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Growth Theories and Economic Development in Less Developed Countries

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ABSTRACT

This paper addresses the theories of growth and economic development in less developed countries such as Nigeria, by the classical, neo-classical, Keynesians etc which necessitated the evolution of new growth models to meet the ever changing world economy. The world economy is fast being taken over by capitalism, economic integration and emphasis on international trade. The paper will address the inability to reconcile the huge observed differences in the per capita income with the modest production of the Solow's model. It will address assumed differences in the parameters without explaining these differences and also the assumption that long term per capita growth may well be driven by technical progress alone etc.

Keywords: Growth Theories, Economic Development, Less Developed Countries, Africa

1. INTRODUCTION

SECTION ONE
Introduction
Economic growth has been defined by different economists in different ways but they all centered on capital accumulation and increase in investment. According to Professor J. L. Hanson, he said economic growth is the rate of its national income which measures the standard of living of the people in a country. The theory of economic growth is as old as economics itself. We have the classical growth theory, comprise of Adam Smith, ThomaMulthus David Ricado and Karl Marx.TheHarrodDomar growth model and the new classical theory.

SECTION TWO
ADAM SMITH
According to Adam Smith who belonged to the classical theory of economic growth, in his findings he said that:
1. The important factor or contribution to economic growth was the notion of increasing returns based on division of labour or gains from specialization. Increasing returns means rising labour productivity and per capita income as output and employment expands. The growth of output and living standard depends on investment and capital accumulation.
2. Investment in turn depends on savings out of profits generated and the degree of labour specialization/division of labour.
3. The division of labour is limited by the extent of the market.

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He gave three sources of increasing returns which is derived from the division of labour.

i. Increase of dexterity in every particular workman.
ii. The saving of time which is commonly lost in passing from one species of work to another
iii. The invention of a great number of machines which facilities and abridge labour, and enable one man to do the work of man.
iv. Specialization gives room for greater capital accumulation by enabling complex processes to be broken up into simpler processes permitting hteh use of machinery.But the ability to specialize or the division of labour depends on the extent of the market. Adam Smith uses the example of the production of pins. He said, there is no need using sophisticated machinery for the different processes of pin production if the market of pin is small. If the market is large, it is economical to use cost-saving machinery but if the market is small there would be surplus production.
v. Smith recognized that increasing returns based on the division of labour is a feature of industry than agriculture

The name of agriculture does not admit to the sub-division of labour because it is impossible to separate so entirely the business of the grazier from that of the corn farmer.
He went further to say that, agricultural surplus is necessary to support an industrial population and the labour released by improved productivity in agriculture can be used for the production of non-agricultural goods.

THOMAS MALTHUS
Another classical view after Adam Smith was Thomas Malthus, hu emphasized the importance of demand for the determination of output. He said that, demand must grow in line with productive potential if profitability as the stimulus to investment is to be maintained. But there is nothing to guarantee this. Thomas Malthus is best known for his essay on the principle of population (1798).
In his findings:

i. Population goes on doubling itself every twenty-five years or population increases in a geometrical ratio whereas the means of subsistence increases in an arithmetical ratio.
ii. Food production only grows at an arithmetic rate implies diminishing returns to agriculture.
iii. The imbalance between population growth and growth of the food supply would lead to the per capita income of countries oscillating around the subsistence level of sometime called low-level equilibrium trap.
iv. An increase in per capital income brought about by technical progress leads to more births, which reduces per capital income back to subsistence level.

Nevertheless, Malthus were further to recognized certain checks to the process which he divided into preventive and positive checks.
Preventative checks with respect to the difficulties of rearing a large family are sexual abstinence or the use of contraception.
Where preventive checks are weak positive checks take over in the form of pestilence, disease and famine.
In a nutshell, Malthus solution to the population dilemma was the postponement of marriage in a voiceless society.

