

The relationship between innovation and exporting behavior: the case of Albania

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Abstract:

The aim of this paper is to provide evidence and new findings about the relationship between innovation and export behavior. General hypothesis of this study is that innovations has positive effect in exporting behavior of firms, it raises firm's competitiveness (opening new markets, increasing productivity, creating new products etc.). Moreover, one complementary assumption highlights internationalization of firms, as a hypothesis that pushes firms to increase their innovations performance (learning by exporting hypothesis). From a macroeconomic viewpoint, many policymakers and academics argue that this relationship between is a valuable source of technology and know-how, promote growth by stimulating productivity gains, help in financing current account deficits. Product innovation may play a more important role in the decision to start exporting, while the decision for process innovation may be triggered by successful exporting. This suggests that the causality between innovation and exporting may run from product innovation to exporting and consequently from exporting to process innovation and reverse productivity improvements (J.P. Damijan, Črt Kostevc and Sašo Polanec, 2008). Using microdata, including innovation survey, industrial survey and information on trade, for Albanian firms, we investigate this dual relationship. The study combines different variables concerning innovation (R&D and innovations decision, types of innovation), structural characteristics (size and sector), and export behavior of firms (decision to export and export intensity, weight of export in total sales). Our analysis is a descriptive analyzing. Empirical studies on relationship between innovation and exporting behavior in Albania are rare and this paper attempts to fill the gap in the literature

Keywords: heterogeneity, innovation, exporting, productivity, Albania

JEL classification: D24, F14, F21

INTRODUCTION

Exporting is an important factor of economic growth, and therefore export promotion is a critical consideration for economic development of each country. Promoting export activity; particularly by traditional exports and new export products, is essential for progress in this area. New firms must invest on innovation in order to survive in competitive markets, particularly in the latest high-technology industries where competitive pressure is high. The link between exporting and productivity is not exogenous. Firms improve their productivity prior to exporting, and potentially gain additional productivity benefits post-entry (Aw et al. ,2011). New export opportunities affect exporting firms' innovation performance and in short terms, undertaking R&D

and/or innovating are likely to both impact on the firm's decision to export or not. Innovation allows firms to reduce their production costs by an amount that increases with the size of the innovation investment. While in the short-term cost reductions and increased competitive pressure can lead to job shakeouts, but the firm entry and exit shift resources from old and less productive uses to more productive ones. An increase in demand for firms' products, will have two main effects on firms' innovation incentives. First, a direct market size effect: namely, the expanded market for exports will increase the size of innovation rents and thereby increase firms' incentives to invest more in innovation. And second, a competition effects: the expanded market for exports attract new firm into the market and it will raise the competition between exporters. A key implication is that technology and export decisions are interdependent and both channels may endogenously affect the firm future productivity. Firms that are part of innovative processes in managing production factors such as labor, capital and natural resources have comparative advantages over other firms in and out of the country as a result of specialization in manufacturing processes. Referring to literature, there is a very important connection between the size of the market, the sector where the firm operates and the probability that the firm will export. Productive firms, which have a dominant position in the operating sector, are potentially the largest exporters. As a result, firms invest on manufacturing processes by creating and commercializing innovative products and services. There is a very strong relation between the size of the exporting firm and the innovation process which is based on the modern literature. The most aggressive companies in the market are the most innovative ones and vice versa; they are the potential exporters too. Innovative firms also minimize the risk and are stable in the exporting process. Firms that invest in data collection and market research, encounter with sensitive productivity growth and tend to invest more in adapting modern and innovative technology.

Several countries have implemented programs to support their firms' internationalization efforts. More innovation – friendly regulation, combined with lower barriers to trade and foreign direct investment would enhance competition and would foster the flow of technology and knowledge across borders. Improvements in the skill composition of labor play an important role in productivity growth. Studies suggest that investment in R&D is associated with high rates of return. To achieve sustained (and sustainable) improvements in societal well-being, new and smart solutions to problems should be put into practice.

Government policies can support innovation by continually reforming and updating the regulatory and institutional framework within which innovative activity takes place. In this context, reforms are needed to make public policy and regulatory framework more conducive to innovation in a range of policy areas from the general business environment. Governments can also play a more direct role in fostering innovation. Public investment in science and basic research can play an important role. These resources are used to finance a series of activities aiming at supporting firms in selling their goods in foreign markets, including training on the export process to firms that are new to the trade business; market intelligence to generate relevant background information and uncover specific commercial opportunities abroad; organizing and co-financing the participation of firms in international marketing events such as trade fairs, exhibitions, and missions; arranging meetings with potential foreign buyers; and supporting the association of small companies to operate more effectively in external markets. These differences across firm-sizes are likely to be at least partially related to heterogeneity in access to and ability to use information. In particular, supporting

small and medium-sized companies (SMEs) in their incursion in international markets is a common goal of export promotion agencies as declared by their lead officials and even in their legal statements of purposes. Indeed, these companies are more likely to be affected by barriers to exporting, in general, and those related to imperfect information, in particular, and accordingly appear as the primary beneficiaries of public trade promotion programs. Hence, the value added by such programs to the firm's own internationalization efforts can be expected to differ depending on their size.

