VENTING OUT: EXPORTS DURING A DOMESTIC SLUMP

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The recession of the late 2000s and early 2010s greatly impacted the southern economies of the euro area such as Portugal, Greece and Spain. The recommendation that firms in those economies should reduce unit labour costs to gain international competitiveness in response to domestic economic crises was based on the assumption that domestic and foreign supply decisions are not linked at the firm level. This paper examines whether exports can have a significant impact in mitigating domestic slumps through an alternative channel: the venting-out mechanism. The paradigmatic case of Spain shows that firms with a falling domestic demand that had the ability to reduce their usage of flexible inputs relative to fixed achieved a short-term decrease in marginal costs gaining competitiveness abroad. The results in the paper help rationalize the coexistence of export booms during economic crises in economies in which internal devaluations had limited effectiveness in the short-run.

Introduction

The recession of the late 2000s and early 2010s impacted the core of many advanced economies. Few countries experienced the consequences of the crisis as intensively as Spain (Santos, 2017). From its peak in 2008, Spain's real GDP fell by an accumulated 8.9% in the following five years, until bottoming out in 2013. During the same period, private final consumption contracted by 14.0%, and the unemployment rate shot up from 9.6% to 26.9%. Despite this severe domestic slump, Spanish exports of goods quickly grew after the trade collapse of 2009. Indeed, after falling by 11.5% in 2008-2009, merchandise exports grew by 30.7% between 2009 and 2013 (in real terms), compared to a real growth of 6.8% in the rest of the euro area for the period 2008-2013.

The resilience of merchandise exports during the recession was also remarkable in other Southern economies of the European Monetary Union (EMU), such as Greece and Portugal. As a further illustration of the contribution of exports to alleviate the domestic slump in these economies, the share of euro area merchandise exports to non-euro area countries accounted for by these economies increased markedly during this period, despite the contemporaneous decline in the relative weight of these economies' GDP in the euro area's GDP (see Figure 1 for Spain, Portugal and Greece).

At first sight, this outstanding export performance appears to be consistent with the "internal devaluation" process advocated during the first-stage of the crisis by international organizations (see, for instance, European Commission 2010). In sluggish economies that were policy-constrained by sharing a common currency, the combination of wage moderation with a set of structural reforms in labor and product markets would result in increasing competitiveness for manufacturing firms. Indeed, this "internal devaluation" process would reduce unit labor costs, allowing Southern European firms to lower their relative export prices and increase their market shares abroad. However, the adjustment in labor costs achieved via these policies in the manufacturing sector was modest up to 2013 (OECD 2018) and the internal devaluation channel had a limited contribution to export growth over the period 2010-2013 (see, for instance, IMF 2015, 2018; Salas 2018). What explains then the remarkable export growth in Southern European economies over the period 2010-2013?

In a recent paper, we examine an alternative mechanism that relates the growth in exports directly to the collapse in domestic demand for manufacturing exporters using the salient case of Spain (Almunia, Antràs, Lopez-Rodriguez and Morales 2018). In particular, the so-called "venting-out" mechanism arises when firms that face an unexpected demand-driven reduction in domestic sales have the ability to reduce their usage of flexible inputs (e.g., temporary workers and materials) relative to their usage of fixed inputs (e.g., physical capital and permanent workers). By freeing up capacity associated to irreversible investment inputs, firms achieve a short-run reduction in marginal costs that translates into a gain in competitiveness in foreign markets and, consequently, into an increase in firms' exports.