DAVID RICARDO
Another great classical Economists is David Ricardo, in 1817 he published his principles of political Economy and Taxation in which he predicated that capitalist economies would end up in a stationary state with no growth due to diminishing returns in agriculture.
In his findings:

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1. Smith, who said growth is a function of capital accumulation and capital accumulation depends on reinvested profit. In Richardo's theory, profits are squeezed between subsistence wages and the payment of rent to landlords which increases as the price of food rises owing to diminishing returns to land and rising marginal cost.
2. Ricardo thought of the economy as one big farm in which food and manufacturers are consumed in fixed proportions, so that corn can be used as the unit of account.
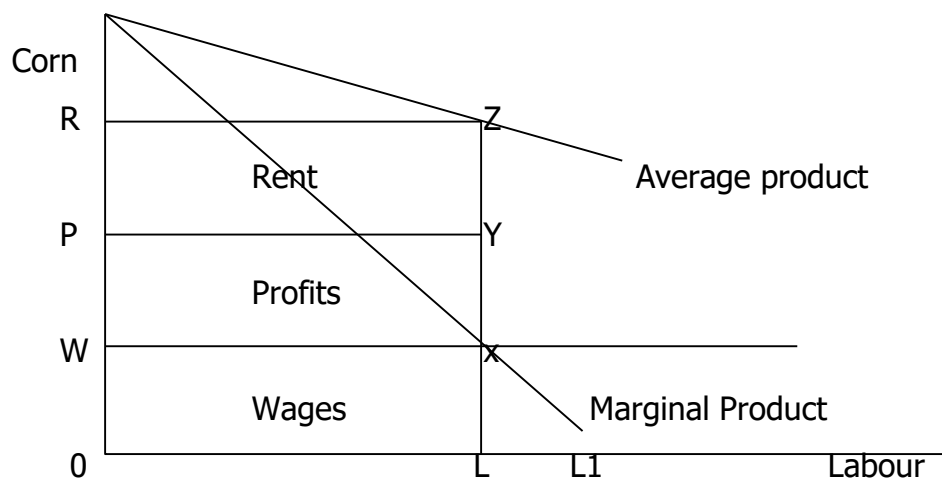

Figure 1: Ricardo Illustration

From the diagram:
i. From the employment of L, amount of labour, total output will be ORZL.
ii. Rent is determined by the difference between the average product and the marginal product of labour working on the land is given as PRZY.
iii. Wages are equal to OWXL
iv. While profits is the difference between rent and wages, equal WPYX.

As output increases and the marginal product of labour falls to subsistence wage (L1), profit disappear.
3. In equilibrium, the rate of profit in agriculture must equal to the rate of profit in industry.
4. As the profit in agriculture falls, capital will shift to industry causing the rate of profit to decline there.
5. As a real in profit fall to zero, capital accumulation ceases, heralding the stationary state.
However, the central importance of capital accumulation in Richardo's vision of economic growth is that, anything that reduces capital accumulation (including rises in wages) will show economic growth.
Ricardo opposed all forms of taxes, levies and tariffs on input of productive systems, including tariffs on imported food.

Karl Marx
Finally, Karl Marx famous book Das Kapital (1867) and his prediction of the collapse of the capitalism manifested.
All members of the classical school agreed that the rate of profit on capital will fall as the economy grows, but they differed as to the reason for the fall.

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Marx believed that economy doesn't grow forever but the end come not from stationary state but from crises associated with over production and social upheaval.

In his findings:
1. Marx said, capitalist surplus is the source of capital accumulation and the main spring of growth.
   - In his theory, gross output consists of three elements
   - Variable capital or the wage bill (v)
   - Constant capital (c) that is, plant and machinery and the raw materials used in production
   - Surplus value or profit (s)
2. Wages of labour are determined by the minimum subsistence level (cost of reproducing the working class) and surplus value (which only labour can create). Surplus value is the difference between output per work and minimum wage per work.
3. The rate of surplus value or the degree of exploitation is given as S/V.
4. The rate of profit is given by the ratio of surplus value to total capital that is, $S/(V+C) = S/V(1+[C/V])$
5. The ratio of constant to variable capital (C/V) is defined as the organic composition of capital.
6. As techniques of production becomes more capital intensive, the organic composition rises through time, so the rate of profit falls unless surplus value rises.
7. There is no limit to the rise in C/V, however there is a limit to S/V.
8. To accumulate is to conquer the world of social wealth, to increase the mass of human beings exploited by him.
9. As capital is substituted for labour there is another problem, labour cannot consume all goods produced, and a realization crisis is caused by failure of effective demand.

