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Trade and inequality in developing countries: a general equilibrium analysis

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Abstract

Developing and newly industrialized countries that have experienced the sharpest increases in wage inequality are those whose export shares have shifted towards more skill-intensive goods. We argue that this can be explained by technological catch-up. We develop this insight using a model that features both Ricardian and endowments-based comparative advantage. In this model, Southern catch-up causes production of the least skill-intensive Northern goods to migrate South (where they become the most skill-intensive Southern goods). This raises wage inequality in *both* the South and the North. We provide empirical evidence that strongly supports this causal mechanism: Southern catch-up exacerbates Southern inequality by redirecting Southern export shares towards more skill-intensive goods.

Keywords: International trade; Inequality; Southern catch-up

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The trade-and-wages debate has settled comfortably into what Sherlock Holmes might have called ‘the 20% solution’. Using a variety of methodologies, many researchers have demonstrated that international trade accounts for no more than a fifth of the rising inequality experienced by the United States in the last two decades, e.g., Feenstra and Hanson (1996, 1999), Borjas et al. (1997), and Baldwin and Cain (2000). As American

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academic interest in the debate wanes, it is easy to forget that the trade-and-wages debate does not stop at the U.S. border. As demonstrators in Geneva, Seattle, and Québec City remind us, rising inequality is an issue of profound importance to the low- and middle-income countries that constitute the 'South'. This Southern incarnation of the trade-and-wages debate poses difficult challenges for international trade economists wedded to general equilibrium reasoning. Their workhorse general equilibrium model dishes up bland fare for a Southern palate, namely, the Stolper–Samuelson theorem. The theorem states that globalization raises the demand for unskilled Southern labor, thereby reducing inequality in Southern countries. Unfortunately, this prediction is not borne out by the data.

For example, consider the Freeman and Oostendrop (2001) occupational wage database. It has 20 developing and newly industrialized countries with consistent data on the relative wages of production versus nonproduction workers over the 1990s. Just over half of these countries experienced rising inequality over the 1990s. That is to say, globalization has *not* reduced wage inequality in Southern countries. Further, this roughly even split between rising and falling inequality illustrates just how complex the evolution of Southern inequality has been.

While this complexity calls for an alternative to Stolper–Samuelson reasoning, it offers no guidance as to what that alternative might be. For example, there is effectively a zero correlation between changes in inequality and per capita GDP. This leaves us with a frustrating problem. If the hallmark of international trade theory is general equilibrium reasoning and if the Stolper–Samuelson theorem is out of the picture, then what can international trade theory contribute to our understanding of Southern inequality? Fig. 1 is a partial regression plot that hints at a possible answer. Each point is one of 20 countries from the Freeman and Oostendorp data in one of four periods (1983–1986, 1986–1989, 1990–1993, and 1993–1997). The vertical axis measures the change in wage inequality, i.e., the log change in the wage of non-production workers relative to production workers. The horizontal axis measures the degree to which export shares have shifted towards more skill-intensive goods. (We will describe this measure in detail below.) The top panel plots the data in deviations from country means; that is, it is the partial regression plot from a regression of the growth in wage inequality on the shift in export shares towards skill-intensive goods and on country fixed effects. The correlation is 0.51 ($p<0.001$). The relationship strengthens when growth in the relative supply of skills is included in the regression.[1] This appears in the bottom panel of Fig. 1, where the correlation is 0.60. We will describe these regressions fully in the empirical sections of the paper. The main message for now is that general equilibrium trade linkages across countries likely play at least some role in the complex evolution of Southern inequality.

To explore this role, we develop a model in which Fig. 1 correlation is driven by Southern productivity catch-up. To this end, we marry the Dornbusch et al. (1980) model of Heckscher–Ohlin trade with the Dornbusch et al. (1977) model of Ricardian trade. The

[1] The relative supply of skills is the Barro and Lee (2000) ratio of secondary education completed to secondary education not completed.