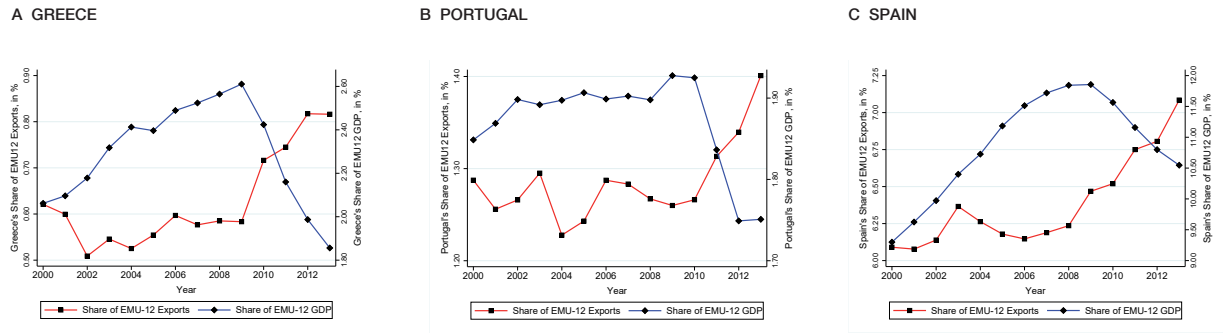
The venting-out mechanism and the Spanish export miracle

This alternative explanation resonates with the vent-for-surplus theory of the benefits of international trade, which has a long tradition in economics dating back to Adam Smith (1776).[1] However, the link between a domestic slump and export growth is hard to reconcile

[1] The term "vent-for-surplus" was introduced by John Stuart Mill in his Principles of Political Economy (1848) and popularized by Williams (1929) and Myint (1958).

SHARE OF EXPORTS TO NON-EU COUNTRIES AND GDP

FIGURE 1



with modern workhorse models of international trade. The canonical model of firm-level trade à la Melitz (2003) predicts that firms' domestic and export sales decisions can be studied independently from each other. Indeed, assuming that firms face constant marginal costs results in a zero effect of demand-driven changes in domestic sales in exports. In recent years, there has been an active literature showing that, in the presence of increasing marginal costs, there is a natural substitutability between domestic sales and exports (some supportive evidence is provided by Vannoorenberghe, 2012; Blum et al. 2013; Soderbery 2014; and Ahn and McQuoid 2017). Our paper goes a step forward by attempting to identify and structurally interpret the causal effect of a domestic slump on exports, exploiting plausibly exogenous variation in domestic sales during a particularly salient event-the Great Recession in Spain.

In the paper, we leverage Spanish firm-level data from 2002-2013 and geographic variation across Spanish regions in the reduction of domestic demand caused by the financial crisis to study the empirical relevance of the vent-for-surplus mechanism. To do so, we divide our sample into a "boom" period (2002-2008) and a "bust" period (2009-2013), and measure the extent to which, at the firm level, a decline in the domestic sales in the bust period relative to the boom period is associated with an increase in export sales over the two periods. When measuring this association, we control for "boom-to-bust" changes in observed marginal cost shifters (i.e. measures of factor prices and productivity) to account for potential internal devaluation effects.

We address the challenge of establishing a causal link between demand-driven changes in domestic sales and exports by exploiting rich geographic variation in the incidence of the Great Recession in Spain. This identification strategy is inspired by the influential work of Mian and Sufi (2013) on the causes and consequences of the Great Recession in the United States. In particular, we use the change in the municipality-level stock of vehicles per capita between 2002-2008 and 2009-2013 as a proxy for the extent to which the Great Recession affected demand across municipalities. We use a battery of empirical tests to show that local per capita changes in this major household durable consumption item is a valid instrument for the reduction in the domestic sales of firms located in different parts of Spain.

The baseline results show that Spanish manufacturing exporters that faced a local demand-driven drop of domestic sales by 10% increased their exports by about 16%. This intensive-margin elasticity of exports with respect to domestic sales is consistent and robust even after controlling for sector and location fixed effects and for firm proxies of productivity and average labor costs. Note that this estimated elasticity does not imply a more-than-complete substitution of exports for domestic sales in monetary values. The median firm in the sample of continuing exporters has an export share of 16.5%, so revenue from domestic sales is around four times than revenue from exports. In that case, for every €100 of lost domestic sales, a firm with the median export share would be able to recoup €20 via exports.