Capitalism eventually collapses through its own inner contradictions.

HARROD-DOMAR GROWTH MODEL
HarrodDomar: A modern growth theory started with the classic article by a British economist Roy Harrod. An essay in Dynamic Theory (1939) which led to the development of what is now called Harrod-Domar growth model.
Harrod distinguished three different growth rates, namely:
- Actual growth rate
- Warranted growth rate
- National Growth rate

The actual growth rate is defined as g = s/c   (1)
Where S = the rate of savings to income S/Y
Where C = Actual incremental capital out ratio

That is, the ratio of extra capital accumulation or investment to the flow of output $\Delta K/\Delta Y = 1/\Delta Y$ ie
S =   S/Y   -   -   (2)
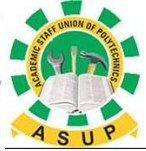C = I/ΔY -   -   (3)
By substitution, equation (2 and 3) back to equation (1) w have
G = S/Y(1/ΔY) = $\Delta Y/Y$
Given that S = I
Where,ΔY measures the growth of output.

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Besides, Harrod said in order to know whether actual growth rate will provide the basis to keep plans to invest and plans to save in line with one another at full employment.

He came up with the concept of warranted rate of growth and the natural rate of growth.

Harrod, defined warranted rate of growth as that rate of growth which if it occurs will leave all parties satisfied that they have produced neither more or less than the right amount.

In order words is that rate of growth that induces just enough investment to match planned saving and therefore keeps capital fully employed, that is there is no under capacity or over capacity, so that manufacturers are willing to carry on investment in the future at the same rate as in the past. How is this rate determined? Given Keynesian savings function $S = SY/Cr = \Delta Kr/\Delta Y = I/\Delta Y$

Where S = the propensity to save
Cr = Accelerator coefficient
The demand for investment is given by the acceleration principle (acceleration relation).
Cr = accelerator coefficient.

Measured as the required amount of extra capital, or investment to produce a unit flow of output at a given rate of interest, determined by technological condition.
Thus:
$Cr = \Delta Kr/\Delta Y = I/\Delta Y$
For planned saving to equal planned investment, we have
$SY = Cr\Delta Y$
$\Delta Y/Y = S/Cr = gw$
$\Delta Y/Y = S/Cr = gw$ is the HarrodDomar growth or $\Delta Y/Y = S/Cr = gw$ is the warranted rate of growth.
   1. This is warranted rate of growth gw for dynamic equilibrium, output must grow at this rate. At this rate, expenditure on consumption goods will equal the production of consumption goods.
   2. This is the rate at which entrepreneurs will be satisfied with what they are doing.
g>gwthen C< Cr which means that actual investment falls below the level required to meet the increase in output.

There will be a short age of equipment, a depletion of stocks and an incentive to invest more. On the other hand, if the actual rate growth is less than the warranted rate g<gw then C> Cr, there will be a surplus of capital goods and investment will be discouraged.

NATURAL RATE GROWTH
The natural rate growth is derived from the identity Y= L(Y/L) where L is labour and Y/L is the productivity of labour
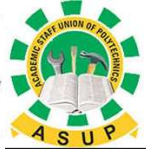Y = 1 + q

The natural rate of growth is therefore made up of two components:
The growth of labour force (1) and growth of labour productivity (q) both are exogenously determined.
Natural rate of growth plays an important role in Harrod-Domar models in two respect.
   1. It defines the rate of growth of productive capacity or the long run full employment equilibrium growth rate.
   2. It sets the upper limit to the actual growth rate, which brings cumulative expansion in the Harrod model to a sticky end.
   Therefore, the full employment for labour and capital requires g = gw = gn.

