Dynamics of Foreign Direct Investment and Human Capital Accumulation

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Abstract

The discussion on the impacts of globalization on wage inequality originated over the concerns of the increase in skill premium in developed countries. However, growing empirical studies have shed lights on two insights that are generally overlooked in the existing literature. First, globalization is associated with increasing inequality in developing countries as well, which are usually unskilled-abundant (Goldberg and Pavcnik, 2007; Harris and Robertson, 2013). Second, the distributional impact of globalization is changing over time (Robertson, 2007; Brülhart et al, 2012; Danziger, 2017) due to increases in education investment (Edmonds et al., 2010; Atkin, 2012; Li, 2018), which further affects the trade patterns across countries.

This paper contributes to the literature by developing a theoretical framework that is able to reproduce these two stylized facts and discusses the dynamic impacts of foreign direct investment on skill premium and human capital investment. In particular, I consider a dynamic general equilibrium model with two countries, which are symmetric except for their efficiency in using skilled labor. Two goods are produced within each country; one is produced with constant returns, while the other is produced by imperfectly competitive Cournot firms with increasing returns technology and its production procedures can be geographically fragmented. Firms choose among different organization types, including domestic firms, vertical multinational enterprises (MNEs), and horizontal MNEs. Individuals are born as unskilled labor and can either work for their whole life as unskilled labor or spend a fixed period of time to pursue an education that enables them to provide high-skill labor and get high wage after graduation. In addition, workers are assumed to be heterogeneous in their relative ability to provide skilled labor. The sector with fragmented production is more skilled labor intensive compared with the other sector.

The simulation results show that the exact impacts of trade cost reductions depend on the change in active types of MNEs. Either when a country expands its headquater production or reallocates labor from domestic firms to affiliates of MNEs from more developed countries, it experiences increases in skill premium. In addition, the trade-induced changes in the returns to education influence the incentives for workers to invest on education. As a result, the total skill supply changes and

thereby the skill premium changes as well. This indicates a non-monotonic transition path when the economy moves from the original equilibrium to the new one after trade cost is reduced.

I then examine the theoretical implication in the context of China's trade reform after the implementation of its opening up policy. I treat metropolitan and non-metropolitan areas in each prefecture as local labor markets to take advantage of the staggered programing timing across prefectures and detect the casual effects the program has on enrollment behaviors by comparing children in prefectures already reached by the program with children in prefecture not yet reached. With the difference-in-difference method based on micro data from 2000 census, I find that the opening up policy significantly increased the enrollment rate of secondary school and college. In addition, the magnitude of the effects declines over time, which further confirms predictions of the simulation results.

To further confirm the impacts of FDI on human capital investment, I use the across-industry variations in the relaxation of FDI regulations at the end of 2001 and the regional variations in industrial employment to construct an instrument for the presence of FDI, and investigates whether this shock in 2001 affects the college enrollment. Results based on the micro firm data, custom data, 2000 census, and the 2005 mini census provide supportive evidence for the positive impacts of FDI. In addition, I identify the imported intermediates of MNE's affiliates from the custom data and classify FDI according to their trading behavior. Both the vertical FDI and horizontal FDI raises college enrollment rates, although their magnitudes are not the same.