



The Role of Private And Public Sectors: An Analysis Of Methodological Steps In Understanding Growth Cycles

Santosh Singh Bais and Jagannath B. Kukkudi¹

INTRODUCTION

Though with a very long standing history of a century the growth cycles have once again been in the limelight of thinking of modern economists of 1960 and that of 1995. However, the 21st century growth cycles have been in the focus for policy makers of both developed and developing countries alike. The globalization phenomena has added new dimension to these business cycles and have been a matter of time to time concerns of the policy makers of the developing countries which by nature have a vivid experience in different sectors of the economy. Indeed in the result years it is the current fluctuations which have occupied a prime place in all the economy which are going to be tied or cemented through trade, what attempts are essential and harmonious so as to control these short term growth fluctuations and what political and economic compromises are needed requires a brief analysis this what had been attempted in the paper.

THE HISTORY

The growth cycles have been a subject of great interest among the economist and business specialists. It is latter group which eventually started forcing ahead and termed as business cycles. Sooner or later an integrated approach emerged among the business and other economist and termed them as growth cycles.

¹ Dr.Santosh Singh Bais and Dr. Jagannath B. Kukkudi, Faculty Members, Department of Studies and Research Management, Gulbarga University, GULBARGA-585 106 KARNATAKA. E-mail singh_31@rediffmail.co and jbsulepeth@rediffmail.com

Long back in the economic history Mitchell¹ an economist made an in-depth study of the growth activities of number of countries he could find to his solace the production in two interrelated sectors of the economy only create business cycles. As the world was to start with depended largely on agricultural and to some extent on industrial production (two have inseparable) attempted to study the phenomenon of the production process under given natural conditions. For Mitchell these conditions included the quantum of rainfall, availability of surplus, agricultural production and its impetus to industrial production in particular and the output of the entire economy in general. He came to the profound conclusion that the increase and fall in the growth of the output of the economies greatly depended on the prevailing sunspot on that economy. He therefore was the first to produce the sunspot theory of business cycles. In simple terms it means the growth will be lower or higher depending upon the sunspot in which country they fall.

However, during the latter part of both centuries the growth cycles become a prominent subject of interest and matter of prime policy concern. Many economists have devoted attention to not the sunspot aspect but to the economic variables operating in the modern economies. Further there are various types of business cycles have been discussed by very prominent economist which have been noted in the following.

NATURE OF CYCLES (SHORT AND LONG)

Undoubtedly Mitchell gave a simple result that if a country is constantly (every year) faced with good sunspot will have a smooth pattern of growth and there will not be untoward changes in business activities. But the change in sunspot produces fluctuations which would be difficult to be brought under control in fact the mix of changes in agricultural production its impact on business activity have studied quite scientifically by Mitchell. However as a result of development economies in which commercialization of agriculture and less dependence on the investment, income and output of this sector. There are many other variables which cause business cycles spreading over a period of time. This has been discovered by few of the economists.

1. **The Short Kitchin Cycle²:** it is also known as the minor cycle which is of approximately 40 months duration. It is famous after the name of the British economist Joseph Kitchin, who made a distinction between a major and minor

cycle in 1923. He came to conclusion on the basis of his research that a major cycle is composed of two or three minor cycles of 40 months.

2. **The Long Jugler Cycle³:** This cycle is also known as the major cycle. It is defined “as the fluctuation of business activity between successive crises.” In 1862 Clement Jugler, a French economist showed that periods of prosperity, crisis and liquidation followed each other always in the same order.
3. **The Very Long Kondratieff Cycle⁴:** In 1925. N.D Kondratieff, the Russian economist, came to the conclusion that there are longer waves of cycles of more than 50 years duration, made of six Jugler cycles. A very long cycle has come to be known as the Kondratieff wave.
4. **Building cycles:** Another type of cycle relates to the construction of buildings which is of fairly regular duration. Its duration is twice that of major cycles and is on an average of 18 years’ duration. Such cycles are associated with the name of Warren and Pearson⁵, two American economists who came to this conclusion in World prices and the building industry.
5. **Kuznets Cycle⁶:** Professor Simon Kuznets, a famous American economist, propounded a new type of cycle, the secular swing of 16-22 years which is so pronounced that it dwarfs the 7 to 11 years cycle into relative insignificance.