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NEOCLASSICAL GROWTH THEORY

There are three basic propositions of neoclassical growth theory.

1. In the long run steady state, the growth of output is determined by the rate of growth of labour force in efficiency units.
2. The level of per capital income, does depend on the ratio of savings and investments to GDP. The level of PCY varies positively with saving and investment ratio and negatively with the rate of growth of the population.
3. Given identical tastes (that is preference for saving vis a vis consumption) and technology (production function) across countries, there will be an inverse relation across countries between the capital-labour ratio and the productivity of capital, so that poor countries with small amount of capital per head should grow faster than rich countries with a lot of capital per head, leading to the convergence of per capita incomes and living standards across the world.

The three key assumptions of the theory is that:

i. The labour force grows at a constant exogenous rate, I.
ii. Output is a function of labour and capital Y= f(k,y).
iii. All saving(s) is invested: S=1=SY

The basic idea about the neoclassical growth model is designed to show that an economy will tend towards a long run equilibrium capital-labour ratio (k*) at which output (or income) per head (q*) is also in equilibrium so that output, capital and labour all grow at the same rate.

In other words, the model predicts long run growth equilibrium at the national rate. The most commonly used neo-classical production function with constant returns to scale is the Cobb-Douglas production function.

$$Y = bk^{\alpha}L1^{-\alpha}$$

α =is the elasticity of output with respect to capital.

1- α = is the elasticity of output with respect to labour

However, α + (1- α) = 1, that is a 1 (one) percent increase in k and l will lead to a 1 (one) percent increase in Y. This is what is meant by output exhibiting constant returns to scale.

SECTION THREE
DETERMINANTS OF ECONOMIC GROWTH

There are two factors that determine economic growth. They are economic factor, and non economic factor.
Economic factors

1. National resources
2. Capital accumulation
3. Organization
4. Technological progress
5. Division of labour and scale of production
6. Structural changes.

NON-ECONOMIC FACTORS

1. Social factor
2. Human factor
3. Political and administrative factor

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1. **Natural Resources**

The principal factor affect the development of an economy is the natural resources or land. Land is used in economics includes natural resources such as the fertility of land, its situation and composition, forest wealth, minerals, climate, water resources, sea resources etc. For economic growth, the existence of natural resources in abundance is essential. A country which is deficient in natural resources will not be in a position to develop rapidly. As pointed out by Lewis, "other things being equal, me can make better use of rich resources than they can of poor".

In LDC natural resources are either utilized, underutilized or mis-utilized. This is one of the reasons for their backwardness. The presence of abundant resources is not sufficient for economic growth. It is often said that economic growth is possible even when an economy is deficient in natural resources. As pointed out by Lewis, "A country which is considered to be poor in resources today may be considered very rich in resources at some later time, not merely because unknown resources are discovered, but equally because new uses are discovered for the known resources". Japan is one such country which is deficient in natural resources but it is one of the advanced countries of the world because it has been able to discover new uses for limited resources. Moreover, by importing certain raw materials and minerals from other countries, it has been successful in overcoming the deficiency of its natural resources through superior technology, new researches, and higher knowledge. Similarly, Britain has developed without non-ferrous metals.

