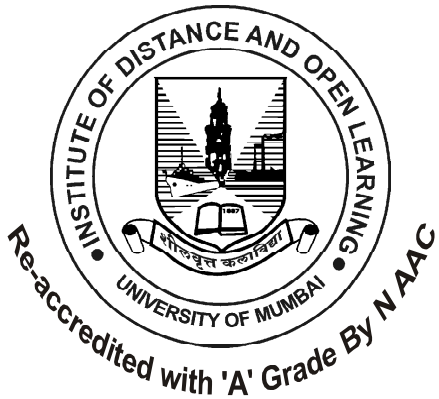

M. A. PART - II
ECONOMICS GROUP - I
PAPER - III
DEVELOPMENT ECONOMICS

(UNDER UGC - DEB DEVELOPMENT GRANT FOR YEAR 2013-2014)

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CONTENTS

Unit No.	Title	Page No.
	Module 1	
1	Theories of Economics Growth and Development	1
2.	Classical Theories of Growth and Development	19
3.	Partial Theories of Development	42
	Module 2	
4.	Theories of Economics Growth and Development - II	56
5.	The AK Model and The Feldman - Mahalnobis - Domar Models	73
6.	Growth Accounting	90
	Module 3	
7.	Political Economy of Development	97
	Module 4	
8.	Microeconomics of Development	117
9.	Migration	131
10.	Environment, Property Rights and Development	146
	Module 5	
11.	Microeconomics of Development	160
12.	Foreign Trade, Finance and Economic Development	176
13.	Financial aspects of Trade and Development	188
	Module 6	
14.	Development Strategy, Development Planning and Development Policy - I	201
15.	Development Strategy, Development Planning and Development Policy - II	219
16.	Structuralist Approaches to adjustment	246

M. A. PART - II
ECONOMICS GROUP - I, PAPER - III
DEVELOPMENT ECONOMICS

Module 1 : Theories of Economic Growth and Development - I

Alternative measures of development - Basic development processes - Typology of development patterns - Some features and stylized facts of growth and development. Classical theories of growth and development : Adam Smith - David Ricardo - Karl Marx - Joseph Schumpeter - W. W. Rostow, Partial theories - Model of surplus labour - The big push - Barlanced versus unbalanced growth - Critical minimum effort - Low level equilibrium trap.

Module 2 : Theories of Economic Growth and Development - II

The Harrod - Domar model - The Solow - Swan model - The golden rule of accumulation - Absolute and conditional convergence - Technological progress - Models of endogenous growth : The AK model - Growth models with poverty traps - The Feldman - Mahalnobis - Domar (FMD) class of models - Two sector models of endogenous growth : The role of human capital. Growth accounting - Total factor productivity - Cross section analysis of growth rates - Some empirical regulations about growth.

Module 3 : Political Economy of Development

Approaches to political economy : Radical, mainstream and institutional - Unequal exchange - Imperialism, development and underdevelopment - 'Dependencia' theories of development - Centre - periphery models. The political economy of structural adjustment - Political instability and economic policy - Political responses to external shocks : Capital flows and aid - Reciprocal conditionality and growth - Redistribution and political economy - Political stabilization cycles. The role of institutions - Institutional economics and the State in development - Political lessons of economic reforms.

Module 4 : Microeconomics of Development :

The need for microeconomics modeling - Risk and insurance in an agricultural economy - Fragmentation and informal credit markets - Segmented labour markets - Rural land markets and inter - linked markets - Under - nutrition and labour markets - Efficiency wage hypothesis - Migration - Theory of demographic transition - Economic of fertility - Microeconomics of child labour - Poverty alleviation : Efficiency, equity and entitlement issues - Environment, property rights and development - Unitary versus bargaining

models of the household - Gender and development - Gender and fertility models - Women's work participation rates and the development process - An assessment of development microeconomics.

Module 5 : Macroeconomics of Development

Agriculture - industry interrelationships in the development process - Dual economy models - Financing development from domestic and foreign resources - Financial repression and capital controls - Effects of interest rate liberalization - Capital mobility and monetary autonomy - Credibility and exchange rate management - Speculative attacks and BOP crises - Contractionary devaluation and real - exchange - rate targeting - Trade reforms and development - Structuralist - monetarist models of the inflationary process - Disinflation and nominal anchors - Debt, investment and growth.

Module 6 : Development Strategy, Development Planning and Development Policy

Evaluation of alternative development strategies and policies - Resource allocation and shadow prices - Development planning models - Dual gap analysis - Growth programming : Revised minimum standard model (RMSM) - The merged Bank - Fund model - Adjustment with a human face - Redistribution with growth - Sustainable development - The quality of growth - Human development - Structuralist approaches to adjustment : The three gap framework - Intersectoral complementarities and coordination failures - Linkages and policy - Liberalization with stabilization - Sequencing and speed of reforms - Structural adjustment programmes - Global integration and external sector equilibrium.

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1

MODULE 1

THEORIES OF ECONOMIC GROWTH AND DEVELOPMENT

Unit Structure :

1.0 Objectives
1.1 Economic Development
1.2 Alternative Measures of Economic Development
1.3 Concept of Human Development
1.4 Some Features and Stylized Facts of Growth and Development
1.5 Summary
1.6 Questions

1.0 OBJECTIVES

- To study the Concept of Economic Development
- To study the Alternative measures of development
- To understand the Concept of human development
- To study some features and stylized facts of growth and development

1.1 ECONOMIC DEVELOPMENT

Economic development until the 1960s was considered the same as economic growth. It is now understood as economic growth plus some progressive changes which determine the welfare of the people. Mahbub ul Haq, a leading Pakistani economist observed that “the problem of development must be defined as a selective attack on the worst forms of poverty. Development goals must be defined in terms of progressive reduction and eventual elimination of malnutrition, disease, illiteracy, squalor, unemployment and inequalities. We were taught to take care of our GNP because it would take care of poverty. Let us reverse this and take care of poverty because it will take care of

the GNP. In other words, let us worry about the content of GNP even more than its rates of increase." There are two approaches to the concept of Economic Development and these two approaches are the traditional and the modern approach.

The Traditional Approach : The traditional approach defines economic development in economic terms. It means a sustained annual increase in GNP at rates varying from 5 to 7 percent along with changes in the economic structure so that the share of agriculture declines in both production and employment and the share of the secondary and tertiary sectors increases. The policy measure to achieve such GNP growth is industrialization. Objectives of poverty elimination, reduction in economic inequalities and employment generation are subsumed in the process of industrialization. The traditional approach is also known as the Trickle Down approach to Economic Development.

