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Does Trade Foster Employment Growth in Emerging Markets? Evidence from Turkey

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Summary. — This work investigates the impact of importing, exporting, and *two-way* trading on firm labor demand in Turkish manufacturing. Adopting Multiple Propensity Score Matching techniques and Difference in Difference estimator, we support the positive internationalization impact on firm employment for an emergent country. Our evidence reveals the existence of complementarity effects between exports and imports, which is strengthened for high trade intensity firms. Furthermore, only high intensity exporting seems to promote the workforce skill upgrading in terms of an increase in the R&D worker share. The employment creation effect of firm internationalization reflects its large positive impact on firm production scale.

Key words — importer, exporter, two-way trader, employment, firm growth, Turkey

1. INTRODUCTION

The recent economic success of emerging countries rests largely on their competitive manufacturing sectors, which are increasingly integrated into the world economy. On the one hand, the export market represents an unprecedented opportunity for growth and innovation for manufacturing firms. On the other hand, imported inputs enhance the possibilities for acquiring advanced technologies and/or exploiting new complementarities in production. Although both importing and exporting activities may occasion an internal restructuring process and bring about efficiency gains (Halpern, Koren, & Szeidl, 2005; Wagner, 2007, 2012) the impact on firm employment levels is more uncertain. Productivity improvements arising from import and export activities might, for example, foster a permanent shift toward labor-saving technologies, with a consequent reduction in firm employment. Also, imported inputs may directly substitute for domestic labor. Nevertheless, this is only part of the story, and there are other channels that instead suggest the employment-creation effects of trade. If higher productivity fostered by internationalization leads to improved competitiveness and to an expansion of firm output and market share, trade could positively affect firm employment levels, even in the face of a reduction in overall labor intensity in manufacturing. Finally, exporting might directly lead to an expansion of the scale of firm operations and thus of firm employment, as it opens new potential business opportunities and increases the relevant market size of firms. Policy makers in developing economies should, then, be concerned about the international integration of manufacturing firms, as it may have important consequences for long-term trends in employment creation and economic growth. Indeed, countries' integration into the global economy brings about an important restructuring process, with low productivity firms exiting manufacturing (Fernandes, 2007; Melitz, 2003; Pavcnik, 2002; Paus, Reinhardt, & Robinson, 2003). If redundant workers are then reallocated to low productivity and low growth sectors (e.g., services), the country will experience low productivity growth (Rodrik & McMillan, 2011). On the other hand, if trade fosters an increase in manufacturing firms' demand for labor, redundant labor could be reallocated within the manufacturing sector to trading firms, which are usually the most productive firms in the economy. As a consequence, a country may experience increased productivity growth.

Our aim, then, is to explore the effect of trade on firm employment and employment composition in an emerging country framework by examining the Turkish manufacturing sector, thus contributing to the developing economy literature that has mainly investigated the relative demand for skilled labor (Fajnzylber & Fernandes, 2009; Görg & Strobl, 2002; Harrison & Hanson, 1999; Pavcnik, 2003). In particular, our study adds to previous empirical work on Turkey (Demir, 2010, 2013; Meschi, Taymaz, & Vivarelli, 2011; Yasar & Morrison Paul, 2008) by providing, for the first time, comprehensive evidence regarding the causal effects of importing, exporting, and joint importing and exporting on firm level labor demand, using recent and representative data. The empirical strategy we adopt is based on a combination of Multiple Propensity Score Matching (MPSM) and Difference-in-Differences (DID) estimation. This methodological choice allows us to dissect and isolate the role of each international strategy—importing, exporting, and two-way trading—on employment, by controlling for selection on time invariant unobservables. The focus on developing countries is of particular interest in the study of the trade-employment nexus for several reasons. First, while developed countries' importing activities, especially from low-income countries, are often driven by labor cost saving objectives, firms in emerging markets are more likely to be seeking technology and high-quality inputs when they engage in cross-border trade. This may, directly or

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indirectly—indirectly through productivity improvements induced by technology transfers embodied in trade flows (Halpern *et al.*, 2005)—affect firm level employment and employment composition in different ways than in a developed economy framework. Second, exports may offer firms in developing countries—more than firms in developed countries—the opportunity to substantively enlarge their scale of operations, as their domestic markets may be small. Third, global production chains intensively involve firms located in emerging economies, and it is important to understand whether firms entering international production networks can create important employment opportunities within developing economies.

