standards becomes one relevant element in analyzing the market power of retailers. Indeed, certification with private standards that enables us to identify retailer suppliers can be seen as a "formal or implicit contract". Suppliers that are able to comply with these standards are generally large-scale suppliers (to meet their stringent and costly requirements) and enter a small group of "preferential suppliers", according to Reardon et al. (2003), that can accompany retailers entering new markets ((Gereffi and Lee, 2012; Raff and Schmitt, 2015)) with reduced trade costs, as shown by our results.

4. Robustness of results

4.1. Impact of sales of retailers from other origins

We saw in the previous section that IFS certification has a positive impact on exports to countries hosting French retailers. To test whether this impact is due specifically to the presence of French retailers, and not to the presence of foreign retail companies in general, we re-estimate equations (1) and (2) augmented by the foreign activity of retailers from other countries than France. We focus only on US and British companies, which include some of the world' largest retail chains (Walmart, Tesco, Costco, Safeway, Sainsbury), are highly

internationalized, and established outlets in many countries.[12] We test if the overseas sales of British and American retailers have a significant impact on French firms' exports and how it positions compared to the impact of French retailers. The underlying hypothesis is that a strong presence of US and British retailers in foreign markets may change the local consumer tastes in favor of processed foodstuff and Western products (products largely consumed in Western countries), and generate thereby an increase in the volume of French agri-food exports. As previously, we distinguish certified from non-certified firms, and use country and firm-level fixed effects as additional controls. We display results for the extensive and intensive margin in Tables 4 and 5.

Table 4 reports the results on the extensive margin. We find that the foreign activity of British and American retail chains has similar impacts on French firms' exports as the overseas activity of French retailers, but to a lesser extent. The probability to export increases with the volume of retailers' sales in the destination market, and the effect is larger for certified firms, whatever the specification. This result suggests that the positive impact of retail sales on the extensive margin is mainly due to French companies, but also to the presence of retailers from other countries. However, these effects are between two and five times lower than the effect of French retailers.

In Table 5 we analyse the impacts on the volume of exports. Results from column (3) show that French agri-food firms export more to countries with high US retail sales, but this effect is smaller than that of French retail sales. Moreover, the coefficient of the interaction variable is negative, meaning that the positive impact of US retail activity is smaller for certified firms (but still positive since the sum of the two coefficients is greater than zero). British retailers have a negative impact on French agri-food exports, with no difference between certified and non-certified firms.

These results suggest the presence of a *crowding out effect* of foreign retailers, each retailer attracting its own network of suppliers. This effect is confirmed by the other specifications in Table 5. Although the overseas activity of other multinational retailers may affect the French exports to their host countries, the effect for certified firms is similar to, or smaller than, the

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[12]In 2011 overseas sales accounted for 20% and respectively 17% of the global turnover of US and British retailers. Data on the sales of these retailers in each country are obtained from the Planet Retail database.

Table 4 – Effect of others origins - extensive margin

	(1)	(2)	(3)	(4)	(5)
Certification IFS	0.0178***	-0.0009			
	(0.00)	(0.00)			
ln Sales French retailers			0.0077***	-0.0014***	
			(0.00)	(0.00)	
ln Sales US retailers			0.0018***	0.0009***	
			(0.00)	(0.00)	
ln Sales British retailers			0.0030***	0.0015***	
			(0.00)	(0.00)	
Certification IFS × ln Sales French retailers	0.0475***	0.0475***	0.0461***	0.0473***	0.0475***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Certification IFS × ln Sales US retailers	0.0046***	0.0046***	0.0043**	0.0046***	0.0045**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Certification IFS × ln Sales British retailers	0.0281***	0.0281***	0.0280***	0.0279***	0.0280***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm FE	no	yes	no	no	no
Country FE	no	no	no	yes	no
Firm × time FE	no	no	yes	yes	yes
Country × time FE	yes	yes	no	no	yes
Nb observations	35,749,997	35,749,997	35,749,997	35,749,997	35,749,997
R^2	0.02	0.15	0.15	0.16	0.16

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

effect for non-certified firms.

These findings indicate that the positive impact on firms' exports of the overseas activity of French retailers identified in sections 3.2 and 3.3 can be generalized to retailers from other origin countries. Still, only the sales of French retailers have a differentiated impact on certified and non-certified firms. This highlights the importance of retailers' privileged relationship with its supplying firms. The latter concentrate their exports on markets with a strong presence of French retailers.

