

CHAPTER 1

INTRODUCTION

1.1 Introduction

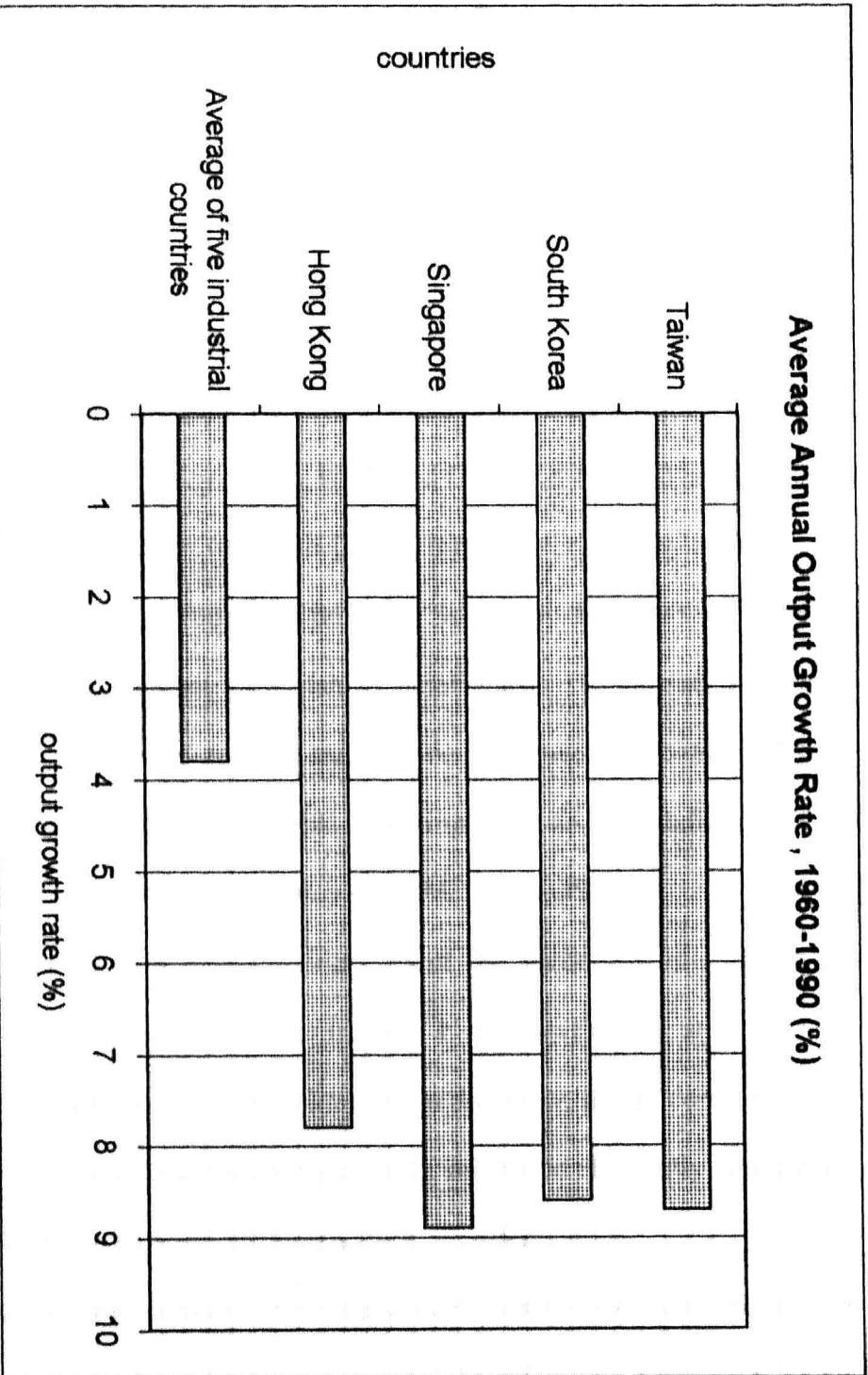
The spectacular growth of many East Asian economies over the past three decades (Graph 1) has amazed the economists and has motivated a large empirical literature attempting to explain this phenomenon. A number of different theories have been put forth purporting to explain the Asian Miracle over the last decade (Amsden 1989, Kim & Lau 1994, Krugman 1994, Pack & Westphal 1986, Rodrik 1994, Westphal, Kim & Dahlman 1985, World Bank 1993, Young 1993).

