



Economic growth in Asia: Determinants and prospects[☆]

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ARTICLE INFO

Article history:

Received 29 November 2010

Received in revised form 18 November 2011

Accepted 26 January 2012

Available online 4 February 2012

JEL classification:

O11

O15

O32

O47

O53

Keywords:

Economic growth

Growth accounting

Capital accumulation

Human capital

Total factor productivity

ABSTRACT

Using a growth accounting framework, we find that developing Asia grew rapidly over the past three decades mainly due to robust growth in capital accumulation. The contributions of education and total factor productivity in the region's past economic growth remain relatively limited. We also make long-run growth projections for developing Asia by combining the growth accounting framework with growth regression approach. Our baseline projections based on the model of conditional convergence show that the gross domestic product (GDP) growth rates of the 12 developing Asian economies covered by this paper will be consistently lower for the next two decades than their historical performance. However, policy reforms in education, property rights, and research and development can substantially raise GDP growth in the region and partly offset the slowdown in growth caused by the convergence phenomenon. Even under the baseline scenario, the region's share in the world economy will increase from the current 34 percent in 2009 to close to a half in 2030.

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1. Introduction

Developing Asia weathered the global economic crisis of 2008/09 well. It was the first region to emerge from the turmoil, helped by decisive and large-scale fiscal and monetary policy measures. Domestic demand has been resilient, especially in the region's larger economies, and the economic cycle clearly suggests that economies have bottomed and begun to recover. A number of Asian economies even posted double-digit gross domestic product (GDP) growth in the first half of 2010.

Now, as the recovery takes firm hold, the region faces a more crucial challenge for its sustained growth in the long run. The question is whether the economies in the region can return to the rapid growth of the past few decades.

Developing Asian economies¹ have grown impressively over a period of nearly 30 years. The region's real GDP in purchasing power parity (PPP) terms climbed from about \$3.3 trillion in 1980 to an estimated \$24.5 trillion in 2009. That is an increase of 7.5 times, compared with just three times for the world economy during the same period. Real per capita GDP expanded in excess of four times during the period, while average global income registered less than a two-fold increase. Such robust, prolonged growth has clearly raised incomes, lifted millions out of poverty, and expanded developing Asia's global economic influence.

Per capita GDP in developing Asia remains below the global average, but is rapidly catching up. In 1980, the income of the average Asian was just over a quarter of the world average; by 2009, it had risen to nearly two thirds.

Several factors were responsible. While Asia's economic growth had been considered a "miracle" in the 1990s (World Bank, 1993; Lucas, 1993), a number of empirical studies were able to explain the determinants. They highlight the role of investment, human

[☆] This paper was prepared for the Asian Development Bank's TA7470-REG: "Long-term Projections of Asian GDP and Trade." We thank the participants in the workshops in Seoul and Hong Kong, China for helpful comments and Lea Sumulong for excellent research assistance. The views expressed in this paper are those of the authors and do not necessarily reflect the views or policies of the Asian Development Bank or its Board of Governors or the governments they represent.

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¹ Developing Asia here includes the People's Republic of China; Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; Pakistan; the Philippines; Singapore; Taipei, China; Thailand; and Viet Nam. These economies account for about 95% of emerging Asia's GDP, and are thus representative of regional trends.

resources, fertility, and institutional and policy variables. For example, Sachs et al. (2001) find that East Asia's rapid growth was due to its (i) large potential for catching up; (ii) favorable geography and structural characteristics; (iii) demographic dividend; and (iv) economic policies and strategy that were conducive to growth. The empirical studies show that the role of economic policies, particularly those relating to openness, played a highly significant role in the region's sustained growth.

The standard growth model, such as the extended version of the neoclassical growth model as described by Barro and Sala-i-Martin (2003), predicts the conditional convergence of income, in which a country with a low level of initial income relative to its long-run or steady-state level of potential income will tend to grow faster than a country that is already nearing its potential. Controlling for the factors that influence the long-run or steady-state income level, this implies that a poorer country is expected to grow faster than a higher income country. This is because in poorer countries, levels of physical and human capital and technological progress are farther from their long-run levels, and thus can accumulate capital and learn existing technology more quickly than more advanced economies. In other words, the greater potential for catching up among poorer countries allows them to grow more quickly.