The Modern Approach : The Trickle Down approach failed to solve the problems of mass poverty is most of the developing countries. During the 1970s, economic development was redefined to include objectives such as reduction and elimination of poverty, inequality and unemployment. 'Redistribution with Growth' became the new approach to economic development. Following the new approach, Charles P Kindleberger and Bruce Herrick observed that:

"Economic development is generally defined to include improvements in material welfare, especially for persons with the lowest incomes, the eradication of mass poverty with its correlates of illiteracy, disease and early death, changes in the composition of inputs and outputs that generally include shifts in the underlying structure of production away from agricultural towards industrial activities, the organization of the economy in such a way that productive employment is general among the working age population rather that the situation of a privileged minority and the correspondingly greater participation of broadly based groups in making decisions about the directions, econ9mica and otherwise, in which they should move to improve their welfare."

1.2 ALTERNATIVE MEASURES OF ECONOMIC DEVELOPMENT

The following are the measures of economic development:

1. **Gross National Product.** Economic development can be measured in terms of increase in the economy's real national income over a long period of time. Real GNP fails to take into consideration changes in the growth of population. If a rise in real national income is accompanied by a faster

growth in population, there will be no economic growth but retardation. **The GNP figure also does not reveal the costs to society of environmental pollution, urbanization, and industrialization and population growth. It does not say anything about the distribution of income in the economy.**

2. **GNP Per Capita.** The second measure relates to an increase in the per capital real income of the economy over the long period. According to this measure, the rate of increase in real income should be higher than the growth rate of population. Even this measure has a number of limitations. For instance, it is possible that while per capita real income is increasing, per capita consumption might be falling. People might be increasing the rate of saving or the government might be using up the increased income for military or other purposes. Further, if the increase in real national income goes to the rich instead of the poor, it cannot be considered as economic development.

3. **Welfare.** The welfare measure looks at economic development as a process whereby there is an increase in the consumption of goods and services of individuals. **According to Okun and Richardson, "economic development is a sustained secular improvement in material well being which we may consider to be reflected in an increasing flow of goods and services."** This indicator is also not free from limitations. The first limitation arises with regard to the weights to be attached to the consumption of individuals. Consumption of goods and services depends on the tastes and preferences of individuals. It is therefore not correct to have the same weights in preparing the welfare index of individuals. Further the increase in total output may be due to the increase in production of capital goods which will be at the cost of reduced output of consumer goods. How the output is produced is yet another relevant question. The expansion of output might have raised the real costs i.e. pain and sacrifice and social costs in the economy. Finally, increase in output per head cannot be considered as increase in economic welfare because we need to make value judgments regarding income distribution, composition of output, tastes, real cost and other changes that are related to the increase in real income.

4. **Social Indicators.** Social indicators include health, food and nutrition, education including literacy and skills, employment, conditions of work, consumption of basic necessities, transportation, housing including household

facilities, clothing, recreation and entertainment, social security etc. All these indicators emphasize on the quality of the development process. However, there are problems in construction a common index of development relating to these social indicators. There is no agreement among economists as to the number and type of items to be included in such an index. Hence, economists and UN organizations use GNP per capita as a measure of economic development. However, since 1997 a number of new measures of economic development have come into use. Measures such as HDI, HPI, GDI and GEM are in use in today's times.

1.3 CONCEPT OF HUMAN DEVELOPMENT

The UNDP Human Development Report 1997 describes human development as "the process of widening people's choices and the level of well-being they achieve are at the core of the notion of human development. Such theories are neither finite nor static. But regardless of the level of development, the three essential choices for people are to lead a long and healthy life, to acquire knowledge and to have access to the resources needed for a decent standard of living. Human development does not end there, however. Other choices highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive and enjoying self respect and guaranteed human rights". The HDR 1997 further stated that, "Income clearly is only one option that people would like to have though an important one. But it is not the sum total of their lives. Income is only a means with human development the end".

What we understand from the description of human development found in HDR 1997 is that human development is a continuous process. The process becomes developmental only if it increases choices and improves human well-being. Amongst other choices, the three most important choices are that of long and healthy life which is determined by life expectancy at birth, to acquire knowledge which is determined by education and a decent standard of living which is determined by GDP per capita. These three choices are also the components of human development index. While these three choices are basic to human development, the choices go beyond these three to include the ever expanding social, political and economic freedoms that make human life worth living. Thus guaranteed human rights become an important aspect of human development.

According to Paul Streeton, human development is necessary due to the following reasons:

1. Economic growth is only a means to the end of achieving human development.
2. Investments in education, health and training will increase longevity and productivity of the labor force and thereby improve human development.
3. Female education and development widens choices for women's development. Reduced infant mortality rate reduces fertility rate and also reduces the size of the family. It further improves female health and helps to reduce the rate of growth of population.
4. Encroachment upon the natural environment is the result of growing size of impoverished populations. Problems of desertification, deforestation, and soil erosion, erosion of natural beauty, unpleasant habitats and surroundings will reduce with human development.
5. Poverty reduction will encourage people to satisfy higher order needs like esteem needs and the need for self-actualization. Thus human development can contribute to a better civil society, a credible democracy and social stability and political stability.

(A) The Human Development Index (New method for 2011 data onwards)

In its 2010 Human Development Report the UNDP began using a new method of calculating the HDI. The following three indices are used:

1. Life Expectancy Index (LEI) $= \frac{LE - 20}{83.4 - 20}$

2. Education Index (EI) $= \frac{\sqrt{MYSI \,.EYSI}}{0.951}$

   2.1 Mean Years of Schooling Index (MYSI) $= \frac{MYS}{13.2}$

   2.2 Expected Years of Schooling Index (EYSI) $= \frac{EYS}{13.2}$

3. Income Index (II) $= \frac{In(GNIpc) - In(100)}{In(107,721) - In(100)}$

Finally, the HDI is the geometric mean of the previous three normalized indices:

$HDI = \sqrt[3]{LEI.EI.II}$

LE: Life expectancy at birth

MYS: Mean years of schooling (Years that a 25-year-old person or older has spent in schools)

EYS: Expected years of schooling (Years that a 5-year-old child will spend with his education in his whole life)

GNIpc: Gross national income at purchasing power parity per capita.

Calculating the Human Development Index

The Human Development Index (HDI) is a summary measure of human development. It measures the average achievements in a country in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The HDI is the geometric mean of normalized indices measuring achievements in each dimension. For a full elaboration of the method and its rationale, see Krugman, Rodriguez and Choi (2011). This technical note describes the steps to create the HDI and the methodology used to express income.

There are two steps to calculating the HDI.

Step 1. Creating the dimension indices

Minimum and maximum values (goalposts) are set in order to transform the indicators into indices between 0 and 1. The maximums are the highest observed values in the time series (1980–2011). The minimum values can be appropriately conceived of as subsistence values. The minimum values are set at 20 years for life expectancy, at 0 years for both education variables and at $100 for per capita gross national income (GNI). The low value for

income can be justified by the considerable amount of unmeasured subsistence and nonmarket production in economies close to the minimum, not captured in the official data.

