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Dynamic evolution of income distribution and credit-constrained human capital investment in open economies

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Abstract

This paper shows how the degree of credit-market imperfections affects the steady-state distributions of income and wealth, human capital investment, and the pattern of comparative advantage. The impact of trade liberalization on the accumulation of human capital depends on how it affects (1) the incentives to accumulate human capital, (2) the borrowing constraints facing human capital accumulation, and (3) the distribution of income and wealth. If the degree of credit market imperfections is low in the skill-abundant countries and high in the skill-scarce countries, then trade liberalization can increase investments in human capital in both types of countries. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

It is widely recognized that differences in human capital or skill across countries play an important role in determining differences in growth rates and per capita income levels across countries. As well, skill differentials form the basis of much of the trade between the skill-abundant developed countries in the North and the

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skill-scarce developing countries in the South.[1] While trade based on skill differential always provides static gains from specialization, the dynamic gains depend on how the investment in human capital is affected. This makes the question of how trade affects skill accumulation an important one.

In a pioneering paper, Findlay and Kierzkowski (1983) extended the static Heckscher–Ohlin model of trade by endogenizing human capital accumulation to show that trade amplifies initial differences in factor endowments. The channel of influence is the Stolper–Samuelson effect of trade on factor prices which raises the reward of the abundant factor in each country. This provides further incentives to accumulate human capital in skill-abundant countries and does the opposite in skill-scarce countries. Similar results were also obtained by Grossman and Helpman (1991). Two recent papers — Cartiglia (1997) and Eicher (1999) — show that trade leads to convergence in human capital endowments. A key element of both these papers is that skill is used in the formation of skill (education sector uses skilled labor), and therefore, any rise in the price of skill has an adverse effect on skill accumulation. In Cartiglia (1997) the credit market is missing, therefore, investment in human capital has to be self-financed from the initial endowment. A trade-induced rise in the skilled wage in a skill-abundant country increases the cost of education and hence exacerbates the borrowing constraint facing investment in human capital. In Eicher (1999) there is a domestic credit market where the savings of the unskilled workers are used to finance the investment in human capital. Now, a trade-induced decrease in the unskilled wage in a skill-abundant country reduces the resources available for financing investment in human capital, while a rise in the cost of education increases the need for resources to finance investment in human capital.[2] Therefore, in both these papers trade liberalization reduces the investment in human capital in a skill-abundant country. The opposite happens in a skill-scarce country giving rise to the convergence in human capital endowments after opening up to trade. This literature, however, has ignored the impact of trade on investments in human capital coming through changes in the distribution of income and wealth. This is a serious omission because the distribution of wealth becomes an important determinant of investments in human capital in the presence of borrowing constraints. The main contribution of our paper lies in bringing the distributions of income and wealth to the centre of the discussion of the impact of trade on factor endowments. It endogenizes the wealth

[1] Looking at the exports of the South to the North, the share of manufactures as a proportion of non-fuel exports has gone up from 6% in 1955 to 71% in 1989. The North's export to the South continues to be dominated by manufactures; its share having risen from 73 to 79% over the same period. The difference lies in the fact that the Northern manufactures are more skill intensive than the Southern manufactures (source: Wood (1994)).

[2] Eicher (1999) has an endogenous growth model where the cost of human capital accumulation and the cost of technical change interact to give a convergence in growth rates as well. We have just noted his model's implications for convergence in human capital endowments.