2. **Capital Accumulation**

The second important economic factor in growth is capital accumulation. Capital means that stock of physical reproducible factors of production. When the capital stock increases with the passage of time, this is called capital accumulation (or capital formation). Capital formation is the main key to economic growth. On the one hand, it reflects effective demand and on the other hand, it creates productive efficiency for future production. Capital formation possesses special importance for LDCs. The process of capital formation leads to the increase in national output in a number of ways. Capital formation is essential to meet the requirements of an increasing population in such economics. Investment in capital goods not only raises production but also employment opportunities. It is capital formation that leads to technological progress. Technological progress in turn leads to specialization and the economies of large-scale production. Capital formation helps in providing machines, tools and equipment for the rising labour force. The provision for social and economic overheads like transport, power, education, etc in the country is possible through capital formation. It is also capital formation that leads to the exploitation of natural resources, industrialization and expansion of markets which are essential for economic progress. According to Lewis, the rate of capital formation in LDCs is 5 percent or loss which should be raised to the level of 12 to 15 percent. The estimates of Kuznets reveal that during modern economic growth gross capital formation in developed countries was from 11-13 percent to 20 percent and above while net capital formation was from 6 percent to 12-14 percent.

3. **Organization**

Organization is an important part of the growth process. It relates to the optimum use of factors of production in economic activities. Organization is complement to capital and labour and helps in increasing their productivities. In modern economic growth, the entrepreneur has performing the task of an organizer and undertaking risks and uncertainties. The entrepreneur is not a man of ordinary ability to recognize opportunities for successful introduction of new commodities, new techniques, and new sources of suplly, and to assemble the necessary plant and equipment, management, and labour force and organize them into a running concern. He is kingpin of any business enterprise for without him the wheels of industry cannot move. So entrepreneurship is an indispensable ingredient in economic development. For instance, the credit for the industrial revolution in England States in the 19th century and the mid 20th century to the improvement in the quality of management.

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LDCs should create a climate for encouraging entrepreneurship. To remove market imperfections. The existing institution should be improved. Monopolistic institutions should be controlled and curbed. The knowledge of market opportunities should be increased. Laws should be passed and strictly enforce for protection of property rights efficiently and the maintenance of law an order within the country.

4. Technology Progress
Technological changes are regarded as the most important factor in the process of economic growth. They are related to changes in the methods of production which are the result of some new technique of research or innovation. Changes in technology production. LDCs should therefore, benefit from the vast fund of technical knowledge of the advanced countries. However, scientific and industrial technology to be useful in an LDC needs careful processing and adaptation in accordance with its social, economic and technical absorption capacities and requirements. Above all imported technology require strong bacingfo R and D studies of problems arising in assimilation, adaptation an improvement in keeping with the factor endowments of the country. One of the principal causes in modern economic growth has been the spending of high percentages of their national income on R and D by the advanced countries.

5. Division of Labour and Scale of Production
Specialization and division of labour lead to increase in productivity. They lead to economics of large scale production which further help in industrial development. They increased the rate of economic development. Adam Smith gave much importance to the division of labour in economic development. Division of labour leads to improvement in the productive capacities of labour. Every labourers becomes more efficient than before. He saves time. He is capable of inventing new machines and processes in production. Ultimately, production increases manifold. But division of labour depends upon the size of the market. The size of the market, in turn, depends upon economic progress, that is, the extent to which the size of demand, the general level of production, the means of transport etc. are developed when the scale of production is large there is greater specialization and division of labour. As a result, production increases and the rate of economic progress is accelerated. Larger pecuniary external economics are available and benefits of indivisibilities are power, transport etc. and their uses lead to industrial progress. Production increases in this way and rapid economic growth takes place.

6. Structural Changes
Structured changes imply the transition from a traditional agricultural society to a modern industrial economy involving a radical transformation of existing institutions, social attitudes, and motivations. Such structural changes lead to increasing employment opportunities. Higher labor productivity and the stock of capital, exploitation of new resources and improvements in technology. An LDC is characterized by a large primary sector and a very small secondary sector along with an equally small tertiary sector. Structural changes may begin with the transfer of population from the primary to secondary and then to tertiary employment. In an over populated agriculture changes involve the expansion of the non-agricultural sector so that the proportion of population in the agricultural sector is progressively reduced. It implies reduction in the size of contribution to net national output by the agricultural sector. But a decline in the share of the agricultural sector in the net national product does not mean a fall in the output of agriculture. Rather agricultural output must increase in absolute terms. In order to increase agricultural output, radical changes will have to be made in the form of land reforms, improved agricultural and inputs, better marketing organization, new credit institutions etc.

