Import protection, exports and labor-demand elasticities: Evidence from Korea

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ABSTRACT

We empirically examine the impact of trade on labor demand elasticities using Korean firm-level data. In our analysis, in addition to looking at the impact of liberalizing import restrictions, we take into account the fact that greater trade integration also leads to better and greater export possibilities. While we find that Korea's own tariffs do not have any statistically significant effects on labor-demand elasticities at the firm level, we find some evidence for the impact of imports on labor-demand elasticities when we replace tariffs with import penetration ratios. We also find a fair amount of evidence that exports increase labor-demand elasticites (in absolute value). While we find fairly strong evidence that tariff reductions in China have led to an increase in Korean firm-level labor-demand elasticities, there is no conclusive evidence showing the effect of tariff reductions by Korea's other major trade partners, namely the EU, US and Japan.

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1. Introduction

While greater openness in trade, we believe, leads to an increase in aggregate welfare, it does create both winners and losers. Whether workers in general are the winners or losers from trade liberalization has been, for the last two decades, an important theoretical and empirical question that trade economists have tried to answer. The standard two-factor Heckscher–Ohlin trade model, that assumes free factor mobility across the two sectors, predicts that trade benefits the abundant factor and hurts the scarce factor. Thus workers overall are predicted to benefit from trade in poor labor-abundant countries and to lose from it in rich capital-abundant (or labor-scarce) countries. The empirical debate on whether trade hurts unskilled workers relative to skilled workers (the owners of human capital) is ongoing and is far from resolved. Even the theory is not fully unambiguous in that the introduction of imperfections in factor mobility across sectors can lead to different results.

In the meantime, a new element of the trade-labor linkage was brought to our attention by Rodrik (1997), rigorously investigated empirically first by Slaughter (2001). This linkage works through the impact of trade on labor-demand elasticities. Before we go into this linkage, we need to know why we ought to care about what happens to labor demand elasticities. As Rodrik (1997) has argued (and discussed in detail in Slaughter, 2001), a more elastic labor demand leads to greater volatility in wages and employment, holding fixed the volatility in productivity. In addition, it weakens the bargaining power of workers relative to other factor owners in the sharing of surplus rents. And finally, it shifts the incidence of increase in non-wage costs on workers.

Now that we have established the importance of labor-demand elasticities in determining the welfare of workers, where and how does trade come into the picture? Rodrik argues that trade, by increasing the availability of goods and services for

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consumption as well as for use as inputs into production, directly and indirectly increases the substitution possibilities for the services of domestic labor. This leads to an increase in the own-price elasticity of the demand for labor. The first part works through an increase in the elasticity of demand for final goods in conjunction with one of Hicks-Marshallian laws of labor demand which states that "The demand for anything is likely to be more elastic, the more elastic is the demand for any further thing it contributes to produce" (see Hicks, 1963; Slaughter, 2001). This effect is also called the "scale effect." Intuitively, a given wage increase leading to a price increase leads to a bigger decline in product demand and therefore in labor demand, the higher is the elasticity of product demand (the more responsive is the quantity of output demanded to price). The second channel is the "substitution effect," which works through the availability of a greater range of inputs (in particular imported inputs) that can act as substitutes for the services of domestic labor in production. This, in turn, increases the elasticity of substitution between labor and all other factor inputs taken together.

The Rodrik hypothesis regarding the effect of trade on labor-demand elasticities has been tested rigorously for the US using four-digit industry-level data for the period 1961–91 by Slaughter (2001), for Turkey using plant-level data for the 1980s by Krishna, Mitra, and Chinoy (2001) and for India using two-digit industry level data by state for the 15 major Indian states for the 1980s and 1990s by Hasan, Mitra, and Ramaswamy (2007). While the first two studies were inconclusive, the third one (by Hasan, Mitra and Ramaswamy) found strong support for the labor-demand elasticity increasing effect of the Indian trade reforms. This effect in the Indian case was found to be stronger in states which had labor laws that made for a more flexible market for workers. For the US, Slaughter found the elasticity of demand for production labor to be increasing over time. Such a trend was missing for nonproduction workers. For Turkey, Krishna, Mitra and Chinoy find no statistically significant effect of trade liberalization on labor demand elasticities.