THEORETICAL FRAMEWORK

Firms are born, make decision, thrive or they die. This dynamic process of firm lifecycles generates heterogeneity among firms not only across industries (Bartelsman and Doms, 2000). In general, studies on this research field pay special attention to the internal capabilities of firms and their innovation performance, which have been emphasized by evolutionary economic (Nelson and Winter, 1982). According to this evolutionary approach, the innovation behavior of firms allows them to achieve superior performance in a competitive environment. According to (J Blyde, G Iberti and M Mussini 2017), firms that engage in innovation tend to export more than other firms because they are able to sell goods and target markets that reward innovation.

Previous studies have argued that trade facilitates the transfer of knowledge and ideas across countries (Grossman and Helpman, 1991). In particular, participation in export markets brings firms into contact with international best practices and fosters learning and productivity growth. According to (John R. Baldwin, Wulong Gu, 2004), export-market participation was associated with increases in a plant's productivity growth. They identified the presence of three main mechanisms through which export-market participation raises productivity growth among plants: learning by exporting; exposure to international competition; and increases in product specialization that allowed for exploitation of scale economies. They also show that plants that move into export markets increase investments in R&D and training to develop capacities for absorbing foreign technologies and international best practices.

The trade and innovation relationship has a consolidated macroeconomic framework. An early approach comes from the neo-endowment models, which focus the analysis of the relationship (innovation-trade) on specialization and that consider the factor endowment as source of competitive advantage (Davis, 1995). While different techniques have been used to control for this endogeneity issue, most studies find that innovation efforts tend to translate into larger exports. In the particular context of the Chilean economy, for example, Bravo Ortega et al. (2014) find that firms that invest in R&D are more likely to export, but the reverse is not true. Exports by multi-product firms dominate world trade flows. (T Mayer, Marc J. Melitz, and Gianmarco I. P. Ottaviano, 2014) build a theoretical model of multi-product firms that highlights how competition across market destinations affects both a firm's exported product range and product mix. They show how tougher competition in an export market induces a firm to skew its export sales toward its best performing products. They find very strong confirmation of this competitive effect for French exporters across export market destinations.

At the same time, R&D and innovation activities seem to play an important role in explaining a firm's decision to export and export volumes. Several empirical studies have linked innovation to exporting (e.g., Basile; Bernard and Jensen, 2004). Similarly, Cassiman and Martinez-Ros (2007) using a sample of Spanish firms find that

engaging in product innovation significantly increases the probability of starting to export.

In this paragraph we are regarding the other part of the causal link (exporting - reverse productivity improvements). Does firms' access to export affect innovation? Modern trade and growth theories (Grossman and Helpman, 1991b; Acemoglu, 2009; Aghion and Howitt, 2009) suggest it should, if only because improved access to export markets should increase the size of markets that can be appropriated by successful innovators. Moreover, we know that trade induces knowledge spillovers. The knowledge spillover effect of trade underlies the work of Coe and Helpman (1995) among others. In their paper (P Aghion, A Bergeaud, M Lequien, M Melitz, March 2017) analyzed the impact of export shocks on innovation for French firms. A model of trade and innovation with heterogeneous firms predicts that a positive export shock should raise innovation more for initially more productive firms. Demand shocks generate both market size and competition effects. A larger market size increases the incentives for innovation for all firms, whereas the increased competition generated by the larger market reduces the incentives for innovation most strongly for less productive firms. They find very strong confirmation of both this market size and competition effect for French manufacturing innovators. Most closely related to our analysis in this paper are Clerides et al. (1998), Bernard and Jensen (1999) and Lileeva and Trefler (2010), which look at the effects of exports on productivity. In particular, Lileeva and Trefler (2010) provide evidence of a causal effect on export on productivity and innovation by using the US tariff cut imposed in 1989 by the new Free Trade Agreement (FTA) between US and Canada, as an instrument for export expansion. Their main conclusion is that the FTA induced productivity gains by Canadian firms that saw their access to the US market improved by the FTA.

METHODOLOGY

This study covers a number of variables related to innovation performance and export behavior. Concerning innovation performance, we include in the study the following dimension of innovation: decision to innovate; R&D activity; variety of innovation (as a measure of engagement in innovation activity); and types of innovation (product innovation; process innovation; organizational innovation; marketing innovation). For the export behavior of firms, we analyze variables such as the decision to export (export probability) and the export intensity; the latter measured by the share of exports (sales outside the country) on total sales (O. Rodil, X. Vence and M.C Sanchez, 2015).

