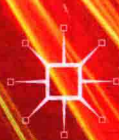


THE CONTRIBUTION OF HUMAN CAPITAL TOWARDS ECONOMIC GROWTH IN CHINA

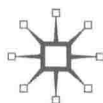
John Joshua



The Contribution of Human Capital towards Economic Growth in China

John Joshua

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Preface

The structural transformation of a country not only has profound effects on the economy of a country, but also involves a cultural transformation.

Having gained three PhDs from Monash University, Melbourne University and Deakin University in Sociology, Education and Economics, respectively, I have a multidisciplinary interest in economic development and its concurrent structural transformation, especially within emerging economies.

My multidisciplinary interests therefore lead me not only to investigate transformational growth of emerging economies, but also to consider the educational requirements as well as the sociological impact that such transformations inevitably will involve. Hence, this book is one of the projects in which I am involved in concerning structural changes within emerging countries.

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Introduction

China has undergone an impressive and spectacular *structural transformation* of its economy since 1978 when various market reforms were progressively introduced. After an initial convergence of real income, income per capita between the provinces has widened since 1993; but the number of people in poverty declined from 250 million to 34 million between 1978 and 1999 (World Bank, 2002; see also Chapter 9). This impressive growth should be seen in historical context. For hundreds of years, per capita GDP in China was stagnant. Maddison, in his book *The World Economy: Historical Statistics* (2003), has compiled historical data from 1500 to 2001 for a range of countries, including China.

Figure I.1 compares the per capita GDP of China to that of Japan. For more than 200 years, China had a higher per capita GDP than Japan. Then in the early 1700s, Japan started to overtake China and from the mid-1800s Japan started to diverge from China.

Figure I.2 compares the post-world war period. Japan grew strongly throughout the post-world war period, though she has since stagnated in the past decade. Per capita GDP in China is now rising, and the income gap between the two countries is starting to close, though the gap in income levels remains wide.

Perhaps more telling, is a comparison between China's performance and the average of the 16 East Asian countries for which Maddison provides data. It is clear that they have converged.

This book develops a human capital model to explain this transformation. China offers an interesting case study of transformational growth. As China's provinces are at different stages of economic development, China provides a good opportunity to study the transformation of human capital and its contribution towards economic growth within different stages of an economy's development. A study on China's economic transformation can provide useful lessons to other emerging economies, such as India, Brazil, and Russia, which may follow similar stages of development and thereby may experience similar transformations.

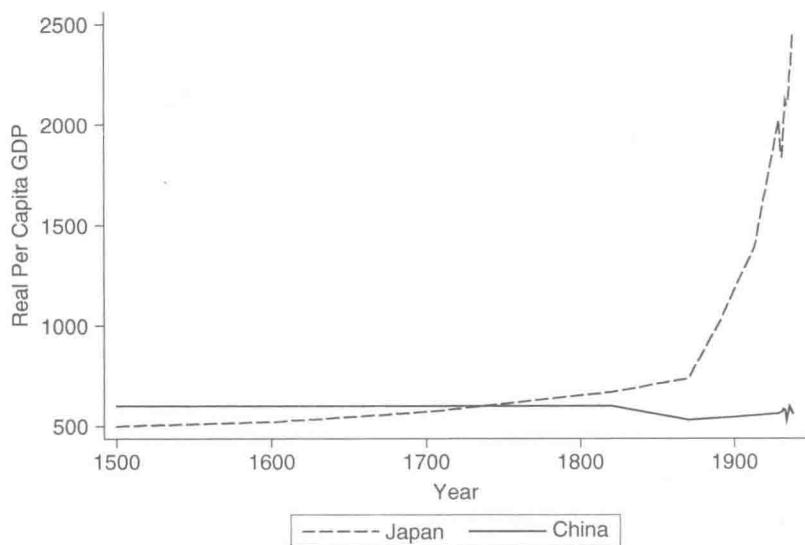


Figure I.1 Per capita GDP, China and Japan, 1500 to 1938

Note: The per capita GDP series are expressed in terms of 1990 international Geary-Khamis dollars, which is based on the purchasing power parity of currencies and the international average prices of commodities.

Source: Constructed from Maddison's (2003) data (*The World Economy: Historical Statistics*)

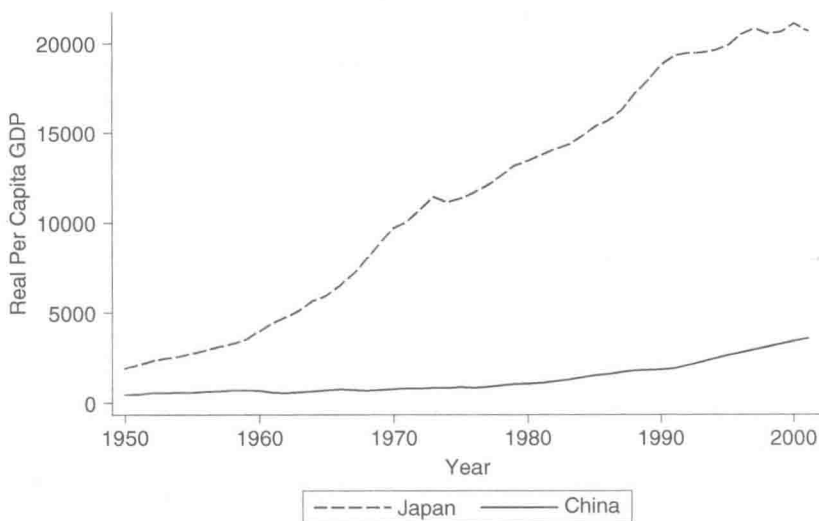


Figure I.2 Per capita GDP, China and Japan, 1950 to 2001

Note: The per capita GDP series are expressed in terms of 1990 international Geary-Khamis dollars.

