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Explaining cross-country differences in exporting performance: The role of country-level macroeconomic environment☆

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ABSTRACT

In this paper, we undertake a meta-analysis to investigate whether country-level macroeconomic factors can help explain the inconclusiveness of existing evidence on the firm-level productivity–exporting relationship – the so-called learning-by-exporting hypothesis. Using 34 studies that investigate learning by exporting covering 31 countries, we attempt to explain whether country-specific macroeconomic factors account for the variation in the estimated firm-specific productivity effects from exporting across different studies, along with considering a firm-level factor. Robust to different specifications, one interesting finding is that countries with bigger external demand (measured by distance-weighted global GDP for each country) are likely to display a higher estimate of the productivity effect of exporting. In addition, countries with higher competitiveness, as reflected in lower relative prices, tend to experience higher exporting performance, while higher returns from overseas production reduce the learning effect from exporting at the firm level. The results also indicate that the effect of exporting on firm productivity is lower in periods of financial crisis.

1. Introduction

This paper attempts to provide a meta-analysis in order to explain whether country-specific macroeconomic and firm-level factors account for the variation in the estimated firm-specific effect of exporting on firm productivity (the so-called learning by exporting) across different studies. It has been well established that exporting is a key channel to achieve a higher level of productivity (Bernard, Eaton, Jensen, & Kortum, 2003; Clerides, Lach, & Tybout, 1998; Helpman, Melitz, & Yeaple, 2004; Melitz, 2003). The literature examining the association between exports and firm productivity has flourished in the past two decades. So far, most studies in this literature offer empirical support for the self-selection of the most productive firms in export markets. However, evidence for ex-post productivity improvement of exporters has been mixed, with only a few studies having found consistent empirical evidence of learning by exporting. This paper aims to take stock of this literature in order to shed light on the factors underlying this diverse empirical evidence. The empirical ambiguities in this finding across studies on learning by exporting can be resolved by considering the influence of country-specific factors such as distance-weighted global GDP and external competitiveness on the magnitude of the productivity effect of exporting.

This paper therefore aims to undertake a quantitative review of the literature on learning by exporting, by investigating the key factors that might explain the variation in the effect of exporting on the productivity of firms across different studies. Previous literature on this issue of learning by exporting with meta-analysis includes Martins and Yang (2009) and ISGEP (2008). However, the previous literature has paid little attention to explaining the learning differences via the role of country- or firm-specific factors. Given the mixed evidence in the literature, it is important to identify the aggregate- and firm-level factors, which can affect the association between past exports and current productivity, and which are more likely to explain the differences in estimates across countries. In a cross-country comparison, the effect of country-specific characteristics will play a crucial role in assessing the difference in the estimates of productivity performance across countries.

We put forward several arguments in the hypothesis development to support the different contentions. Although this

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quantitative survey builds on Martins and Yang (2009)'s data set, assessing the role of country-level macroeconomic factors and firm-level returns from outward FDI as a substitute for exporting can be more satisfactory than simply looking at the study characteristics, as in Martins and Yang (2009). However, the potential role of sampling and methodological heterogeneity in explaining the variation across studies on learning effects by itself may not be sufficient when there are country-level changes taking place. This paper therefore for the first time tries to integrate the micro- and macro-determinants in explaining the mechanisms through which the variation in learning effects could be explained. Firms serve foreign markets either via exporting or through foreign direct investment (FDI), or a combination of the two (Rob & Vettas, 2003). While considering the macroeconomic factors it is also important to examine the return to outward FDI in explaining the variation in learning effects from exporting. Unlike the earlier meta-analysis studies, in this paper we therefore report both aggregate- and firm-level determinants to explain the variation in learning by exporting across different studies/countries.

Empirical studies utilizing firm-level data have explored several causal mechanisms involved in the impact of exporting on firms' productivity, but there have been limited attempts to summarize the mechanisms of learning. Although a significant number of firm-level studies from many countries have produced evidence regarding the productivity effects of exporting, the differences between these estimates across countries remain somewhat unexplained without using country-level macroeconomic and policy indicators. This is because these factors are more likely to explain the differences in estimates across different studies. This paper therefore presents a meta-analysis of export-performance across countries considering the country-level macroeconomic environment.

