

## CHAPTER 1

### INTRODUCTION

*[The] consequences ... of economic growth ... for human welfare ... are simply staggering. Once one starts to think about them, it is hard to think of anything else.*

Robert Lucas (The Economist 1996:23)

#### 1.1 INTRODUCTION AND BACKGROUND

This chapter provides various definitions of economic growth used in the literature. It outlines the rationale for the different definitions of economic growth and discusses the merits of the various concepts. It also deals with the criticisms leveled at some of the definitions. It outlines population data limitations in South Africa and on the basis thereof, demarcates the definition of growth for this study. The next section briefly summarises the history of growth theory. The chapter concludes with an outline of the rest of the study.

#### 1.2 DEFINITIONS OF ECONOMIC GROWTH

Economic growth is both the most prominent and a vast field of study. Samuelson and Nordhaus (2001:568), for example, write in their best-selling textbook: "Economic growth is the single most important factor in the economic success of nations in the long term." Its genesis may be associated with the classical school, which in fact produced two fundamentally different approaches - Smith's growth optimism and Malthus and Ricardo's growth pessimism. With modifications, both theoretical strands are still encountered today.

A distinction is usually made between economic growth and economic development. Economic growth refers to the sustained increase in per capita or total income, while the term "economic development" implies sustained

structural changes, including all the complex effects of economic growth. The two processes are usually intimately linked but the terms are not synonyms. Sir John Hicks made it clear that "growth economics" has nothing to do with the problem of developing the underdeveloped. According to Hicks (1965: 3-4), "underdevelopment economics is a vastly important subject, but it is not a formal or theoretical subject". He cast doubt on the connection between growth theory and economic development by observing "the appearance of a branch of theory called Growth Theory, at a time when the economics of underdevelopment has been a major preoccupation of economists, has made it look as if there must be a real connection". Hahn and Mathews (1964:804) agree with this approach and write "Growth theory is applicable only to the advanced sector whereas the problem of the backward sector must be regarded as part of the theory of development rather than the theory of growth". Choi (1983:8) observed that "if the linguistic usage is to be precise, Walter Rostow's well-known *The Stages of Economic Growth* certainly ought to be titled *The Stages of Economic Development*".

There are many definitions of economic growth. They differ mainly because of shifts in emphasis or the inclusion or exclusion of certain aspects of the process. The core ingredient of most definitions is the annual rate of increase in gross domestic product in constant values from one year to the next, or over a number of years.

Gross domestic product (GDP) gives the total market value of final goods and services produced in the economy in any one year. The purpose of the measure is to determine the increasing ability of a nation to satisfy the material wants of its people by measuring the rate at which the volume of real goods and services expands over a period of time.

The main limitations of GDP as a measure of growth are that it

- does not include imports which are a large source of economic growth and therefore do not include capital importation which can be used to produce larger quantities of goods and services;
- does not include non-monetary incomes, because GDP only measures the value of goods and services traded in markets;

- includes depreciation on capital equipment although a net addition of production capacity would give a more realistic account;
- ignores population changes with the result that if the population increases more rapidly than production, living standards may fall, while GDP may be increase;
- does not account for income distribution which means that no redistribution changes can be accounted for (even real GDP per capita cannot measure which part of the population benefits from higher living standards);
- does not take into account the composition of output and thus gives no indication of the division between capital and consumer goods;
- gives no indication of changes in productivity, nor of the working conditions under which GDP increases;
- does not consider the costs of growth because it cannot measure satisfaction in the community, or lost or gained leisure time;
- it registers only household incomes received to contribute to production and not transfer payments;
- is unable to capture the informal economy which accounts for a significant part of the economy in less developed countries - cash transactions in particular may go unrecorded; (in the 1990s, Statistics South Africa and the South African Reserve Bank started to estimate the contribution of the informal sector and added it to the GDP figures. According to these estimates, the informal sector contributes about 7 per cent to GDP);
- omits nonmonetary factors like political freedom, the environment and cultural achievement;
- is measured in current values which means that it must be adjusted for inflation.

It is clear that a mere increase in the gross domestic product at current prices need not constitute growth because inflation could be high and/or the population growth rate could be higher than the growth rate, resulting in a decrease in the average living standards of the inhabitants of a country. A better measure is the annual rate of increase in the real gross domestic product per capita of a country. This measure provides an indication of the value of real goods and services available to each member of the population on average.

The advantages of real GDP per capita are that it

- accounts for population growth;
- eliminates inflation rises;
- allows for comparisons between countries.

Real GDP per capita figures are the most widely used measure of a nation's general level of material well-being or standard of living. Many analysts of cross-country studies use GDP per capita as their dependent variable. While real GDP per capita appears flawed as an indicator of growth, it is one of the most readily available measures.

The following are alternative indicators that are sometimes used:

- real GNP per capita;
- labour productivity growth showing relative changes in the volume of goods and services produced per person in the labour force;
- real per capita consumption expenditure which is sometimes used to obtain a proxy for the quantity of consumer goods and services purchased by households;
- economic welfare measures focusing on externalities such as leisure, pollution and environmental damage or conservation;
- human development indices which combine measures such as GDP, life expectancy and education.