Within this framework, Turkey is an interesting case. Beginning in the 1980s, the country has undergone a continuous and growing process of integration into the global economy. Empirical evidence confirms that productivity gains are associated with the internationalization of Turkish firms (Maggioni, 2012; Morrison & Yasar, 2007; Yasar & Rejesus, 2005) and this hints at the possibility of pro-competitive effects of firm activities in foreign markets. However, limited empirical evidence exists on the recent consequences of firm trade on Turkish manufacturing employment, a gap that we attempt here to fill. During the period of our analysis, 2003–08, the Turkish manufacturing sector experienced an increase in the absolute size of its labor force and now accounts for a significant share of total Turkish employment. Nevertheless, its share of total employment decreased from about 41% in 2003 to 34% in 2008 and, despite sustained GDP growth (6% annually, on average, during our sample period), the Turkish unemployment rate has remained very high (about 11%), while the employment rate has remained modest (well below 50%). Turning to the country's integration in the global economy, in our sample period, exports and imports grew dramatically (25% and 19%, respectively [1]), compared to previous decades. In this context, it is crucial to clarify whether firm internationalization strategies have sustained manufacturing labor demand or have contributed to stagnation in the labor market. This point is crucial for anticipating future effects of ongoing integration into the global economy on unemployment reduction and employment creation. Furthermore, our investigation aims to disclose the impact of a firm's trade integration strategies on its employment composition in terms of the ratio of R&D to non-R&D workers. Trade may indeed represent a channel of technology and knowledge transfers (Fernandes & Paunov, 2010; Lo Turco & Maggioni, 2012a), and firms may engage in innovation and endow themselves with a skilled workforce to take advantage of the opportunities presented by international markets. The latter channel may clearly play an important role in the future growth pattern of the economy and in the development process, increasingly based on knowledge creation and innovation.

The work is organized as follows: the next section reviews the relevant literature; Section 3 presents the data and some firm level descriptive evidence on trade and employment; Section 4 addresses the empirical strategy and the estimation technique; Section 5 displays the main results of our analysis; Section 6 investigates the role of firm trade intensity. Finally, Section 7 discusses the evidence and concludes.

2. LITERATURE REVIEW

Our work is close to the large literature on the impact of imports on firm level labor demand in developing countries. [2] Most of the empirical contributions focus on the impact of trade on the demand for skilled labor, motivated by the theoretical possibility that foreign inputs and exported products may lead to skill upgrading of firm labor. Indeed, trade may favor technology diffusion from the North to the South (Pissarides, 1997). Also, the growth of new intermediate imports and the insourcing of higher skill intensive production stages may drive an increase in skill intensity in the developing country manufacturing sector (Feenstra & Hanson, 1997). In both cases, a larger share of skilled workers is required to cope with new tasks and new technologies. However, existing evidence on this issue is not conclusive. [3] While it has been shown that imports did not affect the relative demand for skilled workers in Chilean plants (Pavcnik, 2003), purchases of foreign machinery raised manufacturing firms' relative skilled labor demand in Ghana in the 1990s, while exports had no effect (Görg & Strobl, 2002). Similarly, Csillag and Koren (2011) find that Hungarian workers exposed to imported machines earned higher wages than other machine operators in the same firm. On the other hand, increased involvement in imports, exports and foreign direct investment is associated with a reduced demand for skilled labor in China, while the opposite is found in Brazil (Fajnzylber & Fernandes, 2009) and, with respect to imports and exports, in Mexico (Harrison & Hanson, 1999). Previous studies, then, show that a positive association may exist, in developing and emerging markets, between the relative demand for skilled labor and firm trade, yet to date few studies have investigated the causal impact of trade on overall firm employment. There are only two recent exceptions: Paunov (2011), who shows that firm import strategies promoted employment in Ecuador between 1997 and 2007 (notably in the aftermath of the crisis); and Park, Yang, Shi, and Jiang (2009), who finds a slightly positive effect of firm exports on employment in China between 1995 and 2000. However, the focus of both studies is on a single internationalization strategy, i.e., either exporting or importing.

For the case of Turkey, some firm level studies analyze the relationship between trade and firm labor demand. For example, Yasar and Morrison Paul (2008) find that the adoption of imported machinery is weakly related to the extent of capital-skill complementarity in a sample of about 800 firms in four selected industries (apparel, textiles, motor vehicles and parts, and meat processing) in the 1995–97 period. For the manufacturing sector as a whole, Meschi *et al.* (2011) find that between 1992 and 2001, both exporters and firms belonging to sectors experiencing increasing inflows of foreign inputs from advanced countries displayed higher skilled labor costs as a share of total labor costs. Turning to the evidence on firm employment levels, in an analysis of the impact of exchange rate volatility on firm growth, based on a sample of about 500 of the largest Turkish firms, Demir (2010, 2013) [4] find a negative direct relationship between firm exports and employment growth, although the relationship is shown to be barely significant under sensitivity checks. [5] Despite this evidence, which points to a positive relationship between intermediate sectoral imports and firm level skill upgrading and to a negative, but barely significant, direct relationship between firm exporting and firm employment growth in very large firms, there is still scope for a comprehensive and more detailed analysis of firm import and export activities on firm employment in Turkey. Indeed, no previous work has dealt with firm level importing and exporting simultaneously and none has identified a causal effect of trade on firm labor demand. As for the contemporaneous analysis of firm level import and export activities, Yasar and Morrison Paul (2008) do not address firm level exports in their analysis, while Demir (2010, 2013) do not account for imports. Meschi *et al.* (2011) test for both export and import