While everyone agrees that the East Asian economies, particularly the four Tigers (Singapore, Hong Kong, Taiwan & South Korea), have grown historically unprecedented over the past generation, nobody seems to agree on why. There is controversy about the causes of this growth. The debate over why they have grown so well in the past raises important questions about regional growth in the future and about aspiration of countries elsewhere to replicate the East Asian success.

The arguments at the center of the debate are based on theoretical notions of growth accounting¹. This accounting method deals with three elements that contribute to the production of goods and services: labor, capital and technology (also known as Total Factor Productivity, TFP). Labor and capital, known collectively as the “factor of production”, refer to the workforce and the capital goods (buildings, machines, vehicles, etc) that use in producing products or providing services. Technology or TFP refers to all the methods employed by labor and capital to produce goods or services more quickly

¹pioneered by Abramovitz (1956) and Solow (1957)

Graph 1



* Five industrial countries are France, West Germany, Japan, United Kingdom and United States

Sources: Kim & Lau, 1994

and more efficiently. No one denies that all three elements must be present to some degree if an economy is to grow. What is subject to debate is the contribution of the factor of production relative to that of technology. Some believe that increased use of labor and capital explain all growth, others are persuaded that the answer to growth lies in the use of more efficient technology (Michael Sarel, 1997).

In a famous study, Solow (1956) conducted a growth accounting exercise. He found that accumulation of capital and an increase in the labor participation rate had a relatively minor effect, while technological progress accounted for most of the growth in output per person (**Appendix 1**). Further studies have reconfirmed the validity of these conclusions (Cass 1965, Koopmans 1965, and Diamond 1965). The point is that there are two distinct sources of growth. The first is input-driven, i.e. by adding more and more resources into the same production function. Such growth is hard work and by the law of diminishing returns, cannot be sustained indefinitely. The second is technology-driven, which invokes increasing returns and can be sustained. Technology-driven growth is difficult to measure directly, but what is not input-driven is by default technology-driven, which has come to be called TFP growth (H.M. Leung, 1996).

Accordingly, the standard view about the success of the East Asian countries emphasizes the role of technology in their high growth rates and focuses on the fast technological catch-up in these economies. In this view, these economies have succeeded because they learned to use technology faster and more efficiently than their competitors did (Pack & Westphal 1986, Dahlman 1994, Amsden 1989).

However, the contrary views have been pushed hard over the past few years by several economists, in a way clearly designed to strip away most of the miraculous from

the Asian Miracle. Economists who have followed this path find that, according to their calculations, the lion's share of increased output per worker can be explained simply by increases in physical and human capital per worker. Thus, there is little need to assign much of the credit for the growth miracle to entrepreneurship and innovation. What lies behind rapid development is, simply, very high rates of investment (Kim & Lau 1994, Krugman 1994, Young 1993). In this sense, there is little that is 'miraculous' about the superior record of growth, it is largely due to superior accumulation (World Bank, 1993).

Kim & Lau (1994) compares the sources of economic growth in these countries with those of Germany, France, Japan, the United Kingdom and the United States, he found that

'by far the most important source of economic growth in these countries (the four Tigers) is capital accumulation, accounting for between 48% and 72% of their economic growth, in contrast to the case of the Group of five industrialized countries, in which technical progress has played the most important role, accounting for between 46% and 71% of their economic growth'. (Table 1)

Likewise, in explaining the extraordinary postwar growth of the four Tigers, Young (1994b) concludes that

'one arrives at TFP growth rates, both for the nonagricultural economy and for manufacturing in particular, which are well within the bounds of those experienced by the OECD and Latin America economies over equally long periods of time. While the growth of output and manufacturing exports in the newly industrializing countries of East Asian