As implied, economic growth also involves expansion of national productive capacity. The other growth factors involved include:

- whether all resources are fully employed and effectively applied;
- whether supplies of production factors are fixed, pliable or easily transferable;
- whether technology is constant or improving.

Simon Kuznets (1973:247) pointed out that the level of production capacity is significant. He defined the economic growth of a country as "a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands". This view implies that growth which is measured as increases in real gross domestic product without taking cognisance

of levels of utilisation of existing production capacity might not in a certain sense, constitute growth, but rather the catching up of lost production. He stressed that nations can only derive abundance by using best available technology and not by "selling fortuitous gifts of nature to others".

This therefore brings in the notion of production potential rather than actual performance. Robert Solow (1970:295) is emphatic that attention should rather be focused on the "growth of capacity to produce rather than the growth of demand, which is important but a separate problem. The foundation of any broad view must evaluate the major determinants of potential output and productivity in an economy, the chances of influencing them and the effectiveness of changes in the determinants on capacity output itself".

It is a problem obtaining production potential, especially if one is interested in the growth of many economies. To obviate this problem, Solow (1957:314) proposed relative utilisation of labour and capital functions using the unemployment rate. This method uses the same measure to adjust both inputs simultaneously, which in turn introduces its own inaccuracies.

Some adjustment to take account of capacity levels is necessary especially if one is to determine the contribution of productivity to economic growth, since the utilisation of production capacity is one of the factors influencing productivity growth. The approach proposed by Donovan and Norwood (1983:9) and Jorgenson (1995:5) is perhaps the most practical one to minimise this problem. They calculate average annual growth rates from upper turning point to upper turning point of the economic cycle. This would largely reduce the production capacity utilisation distortions. This procedure does not eliminate the problem since the rates of utilisation of the capital stock and of employment need not be the same at each peak. However, it does reduce the problem substantially. Another problem is encountered with international comparisons because business cycle movements and therefore upper turning points may not coincide. This method seems to provide a satisfactory solution for national comparisons and analysis and is the approach adopted in the analyses of growth in South Africa for successive periods between 1946 and 2000 (mainly in chapter 4).

GDP per capita is accepted as the measure of increase in welfare or standard of living of a country, but confusing as it may seem, can be regarded as a passive outcome of an economically determined rate of increase of aggregate real product and an exogenously determined rate of population increase. There are also controversies about the direction of causality between economic growth and population growth. Furthermore, changes in population growth are patently long-term phenomena, whereas total real income can fluctuate dramatically in the short term. Many growth theories and international growth measures therefore focus on total real income or product, because this is an object of interest in its own right, and according to Choi (1983:7), should not be further complicated by demographic phenomena. The total real income is thus the part of the ratio that could change welfare dramatically in the short to medium term. This does not imply that the standard of living or welfare considerations are less important.

Many researchers use GDP per capita as their growth variable, while some also use productivity increases defined as output per employee as their economic growth series. In South Africa it is problematic obtaining reliable population figures, let alone worker or employee series that date as far back as 1946. This problem was compounded by the Transkei, Bophuthatswana, Venda and Ciskei independence and their subsequent reincorporation into South Africa. To circumvent these problems and because time series were used in this study, it was decided to use real GDP growth as the dependent variable in this research project.

### **1.3 GROWTH THEORY**

According to Pearce (1992:179) and Bannock, Baxter and Davies (1998:127), growth theory covers the study of growth in economies with a view to constructing models, which use changes in variables such as

- the capital stock;
- the growth in the size of the population, which impacts on the numbers and age distribution of the labour force;
- the training of workers; and also
- advances in technology

to explain economic progress. The interaction between these and other variables is important, because if they have direct and sizeable effects on the rate of economic growth, they could make a significant contribution to raising living standards through the improved material welfare of the population.

Long-run international growth rate analysis by Barro and Sala-i-Martin (1995:2-4) has shown that a modest rise in the growth rate of a nation could vastly improve living standards over the long term. A permanent increase in economic growth is indispensable for every nation, and even more so for developing countries which need to grow faster than developed countries to catch up. This means that their growth rates must exceed those of developed countries by a considerable margin if gaps in income are to be reduced or levelled over the long term.

A wide variety of growth theories exist and they are almost as old as economics. The classical growth period extends from Adam Smith and his *Wealth of nations* (1776) to JS Mill's *Principles of political economy* of 1848 (Bannock, Baxter and Davis 1998:59). The classical growth theory focuses on growth and development and sets out to investigate the nature and causes of the wealth of nations and the distribution of national product (income) among the factors of production. This is set within a framework of a growing population with finite resources using free competition in a private enterprise economy (Pearce 1992:61).

The Keynesian and neo-Keynesian growth theory considers the capitalist economy to be inherently unstable or extremely delicate to balance. It considers the conditions necessary for equilibrium to be so restrictive that it is extremely unlikely that they will be met. The neo-Keynesian models focus on the problems of instability and unemployment and may be seen as an extension of Keynesian theory in a continuously changing context. The theory focuses on the role of investment and saving as a component of total demand and as an expansion of the capital stock.