Goalposts for the Human Development Index

Dimension	Observed Maximum	Minimum
Life Expectancy	**83.4** **(Japan 2011)**	**20.0**
Mean Years of Schooling	**13.1** **(Czech Republic 2005)**	**0**
Expected Years of Schooling	**18.0** **(capped at)**	**0**
Combined Education Index	**0.978** **(New Zealand 2010)**	**0**
Per Capita Income (PPP$)	**107,721** **(Qatar 2011)**	**100**

Having defined the minimum and maximum values, the sub-indices are calculated as follows:

$$\text{Dimension Index} = \frac{\text{actual value - minimum value}}{\text{maximum value - minimum value}} \quad \textbf{(1)}$$

For education, equation 1 is applied to each of the two subcomponents, then a geometric mean of the resulting indices is created and finally, equation 1 is reapplied to the geometric mean of the indices using 0 as the minimum and the highest geometric mean of the resulting indices for the time period under consideration as the maximum. This is equivalent to applying equation 1 directly to the geometric mean of the two subcomponents. For income the natural logarithm of the actual minimum and maximum values is used.

Step 2. Aggregating the sub-indices to produce the Human Development Index

The HDI is the geometric mean of the three dimension indices:

(*I*Life 1/3 . *I*Education 1/3 . *I*Income 1/3). (2)

Example: Viet Nam	
Life expectancy at birth (years)	75.2
Mean years of schooling (years)	5.5
Expected years of schooling (years)	10.4
GNI per capita (PPP $)	2,805
Note: Values are rounded.	

Life expectancy index $= \frac{2-20}{83.4-20} = 0.870$

Mean years of schooling index $= \frac{5.5-0}{13.1-0} = 0.478$

Expected years of schooling index $= \frac{10.4-0}{18-0} = 0.576$

Education index $= \frac{0.478\,0.576-0}{0.978-0} = 0.503$

Income index $= \frac{In(2805)-In(100)}{In(107,721)-In(100)} = 0.478$

Human Development Index $= \sqrt[3]{0.870.0.503.0.478} = 0.593$

The HDR 2011 has grouped countries in four categories:

1. Very high human development.
2. High human development.
3. Medium human development.
4. Low human development

The HDI for some selected countries along with their components is given in Table 1.1 below:

Table 1.1: HDI (2011) for Selected Countries

HDI Rank	Country	HDI Value	LEB (Years)	MYS (Years)	EYS (Years)	GNIpc (Constant 2005 PPP$)
Very High Human Development						
1	Norway	0.943	81.1	12.6	17.3	47557
4	United States	0.910	78.5	12.4	16.0	43017
9	Germany	0.905	80.4	12.2	15.9	34854
12	Japan	0.901	83.4	11.6	15.1	32295
20	France	0.884	81.5	10.6	16.1	30462
28	United Kingdom	0.863	80.2	9.3	16.1	33296
High Human Development						
56	Saudi Arabia	0.770	73.9	7.8	13.7	23274
66	Russian Federation	0.755	68.8	9.8	14.1	14561
77	Mauritius	0.728	73.4	7.2	13.6	12918
88	Iran	0.707	73.0	7.3	12.7	10164
97	Sri Lanka	0.691	74.9	8.2	12.7	4943
101	China	0.687	73.5	7.5	11.6	7476
109	Maldives	0.661	76.8	5.8	12.4	5276
124	Indonesia	0.617	69.4	5.8	13.2	3716
134	India	0.547	65.4	4.4	10.3	3468
Low Human Development						
145	Pakistan	0.504	65.4	4.9	6.9	2550
146	Bangladesh	0.500	68.9	4.8	8.1	1529
157	Nepal	0.458	68.8	3.2	8.8	1160
187	Congo	0.286	48.4	3.5	8.2	280

Source: Compiled from UNDP HDR 2011.

CRITICISMS OF THE HDI : The Human Development Index has been criticized for failing to include any ecological considerations, focusing exclusively on national performance and ranking (although many national Human Development Reports, looking at sub-national performance, have been published by UNDP and others—so this last claim is untrue), not paying much attention to development from a global perspective and based on grounds of measurement error of the underlying statistics and formula changes by the UNDP which can lead to severe misclassifications of countries in the categories of being a 'low', 'medium', 'high' or 'very high' human development country.

Economists Hendrik Wolff, Howard Chong and Maximilian Auffhammer discuss the HDI from the perspective of data error in the underlying health, education and income statistics used to construct the HDI. They identify three sources of data error which are due to (i) data updating, (ii) formula revisions and (iii) thresholds to classify a country's development status and find that 11%, 21% and 34% of all countries can be interpreted as currently misclassified in the development bins due to the three sources of data error, respectively. The authors suggest that the United Nations should discontinue the practice of classifying countries into development bins because the cut-off values seem arbitrary, can provide incentives for strategic behavior in reporting official statistics, and have the potential to misguide politicians, investors, charity donators and the public at large which use the HDI.

In 2010 the UNDP reacted to the criticism and updated the thresholds to classify nations as low, medium and high human development countries. In a comment to The Economist in early January 2011, the Human Development Report Office responded to a January 6, 2011 article in *The Economist* which discusses the Wolff *et al.* paper. The Human Development Report Office stated that they undertook a systematic revision of the methods used for the calculation of the HDI and that the new methodology directly addresses the critique by Wolff *et al.* in that it generates a system for continuous updating of the human development categories whenever formula or data revisions take place.

Some common criticisms of the HDI are as follows:

1. It is a redundant measure that adds little to the value of the individual measures composing it.
2. It is a means to provide legitimacy to arbitrary weightings of a few aspects of social development.

3. It is a number producing a relative ranking which is useless for inter-temporal comparisons, and difficult to compare a country's progress or regression since the HDI for a country in a given year depends on the levels of, say, life expectancy or GDP per capita of other countries in that year. However, each year, UN member states are listed and ranked according to the computed HDI. If high, the rank in the list can be easily used as a means of national aggrandizement; alternatively, if low, it can be used to highlight national insufficiencies.

Ratan Lal Basu criticizes the HDI concept from a completely different angle. According to him the Amartya Sen - Mahbub ul Haq concept of HDI considers that provision of material amenities alone would bring about Human Development, but Basu opines that Human Development in the true sense should embrace both material and moral development. According to him human development based on HDI alone, is similar to dairy farm economics to improve dairy farm output. To quote: ‘so human development effort should not end up in amelioration of material deprivations alone: it must undertake to bring about spiritual and moral development to assist the biped to become truly human.’ For example, a high suicide rate would bring the index down.

A few authors have proposed alternative indices to address some of the index's shortcomings. However, of those proposed alternatives to the HDI, few have produced alternatives covering so many countries, and that no development index (other than, perhaps, Gross Domestic Product per capita) has been used so extensively—or effectively, in discussions and developmental planning as the HDI.