The literature on the topic of exporting and performance covers many highly industrialised countries and some emerging market economies (see the recent survey paper by Wagner, 2007). Given the emphasis the international trade theory places on exporting behaviour and the ability of exporting firms to achieve economies of scale, it is important to understand country-specific factors in explaining the productivity differences of exporters across countries. Previous analysis suggests several reasons why increased exports should be linked to firm performance, and why and how exporters could gain high returns from international trade. Much of this literature is firmly rooted in the seminal work of Krugman (1980) and Melitz (2003). This learning idea of exporting highlights the continuous gains from the export market, through firms' incremental and continuous engagement in international trade.

Exporting is therefore an important source of information, competitive pressures and other comparative advantages for firms, leading to significant performance improvements (Baldwin & Gu, 2003; Garcia, Avella, & Fernandez, 2012; Isgut, 2001; Love & Ganotakis, 2013; Love & Mansury, 2009), which is identified as 'learning by exporting' (Clerides et al., 1998). Drawing on a sample of UK technology-based companies, Ganotakis and Love (2012) found that exporting improves subsequent firm productivity, whereas Salomon and Jin (2008) found that firms in technologically lagging industries have the opportunity to benefit disproportionately from knowledge spillovers through engaging in international market, and ex post productivity improvements are larger for the more technologically advanced firms than less technologically advanced counterparts (Garcia et al., 2012). In addition, exporting is the outcome of a series of strategic decisions by the firm, and thus exporting decisions can be influenced by other country-specific variables in explaining firm performance. Despite the extensive debate about the learning effect from exporting via firm productivity, empirical findings are still unclear; in part because of sampling and methodological heterogeneity across studies (Martins & Yang, 2009; Wagner, 2007) and in part to changes in the country-level macroeconomic environment. Our paper argues that there are several country-specific macroeconomic dimensions that can make a specific country study different from other country studies on exporting and firm performance. These macroeconomic dimensions include external demand, relative prices reflecting competitiveness, GDP growth, inflation, trade openness, FDI inflows, the degree of financial reform and financial crisis in a country.

Cross-country differences can be explained by aggregate country-level factors, although the productivity effect of exporting can be explained by firm-level characteristics. Given these estimated country-specific common coefficients from firm-level data, it becomes important to consider aggregate factors at the country level to explain the differences in the effect of exporting across studies/countries. Besides exporting activity, the international business literature explains why a firm engages in international operations by bringing the focus from international exchange at the country level to international production at the firm level (see Rugman, Verbeke, & Nguyen, 2011 for an excellent review of this literature). In general, domestic firms enter foreign markets through exports and outward FDI. It is for this reason that we consider firm-specific factors by bringing in the impact of returns from international production as an additional factor that could explain the mixed evidence with regard to the variation in learning effects from exporting. One could expect a negative relationship between exporting and outward FDI by multinational firms. Using firm-level data from the countries covered in this study, we estimate returns to multinationality of domestic multinational firms, which we incorporate as a variable influencing the learning estimates, and we find that the learning effect of exporting is lower when the returns from international production increase.

To sum up, by analysing 34 papers that study learning by exporting covering 31 countries, we explain whether country-specific macroeconomic factors account for the variation in the estimated firm-specific exporting effects on firm productivity across different studies, considering both country-level and firm-level factors. Robust to different specifications, the results show that the countries with higher external demand are likely to display a greater effect of exporting, and countries with higher competitiveness, as reflected in lower relative prices, tend to experience higher exporting performance. At the same time, higher returns from overseas production reduce the learning effect from exporting. The results also indicate that the effect of exporting on firm productivity is lower in periods of financial crisis. Our results have important implications for managers of exporting firms in order to assess the possible risk factors whether to engage in exporting or to go for overseas production via outward FDI. The micro and macro-level factors we have included to explain the variation in learning from exporting across countries do help us in this regard. It is quite clear from this meta-analysis that by including the returns to FDI as a micro-level factor we are able to establish a managerial perspective of our paper that higher returns to FDI suggest lower learning from exporting thereby making a case for substituting overseas production for exporting, even when we control for the role of macro-level business environment factors.

The paper is structured as follows: Section 2 discusses the literature and hypothesis development and the following section explains the econometric approach undertaken in the study. Section 4 describes the studies that we examine, Section 5 presents the results and Section 6 concludes.

2. Literature overview and hypothesis development

Theoretical studies on international trade show that one can distinguish three research streams. The traditional or old theories