TYPES OF CYCLES

After a lengthy study of business cycles spread over a period of more than a century, according to changes in the economic situations in various countries the modern economists have tried to define business cycles caused by the interaction of various inseparable variables of the economy in particular the three economists come to the forefront of the analysis of growth cycles in a very systematic manner. For example,

Samuelson’s Model of Trade cycle

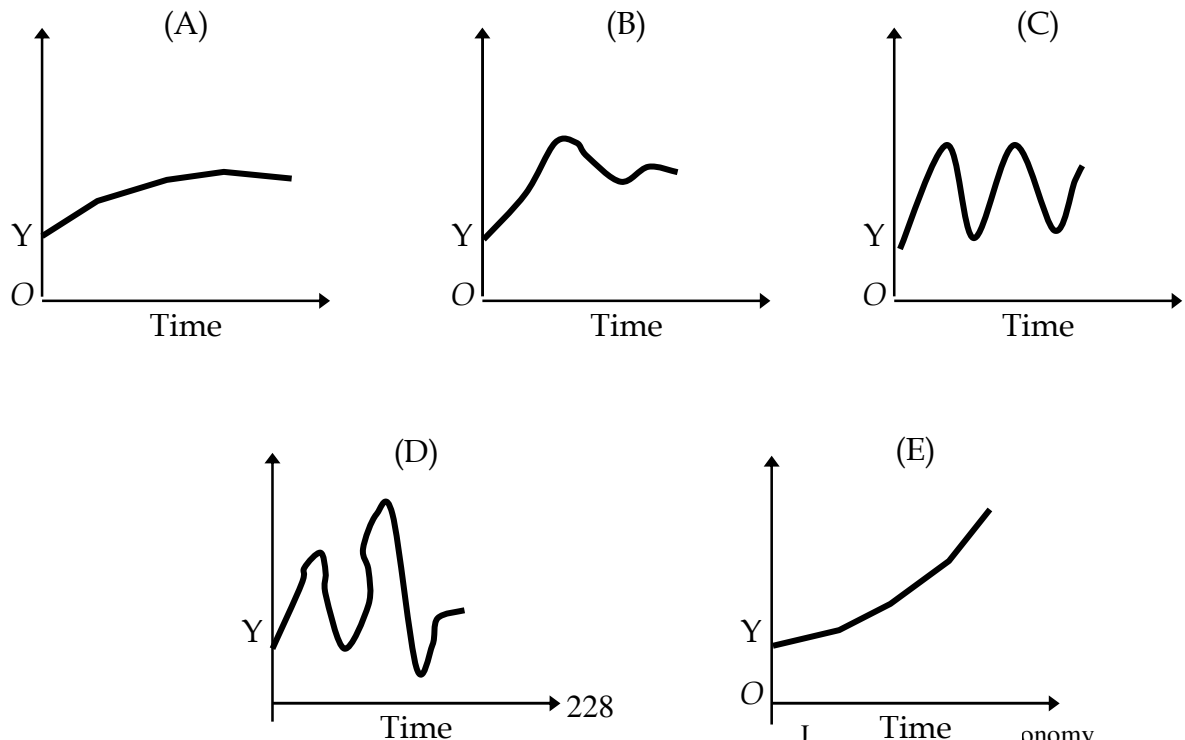
Prof. Samuelson⁷ constructed a multiplier-accelerator model assuming one period lag and different values for the MPC (a) and the accelerator (B) that result in changes in the level of income pertaining to five different types of fluctuations. The Samuelson model is

$$Y_t = G_t + C_t + I_t$$

Where Y_t is national income Y at time which is the sum of government expenditure G_t . Consumption expenditure C_t and induced investment I_t .