(B) HUMAN POVERTY INDEX (HPI) :

The concept of HPI was introduced for the first time in the Human Development Report 1997. HPI focuses on the extent of deprivation in the three most important aspects of life. They are longevity, knowledge and a decent standard of living. These three important aspects are also the constituents of HDI. These aspects of HPI are explained as follows:

1. The first deprivation represented in the HPI is the deprivation of life. Deprivation of life is denoted by the percentage of people expected to die before age 40.
2. The second deprivation is related to knowledge and is denoted by the percentage of adults who are illiterate.

3. The third deprivation relates to a decent standard of living and this is represented by the percentages of people with access to health, safe water and malnourished children under five.

Income has not been used as a criterion to measure human poverty because a single poverty line cannot capture the variety in consumption in different countries of the world. Clothing, accommodation, tools of communication such as radios and telephones are considered essential for social participation in one community and the same may not be true of other communities. The minimum income required to escape social alienation can be different in different communities.

In Table 1.4, indices for all the four measures of development are being shown. You may notice that 70% of the population in Nigeria suffers from income poverty but the HPI index is only 37.3% indicating thereby that only 37.3 % of the population is impoverished. While in the case of Bangladesh, the situation is reversed. The percentage of people suffering from income poverty is 41.3 % whereas the HPI is 40.5 %. In the case of India, the percentage of population living below the international poverty line of US$ 1 a day is 34.3% but the HPI is a shade lesser to 31.4 %.

The HDR 2001 while reviewing the progress made by the world community in achieving the targets of human development stated that, **"**At the United Nations Millennium Summit, world leaders agreed on a set of goals that can be quantified and monitored for development and poverty eradication to be achieved by 2015. Progress made by the world over the last 30 years shows that these goals are achievable. But many developing countries will not achieve them without much faster progress. While 66 countries are on track to reduce under five mortality rates by two-thirds, 93 countries with 62% of the world's people are lagging far behind or slipping. Similarly, while 50 countries are on track to achieve the safe water goal, 83 countries with 70% of the world's people are not. More than 40% of the world's people are living in countries on tract to halve income poverty by 2015. Yet they are in just 11 countries that include China and India (with 38% of the world's people) and 70 countries are far behind or slipping. Without China and India, only 9 countries with 5% of the world's people are on track to halve income poverty".

(C) GENDER RELATED DEVELOPMENT INDEX

Table 1.4: Comparison of HDI, GDI, HPI and Income Poverty Line.

(Some Selected Countries – 2005)

HDI Rank	Country	2005			Income Poverty Line US $ One a Day 1993 PPP 1990-2005
		HDI	GDI	HPI	
High Human Development (HDI 0.8 and above)					
1	Iceland	0.968	0.962	--	
2	Norway	0.968	0.957	--	
4	Canada	0.961	0.956	--	
8	Japan	0.953	0.942	--	
12	US	0.951	0.937	--	
16	UK	0.946	0.944	--	
26	SK	0.921	0.910	--	
52	Mexico	0.829	0.820	6.8	3.0
63	Malaysia	0.811	0.802	8.3	< 2
67	Russian Federation	0.802	0.801	---	---
70	Brazil	0.800	0.798	9.7	7.5
Medium Human Development (HDI 0.5 to 0.8)					
74	Venezuela	0.792	0.787	8.8	18.5
90	Philippines	0.771	0.768	15.3	14.8
81	China	0.777	0.776	11.7	9.9
94	Iran	0.759	0.750	12.9	< 2

99	S Lanka	0.743	0.735	17.8	5.6
105	Vietnam	0.733	0.732	15.2	< 2
107	Indonesia	0.728	0.721	18.2	---
112	Egypt	0.608	---	20.0	7.5
128	India	0.619	0.600	31.3	34.3
136	Pakistan	0.551	0.525	36.2	17.0
140	Bangladesh	0.547	0.539	40.5	41.3
Low Human Development (HDI less than 0.5)					
158	Nigeria	0.470	0.456	37.3	70.8
174	Niger	0.374	0.355	54.7	60.6
176	Burkina Faso	0.370	0.364	55.8	27.2

Source: HDR 2007.

The GDI adjusts the average achievement measured under HDI to reflect the inequalities between men and women. The three components of GDI are:

1. Female life expectancy.
2. Female adult literacy and gross enrollment ratio and,
3. Female per capita income.

In the absence of gender inequality, the values of HDI and GDI would be the same. However, if gender inequality exists, the GDI value would be lower than the HDI value. The greater the difference between these values, greater will be gender inequality. Table 1.4 provides data for GDI and HDI for selected countries. In countries like Iceland, Norway, Canada, Mexico, United States, United Kingdom, Japan, Russian Federation, Malaysia, Venezuela, Philippines, Sri Lanka, China, Vietnam and Indonesia there is no noticeable difference between the two indices. However, the difference between the two indices in case of countries like Saudi Arabia, Pakistan, Iran, India, Egypt and Nigeria is marginally higher.

GENDER EMPOWERMENT MEASURE : The GEM was introduced in HDR 1995. The GEM is an index which consists of the following:

1. Women's participation in political decision making.
2. Women's access to professional opportunities, and
3. Women's income earning power.

Historically, world over, women have been deprived of political and economic power. The Gender Empowerment Measure therefore determines the extent of political and economic power exercised by women. It attempts to find out whether equality of choice is available to women as compared to men.

Measurement of the GEM : The GEM captures gender inequality in three key areas:

1. Political Participation and Decision-making Power. It is measured by women's and men's percentage shares of parliamentary seats.
2. Economic participation and Decision-making Power. It is measured by two indicators:

a) Women's and men's percentage shares of positions as legislators, senior officials and managers.

b) Women's and men's percentage shares of professional and technical positions.

3. Power over Economic Resources. It is measured by women's and men's estimated earned income (PPP US $).

An equally distributed equivalent percentage (EDEP) is calculated for each of these three dimensions as a population weighted average. The GEM is calculated as a simple average of three EDEP indices:

GEM = 1/3 (indexed EDEP for parliamentary participation)

\+ 1/3 (indexed EDEP for economic participation)

\+ 1/3 (EDEP for income).

The GEM of India : The HDR 1995 and 1999 gives GEM value for India. These values for the years 1993 and 1997 are given below:

Year	GEM Value	GEM Rank
1993	0.226	101
1997	0.240	95
2005	---	---

Source: HDRs 1995, 1999 and 2007.

The GEM value of India is very low. India ranked 95th out of 102 countries. A very poor GEM value indicates that wide gender inequalities exist in India. Neighboring China had a GEM value of 0.491 and ranked 40th. Countries like Sri Lanka and Bangladesh had better scores of 0.321 and 0.304 with rankings 80 and 83 respectively. Only Pakistan in South Asia had a poorer score than India with a rank of 101 and a score of 0.176. Human Development Reports since the year 2000 do not give GEM rankings for India. Norway ranks first in GEM with a value of 0.932.