4.2. Selection bias

A general result of the recent literature on international trade with heterogeneous firms, is that only a fraction of firms, the most productive ones, export. This is due to the fact that exporting implies a specific fixed cost, which can be supported only by firms on the right side of the productivity distribution. The OLS estimates of the impact of the overseas activity of French retailers on the export values of French agri-food firms (Table 2) do not account for this left censoring of the exports data, and, therefore, can suffer from a selection bias. To address this issue, we follow Eaton and Kortum (2001) and Crozet et al. (2012) and estimate

Table 5 – Effect of others origins - intensive margin

	(1)	(2)	(3)	(4)	(5)
Certification IFS	0.4540***	-0.0747**			
	(0.10)	(0.04)			
ln Sales French retailers			0.5755***	-0.0544	
			(0.02)	(0.04)	
ln Sales US retailers			0.3013***	0.1738***	
			(0.03)	(0.06)	
ln Sales British retailers			-0.1600***	0.2488***	
			(0.05)	(0.09)	
Certification IFS × ln Sales French retailers	0.2897***	0.2521***	0.2392***	0.2628***	0.2747***
	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)
Certification IFS × ln Sales US retailers	-0.0162	-0.1712***	-0.2098***	-0.2066***	-0.1984***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)
Certification IFS × ln Sales British retailers	-0.1289	-0.1360*	-0.1029	-0.1297	-0.1272
	(0.10)	(0.08)	(0.10)	(0.09)	(0.09)
Firm FE	no	yes	no	no	no
Country FE	no	no	no	yes	no
Firm × time FE	no	no	yes	yes	yes
Country × time FE	yes	yes	no	no	yes
Nb observations	127,573	127,573	127,573	127,573	127,573
R^2	0.09	0.47	0.42	0.51	0.51

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

the impact of retailers' activity with an appropriately-designed Tobit model. The approach consists in assuming that a different censoring applies to each destination country. This assumption matches another finding confirmed by many empirical trade studies: firms face fixed (sunk) export costs which vary across destinations (Chaney, 2008; Chevassus-Lozza and Latouche, 2012). The Eaton and Kortum (2001) (EK) Tobit estimation approach was initially designed for country-level data. Eaton and Kortum (2001) argue that each importer has a threshold level of imports below which it simply does not report imports, and estimate a Tobit model with import-country-specific censoring points. Although one does not directly observe these censoring points, they can be safely approximated by the lowest exports value over all source countries appearing in the data. Crozet et al. (2012) transpose this solution to a trade setting with firm-level data. We follow Crozet et al. (2012) and define the left-censoring exports value for each country and year as the minimum (lowest exports value) across all French agri-food firms exporting to this destination. We prefer this definition to estimating threshold productivity levels for each export market in order to avoid imposing additional assumptions with respect on the structure of export costs or the productivity distribution of

Table 6 – The overall effect on both margins: Eaton-Kortum Tobit

	(1)	(2)	(3)	(4)	(5)
Certification ISF	1.96***	-0.19			
	(0.16)	(0.17)			
ln Sales			4.50***	-0.06	
			(0.05)	(0.18)	
Certification IFS × ln Sales	0.97***	0.55***	0.32**	0.60***	0.59***
	(0.17)	(0.13)	(0.15)	(0.13)	(0.13)
Firm FE	no	yes	no	no	no
Country FE	no	no	no	yes	no
Firm × time FE	no	no	yes	yes	yes
Country × time FE	yes	yes	no	no	yes
Nber observations	326,942	326,942	326,942	326,942	326,942
ll	-81319.6	-67580.7	-80888.4	-67328.1	-66756.8

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

firms.[13]

Recall that most of our specifications in Tables 1 and 2 require the use of firm-level fixed effects. To make tractable the computation of EK-Tobit estimates under these circumstances, we need to reduce substantially the number of firms in our panel. We estimate the model on 1,000 different randomly-selected sub-panels of 1,000 firms and display results in Table 6. The EK Tobit permits to include in the estimation all firms and destinations, even when exports are nil. The latter depict situations when bilateral sunk export costs are too large for firms to make positive profits, and firms decide not to export. Consequently, the EK Tobit estimates correspond to the average impact of French retailers' foreign activity jointly on the extensive and intensive export margin. Results in Table 6 are quantitatively different than those in Tables 1 and 2, but the main conclusions are confirmed.

