Comment on Kar-yiu Wong

Jörn Kleinert

In a world of increasing globalization and increasing importance of all channels of international factor movements, the theoretical understanding of the relationship between migration, capital movements, and trade is necessary for both empirical analysis and policy advice. Economists have devoted some effort to the analysis of the relationship between trade and foreign direct investment (Brainard 1997, Blonigen 2001, Markusen 2002) and trade and migration (Gould and Findlay 1994) but less so to the relationship between different types of factor movements. However, the question how FDI affects international labor migration is an important one, since whether capital and labor movements are substitutes or complements yields different policy implications.

Kar-yiu Wong’s paper uses a theoretical general equilibrium model with Marshallian externalities. In doing so, he considers resource allocation, income distribution, and intersectoral relationships.

Wong uses two substitution criteria to explore the relationship: substitution in the price sense and substitution in the quantity sense. He defines substitution in the price sense as when either international capital mobility (ICM) or international labor mobility (ILM) is sufficient to bring about the efficient allocation of resources in the world, i.e., when either of them leads to equalization of both factor prices. ICM and ILM are said to be substitutes in the quantity sense, according to Wong, when a small exogenous increase in the volume of flows of one factor leads to a decrease in the flow of the other factor, and vice versa. ICM and ILM are complements if a small exogenous increase in the volume of flows of one factor leads to an increase in the flow of the other factor, and vice versa.

Both factors, labor and capital, are homogenous, within and between the two countries. The production of a good uses both factors in a typical neoclassical production function, with substitutable input factors and falling marginal productivity of both factors. To generate Marshallian externalities, this production function is augmented in one sector by a term that increases the output of a single firm by an additional term that is a positive function of the size of the sector. Firms in the two countries use the same technology but differ in their factor intensities because both countries differ in relative factor endowment before integration. The home country is assumed to be relatively capital abundant. Sectors
differ in factor intensities within a country. The more capital-intensive sector is subject to Marshallian externalities.

Since homogenous factors and identical technologies are assumed to obtain in both countries, perfect mobility of one factor is enough to achieve equalization of both rental rates and wages between the two countries. From the equalization of both factor prices through each channel follows that ICM and ILM are substitutes in the quantity sense of parameters. However, Marshallian externalities can cause ICM and ILM to be complements under certain conditions if the increase in the size of the sector through an exogenous increase in one factor overcompensates the decreasing marginal productivity. Although this case might arise, it is certainly rather the exception than the rule.

The results of the model are therefore strongly in favor of substitution between ICM and ILM. Yet, it is not obvious whether reality comes close to the conditions assumed in the models, and therefore, whether we should base policy advice on this analysis. A first warning not to use this assumption comes from the literature on the relationship between trade and FDI or trade and migration. Trade has been found to be a complement to both factor flows in various empirical analysis. Just as trade is predicted to be a substitute for both migration and capital movements in Wong’s models, the result that migration and capital flows are substitutes might fail the empirical test as well. The main problems with the model are the assumption of identical technologies in both countries and the assumption of homogenous factors within and between countries. Wong admits this in his concluding remarks.

Davis and Weinstein (2002) come up with complementarity in their analysis. They use a Ricardian model instead of a neoclassical model. Thereby, they account for differences in technologies between the countries. Technological differences yield higher rental rates for capital and higher wages in the country with the higher level of technology than in the other country. Davis and Weinstein argue that possession of superior technology explains the inflows of labor and capital into the United States in the 1980s and 1990s. The empirical analysis that they present supports this view.

Gross and Schmitt (2003) explain immigration in an empirical analysis of OECD host countries using stocks of migrants from the same home country who are already living in the host country as a determinant. The theoretical reasoning behind this setup of the estimated equation is the observation that labor markets in many developed countries are fragmented. Migrants are mostly employed by people from the same country of origin. Gross and Schmitt explain this as being caused by information costs, which are smaller if employer and employees share the same cultural background. Heterogeneity in the labor force is therefore an important determinant of international migration according to Gross and Schmitt.