1.4 SOME FEATURES AND STYLIZED FACTS OF GROWTH AND DEVELOPMENT

In 1958, Professor Kaldor brought out six factors that led to the growth and development of advanced industrial economies. These facts were described by him as 'stylized facts'. According to him, any model of growth and development must be able to explain the following six facts:

1. The growth rate of real output per man hour is fairly constant over a long period i.e. the labor output ratio is constant over a long period of time.
2. The growth rate of capital stock is constant but greater than the growth rate of labor force. Capital labor ratio increases overtime.
3. The growth rate of capital stock and the growth rate of real output is similar. Hence, the capital output ratio is constant and the relative shares of labor and capital in the national output is also constant.
4. The rate of profit or the ratio of profits (P) to capital stock (K) is constant over a long period.
5. There are cross country differences in the growth rate of output per man hour.
6. Countries with a high share of profit in income tend to have a high ratio of investment to output.

An economy growing as per the first four stylized facts is known to be in a steady state because the last two facts relate to comparisons between different countries. These stylized facts relate to the long run regularities in the relationships that appear in a majority of advanced industrial economies. The first four stylized facts in the context of advanced industrial economies can be explained as follows.

1. Constant Growth Rate of Labor Force :

The growth rate of labor force (L) is constant over a long period. The growth rate of output is defined as the sum of average labor productivity Q/L and the total labor force i.e. $Q = (Q/L)_t \times L_t$. The trend growth rate of output is given by the trend growth rates of labor productivity and the available labor force. The trend growth rate of output therefore is Q = L. The estimates for USA show that during the 1970s and 1980s, the growth rate of labor force had been constant at about 1.5 per cent per annum. The growth rate of output as measured by labor productivity was 3.5 per cent in the 1970s and 2.5 per cent in the 1980s. The decline was on account of slowing down of labor productivity from 2 per cent in the 1970s to one per cent in the 1980s. Therefore, this stylized fact leads to the conclusion that the growth rates of output and labor force are fairly constant with Q > L and the growth of output per employee or productivity (q > 0).

2. Growth Rate of Capital Stock Constant :

The growth rate of capital stock (K) is constant over the long period but it is greater than the growth rate of labor force, i.e. K > L. The capital labor ratio k = K/L increases over time. Estimates for the United States show that the growth rate of capital stock during 1970-80 was steady at 3.3 per cent and the growth rate of labor force was also steady at 1.5 per cent per annum for the same period. It means that the growth rate of capital stock (K) and the growth rate of labor force (L) are steady over time with (K > L) so that capital labor ratio (k) is positive.

3. Equality between Growth of Capital Stock and Output :

The growth rate of capital stock (K) and the growth rate of output (Q) are equal and hence the capital output ratio (v = K/Q) is constant over time. In the United States, the output had been growing at the rate of 2.5 per cent per annum in the 1980s and the capital stock at about 2.5 per cent per annum during the same decade. Hence, Q = K and the capital output ratio (v) is constant over time.

4. The Share of Profits in National Output is Constant :

The profit rate P/K and the capital output ratio are constant over the long run. Hence the share of profits in national income P/Q is constant. The share of wages in national income is also constant as W/Q = 1 – P/Q. With constant capital output ratio (v), the relative shares of wages and profits in national income are constant. The estimates for United States corporate manufacturing sector in the 1970s and 1980s shows constant relative shares of labor and capital in national output.

Assuming these stylized facts holds good for an economy, the economy will be in a steady state. The output, employment and capital stock will grow at a constant rate with its capital output ratio remaining constant.

1.5 SUMMARY

1. There are two approaches to the concept of Economic Development and these two approaches are the traditional and the modern approach.

2. GNP, GNP per capita, Welfare and some social indicators are the alternative measures of development.

3. Human development is a continuous process. The process becomes developmental only if it increases choices and improves human well-being. Amongst other choices, the three most important choices are that of long and healthy life to acquire knowledge and a decent standard of living. These three choices are also the components of human development index. Guaranteed human rights become an important aspect of human development.

4. Professor Kaldor brought out six factors that led to the growth and development of advanced industrial economies. These facts were described by him as ‘stylized facts’.

1.6 QUESTIONS

1. What is Economic Development? Explain the alternative measures of economic development.
2. Critically examine the concept of Human Development Index.
3. Write a note on Human Poverty Index.
4. Explain the concepts of Gender Development Index and Gender Empowerment measure.
5. Write a note on the stylized facts of growth and development.

2

CLASSICAL THEORIES OF GROWTH AND DEVELOPMENT

Unit Structure :

2.0 Objectives
2.1 Adam Smith
2.2 The Ricardian Theory of Economic Development
2.3 Karl Marx (1818-1883)
2.4 WW ROSTOW – Stages of Economic Growth
2.5 Schumpeter's Theory of Economic Development
2.6 Summary
2.7 Questions

2.0 OBJECTIVES

To understand and study the following theories:

- Adam Smith's Theory of Economic Development
- Ricardo's Theory of Economic Development
- Karl Marx Ideads of socialism
- W W Rostow's Stages of Economic Growth
- Schumpeter's Theory of Economic Development

2.1 ADAM SMITH

Adam is known as the father of economics. His famous work 'An Enquiry into the Nature and Causes of the Wealth of Nations' was published in 1776 and was concerned with economic development. The followers of Adam Smith put together his ideas on economic development which are now presented as a theory on economic development.

2.1.1 Natural Law : While an individual pursues his self-interest without trampling upon the self-interest of others, he or she is not only furthering his or her self interest but directly or indirectly also furthering the self interest of others. Individual self interest is guided by the invisible hand which also guides the market mechanism. When the individual is left to pursue self interest, he will maximize his personal wealth and when all individuals in the society are left free to pursue their self interest, the society's or nation's wealth will be maximized. Adam Smith was a free marketer and believed in the non-interference of the State in economic affairs or laissez-faire. The invisible hand or market mechanism will establish equilibrium in all markets and maximize national income.

2.1.2 Division of Labor : Division of labor leads to specialization and specialization in turn leads to large scale production. The productivity of labor increases due to improved skills of labor, saving of time and invention of labor saving machines. Improved technology leads to division of labor and market expansion. Division of labor depends upon the size of the market and markets can expand to their fullest potential only under the conditions of laissez-faire.

2.1.3 Capital Accumulation : Economic development cannot take place without capital accumulation. Saving and investment must increase overtime. Smith believed that the working class was not capable of saving. It was only the class of capitalists and land lords who saved. Smith believed in the Iron Law of Wages or the Wages Fund theory. According to the Iron Law of Wages, wages are always equal to subsistence. If wages are above subsistence level, labor force will increase. Increase in labor force will increase supply side competition and the average wages will be driven down to the subsistence level. On the demand side, competition will increase for labor when capital investments are increasing and wage rates will rise above the subsistence level. However, under stationery conditions, wage rates are equal to subsistence level. The wages fund consisted of historical savings and was used for hiring labor through investments. The wages fund increased directly in proportion with the increase in capital investments.