4.3.   Endogeneity of retail sales and certification

Another problem that we may face is endogeneity. We identify two possible sources of endogeneity in our model. In a previous paper, we show that the retailers' sales in foreign markets and exports to these markets have common determinants (Cheptea et al. (2015)). This endogeneity issue, however, is less likely to affect the results of the current paper, due to differences in the disaggregation level of data: the overseas sales of French retailers vary only across destination markets, while the volume of exports varies across firms. A second possible

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[13]We estimate the EK Tobit in Stata using the *intreg* command and the following the estimation guidelines and Stata code from Head and Mayer (2014) and the companion website: https://sites.google.com/site/hiegravity/.

source of endogeneity arises from the fact that firms' decision to certify may be linked to their decision to export. This issue may bias our results, since both decisions are taken within the same firm, and possibly even simultaneously.

To test the robustness of our results we follow Cheptea et al. (2015) and instrument the volume of sales of French retailers in each market with (i) the annual growth rate of all modern retail sales in the destination country, and (ii) the participation of women to the labor market. The first Instrumental Variable (IV) reflects the level of saturation of the retail market in the destination country, while the second is a proxy for the demand for retail services in the destination country.[14] To control for the endogeneity of the IFS dummy, we use the certification of neighbor firms producing similar products as instrument.[15] For each firm and year in our sample, we compute the share of sales of certified firms from the same sub-national region (*département*), excluding the firm itself.

The most accurate measure of the impact of French retailers' presence in overseas markets on the exports of French firms is obtained when we control for both firm and country characteristics. Therefore, we focus on the trade specification including both types of time-varying fixed effects, corresponding to column (5) in Tables 1 and 2. We estimate equations (1) and (2) with two-stage least squares (2SLS) and report results in Table 7. The first three columns show the impact on the extensive margin, and the last three the impact on the volume of exports. We control successively for the endogenity of retailers' sales, of certification, and of both variables. The tests for weak-, under-, and over- identification displayed in the bottom of the table confirm that our instruments are valid and not redundant.[16] The endogenity test is statistically significant only in columns (1) and (2), suggesting the need to control for endogeneity. In both cases the estimated impact of the interaction variable (retailers' activity times

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[14] A rapidly expending retail sector indicates that the country's demand for retail services is not saturated and that retailers face a weak level of competition, leaving place for established and incoming retailers to expend their sales in this market. A high share of employment among women leads to a broader, more intensive substitution of traditional housework tasks (such as cooking) with less time-consuming alternatives that imply larger expenditures in retail-type outlets (e.g. an increase of purchases of processed food in the detriment of unprocessed products in traditional marketplaces).

[15] Neighbor firms compete against each other for the same retail shelf space, leading to mutually dependent certification strategies. The certification choice of neighbor producers/competitors, however, in unlikely to affect the firm's decision to export. The latter is mainly driven by firm-level factors (productivity, export costs specific to each product and destinations, etc.)

[16] In column (1) the significant over-identification test statistic suggests that we should use separately the two instruments of French retailers' sales. Estimation results with only one instrumental variable are shown in the first two columns of Table 8 of the Appendix, estimates being somewhat lower than in column (1) of Table 7.

the decision to certify) on firms' probability to export remains positive and highly significant.

In all the other columns of Table 7, the endogenity test is no longer statistically significant. This indicates that our previous estimates for the intensive margin do not suffer from an endogeneity bias. Note that this includes the case when we address both potential sources of endogeneity, our preferred specifications (columns (3) and (6) of Table 7). The sales of French retailers in each country ($\ln Sales_{jt}$) and firms' decision to certify (IFS_{ft}) can each be written as a linear combination of the country or firm fixed effects included in the estimation. Therefore, the direct impact on exports of these variables cannot be identified. Accordingly, we instrument only the interaction of the two variables using the product of instruments identified separately for each variable: the share of sales of certified neighbor firms multiplied with the growth rate of modern retail sales in the destination country, and with the share of employed women. Computed statistical tests reject the endogeneity of our variable of interest. Based on these findings, we conclude that the main results identified in sections 3.2 and 3.3 do not suffer from a significant endogeneity bias. French agri-food firms export larger amounts to countries where French retailers established outlets, the effect being larger for certified firms, i.e. for the retailers' suppliers.

5.   Conclusions

The present article shows that French retailer suppliers are more likely to export and export larger volumes than non-suppliers to markets where French retailers established outlets. These firms also have a different behavior in countries where French retailers close down their activities. These results highlight the trade cost advantage of retailers' suppliers, who benefit from their preferential relationships with the globalized retail companies. These findings point to the central role of retailers in the supply chain and calls for deeper work on this subject. In line with the global value chain literature, our results can be considered as some evidence of the role of the retail sector in the production, trade, and organization of industries. Chains evolve from "producer-driven chains" to "buyer-driven" chains, where retailers of the final product exert power, particularly in globalized agri-food chains (Gereffi and Lee, 2012; Gereffi and Beauvais, 2012).