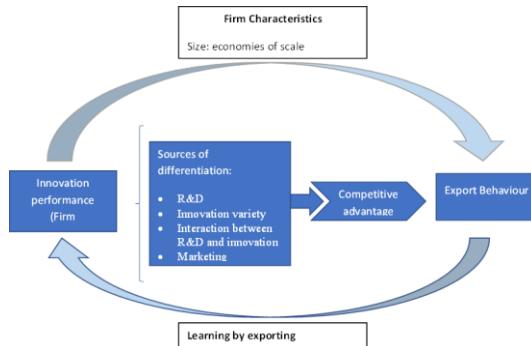
The data from Albania firms are provided from BEEPS, with a sample of 360 firms.

Descriptive analysis

A large part of the empirical literature has been focused in the effect of R&D on exporting. The R&D activities that a firm carries out to improve its technological and innovation capacities constitute an important factor for its market success. In general, empirical studies have found that R&D expenditure is a key condition that allows firms to create new technologies and absorb external knowledge, which is a condition to survive in a competitive environment.

The analysis shows that only 5 firms carry out R&D activities, accounting for the 1.4 % of total (Sample of 360 firm with viable data on market turnover). Only one 1

firm with R&D export to international market, whereas other firms, sale to national market.



Source: Rodil O, Vence X and Carmen Snchez M, 2015

Studies that include only R& D as the main factor of innovation have limitation, because many innovations do not require R&D to be carried out. In order to study innovation behavior, its necessary to add other activities not only R&D. According to OECD Innovation include a variety of activities such as staff training, internal and external R&D investment, acquisition of machinery, equipment and software and commercialization. If we consider this, the proportion of firms that invest in innovation reaches 10.3% of total firms (37 firm from 360), which is 10 times more when we consider only R&D as an innovation.

Table1 Cross-tabulations of exporting activity by firms

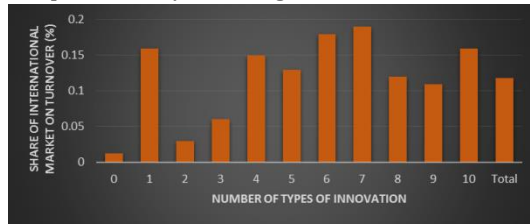
		Exporter			Chi -square test
		No	Yes	Total	
R&D Investment	No	90%	10%	355	p-values = 0.0001
	Yes	80%	20%	5	
	Total	99%	1%	360	
Innovator	No	12%	88%	280	p-values = 0.00011
	Yes	89%	11%	80	
	Total	78%	22%	360	
Variety of innovation	No	85%	15%	322	p-values = 0.006
	Yes	21%	79%	38	
	Total	89%	11%	360	

Source: Own elaboration (data from BEEPS survey)

As we can see from this table, there is a considered difference between exporters and no-exporters. This finding shows a positive link between innovation and export behavior.

To analyze the variety of innovation, we have been classified the firms according to the number of types of innovation that they carried out. The table show that most of the firms innovate from 1 type of innovation to 5 types of innovation. As we can see, the higher the number of innovations varieties the lower of firms that are included. This is logical because it is difficult for a firm to produce more types of innovation.

Fig 1: Export intensity according to the varieties of innovation.



Source: Own elaboration

One the other hand, when we analyze the number of types of innovation and the share of international market, export intensity, we conclude that exist an important difference between firms with zero, one or with two types of innovations and those that produce much more variety. In this logic, while the former shows a low export intensity the latter show a higher rate of internationalization. Variety of innovation is a significant key for decision to export. A firm with high variety of innovation is more likely to be a potential exporter. These results are in line with other authors studies based on different cases (Rodil O, Vence X and Carmen Sanchez M, 2015, Lopez and Garcia, 2005).

CONCLUSION

In this study we emphasize that innovations have positive effect in exporting behavior of firms, it raises firm's competitiveness (opening new markets, increasing productivity, creating new products etc.). Moreover, one complementary assumption, highlights internationalization of firms, as a hypothesis that push firms to increase their innovations performance (learning by exporting hypothesis). We have found that R&D expenditure is a key condition that allows firms to create new technologies and absorb external knowledge, which is a condition to survive in a competitive environment. When we analyze the number of types of innovation and the share of international market, export intensity, we conclude that exist an important difference between firms with zero, one or with two types of innovations and those that produce much more variety. In this logic, while the former shows a low export intensity the latter show a higher rate of internationalization. Variety of innovation is a significant key for decision to export.

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