Private enterprise is profit motivated and investments increased to make more profits. However, with economic development, Smith believed, profits have a tendency to fall. When capital investments increase, there is more competition for labor,

thereby leading to higher wages and lower profits. Smith also believed that with more economic development, the rate of interest would also fall. Money lenders would lend more at lower rate of interest to maintain their real incomes and capital accumulation will increase. However, at very low rates of interest, money lenders will themselves become capitalists and the process of capital accumulation and economic development will continue. Rents will also increase as economic development takes place.

2.1.4 Growth Agents : Farmers, producers and business men are the agents of growth. Free trade motivates these agents to expand the size of the markets and economic development takes place. The functions of the three agents are inter-dependent. Agricultural development leads to increase in construction works and commerce. The demand for manufactured goods and commercial services increase with the increase in agricultural surplus. As a result, both the service and manufacturing sectors of the economy expands which in turn feeds into agricultural progress. In this way, capital investments and economic development takes place due to the inter-dependent functions performed by the growth agents.

2.1.5 The Growth Process : Growth is a direct function of population and savings. As population and savings increase, markets expand and division of labor takes place and productivity of labor increases. According to Smith, the process of growth is cumulative. With economic development, there is capital accumulation, technical progress, increase in population, market expansion, division of labor and increase in profits. Economic development is therefore steady and continuous

2.1.6 The Stationary State : Economic development is however, not an endless process. Scarcity of natural resources puts an end to the growth process. With competition amongst workers and competition amongst the capitalists, both wage rates and rates of profit will fall. As a result, investment begins to fall until the beginning of the stationary state. In the stationary state, capital accumulation comes to an end, population ceases to increase, profits and wages are reduced to their minimum, production and per capital income remain constant and the economy reaches the state of stagnation. The Stationary State of Adam Smith is diagrammatically explained in Figure 2.1.

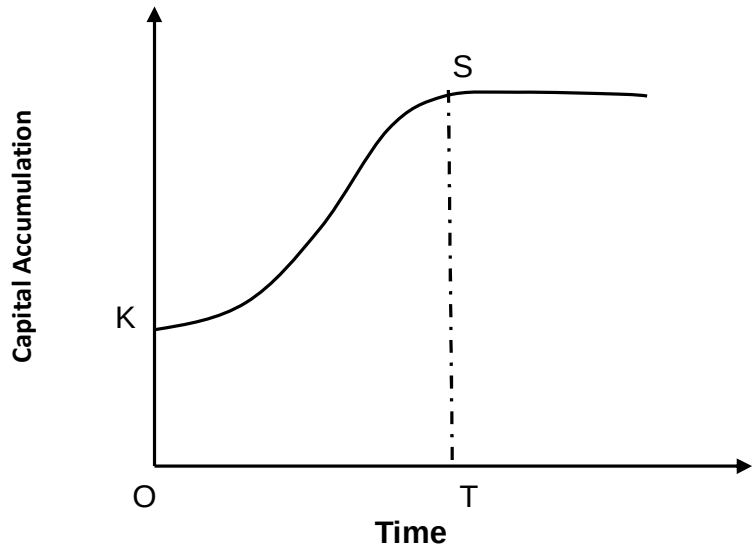


Fig. 2.1 - The Stationary State

2.1.7 CRITICAL ANALYSIS

Adam Smith's theory of economic development is criticized on the following grounds:

1. **The Traditional Society of Smith is replaced by the Modern Society.** The traditional 18th century English society of Adam Smith was rigid and had only two classes: the Capitalists/Land Lords and the workers. The middle class did not exist. However, in the modern times, the middle class is the greatest driver of the economy in terms of contribution to savings and aggregate demand.

2. **Perfect Competition or Laissez-faire does not exist.** Laissez-faire or let live alone is no more the guiding principle of modern societies. The modern State is interventionist and economic activities are largely guided and influenced by the economic policies of the State. Practically speaking, there is no perfect competition. Markets are imperfect and therefore inefficient.

3. **The Entrepreneur is subsumed in the Capitalist.** Enterprise and the entrepreneur is known as the captain of the industry in modern times. Smith did not consider entrepreneur as a separate factor of production. Smith's entrepreneur was subsumed in the capitalist.

4. **Smith's Model is Static.** According to Hicks, the model of economic development presented by Smith does not have a growth sequence. It is therefore a static model.

2.2 THE RICARDIAN THEORY OF ECONOMIC DEVELOPMENT

David Ricardo discussed his ideas on economic development in his work 'The Principles of Political Economy and Taxation', 1917. His ideas are presented in the form of a theory of economic development.

Ricardo begins his theory with stating the fact that the supply of land is fixed and farmers produce corn. The produce is distributing amongst capitalists, landlords and laborers in the form of profits, rent and wages. Rent per unit of labor is the difference between the average and marginal product. The total rent is equal to the difference between the average and marginal product of labor multiplied by the quantity of labor and capital applied on land. The wage rate is determined by wage fund divided by the number of workers employed at the subsistence level. The land lord has the first right over the product of the land and the residual product is distributed between wages and profits and interest is included in profits.

2.2.1 Capital Formation : Capital accumulation takes place through profits, savings and investments. The capacity and the will to save are important in capital formation. The capacity to save depends upon the net income of the society which is a surplus over wages. Greater the surplus, greater will be the investment made by the land lords and the capitalists. The rate of profit is the ratio of profit to wages. Capital formation will continue to take place as long as the profit rate is positive. The rise in the wage bill is in proportion to the rise in the labor force. Profit therefore depends upon wages, wages in turn depend upon the price of corn and the price of corn depends upon the fertility of the marginal land. There is therefore an opposite relationship between wages and profits. When there are improvements in agriculture, land productivity increases. The productivity of land also increases when better machines are employed and labor force is reduced. However, higher output leads to fall in the price of corn thereby reducing the wage rate. Fall in wage rate leads to higher profits and greater capital formation. Increase in capital formation leads to higher demand for labor and high wage rate. Higher wage rates will lead to increase in population, higher demand for corn, higher prices and higher wages and decline in profits. As the demand for food increases, less fertile land is brought under cultivation. The

marginal productivity of land declines. Rising demand and falling productivity leads to rising wages and falling profits. Falling profits leads to falling investments and decline in the rate of capital formation. When the rate of profits decline in the farm sector, there is a similar decline in the manufacturing sector because when the price of corn rises, industrial wages increase and reduce the profits. Thus when profit decline in the farm sector, other sectors in the economy follows the trend of declining profits.

2.2.2 Other Sources of Capital Formation : Economic development depends upon the difference between production and consumption. Therefore, production must increase and unproductive consumption must decrease. According to Ricardo, taxes must be levied by the government to reduce conspicuous consumption. However, taxes have a negative impact on investment and in turn on income, profits and capital formation. Ricardo believed that free trade will contribute to economic development. Rise in wages can be controlled by importing corn and profits can be safeguarded. David Ricardo's theory of rent is shown in Fig. 2.2 In this figure, quantity of corn is measured on the vertical axis and the quantity of labor employed in agriculture is measured on the horizontal axis. The AP curve shows average product of labor and MP curve shows the marginal product of labor. "With OM quantity of labor, OQRM corn is produced. PQRT is the rent which is the difference between average and marginal products. At the subsistence wage rate OW, the supply curve of labor WL is perfectly elastic and the total wage bill is OWLM. Total profits WPTL are the residue after subtracting rent and wages from the total output: WPTL = OQRM – (PQRT – OWLM).