Table 7 – Endogeneity of IFS certification and $\ln$ Sales: 2SLS estimations

Explained variable:	Extensive margin			Intensive margin		
Endogeneous variable(s):	$\ln$ Sales	IFS	IFS & $\ln$ Sales	$\ln$ Sales	IFS	IFS & $\ln$ Sales
	(1)	(2)	(3)	(4)	(5)	(6)
Certification IFS $\times \ln$ Sales	0.72***	0.02*	0.11	-0.33	0.21***	-0.51
	(0.05)	(0.015)	(0.09)	(0.32)	(0.04)	(0.43)
Nb obs	24,697,065	3,007,409	2,041,599	145,837	147,149	135,761
Nb country $\times$ time FE	971	1438	971	971	1438	971
Nb firm $\times$ time FE	203411	16729	16729	17245	14892	14430
Nb clusters (by firm)	25726	3462	3462	3212	2974	2902
1st stage R^2 of excl. IV	0.0051	0.8320	0.0043	0.0104	0.8683	0.0056
2nd stage R^2	0.1479	0.2830	0.1966	0.5208	0.5102	0.5117
Endogeneity test	214.88	442.84	1.42	2.51	0.76	2.55
p-value	0.000	0.000	0.233	0.113	0.384	0.110
Overid. test	14.586	–	1.772	2.305	–	2.640
p-value	0.0001		0.1832	0.1289		0.1042
Weak id. test	310000	841.35	879.03	49.84	12533.95	31.01
Identification test	1053.88	21793.33	10319.13	217.74	275.65	176.50
p-value	0.000	0.000	0.000	0.0000	0.000	0.000

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

References

Chaney, T. (2008). Distorted Gravity: The Intensive and Extensive Margins of International Trade. *American Economic Review*, 98(4):1707–21.

Cheptea, A., Emlinger, C., and Latouche, K. (2015). Multinational retailers and home country food exports. *American Journal of Agricultural Economics*, 97(1):159–179.

Chevassus-Lozza, E. and Latouche, K. (2012). Firms, markets and trade costs: access of French exporters to European agri-food markets. *European Review of Agricultural Economics*, 39(2):257–288.

Crozet, M., Head, K., and Mayer, T. (2012). Quality Sorting and Trade: Firm-level Evidence for French Wine. *Review of Economic Studies*, 79(2):609–644.

Dawson, J. A. (2007). Scoping and conceptualising retailer internationalisation. *Journal of Economic Geography*, 7:373–397.

Eaton, J. and Kortum, S. (2001). Trade in capital goods. *European Economic Review*, 45(7):1195–1235.

Gereffi, G. and Beauvais, J. (2012). Global value chains and agrifood standards: challenges and possibilities for smallholders in developing countries. *Proceedings of the National Academy of Sciences*, 109(31):12326–12331.

Gereffi, G. and Lee, J. (2012). Why the world suddenly cares about global supply chains.

Journal of supply chain management, 48(3):24–32.

Head, K., Jing, R., and Swenson, D. L. (2014). From Beijing to Bentonville: Do Multinational Retailers Link Markets? *Journal of Development Economics*, 110:79–92.

Head, K. and Mayer, T. (2014). *Handbook of International Economics*, volume 4, chapter Gravity Equations: Workhorse, Toolkit, and Cookbook, pages 131–195. ed. Elhanan Helpman, Kenneth Rogoff and Gita Gopinath, Elsevier.

Mayer, T. and Ottaviano, G. I. (2008). The happy few: The internationalisation of european firms. *Intereconomics*, 43(3):135–148.

Nordås, H. K., Grosso, M. G., and Pinali, E. (2008). Market Structure in the Distribution Sector and Merchandise Trade. OECD Trade Policy Papers 68, OECD Publishing.

Raff, H. and Schmitt, N. (2015). Retailing and international trade: A survey of the literature. Economics Working Paper, Christian-Albrechts-Universit at Kiel, Department of Economics 2015-02.

Reardon, T., Timmer, C. P., Barrett, C. B., and Berdegue, J. (2003). The Rise of Supermarkets in Africa, Asia, and Latin America. *American Journal of Agricultural Economics*, 85(5):1140–1146.