In the paper, we provide an exhaustive set of robustness tests to examine the credibility of the identification strategy and the estimated causal effects. These include excluding firms associated with the auto industry, heterogeneous effects, alternative instruments, controls for confounding factors, placebo tests and also alternative measures of productivity. We also explore whether the venting-out mechanism operates on the extensive margin, but we don't find evidence for that. This is consistent with the fact that more than 90% of the growth in Spanish exports in 2008-2013 is due to continuing exporters (De Lucio et al. 2017).

We finally use a structurally estimated version of the model with non-constant marginal cost of production to quantify the importance of the venting-out mechanism in explaining the 2009-2013 export miracle in Spain.

Using our causal estimates as inputs for the structural model, we implement a variance decomposition exercise to determine the extent to which the domestic slump in Spain was driven by demand versus supply shocks. This decomposition allows us to calculate a counterfactual to predict the "boom-bust" growth of exports that would have been observed if there had been no change in demand. The quantitative exercise detailed in the paper shows that approximately half of the growth in Spanish exports in the period 2009-2013 can be attributed to the venting-out mechanism created by firm-level responses to the slump in domestic demand.

Conclusions

Taken together, the results in the paper help rationalize the coexistence of export booms during economic crises in economies in which internal devaluations had limited effectiveness in the short-run. These limitations can emerge in practice because of the short-run stickiness of wages, the medium-term returns on productivity associated to structural reforms or the needed synchronization with expansionary monetary policy during deep recessions. In this context, exports can still have a broad scope to mitigate domestic slumps due to the relevant interdependencies between domestic and external market conditions for manufacturers. The paradigmatic case of Spain shows that firms that had the ability to reduce their usage of flexible inputs relative to their usage of fixed inputs freed up their fixed capacity, allowing exporters with a falling domestic demand to gain external competitiveness.

REFERENCES

AHN, J., and F. A. MCQUOID (2017). "Capacity Constrained Exporters: Identifying Increasing Marginal Cost." Economic Inquiry, Vol. 55, No. 3, pp. 1175-1191.

ALMUNIA, M., P. ANTRÀS, D. LOPEZ-RODRIGUEZ, and E. MORALES (2018). "Venting Out: Exports during a Domestic Slump." Documento de Trabajo del Banco de España, No. 1844.

BLUM, B. S., S. CLARO and I. J. HORSTMANN (2013). "Occasional and Perennial Exporters." Journal of International Economics, Vol. 90, No. 1, pp. 65-74.

DE LUCIO, J., R. MÍNGUEZ, A. MINONDO, and F. REQUENA (2017). "Los Márgenes del Crecimiento de las Exportaciones Españolas Antes y Después de la Gran Recesión." Estudios de Economía Aplicada, Vol. 35, No. 1, pp. 43-62.

EUROPEAN COMMISSION (2010). "Quarterly report on the euro area." Directorate General for Economic and Financial Affairs, March.

FAN, H., Y. LIU, L. QIU and X. ZHAO (2018). "Export to Elude," mimeo University of Hong Kong.

INTERNATIONAL MONETARY FUND. (2015). Crisis Program Review.

INTERNATIONAL MONETARY FUND. (2018). Spain. IMF Country Report No. 18/330.

MELITZ, M. J. (2003). "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity." Econometrica, Vol. 71, No. 6, pp. 1695-1725.

MIAN, A., K. RAO and A. SUFI (2013). "Household Balance Sheets, Consumption, and the Economic Slump." The Quarterly Journal of Economics, Vol. 128, No. 4, pp. 1687-1726.

OECD (2018). "Productivity and ULC by main economic activity (ISIC Rev.4)". OECD Productivity Database, OECD Online Databases.

SALAS, J. (2018). "Drivers of Spain's Export Performance and the Role of Labor Market Reforms." IMF Working Paper.

SANTOS, T. (2017). "El Diluvio: The Spanish Banking Crisis, 2008–2012," mimeo Columbia Business School.

SODERBERY, A. (2014). "Market Size, Structure, and Access: Trade with Capacity Constraints." European Economic Review, Vol. 70, pp. 276-298.

VANNOORENBERGHE, G. (2012). "Firm-level Volatility and Exports." Journal of International Economics, Vol. 86, No. 1, pp. 57-67.