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Service sector productivity and economic growth in Asia☆

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ABSTRACT

The paper explores the historical experience of productivity growth in the Asian economies over recent decades, with a focus on the service sector. Based on this historical experience, the paper then evaluates the impact of more rapid growth in labor productivity in the service sector in Asia using an empirical general equilibrium model that allows for goods and capital movements across sectors and economies, and consumption and investment dynamics. We find that faster productivity growth in the service sector in Asia contributes to sustained and balanced growth of Asian economies, but the dynamic adjustment is different across economies. In particular, during the adjustment to higher services productivity growth, there is a significant expansion of the durable manufacturing sector that is required to provide the capital stock that accompanies higher economic growth.

1. Introduction

The purpose of this paper is to explore the potential role of the service sector in future economic growth and rebalancing in Asia. This is undertaken in two parts. The first part uses empirical techniques to analyze the historical role of the service sector in structural change and economic growth in Asia. The second part of the paper, considering this historical data and trends, uses a general equilibrium model of the global economy called the G-Cubed model,[1] to explore future scenarios of more rapid catch-up of service sector productivity growth over coming decades for the Asian economies.

In the era of industrialization since World War II, major Asian economies including Japan, the Republic of Korea and the People's Republic of China (PRC) have undergone spectacular economic transformations–fast economic growth and major employment shifts from the agriculture sector toward the manufacturing sector. The manufacturing sector has been a key engine of growth over this period. This rapid industrialization has been supported by high savings and investment rates and export-oriented policies. In recent decades, however, the pace of output growth in the industrialized East Asian economies has slowed significantly. Japan and Asian newly industrialized economies (NIEs) that had experienced fast growth began to grow less rapidly over time as the gap between their per capita incomes and that of the US narrowed.[2] A number of factors, including slower labor force growth, lower investment rates, declining rates of return to investment, and sluggish technology advancement have been highlighted as the major causes of the "growth deceleration."

Another salient feature in East Asia's growth is the rise of service industries with major employment shifts toward the service sector. The well-established empirical stylized fact shows that there is a positive

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[1] The G-Cubed Model was developed by McKibbin and Wilcoxen (1999).

[2] The trend of declining growth rates over time can be explained by the "conditional convergence" theory (Barro and Sala-i-Martin, 2004), where a country with a low level of initial per capita output relative to its own steady-state potential has a higher growth rate than a country with a higher level of per capita output, owing to a rapid catching-up process through high rates of capital accumulation and technology diffusion from more technologically advanced economies. A fast-growing country eventually grows slower, as it narrows the gap of capital stock and productivity from its steady-state levels. Recent empirical papers including Madsen (2007), Bournakis (2012), Barro (2015), and Lee (2017) apply this theoretical framework to explain growth experiences across economies or an individual economy.

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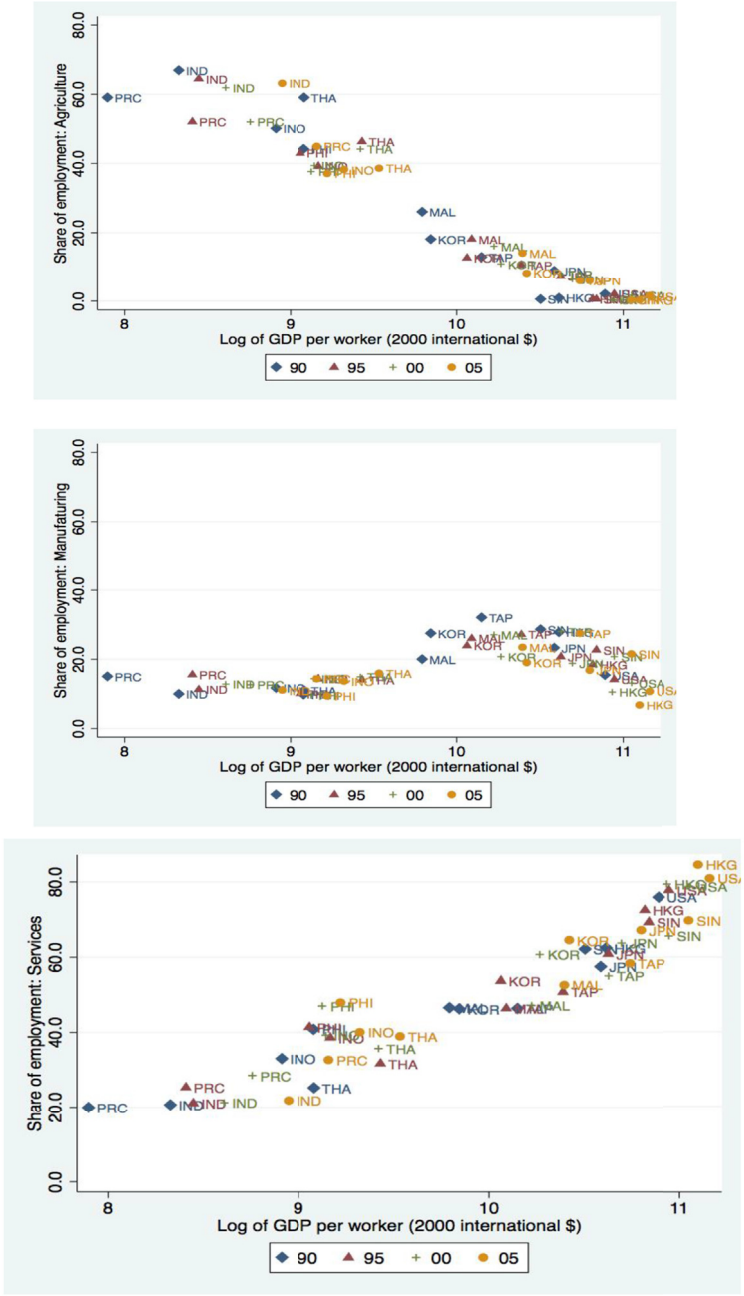

GDP = gross domestic product.

Source: Author's illustration based on Groningen Growth and Development Centre 10-Sector Database].

Fig. 1. Sector shares of employment for 11 Asian economies and the United States, 1990–2005.

relationship between the share of services in GDP (or total employment) and GDP per capita (Clark, 1957; Chenery, 1960). More recently, Eichengreen and Gupta (2013) argue that the relationship is not linear, following two distinct "wave" patterns of service sector growth. In the first wave, the service share in output and employment rises with GDP per capita at a decelerating rate. The service share rises again in the second wave at a higher income level. They argue that the first wave features the rise of traditional services while incomes are still low, while the second wave features modern services including post and communication, financial intermediation, computer, and business services.

How does the rise in the service sector contribute to overall growth in Asian economies? As an economy grows, the service sector becomes larger and hence overall growth depends more on the performance of the service sector. Thus, the service sector's contribution to overall growth tends to become proportionally larger with economic development and expansion of the service sector. However, if labor productivity growth of the service sector is lower than that of the industrial sector, the increase in the size of the service sector with deindustrialization can have a harmful effect on overall output growth.

The literature presents a number of theories that attempt to explain the change in the service sector share and its implication to overall economic growth. Structural change can be driven by both demand and supply-side factors. The seminal paper by Baumol (1967) presents a model of "unbalanced growth," in which higher productivity growth in the "progressive" (manufacturing) sector than in the "stagnant" (service) sector causes shifts of labor from manufacturing to service industries and

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