Wrigley, N. and Lowe, M. (2010). The globalization of trade in retail services. OECD technical report.
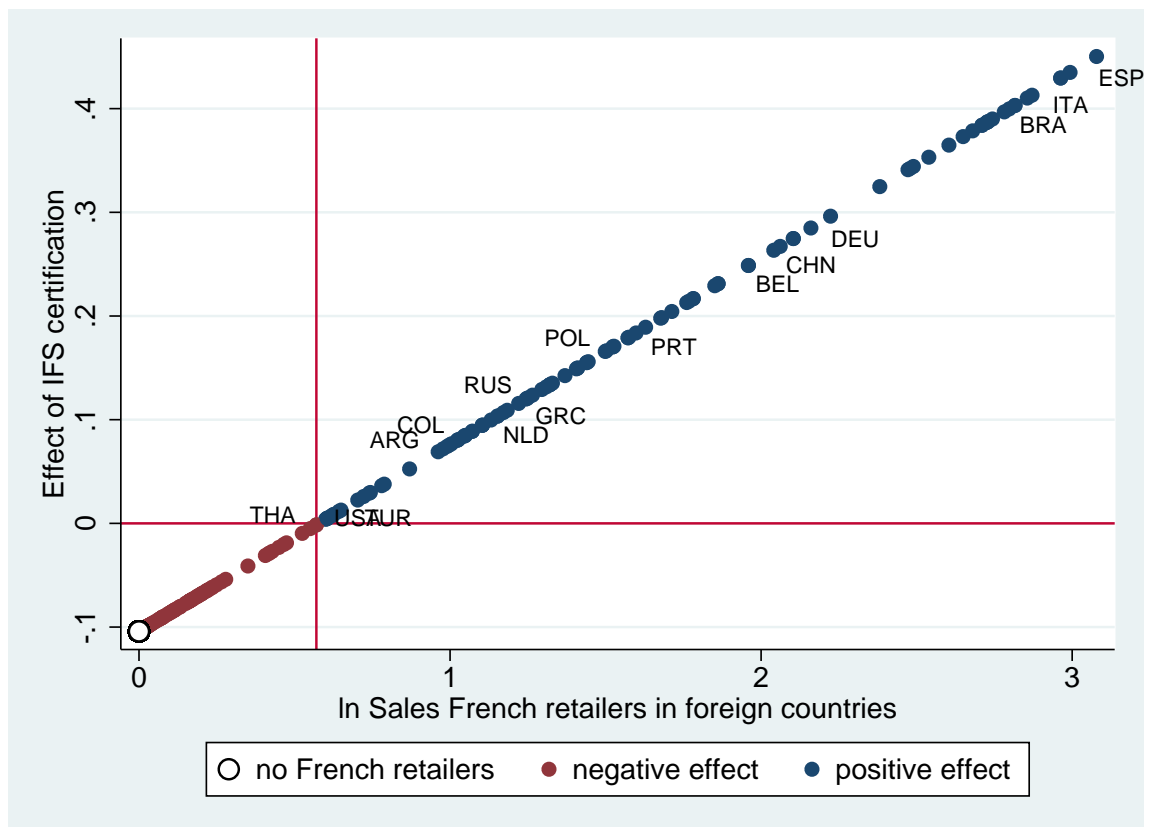
Appendix

Figure 5 – The overall effect of IFS certification on firms' exports to specific markets

Table 8 – Endogeneity of $\ln$ Sales: 2SLS estimations

Explained variable:	Extensive margin		
Endogeneous variable(s):	$\ln$ Sales	$\ln$ Sales	$\ln$ Sales
	(1)	(2)	(3)
Certification IFS $\times$ $\ln$ Sales	0.5840***	0.6556***	0.7209***
	(0.0420)	(0.0491)	(0.0488)
Instrumental variable(s)	the share of employed women	the growth rate of modern retail sales	the growth rate of modern retail sales & the share of employed women
Nb obs	25,130,976	34,554,841	24,697,065
Nb country $\times$ time FE	988	1359	971
Nb firm $\times$ time FE	203411	203411	203411
Nb clusters (by firm)	25726	25726	25726
1st stage R^2 of excl. IV	0.0012	0.0038	0.0051
2nd stage R^2	0.1708	0.1255	0.1479
Endogeneity test	214.88	4760.14	5117.82
p-value	0.000	0.000	0.000
Overid. test	–	–	14.586
p-value			0.0001
Weak id. test	8213.75	460.000	310000
Identification test	932.566	1029.232	1053.877
p-value	0.000	0.000	0.000

Notes: Clustered (by firm) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.