1. Social Factors
Social attitudes, values and institutions also influence economic growth. The term "attitude" means the totality of beliefs and values that cause human behavior to be what it is. The term "values" refers to motivation of human behavior towards particular ends. Modern economic growth has been influenced by social and psychological factors. Western culture and education led to reasoning and skepticism. It inculcated the spirit of adventure which led to new discoveries

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and inventions and consequently to the rise of the new mercantile classes. These forces brought about changes in social attitudes, expectations, and values. People cultivated the habits of saving and investment, and undertook risks to earn profits. They developed what Lewis calls "The will to economise" to maximize output for a given input. As a result, the European countries experienced the industrial Revolution in the 18th and 19th centuries. Economic and religious freedom brought about further changes in social attitudes and values. Single family unit took the place of joint family system which further helped in modern economic growth.

2. Human factor

Human resources have been an important factor in modern economic growth. Economic growth does not depend on the mere size of human resources but on efficiency. According to Kuznets, the population of Europe increased by 433 percent between 1750-1950 while the population of the remaining world increased by 200 percent over the period. Whereas population increased five foldin European and now developed countries there was ten fold increase in their GNP per capita.

Such a phenomenal increase in their GNP per capita is attributed to the development of the human factor which is reflected in the increased efficiency or productivity of their labourforc. This is called human capital formation this is the process of increasing knowledge, the skills, and the capacities of all people of the country. It includes expenditure on heath, education and generally on social services. Denison's estimate reveal that the expenditure incurred on education in the United States between 1929-57 contributed 23 percent to its gross national output. According to Solomon Fabricant, the increase in the total national product of the United States through increase in physical capital between 1889 – 1957equalled the increase through higher labour productivity.

3. Political and Administrative Factors

Political and administrative factors also helped in modern economic growth. The economic of Britain, Germany, the United States, Japan and France has been due to their political stability and strong administration since the 19th Century. With the exception of the United States, they were directly involved in the two world wars and were devastated. Still they have continued to progress on the strength of their political and administrative traditions. On the other hand, Italy has not been able to grow up to their level due to political instability and corrupt and weak administration. Peace, protection and stability have encouraged the development of entrepreneurship in developed countries, along with the adoption of appropriate, fiscal and monetary policies by the government from time to time.

SECTION FOUR
The new growth theories and the less developed countries

The shortcoming noticed in the earlier theories that were propounded by the Classical, Neo-classical, Keynesians etc necessitated the evolution of new growth models to meet the ever changing world economy which is fast being taking over by capitalism, economic integration and emphasis on international trade. Gatak S. R. 2003. Postulated these short earnings to be:
  i.   The inability to reconcile the huge observed differences in the per capita income with the more modest productions of the Solow's model.
  ii.   Assumed differences in the parameters without explaining these differences
  iii.   The assumption that long term per capital growth may well be driven by technical progress alone etc.

These and some other questions gave rise to other assumption which includes:
  i.   Human capital and growth
  ii.   Technical progress and growth
  iii.   Total factor productivity and growth

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iv.   Economic integration and growth
v.   Trade labialization with no flow of idea
vi.   Economic liberalization with flow of idea

HUMAN CAPITAL AND GROWTH

Human capital has been discovered to be a major contributor to economic growth on the long run. Robert Lucas, 1988. In his model where the "engine" of growth was human capital, postulated that as human capital accumulation raises the productivity of both labour and human capital also rises. The main or basis idea of the model is that people divide their time between work and training. So, there is a trade-off. Since taking on training people give up part of their work income, but raise their future productivity and therefore their future wages.

This model has two types of capital; physical and human capital, the fundamental equations of the model, states that, in steady state the marginal product of the two types of capital must be the same. This prediction of the model seems to make sense in the real world.