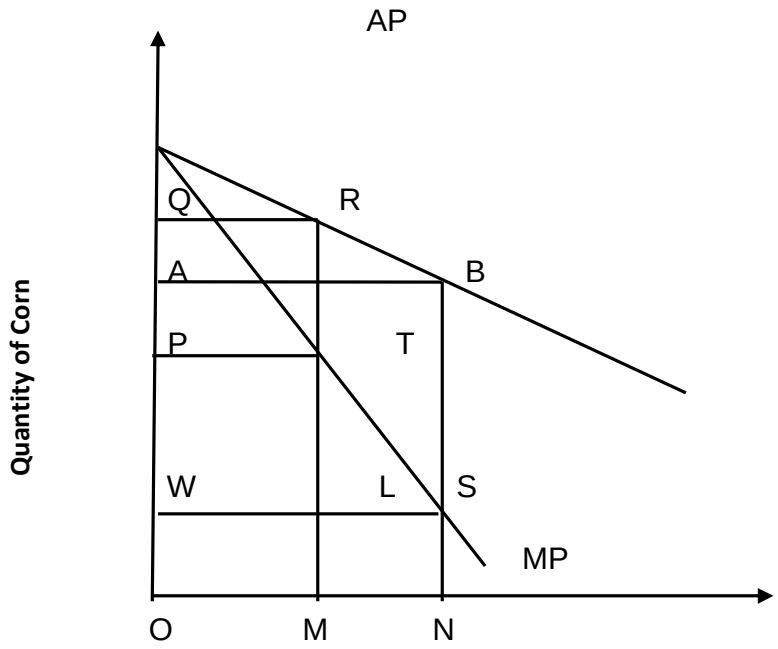


Fig. 2.2 - Distribution of Income

2.2.3 Stationary State : David Ricardo says that profits have a natural tendency to fall and the economy reaches the stationary state in the end. When capital formation takes place with increase in profits, total output increases and the wages fund also increases. As a result, there is an increase in population. With the increase in population, the demand for corn increases leading to price rise. Farmers are forced to cultivate inferior land. Rents on superior grades of land rise thereby reducing the shares of capitalists and laborers. Profits decline and wages fall to the subsistence level. The process of rising rents and declining wages continue till output from the marginal land just equals subsistence wages and profits become zero. The marginal land is therefore known as the 'no rent – no profit land'. The stationary state is explained in the above figure. When capital formation is taking place, the amount of labor employed increases from OM to ON and the total output increases from OQEM to OABN. OWSN is the total wage fund and WABS is the rent. Profits are zero and the stationary state sets in. Capital formation, population growth and technical progress ceases. Diminishing returns in agriculture is the fundamental cause of the arrival of the stationary state. Technical progress may delay the stationary state but cannot prevent it.

The movement of the economy towards the stationary state is explained in Fig. 2.3

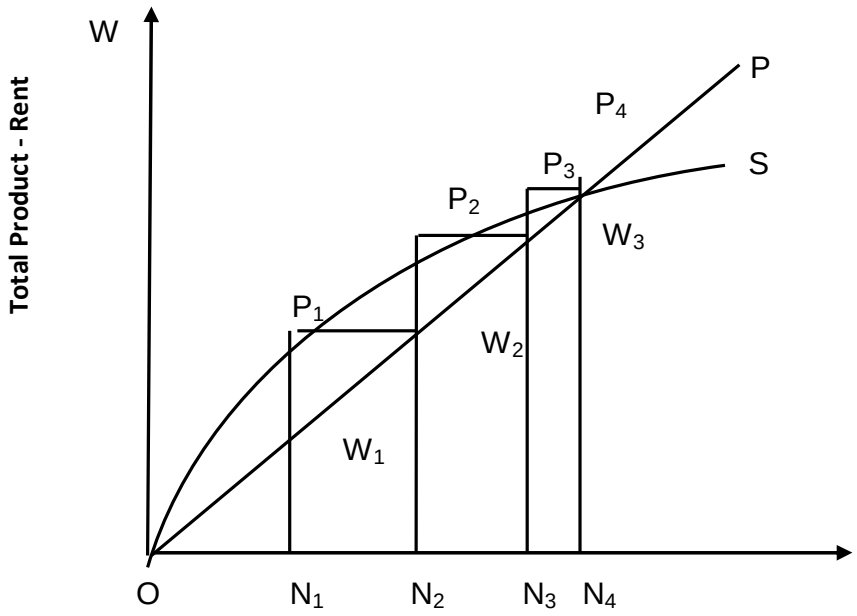


Figure 2.3

In the above figure, population is measured along the horizontal axis and total product minus rent is measured on the vertical axis. The curve OP is the production function which shows total product minus rent as the function of population. As population increases, the OP curve flattens due to the law of diminishing marginal returns. The ray through the origin OW measures the constant real wage. The vertical distance between the horizontal axis and the wage rate line OW measures the total wage bill at different levels of population. Thus W_1N_1, W_2N_2, W_3N_3, are the total wage bills at ON_1, ON_2 and ON_3 levels of population. When the wage bill is W_1N_1, the profits are P_1W_1, (total product minus rent ÷l total wage bill i.e. $P_1N_1 + W_1N_1 = P_1W_1$). When profits are P_1W_1, investment is encouraged. The demand for labor increases to ON_2 which raises the wage bill to W_2N_2 but profits decline to P_2W_2. This process continues till profits become zero at the point intersection between the OP curve and OW curves at point S and the stationary state sets in.

2.2.4 Critical Evaluation of the Ricardo's Theory of Economic Development

David Ricardo's theory of economic development is criticized on the following grounds:

1. **Technological Changes can offset Diminishing Returns.** David Ricardo believed in the law of diminishing marginal returns and hence the stationary state was an inevitable consequence. However, technological development is a sustained process and before diminishing returns set in, you have an improved version of the technology to ensure increasing returns or constant returns. Both industrial and agricultural technology over the last hundred years have been successful in preventing diminishing returns to set in and has been successful in feeding the growing population across the world. David Ricardo's stationary state may therefore not arrive.

2. **Wages are increasing and Labor is Prospering.** The 19th and early 20th century economists like Marx and Ricardo believed in the existence of subsistence wages. However, mid 20th century welfare capitalism, the rise of trade unionism and the growth of democracies have ensured that workers are not paid subsistence wages save the developing countries of the world. Labor is organized enough in the world to demand their due share in the total product of the firm and the nation.