The neo-classical growth theory considers the economy to be inherently stable and tending towards full employment. These models assume factor prices of labour and capital to vary over the long term. Changes in the cost of labour and capital lead to the substitution of capital for labour, or vice versa. This in turn

leads to changes in input proportions actually utilised in the aggregate production function. Changing input proportions result in changes in the capital-output ratio. The assumption of perfect competition leads to the outcome that on the equilibrium growth path the real rate of interest equals the marginal product of capital and the real wage equals the marginal product of labour (Pearce 1992:179). Unlike the vintage growth models, which assume that new technology can only be incorporated into new machines, the neoclassical models assume that technological progress is exogenous and falls like "manna from heaven" and that technical advances can be incorporated into existing and new machines. According to neoclassical theory, growth originates from population growth and disembodied technical progress. Abramovitz (1993:218) termed the latter "some sort of measure of our ignorance", and defined it as the difference between the growth of output and the growth of all factor inputs combined.

According to Romer (1994:3): "Endogenous growth embraces a diverse body of theoretical and empirical work. The empirical work does not settle for measuring a growth accounting residual that grows at different rates in different countries. It tries instead to uncover the private and public sector choices that cause the rate of growth of the residual to vary across countries."

Modern growth theory is often considered to be of more interest for its mathematical content than for its insights into the actual working of the economic system. In this study an attempt is made to explain and investigate economic growth with descriptive text rather than mathematics. Factors contributing towards economic growth in South Africa are, however, examined using econometric tools.

It is also important to note that high growth rates can easily dissipate and be quite difficult to regain, something South Africa was painfully aware of in the 1990s and still is in the new millennium. Other countries that experienced similar declines in growth are Japan (1993-98) and Mexico (1982-88), and decades ago, Argentina (1972-76 and again 1987-90). Rostow (1971:38) classified Argentina as a developed industrialised country and states the following: "In one sense the Argentine economy began its take-off during the First World War. But by and large, down to the pit of the post-1929 depression, the growth of its modern sector, tended to slacken; and like a good part of the



Western World, the Argentine sought during the 1920s to return to a pre-1914 normalcy. It was not until the mid-1930s that a sustained take-off was inaugurated, which by and large can now be judged to have been successful despite the structural vicissitudes of that economy." The World Bank (2000:229) confirms this view as it classified Argentina as an upper middle-income country.

Denison (1967:5) observed that "there are many sources of growth and these vary greatly in importance from time to time and from place to place". Simon Kuznets (1973:247) is more specific on the same subject and states the following "The source of technological progress, the particular production sectors that it affected most, and the pace at which it and economic growth advanced, differ over centuries and among the regions of the world; and so did the institutional and ideological adjustments in their interplay with the technological changes ... ."

#### **1.4 CONCLUSION**

Economic growth is the most important outcome in the field of economic studies because it affects the material well-being of every human being. The growth in GDP per capita is the most widely used measure to determine the standard of living of the citizens of a country and for international comparisons.

The percentage increase in gross domestic product from one year to the next is used as the dependent variable of growth when econometric tools are used in this study to test for factors determining economic growth in South Africa.

#### **1.5 OUTLINE OF THE STUDY**

The second chapter examines the origins of economic growth, with a study of the growth theories of the classical economists, followed by a brief look at the neoclassical growth theories and the empirically untestable theory of Marx. A cursory study of the difference between growth and development follows. The initial growth hiatus of the late classical and early neoclassical period is then discussed, focusing on the important microeconomic tools designed by Marshall.

Two growth proponents of the neoclassical period, namely Schumpeter and Kuznets are then discussed, before looking into the seminal work of Robert Solow. Chapter 3 focuses on the exogenous growth theory proposed by Solow followed by the endogenous growth theory propounded by Romer and Lucas. Chapter 4 examines the growth performance of South Africa and evaluates the efforts towards sustained growth and development since 1960 through the decades and ends with the new political dispensation that followed the general elections in 1994. In chapter 5 the concept of growth empiricism is examined, with particular emphasis on the work of cross-country growth theorists and the factors they isolated as important contributors to economic growth.

As there does not seem to be a single or common growth recipe that is suitable for all countries, it is important to find out which growth-inducing factors might lift South Africa's growth performance and as such make a meaningful contribution to higher living standards. The proposed approach for this study is to use the growth factors identified in cross-country literature and test their contributions to growth in South Africa. This methodology can identify the most promising growth determinants and the results can then be used to induce a higher growth rate for South Africa in the future.

In chapter 6, South African time series are used to determine the contributions to growth of the factors that were found to be robust contributors to economic growth in the cross-country analyses discussed in chapter 5. Instead of using the indicated growth-inducing factors in a similar fashion to those of cross-country analysts in explaining growth, thus heeding the advice of Barro, stationary time series are used in conjunction with Granger causality tests. If these tests are significant, the instruments of vector autoregression and spectrum analyses are applied to cast more light on the influence of some of the factors discussed in chapter 5, on growth in South Africa. The thesis concludes with an empirical analysis of growth determinants in South Africa from 1946 to 2000.