The basic assumptions of the model are:
-   The consumer welfare is given by an integral constant – elasticity of substitution
-   Utility function
-   The effectiveness of training, that is the rate at which productivity is risen by one additional unit of training is exogenous

The main result of the model can be summarized as follows:
-   The higher the productivity of training, the higher will be the increase in the marginal product of labor that follows training and hence the higher the future wage rate. This means that the incentives to training are greater and so will be the growth rate of the economy.
-   The lower the rate of impatience that is the less consumer privilege present relative to future consumption, the more will works be willing to forsake present consumption to dedicate their selves to training. Therefore the higher will be the rate of economic growth. Gatak, 2002 postulated that the rich countries not only have access to large stock of physical capital, but investing time and money in education. This according to her allows these countries to produce large stock of human capital (labour that are skilled in production). But in less developed countries (LDCs) they have mainly unskilled labour, which means that the Developed Countries (DCs) has much of skilled labour.

In trying to determine the growth rate with relation to human capital, she considered just two inputs of production physical capital and human capital (unskilled labor have been removed).

$$Y = K^{\alpha} H^{1-\alpha} \qquad (1)$$
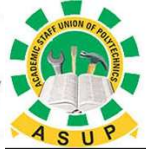
Where
Y = Output
K = Physical capital
H = Human capital

Output can be used in 2 days, it can be consumed and the other part can be saved or used to improve human capital

$$K(1+1) = - k(t) \qquad (2)$$
$$H(1+1) – H(t) – qy(t) \qquad (3)$$

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Starting from date or time o, the economy is found to be growing at a constant rate and this is determined by the savings rate and the propensity to invest in human capital which is measured by P and Q. Taking the ratio between human and physical capital to be on the long run dividing both sides of equation 2 by kt

$$\frac{K(1+1)\text{-}k(t) - St^{1-\alpha}}{K(t)} \qquad (4)$$

This gives the growth rate of physical capital and also dividing both sides of equation (1) by h(t) gives

$$\frac{H(t+1) - h(t) = q^{1-\alpha}}{H(t)} \qquad (5)$$

This also gives the growth of human capital and these growth rate will be the same of the long run and this means that

$$Sr^{1-\alpha} = q^{t-\alpha}$$
$$R = q/s$$

This means that the larger the ratio of saving in human capital relative to that of capital, the larger is the long run ratio of the former to the later

$$\frac{K(t+1) - km = S^{t-\alpha} = S^{\alpha} = Q^{1-\alpha}}{K(t)}$$

The long run growth rate of all the variables is given by the expression $S\&q^{1-k}$

TECHNICAL PROGRESS
In most growth model, long run growth is driven by technical progress and this is the rate at which the productivity of factors of production increase, in the Harrod-Domar model or in the exogenous growth e.g. savings, human capital accumulation etc.

If we agree that there exist some fixed factors of production such as unskilled labour or land and also that production is constant return to scale in all factors, sustained growth become difficult to explain without the continued increased in knowledge.

The presence of a fixed factor say population that is a source of unskilled labour, diminishing returns sets in if the per capital magnitude of the accumulated factors becomes too high relative to the fixed factor. This is because it is assumed that production exhibits constant returns to all inputs that can be deliberately accumulated per capital without this assumption growth will ultimately die out

The above not withstanding technical progress does not occur in a vacuum, but however this is in most cases a deliberate attempt on the part of the firm or manufacturing outfit in improving its operation. In the year past, this according to Gatak S. R. 2002 "The result of a spontaneous insight or the lonely work of individuals" but in recent years, this has become a deliberate measure through their research and development (R/D) to improve their production or distribution techniques. Production firms also employ scientists whose main pre-occupation is to create new production method. Technical progress can also occur on the job by learning to do more advanced jobs.

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TOTAL FACTOR PRODUCTIVITY

This is the difference between actual growth rate of output and the growth rates of factors weighted by their contributions to output. In the application of this to the increaseof productivity we must make sure that input growth is properly accounted for .g. the growth of population rate and educational composition of the wrong population might be systematically changing over time.

