Chapter 7
Growth Theory: A Primer

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ABSTRACT

In this chapter, the authors discuss how the modern thinking of growth starts from the classicists. To the classical economists, limitedness of resources is the limit to growth. Neo-classicists transplanted the natural resources with the producible means of production — capital. Limitedness of resources is removed but it is replaced by the limitedness of operational structure — the firm size. The result is the diminishing returns to capital¹ that shape the frontier growth. New growth theorists introduce the concept of generating “ideas” — involving human endeavour with its intellect. This is human capital — the seed of unlimited growth. However, this main story does not cover sharper niceties that are of paramount human interest. Issues of inequality and sustainability are some of these. This chapter is not any encyclopedic attempt. It only tries to cover some of the basic dynamics into which man has fashioned to understand his own destiny.

INTRODUCTION

Professor Samuelson (1948) has warned that the model building exercise pursued by economists is often a sort of mental gymnastics of a socially depraved class. It is true of most of the so-called hallowed edifices of neoclassical economics. All economic models are built on certain assumptions, which can be derived from some primitives. There is very little scope for a reader in this regard. He either accepts the primitives or rejects it. However it is necessary to understand the essential dynamics of a model in order to debate its contribution in the greater context of human learning.

Growth is a pervasive fact of modern existence. People everywhere like to talk about it. Media persons debate regularly about the problems and prospects of long-run growth. Politicians like to project themselves as pro-growth. Policy makers analyse impact of government decisions on the economic growth. Uneven
growth may lead to social and political tensions. In fact, the huge amount of inequality generated in the present day world is an indirect fall out of growth. Poverty, malnutrition and other deprivations become intolerable and unjustifiable in an atmosphere of sustained growth. One of the causes of the demise of East European communist regimes is their inability to sustain growth. Currently scientists are concerned about the possible impact of growth on environment and resource base of the world.

Economists since the time of Adam Smith are concerned about growth. The main debate between him and his predecessors (mercantilists and physciocrats) was mainly based on the sources of economic prosperity. It so fascinated him that it was stamped on the cover of his famous treatise An Inquiry into the Nature and causes of the Wealth of Nations (Smith; 1776). However the prediction of a gloomy future by Malthus (1826) earned economics its name dismal science. Marx analysed the evolution of history as a conflict between growth sustaining efforts and that which wishes to strangle it. However modern growth theory started with Harrod (1939) and Domar (1946). This Keynesian perspective was replaced by the neoclassical view by Solow (1956) and Swan (1956). After a development for two decades the subject seemed to have met its natural death. It was the new growth theory (Romer, 1986; Lucas, 1988; Grossman & Helpman, 1991; Aghion & Howitt, 1991) that revitalized the field utilizing some earlier works (Arrow, 1962; Shell, 1967). However the subject is couched in a mathematical form that is not easily accessible to ordinary people whose life are intimately linked with it. It is thus necessary to spell out the empirics of growth that helps us to gather the fire and excitement in studying growth that fascinated economists and philosophers since time immemorial.

**Table 1. Growth of per capita world GDP (in 1985 dollars)**

<table>
<thead>
<tr>
<th>Periods</th>
<th>Growth Rate</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>500-1500</td>
<td>0%</td>
<td>Medieval period</td>
</tr>
<tr>
<td>1500-1750</td>
<td>0.08%</td>
<td>Period of Merchant capital</td>
</tr>
<tr>
<td>1750-1850</td>
<td>0.17%</td>
<td>First phase of Industrial Revolution</td>
</tr>
<tr>
<td>1850-1950</td>
<td>0.88%</td>
<td>Second Phase of Industrial Revolution</td>
</tr>
<tr>
<td>1950-1990</td>
<td>2.20%</td>
<td>Global spread of growth phenomenon</td>
</tr>
</tbody>
</table>

Source: Charles I. Jones: Introduction to Economic Growth

**SOME BASIC FACTS**

Since majority of us live in an environment of persistent growth, it is difficult to imagine a world of stagnancy. However this was the reality which our forefathers lived over centuries. Ever since human being evolved out of apes, there were some periodic spurts of technological advances: use of fire, discovery of wheel, animal domestication, agriculture, development of cognitive language and phonetic alphabets, use of mathematics and geometry and so on and so forth. These changes helped to advance per capita output\(^2\) to a certain higher level. However such changes could not be sustained. The economy became richer and leaved happily thereafter\(^3\). The idea was an attainment of a steady state where growth in per capita growth is arrested. Moreover these changes were sporadic and not shared by majority of the people either in the same country of elsewhere. Neither could it be sustained for a long enough period. The idea of continuous improvement in the life of a majority of the people is an entirely recent phenomenon. This idea can be grasped from the following table that gives the growth rate of per capita world GDP (in 1985 dollars).

It is this that prompted the economist Charles I. Jones (2001) to comment that “Sustained economic growth at rates of 2 percent per year is just as much a modern invention as is electricity of the