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THE EURO AND THE INTENSIVE AND EXTENSIVE MARGINS OF TRADE: EVIDENCE FROM FRENCH FIRM LEVEL DATA

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NON-TECHNICAL SUMMARY

Past literature on Currency Unions has found a positive but low effect of the adoption of a common currency on trade flows within the Monetary Union. Beyond the macro perspective however, very little has been done to investigate the effect of euro adoption at the micro-level.

On a theoretical perspective, previous literature suggests that the effect of a reduction infirm-level uncertainty related to nominal exchange rate volatility should lead to an increase in the average value of exports by each firm, and promote the entry of new exporters. The adoption of the euro has also been motivated by the elimination of trade costs related to economic exchanges in different currencies, and by a greater price transparency within the eurozone. In a framework a la Melitz with heterogenous firms, the decrease in variable trade costs would lead to an increase in the value of exports by firm in the foreign market, and to the entry of new firms on the export market. A decrease in the fixed cost of export however would only have a positive effect on the number of exporting firms. More recently, models of trade with multi-product firms have emphasized that a variation of trade costs may lead to a within-firm adjustment through the number of goods exported by each firm. Finally, one would expect from a greater price transparency that competition increases, thus contributing to firm selection on the export market. Hence, theory tells us that the effect of the euro on trade can both translates into a variation in the number of exporting firms or product exported by firm, and a variation in the value of exports by firm or by product.

We contribute to the literature on the micro effects of Currency Unions, by making use of a unique database on French firm-level exports. Previous empirical studies on the micro effects of the euro have been using product-level trade data at the HS6 level - with around 5,000 product categories. However, the level of disaggregation of these data does not enable to control for the entry or exit behavior of firms within a product category. In contrast, we rely on the use of French data on firm-level exports provided by the French customs. Importantly, our data provide information on firm exports with detailed information on the nature of the products that are shipped (HS8 categories). We can therefore identify an additional pattern related to the fact that several firms can export within a single product category, and we define a variety as a

product category exported by a single firm. Note that we restrict our analysis to manufactured products, including agro-food. Our data cover the 1998-2003 period.

Since we are interested in measuring the effect of the euro on trade, we identify a "treatment group", i.e. destination countries located within the eurozone (EZ13: eurozone 13 less Greece and Slovenia), and a "control group" in which we identify three destination regions: the rest of the EU15 less Greece (nonEZeu); the rest of Europe including the 12 enlargement countries (less Malta and Cyprus) plus Switzerland and Norway (nonEZeurope); the rest of the world (nonEZworld).

We define the extensive margin as the number of varieties that are exported to each destination country, and the intensive margin as the average value of exports by variety. These export margins have a bilateral dimension, and are used in the econometric part of the paper. In the descriptive statistics, we further identify the intensive and extensive margins by destination region, which requires to account for the geographical component of the extensive margin, i.e. the number of destination countries for each variety within a destination region. This second decomposition of the export margins has therefore a multilateral dimension.

Relying on the latter definition, our descriptive statistics indicate that overall, the variation of exports to eurozone partners over the period is proportionally more driven by the extensive margin. This is the result of different changes. The number of French exporters has declined in the eurozone, contributing negatively to the extensive margin of trade. In contrast, the average number of varieties exported by firm, and the average number of destination markets by variety - within the EZ destination region - have both positively contributed to the extensive margin. Finally, the intensive margin shows a positive trend over the period. We record a similar increase in the number of products exported by firm to the eurozone and to nonEZeu destinations; however the reduction in the number of exporters is more pronounced in the eurozone than in nonEZeu, which dampens the increase in the extensive margin. Exports towards the rest of Europe are characterized by a decrease in the number of varieties exported by firm, a slight increase in the number of exporting firms and destination markets by variety, and a very large increase in the intensive margin. This pattern is similar and even amplified for exports to the rest of the world, with a very large decrease in the number of varietiesexported to nonEZworld partners. Overall, the descriptive statistics indicate that if any, the euro had a differentiated impact on the two margins of trade.

As a second step we use the decomposition of the intensive and the extensive margins using the bilateral dimension: the extensive margin is therefore defined as the number of varieties exported to each partner, and does not include the geographical component as in the descriptive statistics. We proceed to econometric estimates that aim at identifying the effect of the euro on French exports to EZ partners, as compared to French exports to nonEZ partners. We estimate two gravity equations with the intensive and extensive margins of French exports as the dependent variables. In our empirical methodology, we introduce a measure of the nominal exchange rate volatility, in order to control for the reduction in the related uncertainty at the firm level. We also introduce eurozone dummies to control for additional effects that the adoption of the euro may have generated on French exports, as suggested by the literature.

Estimation results point to a strong negative effect of the nominal exchange rate volatility on both the intensive and extensive margins of trade, which suggests a large - positive – effect of the euro related to the reduction of firm-level uncertainty. Volatility indeed reduces the number of varieties that are shipped to trade partners, as well as the value of exports by variety.

The coefficients on the euro dummies also indicate an additional positive effect of the euro on the extensive margin, which is not related to the reduction in nominal exchange rate volatility. We find that the difference between the number of varieties exported to EZ partners and non-EZ partners, has increased by 19.4% between 1998 and 2003. We also find a positive effect specific to the introduction of the banknotes, that can be estimated at 7.8%. Robustness checks indicate however that the positive effect of the euro introduction on the extensive margin of French exports is responsive to the size of the control group.

Overall, this paper contributes to the literature on the micro effects of Currency Unions, and provides new evidence of a positive effect on trade that is not related to the elimination of nominal exchange rate volatility. This effect can be attributed to reduced trade costs or increased price transparency, which has increased the number of varieties exported by French firms.

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