ECONOMIC INTEGRATION AND ENDOGENOUS ECONOMIC GROWTH

Many economists believe that increased economic integration among developed economics has had a positive input on long run growth. Some empirical evidence according to which the creation and transmission of ideas has been important in establishing the modern standards of living. In doing this broad definitions of integration are used. One that includes the exchange of goods as well as of in ideas. Assuming that full economic integration implies a merge of two economics, we see that human capital will double and so growth would be permanently higher as the growth rate of the "production" of designs would also double. However in trying to analyze the dynamic behavior of the economy when there is economic integration we will do that sequentially, by first considering the impact of goods and trade liberalization and only then will we evaluate the impact of trade. Liberalization of goods and ideas. Growth as a result of free flow of Goods with on flow of idea two economics

There is only one (aggregate) consumption good that is assumed similar for the two economics, which means that trade will only occur in the intermediate, capital sector. In the consumption good sector when trade is opened, the machine produces in order to avoid redundancy and so competition. Specialize and the number of machines available for the production of the consumption good doubles. This also has the effect of doubling the marginal product (mp) and above the wage rate.

In the research sector, opening of trade implies that the market of new design is twice as large as before. This doubles the price of patients and doubles MP (marginal product) of human capital in research. But, since the foreign stock of knowledge is not available for use in research because only goods can be traded, the productivity of human capital remains the same. The wage of human capital doubles in both sectors and so the allocation of wage rate in the two sectors. Does not change, consequently, the growth rate of the stock of knowledge and so of the economy's output, does not change in but however there is a growth effect that results from the fact that at any moment the number of machines in use is twice as much as in autocracy.

FLOW OF INFORMATION ON THE TOP TRADE LIBERALIZATION

Trade liberalization entails specialization in the types of machine produced so that after a while the stock of knowledge of the two economic all completely distinct, and so the area wide stock is what was for each economy in isolation. It flows of ideas is allowed betweenthe two economics then the research sectors of each coming have twice as by a stock of idea to use in crating new designs. So even if the share of human caital allocated to the research sector does not change, the growth rate of output would double permanently in balance growth. That an increase in output (4) has a way of affecting or increasing productivity of human capital in the reserve sector and no effects is relative productivity raises the wages of human capital in the output sector. This change in capital is the research sector relative to the output sector.

The consequence of a migration of human capital from the output sector to the research which reinforces the growth effect of the liberalization of the flow of idea. So the growth rate in ss more than doubles compared to a situation in which the flow of ideas is not permitted.

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The exchange of idea allows countries to share knowledge and ideas, which naturally amplifies their technological possibilities, but also provide more input to the creative process.

The exchange of goods stimulate the economy if only for the fact that it extends the scope of capital inputs that can be used in production of the final good and also for creating incentives to specialization and so for higher efficiency.

SECTION FIVE
Summary and Conclusion
Summary

In trying to look at growth theory and its application to LDCS, the write up was divided into five sections one is an introduction to the subject section, two looked at lit, review which was mainly works that has been done by other authors. In the area of growth theory. With special emphasis on the classical, Keynesian, her rod domar etc. section three looked at the factors of economic growth which includes the economic and social factors, section four looked at the application of growth theory to less developed countries while section five was the summary and conclusion.

Conclusion

The whole idea of growth as propounded by the various authors has become prominent in the last 50 years due to the problems of the Post World War II countries and that of less developed countries. It is all about looking at the growth part of developed countries and applying it to the economics of these countries as a way of helping them overcome the basic problems of:

i.   Price instability
ii.   Low economic growth
iii.   Unfavourable balance of payment
iv.   High unemployment etc.

But the application of these theories over the years and its impact on the economics of the LDCs has necessitated the evolvement of other theories which included

i.   Human capital growth
ii.   Total factor productivity etc that are seen to be of more help to these economics.

In conclusion therefore, the theories of economic growth has helped the world to appreciate and better understand the importance of patterned growth in developing and developed countries.

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