According to Samuelson “if we know the national income for two periods, the national income for the following period can simply be derived by taking a weighted sum. The weight depends, of course, upon the values chosen for the marginal propensity to consume and for the relation (i.e. accelerator)”. He explained five types of cyclical fluctuations which are summarized in following paragraphs.

1. **Cycle less Path:** it shows a cycle less path because it is based only on the multiplier effects, the accelerator playing no part in it. This is shown in figure A.
2. **Damped fluctuations:** shows cyclical path fluctuating around the static multiplier level and gradually subsiding to that level, as shown in figure B.
3. **Fluctuations of constant Amplitude:** it depicts of constant amplitude repeating themselves around the multiplier level this case is depicted in figure C.
4. **Explosive cycle:** reveals anti-damped, which is shown in figure D
5. **Cycle less explosive path:** relates to a cycles explosive path eventually approaching a compound interest rate of growth as shown in figure E.



Of the five cases explained above, only three cases 2, 3, and 4 are cyclical in nature. But they can be reduced to two because case 3 pertaining to cycles of constant amplitude has not been experienced. So far as type 2 of damped cycles are concerned these cycles have been occurring irregularly in a milder form over the last half century. Generally, cycles in the post war period have been relatively damped compared to those in the interwar period.

Despite these apparent uses of the multiplier –accelerator interaction, this analysis has its limitations.

1. He is silent about the length of the period in the different cycles explained by him
2. This model assumes that the marginal propensity to consume (a) and the accelerator (B) are constants, but in reality they change with the level of income so that this is applicable only to the study of small fluctuations.
3. The cycles explained in this model oscillate about a stationary level in a trend less economy. This is not realistic because an economy is not trade less but it is in a process of growth. This has led Hicks to formulate his theory of trade cycle.

Hick's Model of Trade cycle

J.R Hicks⁸ in his book “A contribution to the theory of trade cycles” around the principle of the multiplier–accelerator interaction. To him, “the theory of the acceleration and the theory of the multiplier are the two sides of the theory of fluctuations, just as the theory of demand and theory of supply are the two sides of the theory of value” Hick’s model is concerned with the problem of growth and of a moving equilibrium.

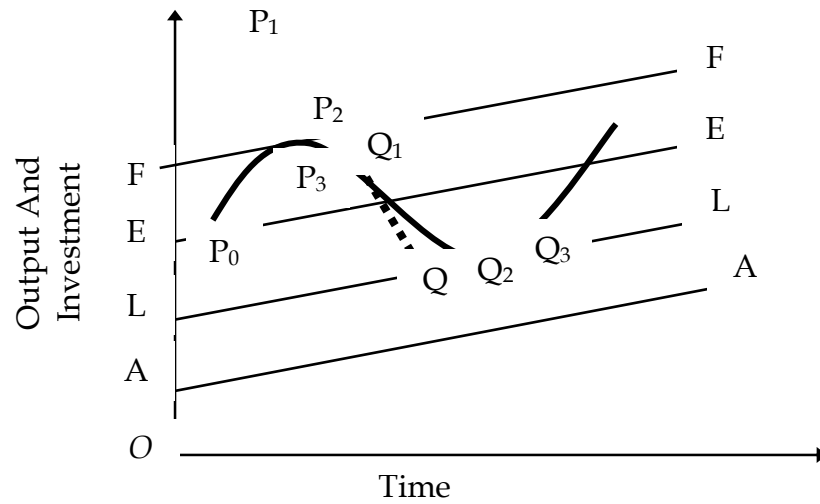
The ingredients of Hick’s model of trade cycle are the warranted rate of growth, the consumption function, autonomous investment, an induced investment function, and the multiplier-accelerator relation. The warranted rate of growth is the rate which will sustain itself. It is consistent with saving investment equilibrium. The economy is said to be growing at the warranted rate when real investment and real

saving are taking place at the same rate. Consumption function takes the form $C_t = a + y_{t-1}$. Thus consumption in period t is treated as a function of income (y) of the previous year ($t-1$). Hence it is a function of the growth rate of the economy. Induced investment, on the other hand, is dependent on changes in the level of output. Hence it is a function of the growth rate of the economy. Hick's explains his theory of the trade cycle in terms following figures.