Across developing Asia, growth rates in per capita income have varied in the past three decades. The People's Republic of China (PRC), with the lowest initial level of income per capita in 1980, grew fastest at 8.2% between 1981 and 2007, allowing it to develop from an economically desolate country into a global powerhouse. In Hong Kong, China; the Republic of Korea; Singapore; and Taipei, China, with relatively higher levels of initial income per capita, average growth rates declined during the three decades. This generally supports the conditional convergence hypothesis in which poorer countries tend to grow faster and richer countries slower.

However, the more important question now is whether this rapid economic growth can continue in the next two decades. Does convergence imply that as income levels in Asian economies increase they can no longer achieve high rates of growth? We believe this is not necessarily the case. The conditional convergence theory predicts that, through appropriate policies and institutional changes, an economy can shift its growth path higher and expand the long-run or steady-state level of potential income, thereby continuing to enable the long-run target level of potential income to remain in excess of the current income. Other growth theories, such as the various models of endogenous growth, also predict that policies can have permanent impact on an economy's rate of growth.

Measures are thus needed to ensure developing Asia's sustained growth in the coming decades. In considering the variations in the initial levels of income per capita across developing Asia, the challenge for the region ranges from closing the gap with the steady-state or long-run levels of potential income for low-income economies, to expanding the steady-state or long-run potential income levels for high-income economies. Lower-income economies have more opportunity for factor accumulation, and can thus focus on policies that encourage increases in human and physical capital, such as improvements in the quality and quantity of education and in the investment climate. Indeed, physical capital accumulation accounted for most of GDP growth in the less mature Asian economies until 2007. More mature economies with larger capital stocks, meanwhile, will be subject to diminishing returns to capital and must progressively rely on productivity increases to drive growth. Improvements in total factor productivity were actually significant contributors to GDP growth in Hong Kong, China; the Republic of Korea; Singapore; and Taipei, China from 1981 to 2007.

But why is it important for Asia to sustain its growth beyond the crisis? Despite its remarkable growth in recent decades, developing Asia still remains as a relatively poor region and is home to two thirds of the world's poor. Long run growth is essential to reduce poverty in the region on a sustainable basis. Also, just as the last 30 years of growth in developing Asian economies brought large changes to the global and regional economies, Asia's performance in the coming decades is also expected to substantially influence the global and regional landscape. Knowing how the region will evolve in the next few decades is crucial to how Asian policy-makers prepare for their future role in the global community.

Today more than ever, Asia's influence in the global economy has deepened dramatically as the region helps pull the global economy out of recession. Nonetheless, while it is generally expected that Asia's economic expansion will carry on, it is unlikely that the economies that achieved very strong growth in recent years, such as the PRC, Viet Nam, and India will maintain such rapid growth rates in, say, the next 20 years. It would thus be interesting to know how Asia's economic environment will be transformed in the two decades ahead.

In particular, we would like to find answers to the following questions: How will Asia's growth likely pan out? Will a different group of economies take the helm in driving regional growth prospects? If so, what would be the impact on the global and regional economies? What will be the contribution of labor, human capital, physical capital, and technology diffusion to Asia's future growth? How will Asia fare relative to the industrialized economies of the United States (US), Japan, and the European Union? What would be the impact of Asia's continued growth in the global balance of power in the coming decades?

While our study is clearly not the first attempt to address these questions, we can be differentiated for having a focus specifically on developing Asia. Also, we explicitly incorporate growth regression analysis into the conventional growth accounting approach to produce long-run GDP forecasts. In most GDP projections based only on growth accounting, each component of GDP growth is forecast independently of the others with no attention paid to possible inconsistencies between them. By estimating a simultaneous equation system of GDP growth components and incorporating it into growth accounting, we can increase internal consistency among the forecasts. These differences of our paper will hopefully lead to more plausible and valid description about the future of developing Asia.

Section 2 briefly describes developing Asia's performance from 1981 to 2007. Section 3 lays out the sources of growth for the 12 Asian economies using a growth accounting framework. Section 4 analyzes the determinants of developing Asia's growth using a system of equations. Section 5 presents the estimation results and projects GDP growth through 2030 for the developing Asian economies. Section 6 concludes.

2. Sources of growth, 1981–2007

The aggregate production function is used, and the level of output per labor is produced by combining productive inputs and total factor productivity (TFP). We assume a Cobb–Douglas production function as,²

$$Y = AK^\alpha(hL)^{1-\alpha} \quad (1)$$

where K denotes the stock of physical capital, h represents the amount of human capital per labor, L represents the number of laborers, and A denotes a measure of TFP. The production function

² Note that by assuming neutral technological progress, rather than labor-augmenting progress, our framework considers the role of productivity more important.

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