Another very important paper in the literature is Fajnzylber and Maloney (2005), which looks at the impact of trade reforms on labor-demand elasticities across worker categories using plant-level data from Chile, Colombia and Mexico. The results are mixed in that they find no consistent patterns and sometimes there seems to be no relationship between globalization and labor-demand elasticities. This paper is important because it covers three Latin American countries and also looks at the effects of exports (in addition to import competition) on labor-demand elasticities, an important aspect missing from other papers in the existing literature. The impact of exports turns out rarely to be strong and in fact, is quite mixed.

It is clear from the discussion above that the literature on trade and labor-demand elasticity so far has mainly focused on effects working through the competitive effects of imports on domestic products as well as through the substitution of the services of domestic labor by imported inputs.[2] This is true of both the theoretical literature on this issue pioneered by Rodrik as well as of the subsequent empirical investigations. With the exception of Fajnzylber and Maloney (2005), what is clearly neglected is that greater trade integration also leads to better and greater export possibilities. While the impact of reducing a country's own tariffs on its labor demand elasticities is important, the impact on the same of partner countries' trade reforms could be equally important. Before we apply the Hicks-Marshallian law stated above to this problem, we need to understand the various ways in which greater export possibilities through tariff reductions in partner countries might affect product demand elasticities (see Fajnzylber & Maloney, 2005 for a detailed analysis). First, note that for a firm that produces for the domestic market and for the rest of the world, its product demand elasticity is a weighted average of the product demand elasticity in the home market and in the foreign market, the weights being the sizes of the two markets. A bigger relative size of the export market leads to a higher weight on product demand elasticity in the export market. If the exports are primarily to countries that are richer than one's own, then the product demand elasticity for the same product might be lower in the export market. The argument is that what is a luxury in a certain country might be less of a luxury and more of a necessity in a richer country. The opposite will be the case in a poorer country. Secondly, if a firm is exporting to a country that is bigger in size than its own, then the bigger market size might mean it can accommodate more firms and could result in more competition. This leads to a greater effective product demand elasticity faced by the firm in this export market than its domestic market. Therefore, a larger share of exports in a firm's total demand will change the elasticity of the overall demand for its product and therefore, will also bring about a change in its elasticity of labor demand. One way this can happen is through trade reforms in partner countries. However, this also means that there is an additional effect of domestic tariff reductions, if we do not control for exports in our analysis. When the domestic tariff in an industry goes down, domestic firms in that industry face greater competition. While this increases product-demand elasticity in the domestic market, it increases the weight on demand elasticity in the foreign market. If exports are mainly to richer (and/or smaller) markets, this effect works to reduce the labor-demand elasticity from domestic tariff reductions. For all these reasons, it becomes very important to bring in exports and partner country tariff reductions into our theoretical and empirical analysis of the relationship between trade and labor-demand elasticities. This is exactly what we do in this paper. While Fajnzylber and Maloney (2005) have looked at the impact of exports on labor-demand elasticities (which we do as well), to our knowledge ours is the first paper to look at the impact of partner-country tariffs.

We use Korean firm-level data to see how Korean tariff reductions have affected labor-demand elasticities. At the same time, using this dataset, we also try to see how exports have affected labor-demand elasticities. We further probe into this export effect by looking at the effects of the tariff reductions of Korea's major trading partners on its labor-demand elasticities. While we find that Korea's own tariffs do not have any statistically significant effects on labor-demand elasticity at the firm level, we find some evidence for the impact of imports on labor-demand elasticities when we replace tariffs with import penetration ratios. We also

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[2] Another paper that studies the impact of globalization on plant-level labor demand is by Gorg and Hanley (2005) in the context of international outsourcing. They, in fact, estimate a dynamic labor-demand function. For a theoretical analysis of the impact of globalization on various aspects of labor welfare, see Ethier (2005).