Source: Constructed from Maddison's (2003) data (*The World Economy: Historical Statistics*).

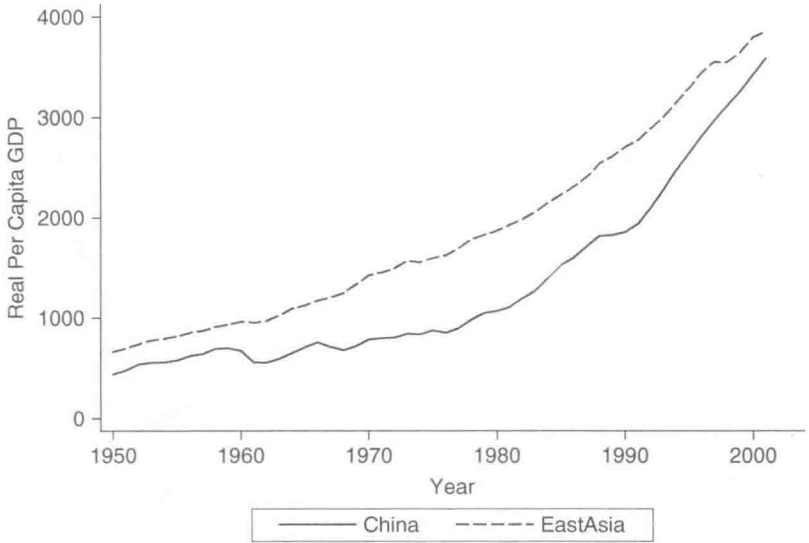


Figure I.3 Per capita GDP, China and 16 East Asian nations, 1950 to 2001

Notes: The countries are: China, India, Indonesia, Japan, Philippines, South Korea, Thailand, Taiwan, Bangladesh, Myanmar, Hong Kong, Malaysia, Nepal, Pakistan, Singapore and Sri Lanka. The per capita GDP series are expressed in terms of 1990 international Geary-Khamis dollars.

Source: Data from Maddison (2003).

Structural transformational growth and the transformation of human capital

This thesis regards technological progress as an endogenous driving force which evokes a perpetual transformation of human capital, leading to a *continuous* structural transformation of the economy. Innovation and technological change are regarded in this thesis as the linchpin of such structural transformational growth. As technological change is perpetual in nature, it requires a continuous transformation of human capital to support such a change to further economic growth. The result is transformational growth which feeds into further growth. Technological progress depends on the quality of human capital and both feed into economic growth. Lucas (1988) and Romer (1990a) regarded human capital as the engine of economic growth. A shift in demand from unskilled labour to skilled and higher-skilled labour results in a human capital transformation.

Structural transformational growth as perceived in this thesis is seen as a historical process whereby the economy moves through various stages, with each stage dominated by different economic structures. It is argued in the thesis that the interaction between human capital and technological change

may invoke inventions and innovations or they may facilitate the replication of imported technology. In both situations, this may lead towards the industrial application of new knowledge and new technology which may then lead towards creative destruction as old products are being replaced with new ones. Such creative destruction then invokes new product cycles which lead towards a structural transformation of the economy, which feeds into new import-export cycles. The industrial application of new knowledge entails new product technology and new production processes which in combination then involve new product cycles. New product cycles require a restructuring of industries which then leads towards structural transformational economic growth, which will invoke further product changes and new cycles of new products, so that a dynamic economy will be involved in a perpetual economic transition. Together they may also be seen as a summary of the main argument of this thesis and illustrate the economic transition of the more dynamic provinces of China as they are moving through different stages of economic development.

Uneven structural transformation between Chinese provinces

Technological change leads to economic growth, but not everyone shares the benefits of growth. For example, Chinese provinces have developed at an uneven pace. Inequality between the provinces has been intensified since the implementation of the reforms after 1978. A major reason for the uneven development is that China has undergone a structural transformation of its economy. As Chinese provinces develop at an uneven pace, some provinces may be regarded as leaders, whereas others may be regarded as laggards, so that the "flying-geese" pattern of economic development will also be addressed in the thesis.

As Chinese provinces are situated at different stages of economic development and are developing at an uneven pace, some provinces, for example, of the coastal provinces such as Shandong, Jiangsu and Zhejiang are expected to converge in their living standards; whereas western provinces, such as Gansu and Qinghai will further diverge from the coastal provinces and may form their own "club". Processes of convergence and divergence also occur between growth regions which may spread over parts of two or three provinces.

One of the central issues of investigation is whether Chinese provinces do converge or diverge. Gerschenkron (1962) argued that there is an "advantage of backwardness", so that Chinese provinces which are more "backward" in their technology, or other endowments, should grow faster than more advanced provinces, so that the less advanced provinces will eventually catch-up with the more advanced provinces. However, the process of catch-up may be a relatively slow process when provinces lack the critical mass of endowments required to take advantage of the catch-up process (see