International spillovers, productivity growth and openness in Thailand: an intertemporal general equilibrium analysis

Xinshen Diao\textsuperscript{a}, Jørn Rattso\textsuperscript{b,*}, Hildegunn Ekroll Stokke\textsuperscript{b}

\textsuperscript{a}International Food Policy Research Institute, Washington, DC, United States
\textsuperscript{b}Department of Economics, Norwegian University of Science and Technology, N-7491 Trondheim, Norway

Received 1 January 2002; accepted 1 December 2003

Abstract

Thailand has experienced economic growth well above world averages from 1960 to the recent crisis. While the controversy over Thailand and East Asian growth has discussed the role of capital accumulation versus productivity, we analyze the general equilibrium interaction between productivity and investment in an intertemporal growth model. The high growth is understood as a prolonged transition path with gradual tariff reduction and endogenous productivity driven by foreign spillover feeding capital investment. Counterfactual analyses show how protection would have reduced growth with productivity and investment slowdown, while shock liberalization would have raised immediate growth with faster convergence to steady state.

\textcopyright\ 2004 Elsevier B.V. All rights reserved.

\textit{JEL classification:} O41; O47; O53

\textit{Keywords:} Intertemporal growth modeling; Endogenous productivity growth; Foreign technology spillover; Trade and growth; Thailand

1. Introduction

Income differences across countries cannot be understood only as a result of different availability of production factors. The empirical evidence that capital stocks per worker

\textcopyright\ 2004 Elsevier B.V. All rights reserved.
explain limited part of the income differences among nations now is widely accepted. The
attention therefore is turned to productivity and technology and productivity differences
between countries are substantial, as documented by Hall and Jones (1999). Acemoglu and
Ventura (2002) find that the world income distribution is remarkably stable over time. It
follows that differences in income levels are permanent, while differences in growth rates
are mostly transitory. A corollary to this is that miracle growth countries cannot produce
miracles over long periods. Growth rates will decline again to world normals.

The sources of the remarkable growth in Thailand and East Asia have been
controversial and empirical studies have constructed a horserace between factor
accumulation and productivity growth. While the conventional view has recognized high
productivity growth associated with openness as part of the explanation (Klenow and
Rodriguez-Clare, 1997), both empirical (Young, 1994) and theoretical (Baldwin and
Seghezza, 1996) studies have argued that capital accumulation has been the main driving
force. This debate is hard to understand from a general equilibrium point of view, since
both factor accumulation and productivity are endogenous. The conventionally calculated
residual underestimates the productivity effect when productivity improvements contribute
to higher capital accumulation. Hulten (2001) shows how this induced capital
accumulation effect can be calculated. He reports that this measure of the productivity
effect accounts for about 50% of output growth in the East Asian economies studied by
Young.

The present paper addresses the growth process of Thailand in this context. We suggest
that the interplay between accumulation and productivity is investigated in an
intertemporal general equilibrium framework. Openness and trade policy are assumed to
be important for productivity spillover and cost of capital goods. The focus is on
endogenous productivity growth in transition towards long-run balanced growth. Thailand
has had economic growth of about 6–8% and well above world averages from 1960 to the
recent crisis, in transformation from a ‘rice economy’ to industrialization with labor-
intensive exports.

The literature on endogenous productivity growth points to the role of research and
development and innovation. But these sources of productivity growth do not seem to be
of great relevance for Thailand. Resource input to research and development is
concentrated to the most developed countries of the North. Innovation is the result of
R&D and certainly requires advanced skills, again not characterizing the local growth
process. Human capital development and skill accumulation are important ingredients in
recent models of endogenous growth. While education and skill levels have been rising in
Thailand, the low-tech labor-intensive industries do not indicate that this is a major growth
factor. Our analysis addresses productivity growth generated by learning by doing,
technology adoption and foreign technology spillover. Based on recent econometric
evidence for Thailand, our understanding is that productivity growth has been related to
the increased openness of the economy. Greenaway et al. (2002) supply broader evidence
about openness and growth.

Thailand’s growth experience is analyzed as an interaction between endogenous
productivity growth and capital accumulation with increased openness of the economy.
This mechanism explains the extended transition growth above long-run balanced growth
rates. To investigate the transition path and the role of openness, we have developed an
دریافت فوری
متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات