

# WORLD

# ECONOMICS:

# THEORETICAL

# BACKGROUND OF

# INTERNATIONAL

# ECONOMICS

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# LINEAR-STAGES-OF-GROWTH MODELS

- Development theory is a conglomeration of theories about how desirable change in society is best achieved.
- The Linear Stages of Growth model is an economic model which is heavily inspired by the Marshall Plan of the US which was used to rehabilitate Europe's economy after the Post-World War II Crisis.
- The linear stages of growth models are the oldest and most traditional of all development plans. It was an attempt by economists to come up with a suitable concept as to how underdeveloped countries of Asia, Africa and Latin America can transform their agrarian economy into an industrialized one.
- The most popular of the linear stage models are Rostow's Stages of Growth Model and the Harrod-Domar Growth Model.



# ROSTOW - FIVE STAGES OF ECONOMIC GROWTH MODEL

- 1. Traditional society.** This is an agricultural economy of mainly subsistence farming, little of which is traded. The size of the capital stock is limited and of low quality resulting in very low labour productivity and little surplus output left to sell in domestic and overseas markets
- 2. Pre-conditions for take-off.** Agriculture becomes more mechanised and more output is traded. Savings and investment grow although they are still a small percentage of national income (GDP). Some external funding is required - for example in the form of overseas aid or perhaps remittance incomes from migrant workers living overseas
- 3. Take-off.** Manufacturing industry assumes greater importance, although the number of industries remains small. Political and social institutions start to develop - external finance may still be required. Savings and investment grow, perhaps to 15% of GDP. Agriculture assumes lesser importance in relative terms although the majority of people may remain employed in the farming sector. There is often a dual economy apparent with rising productivity and wealth in manufacturing and other industries contrasted with stubbornly low productivity and real incomes in rural agriculture.
- 4. Drive to maturity.** Industry becomes more diverse. Growth should spread to different parts of the country as the state of technology improves - the economy moves from being dependent on factor inputs for growth towards making better use of innovation to bring about increases in real per capita incomes
- 5. Age of mass consumption.** Output levels grow, enabling increased consumer expenditure. There is a shift towards tertiary sector activity and the growth is sustained by the expansion of a middle class of consumers.



# HARROD-DOMAR MODEL

- This model was developed independently by Roy F. Harrod in 1939 and Evsey Domar in 1946.
- Model is an early post-Keynesian model of economic growth. It is used in development economics to explain an economy's growth rate in terms of the level of saving and productivity of capital.
- The Harrod-Domar Model is based on a linear function and can also be referred to as the AK model where A is a constant and K is capital stock. This model shows how sufficient investment through savings can accelerate growth. Investments generate income and supplements productivity of the economy by increasing the capital stock.
- The Harrod-Domar model is based on the following assumptions:
  - ✓ *Laissez-faire; where there is no government intervention*
  - ✓ *A closed economy; no participation in foreign trade*
  - ✓ *Capital goods do not depreciate as they possess a boundless timeline*
  - ✓ *Constant marginal propensity to save*
  - ✓ *Interest rate remains unchanged, etc.*



# HARROD-DOMAR MODEL

The Harrod-Domar model makes use of a **Capital-output Ratio (COR)**. If the COR is low a country can produce more with little capital but if it is high, more capital is required for production and value of output is less. This can be denoted in a simple formula of  $K/Y = \text{COR}$ ; where K is the Capital stock and Y is Output because there is a direct proportional relationship between both variables.

**Rate of growth of GDP = Savings Ratio / Capital Output Ratio**

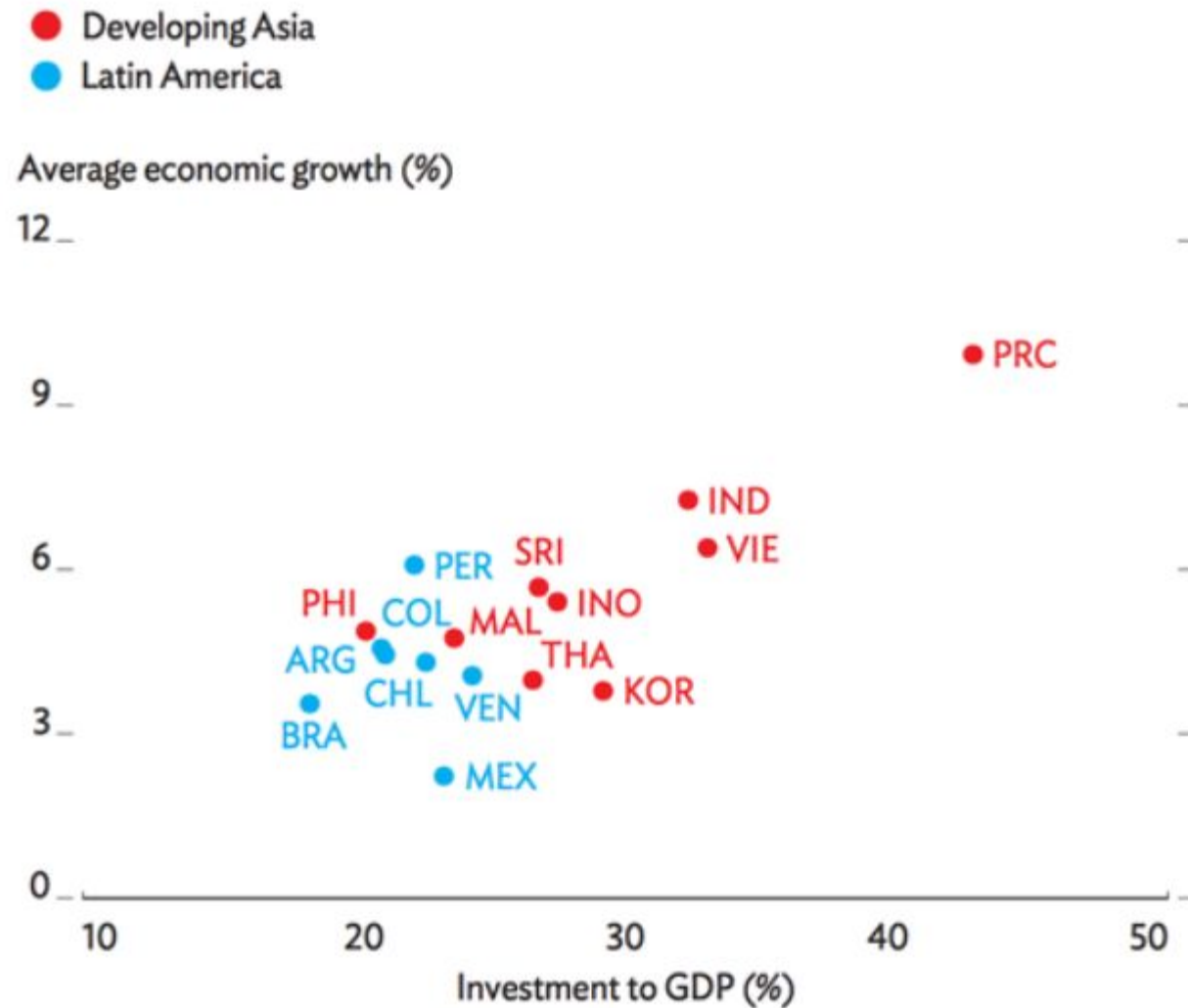
Numerical examples:

- If the savings rate is 10% and the capital output ratio is 2, then a country would grow at 5% per year.
- If the savings rate is 20% and the capital output ratio is 1.5, then a country would grow at 13.3% per year.
- If the savings rate is 8% and the capital output ratio is 4, then the country would grow at 2% per year.



Based on the model therefore the rate of growth in an economy can be increased in one of two ways:

- Increased level of savings in the economy (i.e. gross national savings as a % of GDP)
- Reducing the capital output ratio (i.e. increasing the quality / productivity of capital inputs)



ARG = Argentina, BRA = Brazil, CHL = Chile, COL = Colombia, IND = India, INO = Indonesia, KOR = Republic of Korea, MAL = Malaysia, MEX = Mexico, PER = Peru, PHI = Philippines, PRC = People's Republic of China, SRI = Sri Lanka, THA = Thailand, VEN = Venezuela, VIE = Viet Nam.

Source: International Monetary Fund 2014.



# SOME OF THE KEY LIMITATIONS / PROBLEMS OF THE HARROD-DOMAR GROWTH MODEL

- Increasing the savings ratio in lower-income countries is not easy. Many developing countries have low marginal propensities to save. Extra income gained is often spent on increased consumption rather than saved. Many countries suffer from a persistent domestic savings gap.
- Many developing countries lack a sound financial system. Increased saving by households does not necessarily mean there will be greater funds available for firms to borrow to invest.
- Efficiency gains that reduce the capital/output ratio are difficult to achieve in developing countries due to weaknesses in human capital, causing capital to be used inefficiently
- Research and development (R&D) needed to improve the capital/output ratio is often under-funded - this is a cause of market failure
- Borrowing from overseas to fill the savings gap causes external debt repayment problems later.
- The accumulation of capital will increase if the economy starts growing dynamically – a rise in capital spending is not necessarily a pre-condition for economic growth and development – as a country gets richer, incomes rise, so too does saving, and the higher income fuels rising demand which itself prompts a rise in capital investment spending.



# EVALUATION OF 5 STAGES OF ECONOMIC GROWTH MODEL

- There is overlap with the **Harrod-Domar** model i.e. stages 2 and 3 require increased saving and investment; Stage 4 requires improvements in technology, which reduces the capital-output ratio.
- Stages 2 and 3 call for increased savings and investment but many households may not have the funds to save; the banking channel between savers and firms may be inadequate; the productivity of individual investment projects may depend upon complementary investment in infrastructure.
- Some Sub Saharan African countries have received significant external finance but have been slow to generate growth - many have remained stuck in Stages 1 or 2.
- When the external finance has come in the shape of loans from developed countries, interest charges have been incurred which have acted as a drag on economic growth.
- **Simon Kuznets** threw doubts upon Rostow's theory. He argued that many countries which have now reached developed status did so without seeing a significant increase in their savings rate.
- The theory does not account for exceptions, e.g. falling output in the USSR under a communist regime; the corrupt and failing government in Zimbabwe has reversed development advances; increased globalisation means that a country's growth rate does not lie solely in its own hands and international competition and protectionism may prevent an economy from moving through the latter stages.





# LEWIS 2-SECTORS MODEL

- Arthur Lewis put forward a development model of a **DUALISTIC** economy, consisting of rural agricultural and urban manufacturing sectors
- Initially, the majority of labour is employed upon the land, which is a fixed resource. Labour is a variable resource and, as more labour is put to work on the land, diminishing marginal returns eventually set in: there may be insufficient tasks for the marginal worker to undertake, resulting in reduced marginal product (output produced by an additional worker) and underemployment.
- Urban workers, engaged in manufacturing, tend to produce a higher value of output than their agricultural counterparts. The resultant higher urban wages (Lewis stated that a 30% premium was required) might therefore tempt surplus agricultural workers to migrate to cities and engage in manufacturing activity. High urban profits would encourage firms to expand and hence result in further rural-urban migration.



# THE LEWIS MODEL IS A MODEL OF STRUCTURAL CHANGE SINCE IT OUTLINES THE DEVELOPMENT FROM A TRADITIONAL ECONOMY TO AN

**INDUSTRIALIZED ONE**

China provides a good example. Official Chinese statistics place the number of internal migrants over the past 10 years at over 10% of the 1.3bn population. 45% were aged 16-25 and two-thirds were male. Urban incomes are around 3.5 times those of rural workers.

- A Marxist criticism states that profits will be retained by the capitalist entrepreneur, at the expense of workers. In addition, urban expansion might be driven by increases in capital rather than labour.
- Evidence suggests that surplus labour is as likely in the urban sector as in the agricultural sector. Migrating workers may possess insufficient information about job vacancies, pay and working conditions. This results in high unemployment levels in towns and cities.
- Towns and cities may also be fixed in size and unable to accommodate large numbers of immigrants. This gives rise to slums and shanty towns, which are often illegal, built on flood planes or areas vulnerable to landslides and without sanitation or clean water. Cape Town provides a good example. Globally 1bn people live in slums.



# PATTERNS OF DEMAND THEORY

- Chenery's model defines economic development as a set of interrelated changes in the structure of an underdeveloped economy that are required for its transformation from an agricultural economy into an industrial economy for continued growth in addition to accumulation of capital both human and physical.
- Chenery's model requires an altering of the existing structures within an underdeveloped economy to pave way for the penetration of new industries and modern structures to attain the status of an industrial nation. It is quite similar to Lewis' model but in its opinion investment and savings although necessary are not enough to drive the degree of growth that is required. Chenery's model adopts four main strategies to achieve economic growth:
  - Transformation of production from agricultural to industrial production
  - Changing composition of the consumer demand from emphasis on food commodities and other consumables to desire for multiple manufactured goods and services
  - International trade; creating a market for its exports
  - Using resources as well as changes in socio-economic factors as the distribution of the country's population.



# LIMITATIONS

- One of the criticisms against the Chenery's structural change model is that it shortchanges critical valuables judgement.
- Again, in his analysis of Chenery's theory, Krueger identified areas of market failure emanating from exploitation of static comparative advantage inferior for less developed countries to a more protective or interventionist approach which merely focuses on producing dynamic comparative advantages. This observation bears some relevance to the protection mechanism established under the 'Common Exchange Tariff (CET)' mechanism for ECOWAS member countries. Here, there is clause in the CET that allows Nigeria to use tariffs to protect some local industries
- In spite of these limitations, Chenery's model is useful for economic growth where different countries with varying economic systems are able to support each other in terms of economic relations. On this note, this model suits the economic development efforts of developing countries against the backdrop of globalization



# NEO-COLONIAL DEPENDENCE MODEL

- The neocolonial dependence model is basically a **Marxist approach**.
  - Underdevelopment is due to the historical evolution of a highly unequal international capitalist system of rich country-poor country relationships.
  - Developed nations are intentionally exploitative or unintentionally neglectful towards developing countries. Underdevelopment is thus externally induced.
  - Developing countries are destined to be the sweatshops of the rich nations (through their multinationals for example) and depend on developed nations for manufacturing goods that are high-value-added.

Many developing countries were forced to become exporters of primary commodities by their colonial masters. Many of these countries still depend on primary commodities after independence. However, with average prices of primary commodities falling substantially (by half in many cases) since 1950s, dependence on primary commodities export is impoverishing to these countries. The economies of Zambia and Nigeria had been negatively affected by falling prices for their commodities exports. However, countries like Thailand and Malaysia who used to depend heavily on tin, rubber and palm oil are able to diversify into manufacturing exports. These countries went on to develop strong manufacturing sector.



# FALSE PARADIGM MODEL

- underdevelopment is due to faulty and inappropriate advice provided by well-meaning but often uninformed, biased, and ethnocentric international (often western) expert advisers to developing countries.
- IMF and World Banks took a lot of blame from the advocators of this model. Joseph Stiglitz in *Making Globalization Works* and Jeffrey Sachs in *The End of Poverty* documented some cases where inappropriate advices were given by expert advisers from developed countries to developing nations.
- If the advice of these international advisers were helpful they usually benefit the urban elites. Some economists argue that loans provided to developing countries in the 1960s and 1970s contribute to debt crisis in some developing countries in the 1980s.

***An Case of Misdirection.*** *Eucalyptus is a fast growing tree in favorable conditions and its wood has good commercial value. Encouraged by international advisers, this tree was introduced to many parts of India indiscriminately in the 1970s. In Bangalore, a dry zone, yields were only 20% of the projected figure by the government. In Western Ghats, eucalyptus plantations were taken up on a large scale by clear-felling of excellent rainforest. Unfortunately, these eucalyptus trees were attack by fungus called pink disease and rendered the plantation useless. The losers in this case were the local Indian farmers and environmental quality of India.*



# THE DUALISTIC DEVELOPMENT THEORIES

- This thesis recognizes the existence and persistence of increasing divergences between rich and poor nations, and between rich and poor people at various levels. The urban elites in developing countries will remain rich and become richer. The wealth of these elite will not trickle down to the rest of the society. According to the World Bank, the average for the richest twenty countries in the world was 15 times the average for the poorest twenty countries in 1960, and in 2000 it is 30 times — twice as high.
- However, case studies of Taiwan, South Korea, China, Costa Rica, Sri Lanka, and Hong Kong demonstrated that higher income levels can be accompanied by falling and not rising inequality. The inverted Kuznet Curve shows that as income per capita continues to increase inequality of income can be reduced.
- Basically, dependency theories highlight the need for major new policies to eradicate poverty, to provide more diversified employment opportunities, and to reduce income inequalities. The Marxist approach to growth would recommend nationalization of industries that are controlled by foreign companies (especially those from the western colonists and multinationals ) and implement state-run production to reduce foreign controls on local economy.



# DEPENDENCY THEORIES

- Dependency theories offer little explanation for economic growth and sustainable development. They tell us little on how to obtain economic growth.
- The actual economic experience of developing countries that pursued nationalization and introduced state-run production had been mostly negative. Nationalized companies were usually badly managed. Consequently, the operations were inefficient and productivity fell. Falling output led to falling export earnings. This was bad news for growth.





# NEOCLASSICAL GROWTH MODEL

- Neoclassical Growth Model owed its origin to Robert Solow (in 1956) and Trevor Swan (in 1956). The neoclassical growth model says that growth due to increased capital stock as in Harrod-Domar Model can only be temporary because capital is subjected to diminishing marginal returns. The economy can achieve a higher long-run growth path only with a growth in labor supply, labor productivity or capital productivity. Variation in growth rate is explained by difference in the rate of technological change which affects labor and capital productivity. Advances in technology however is independent of the rate of investment, that is technology is exogenous to the model.
- In the 1980s, Reaganomics and Thatcherism were the buzzwords. These policies recommended small government with little government intervention in the market, reduced distortions in the market, promoted free markets, encouraged competition and regarded multinationals in favorable lights.
- Underdevelopment is seen as the product of poor resource allocation, incorrect pricing policies and too much state interventions that cause market distortion.
- The answer is promotion of free markets and laissez-faire economics through privatization and deregulation.
- Governments should also have market-friendly approaches to address externality problems. Governments should invest in physical and social infrastructure, health care facilities, education and provide suitable climate for private enterprises. Governments should also be friendly towards multinationals and attract Foreign Direct Investment (FDI) as this policy brings injection into the economy.



# NEOCLASSICAL GROWTH MODEL

## Criticisms:

- Economic growth does not mean development. Policies that promote economic growth may benefit the rich in the expense of the poor and the environmental qualities (more environmental degradation). A smaller government could also mean less social facilities for the poor.
- South Korea, Singapore, Japan, and China do not have genuine free market economies but are economic success stories. In fact, governments in these countries play active roles in directing their respective economies.
- Solow-Swan Model suggests that low capital to labor ratio in developing countries means that the rate of return on investment is high but this is not supported by historical data.
- The residual in Solow-Swan Model which is attributed to technology only explains 50% of historical growth in developed nations. There is much room for improvement in this model.



# ENDOGENOUS GROWTH MODEL

- This model is called Endogenous growth model because it makes technology a part of the model and not as a residual. This model tries to explain the rate of technological change.
- Persistent economic growth is determined by the system governing the production process as technology is now part of the model. Economic growth is a natural consequence of long run equilibrium.
- The model allows potentially increasing return to scale from higher level of capital investment, especially investment that has positive externalities. Capital is expanded to encompass human capital .
- Human productivity could increase due to higher skill attainment and learning-by-doing. The latter suggests that experience allows a worker to have higher productivity.
- Human capital can be encouraged through education and skill-training programmes.
- The rate of technological change can increase due to higher investment in R&D. R&D may also confer positive externality to knowledge-intensive industries.
- Protection of intellectual property rights is important because this legal monopoly gives incentive to carry out R&D.
- The model implies an active role for government to promote human capital formation (through education, better access to health care, and better nutrition) and encourage knowledge-intensive industries. To achieve the latter, some government even took the trouble to pick future industrial winners. Japan in the past promoted chemical and heavy-industry. More recently it promoted biochemical industry. Malaysia, for example, established a whole new town called Cyberjaya to attract knowledge-intensive industries and R&D into the country.



- **Criticisms:**

- Developing countries cannot take full advantage from the recommendation of this model that is based on neoclassical principles of efficient free market because of poor infrastructure, inadequate institutional structures, and imperfect capital and good markets. Many developing countries, for instance, do not have adequate protection for intelligent property rights and insurance markets that encourage entrepreneurship.
- The model fails to explain why low-income countries where capital is scarce have low rates of factory capacity utilization.