Line AA shows the path of autonomous investment growing at a constant rate. EE is the equilibrium level of output which depends on AA and is deduced from it by the application of the multiplier accelerator interaction to it. FF line is the full-employment ceiling level about the equilibrium path EE and is growing at the constant rate of autonomous investment. LL is the lower equilibrium path of output representing the floor of or 'slump equilibrium line'.

He begins from a cycle less situation P_0 on the equilibrium path EE when an increase in the rate of autonomous investment leads to an upward movement in income. As a result, the growth of output and income propounded by the combined operation of the multiplier and accelerator moves the economy on to the upward expansion path from P_0 to P_1 . According to Hicks, this upswing phase relates to standard cycle which will lead to an explosive situation because of the given values of the multiplier and the accelerator. But this does not happen because of the upper limit or ceiling set by the full employment level FF.

When the economy hits the full employment ceiling at P_1 , it will creep along the ceiling for a period of time to P_2 and downward swing will not start immediately. The greater the investment lag, the more the economy will move along the ceiling path. During the downswing "the multiplier-accelerator mechanism sets in reverse, falling investment reducing income, reduced income reducing investment, and so on progressively. The fall in output in this case might be steep one, as shown by P_2 , P_3 and Q.

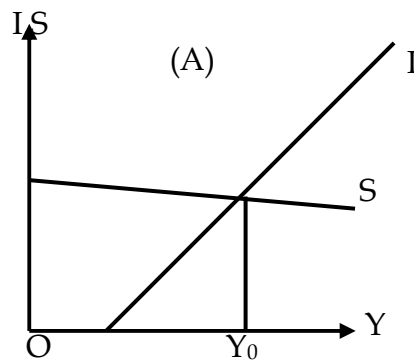


Nicholas Kaldor Model⁹

Nicholas Kaldor built a model of the trade cycle based on the Keynesian terminology of saving and investment. He showed that the cycle is the result of pressures that push the economy towards the equality of ex-ante (anticipated) savings and investment. In fact it is the difference between ex-ante saving and investment that leads to a cycle. Kaldor shows the stability and insatiability conditions in the form of linear diagrams, though the cycle is only possible when, investment and saving are non-linear.

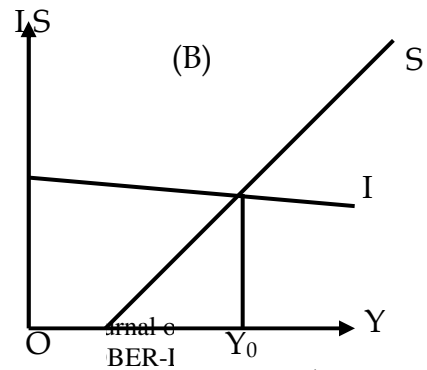
A non-linear investment function investment is shown in figure A. similarly, a non-linear saving function is shown in figure B

Graph Two



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No 3&4, J



An Eye on Growth Cycles in India

Aftermath of economic reforms introduced in India, changes in the social choice of Indian democracy, the emergence of coalition governments¹⁰ and their tailored method of function through common minimum program (CMP) have brought about a far-reaching changes in the economic policies and programmes. The financial allocation, mobilization and utilization have a special set of efforts in so far as growth cycles are concerned¹¹. Notwithstanding the differences in the interpretation of refer on programmes and their implementation have left a strong imprint on the Indian economy¹². The environment has also been making an unpredictable task due to its impact on rainfall and agricultural production and power generation.

Besides furthermore, the country becoming more and more open in the sense that besides its own efforts of making SAARC a integrated unit, making frantic efforts to form the Asian Common Market and having for more visionaries ideas of bringing together all the Afro-Asian Countries together so as to bring about a common market with provisions for free flow of goods and services have been responsible for a sea saw change in the key variable of determining the growth rate. The co-operation and protection with USA and EU countries have introduced further instabilities in variables growth especially in the recent years.