Table 1
Factor Contributions to Growth

Countries	Data Coverage Period	GDP Growth	Share of Capital	Share of Labor	Share of TFP
Rep. Of Korea	1960-1990	8.6	67	19	14
Taiwan	1953-1990	8.7	72	13	15
Singapore	1964-1990	8.9	55	23	23
Hong Kong	1966-1990	7.8	48	17	35
Japan	1957-1990	6.7	49	6	46
United States	1948-1990	3.1	24	28	49
United Kingdom	1957-1990	2.5	35	4	61
France	1957-1990	3.7	33	-1	69
West Germany	1960-1990	3.2	36	-7	71

Note: GDP growth is average % per year; Share of capital, labor and TFP are % contribution to overall GDP growth

Sources: Kim & Lau, 1994

is virtually unprecedented, the growth of TFP in these countries is not.'

(Graph 2)

In 1995, Krugman popularized the controversial view (originally presented by Alwyn Young) that the Asian economies 'miracle' was not due to TFP growth but rather to intensive use of inputs, i.e. a high growth rate of capital due to the high rates of investment in Asia and a high growth rate of labor inputs given the increased labor participation rates in the region. Krugman makes the comparison specific:

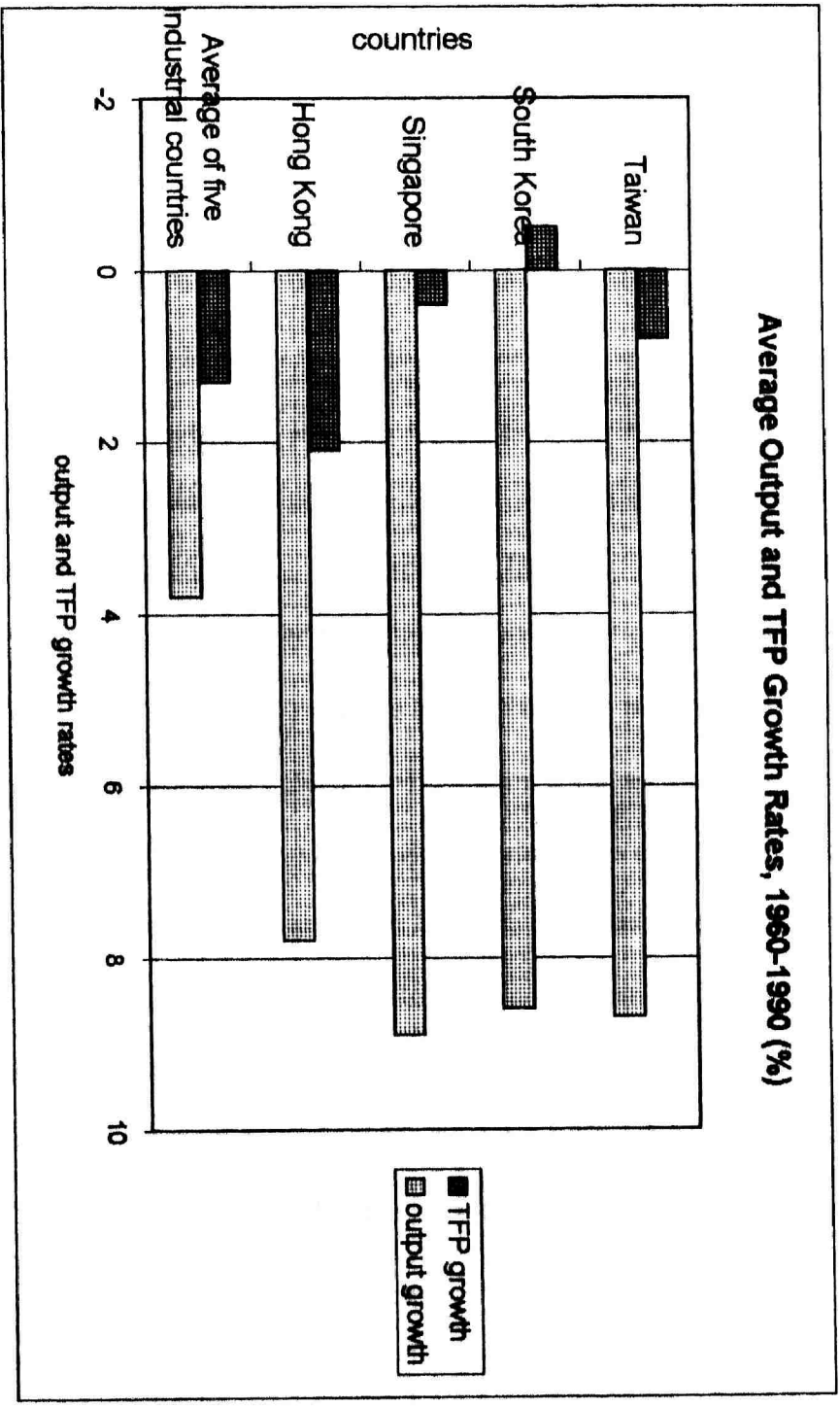
'The newly industrializing countries of Asia, like the Soviet Union of the 1950s, have achieved rapid growth in large part through an astonishing mobilization of resources. Once one accounts for the role of rapidly growing inputs in these countries' growth, one finds little left to explain. Asian growth, like that of the Soviet Union in its high growth era, seems to be driven by extraordinary growth in inputs like labor and capital rather than by gains in efficiency.'

