Education, Innovation, and Long-Run Growth[*]

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Abstract

This paper combines three prototype endogenous growth models, the models with human capital accumulation introduced by Uzawa (1965) and Lucas (1988), variety expansion by Romer (1990), and quality improvements by Aghion and Howitt (1992), in order to investigate how these three engines of growth interact. We show that a subsidy to human capital accumulation has a positive impact on R&D effort, as well as on human capital accumulation. On the other hand, a subsidy to R&D sectors does not affect human capital accumulation in our model. Moreover, we show that equilibrium dynamics is locally saddle-path stable around the steady growth path. It suggests that Schumpeterian growth models à la Howitt (1999) should share the locally saddle-path stable property. Finally, since in our model the per-capita output growth rate is endogenously determined by both technology improvements and human capital accumulation, it bridges the gap between the literature on Schumpeterian growth models and that on growth empirics.

JEL classification: O15; O32; O41
Keywords: quality improvements; variety expansion; human capital accumulation; subsidies

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