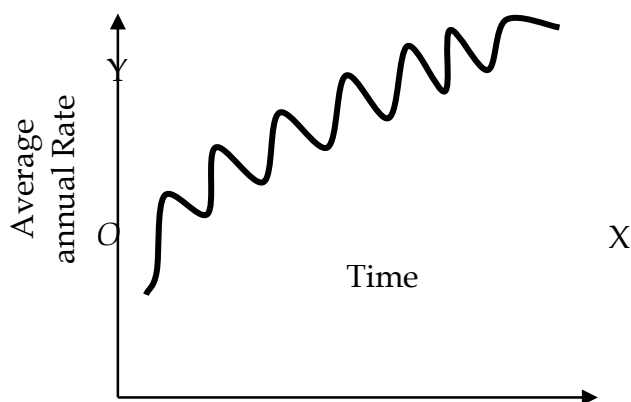
The positions of important variables determining growth and causing fluctuations have been noted in the following table for the year 1991-92 to 2001-02.

Sl. No	Causes	Average annual growth rate
1	Gross Domestic Product	6.32
2	Gross National Product	6.24
3	Inflation rate	9.14

4	Growth in National income	5.75
5	Growth in Electricity Generation	7.37
6	Growth in Bank deposit	
7	Agriculture Production index	1.73
8	Industrial production index	6.24
9	Growth in Stock Market	2.40
10	Growth in Service sector	44.52
11.	Growth money supply	18.43

Source: Statistical outline of India 2002-2003 Tata Service limited

Given the above figures of each variable for chosen period provides as a convenient tool to represent a graphic fluctuating growth cycles path of India which is given below.



Graphic representation is subject to correction to some extent depending on the method of calculation we adopted and weightage we give to some of the variables. The calculations relating to annual rainfall, agricultural production and WTO agreements, reduction of subsidies on agricultural goods and tariffs by developed

countries. The international role of TRIMS and TRIPS that India could get are all further impacting aspects on the Indian growth path.

Conclusion

We have made a small attempt in the direction of finding out the emerging path of growth cycles in the recent years in the country. The political changes fed with instability, the emergence of coalition government with differing but commonly acceptable programmes, the cooperation of states in adapting to firm programmes and political party's ideology have a long standing impact on growth cycles of the country. Lastly we conclude the growth cycles of the India are largely dependent on future policies and programmes in the following areas.

1. Establishment of Future Market: Money market and Commodity market which help to join in trading commodities
2. Discovery of new oil fields with foreign collaboration.
3. Investment in power sector especially by the private sector.
4. Taxes on services.
5. Transparency and control on corruption.
6. Reduction in Fiscal policy

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10. Paul A Samuelson "Interactions between the Multiplier analysis and Principle of Acceleration" the review of economic statistics May 1939.
11. Hick's "A contribution to the theory of the Trade Cycle"

12. Nicholas Kaldor "A model of the Trade Cycle" E.J March 1940 Reprinted in his Essays on Economic stability and growth.
13. For instance the NDA consisting nearly two dozens of political parties coming together on one hand and emerging UPA with as many as one and half dozen of political parties have different objectives have been governing the countries.
14. For instance the NDA wanted to show the development of infrastructures in particular the golden quadrangle roads. Whereas the UPA want to have better cooperation with private sector and allow it to invest freely in the production sector and as and when need arises cooperate with the government in its programme. The government on the other hand keeping the basic problem of the country in forefront with globalization wants the upliftment of poorer sections. Therefore it has an ambition of improving rural life health sector and educational sectors. It anticipates heavy government and private investment in social sectors which in the long should be able to contribute to the economy.
15. The past NDA government stared heavily depending on disinvestment in public sector units (with of without making profits) and sold many government owned units to the private sectors which enable it in the process of mobilization of resources. Whereas the present UPA government has the programmes of resources mobilization and increasing investment by means of a) simplification of tax structure and better compliance. b) Increasing the share of FDIs in few important sectors such as media, insurance, banking and encouraging the establishment of foreign units. c) Permitting FIIs in short term and long-term activities. No idea what so ever to touch the public undertaking.

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