In 1997, Krugman concluded that:

'...Asian growth, impressive as it was, could mostly be explained by such bread-and-butter economic forces as high savings rates, good education and the movement of underemployed peasants into the modern sector. ... if you like, ... Asian growth has so far been mainly a matter of perspiration rather than inspiration – of working harder, not smarter.'

This view was very controversial since it implied that very little TFP growth had occurred in Asia; if true, it also suggested that the very high rates of Asian growth were not sustainable in the long run, given the expected fall in the labor participation rate and

Graph 2



* Five industrial countries are France, West Germany, Japan, United Kingdom and United States

Sources: Kim & Lau, 1994

the expected reduction of investment rates. The economic crisis in Asia in 1997, even of originally triggered by large currency depreciation, appeared to indirectly confirm Krugman's views on the weakness of the Asian economic model and fragility of the Asian Miracle (IMF,1997).

Krugman's criticism of the Asian growth miracle has been taken quite seriously in Singapore. He contended that the island had achieved its stunning growth, an average of 8.5% per year over twenty-five years, through unsustainable additions of investment and labor, not through efficiency. Twisting the knife, he called Singapore 'the economic twin of Stalin's Soviet Union', arguing the city-state 'grew through a mobilization of resources that would have done Stalin proud'.

After denying or minimizing the problem for two years, the Singaporean authorities have now officially accepted Krugman's view and started a policy drive to increase TFP growth. The result was Singapore has inducted its populace into a perpetual productivity campaign. 'Productivity Zones' where companies swap efficiency-boosting tips are popping up around the island. One in eleven workers is engaged in a program to streamline company's operations. Even street hawkers have been roped into the drive (The Wall Street Journal, 23 October 1996). This is a rare example of an academic paper leading to a major change in economic policies!

How about the situation in Malaysia? Does Malaysia also need such a major change in economic policies? If so, what type of policies is needed?

1.2 Objectives

The main objective of this paper is to calculate the TFP growth rate of Malaysia during 1971-1999 to determine whether Malaysia needs a major change in economic policies. Based on the research done by World Bank (1993), the situation where the contribution of TFPG less than 30% of GDP growth is considered poor and will be needed a policy review.

The other objective is to find out the factors that influence TFP growth by regress the estimated TFPG to a list of variables. Knowing what actors will influence TFP growth can lead to useful policy implications.

1.3 Framework of the Paper

The plan of the paper is as follows. Literature reviews are covered briefly in Chapter two. The next chapter is devoted to the definition and measurement of the TFP. In Chapter four, TFP growth is measured for Malaysia over a time series using a neoclassical framework. Then, the next chapter regresses the estimates to a list of variables. Some suggestions and concluding remarks are presented in the final two chapters.