3. **Laissez Faire is a thing of the Past.** There is no laissez faire economy in the world. There is government intervention in free market economies because market failures have been identified. There are mixed economies and no free market economy is perfectly free. There is labor legislation and there is minimum wages act. The base wage rates are set by the government and market wage rates are therefore above the base rates.

4. **It is a theory of Distribution and not Growth.** Joseph Schumpeter has criticized Ricardo's theory as that of a distribution theory because it determines the shares of laborers, land lords and capitalists. Further, the share of land is said to be primary and that of labor and capital being residual. Even as a theory of distribution, the theory is not complete because factor returns are not separately and individually determined.

5. **The Capital-Labor Ratio is not fixed.** The ratio of capital and labor in the production function is not fixed. In reality, the ratio depends upon the technique of production and the state of technological development.

6. **The Entrepreneur is subsumed in the Capitalist.** David Ricardo like his contemporaries subsumed the entrepreneur in the capitalist and therefore neglected the role of interest rate in the economy.

7. **David Ricardo's Model is Static.** Hicks criticized Ricardo's theory by saying that it is a static model. Ricardo used static methods to analyze dynamic process. Economic development is a dynamic process.

2.3 KARL MARX (1818-1883)

Karl Marx provided the materialistic or economic interpretation of history. He brought out the driving forces of capitalism and also predicted the end of capitalism. He also suggested Socialism or planned economic development as an alternative to capitalism.

2.3.1 PROCESS OF ECONOMIC DEVELOPMENT : According to Karl Marx (1818-1883), "the history of hitherto existing societies has been the history of class struggles… ". Marx believed that all historical events are the result of a continuous struggle between different classes in the society. The main cause of this struggle is the conflict between the mode and relations of production. The mode of production relates to a particular arrangement of production in a society that determines entire social, political and economic way of living. People use the mode of production by entering into mutual relations. Marx described these relations as the relations of production which are continually changing. According to Marx, historically society has passed through five different stages: primitive communism, slavery, feudalism, capitalism and socialism. Under primitive communism, the society was primitive and lived on the principle "to each according to his ability and to each according to his needs". However, under slavery the class system came into existence. The relations between man and man were defined by ownership of wealth. Under slavery, the Lord became the master and the serf became the servant. Under feudalism, the economic relation was between the Guild Master and the Journey men and under capitalism, the economic relation was between the workers and the capitalist. The economic relations after the end of primitive communism and until socialism arrives, were essentially contradictory by nature. The contradiction in relations is the result of contradictory objectives of the classes. Marx believed that capitalists aim at profit

maximization and workers aim at maximization of wages. The capitalists as the owners of the means of production are in a strong position to gain profits at the cost of wages. This contradictory and unholy relation can be put to an end only by destroying the class of capitalists and a classless society is established. A classless society can be established only through a class struggle. The workers are the main instrument of class struggle between the workers (proletariat) and the capitalists (bourgeoisie). The seeds of self-destruction are ingrained in capitalism and they manifest in three important self-destructive tendencies. These tendencies are:

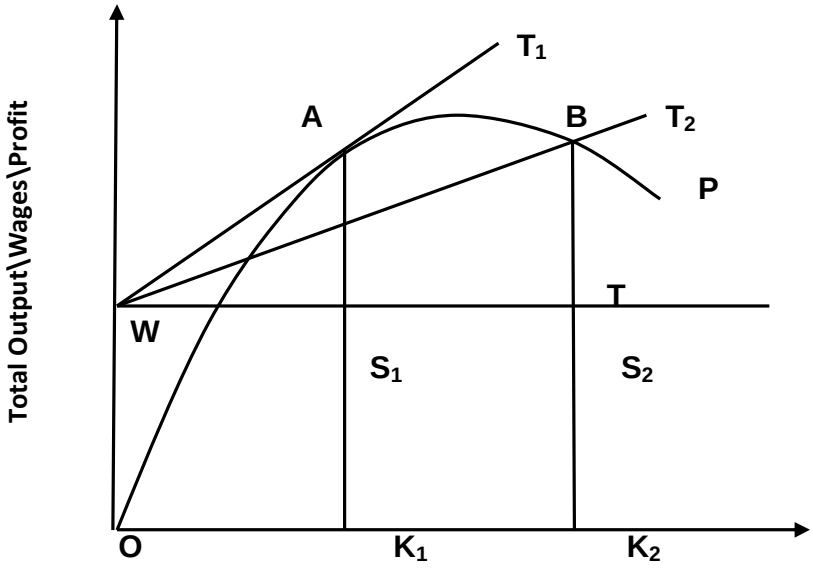
2.3.2 Concentration of wealth and income in the hands of a few big capitalists : The working class or have-nots can only sell their labor power and receive subsistence wages. The capitalist's classes are the owners of the means of production and are habitually exploiting the workers by extracting **surplus value.** Surplus value is the difference between subsistence wages paid to the laborers and the exchange value of their labor power. Assuming a laborer works for eight hours a day and four hours of labor is equal to subsistence wages. Here, the laborer will be paid equal to subsistence wages i.e. the value of four hours of labor and the additional four hours of work which is not paid to the laborer and appropriated by the capitalist is the surplus value.

2.3.3 Competition amongst the capitalists results in competitive technology and rising organic composition of capital : Since labor is paid only the subsistence wages, there is no possibility of further wage reduction and the capitalist class therefore has to compete amongst themselves. This leads to fall in labor power. Since labor power is the only source of surplus value or profits, falling labor power leads to falling surplus value on the one hand and rising industrial reserve army on the other hand. Increasing pauperization of the workers due to rising unemployment and progressively shrinking class of the capitalists along with over production weakens the capitalists' class further. The seeds of destruction of the capitalist class are sowed by themselves.

The decline in surplus value on account of increasing organic composition of capital in the total product is diagrammatically explained in Fig.2.4. The rate of profit varies inversely with the organic composition of capital and directly with the surplus value. In the figure, capital is measured along the horizontal axis and total output, wages and surplus value is measured on the vertical axis.

The total output curve OP slopes positively and steeply up to point A. After point A, the total output curve has a diminishing or a flatter slope and eventually assumes negative slope as according to the law of diminishing marginal productivity. Keeping the supply of labor constant at OT, when the amount of capital employed increases, the ratio of surplus value to capital declines on account of diminishing marginal returns. With OK_1 capital, total output is AK_1 and the total profit is AS_1 and total wages are S_1K_1. The rate of profit (α) = AS_1/TS_1). When the capitalists increase the amount of capital employed from OK_1 to OK_2, the rate of profit or the surplus value declines. When OK_2 capital is used, the rate of profit α` = BS_2/TS_2 which is less than AS_1/TS_1.

Competitive Elimination of Fellow Capitalists, the Breakdown of Capitalism and the Rise of Socialism :



Capital Employed
Figure 2.4

Competition eliminates fellow capitalists, and those who are eliminated joins the ranks of the industrial reserve army and the workers having realized the cause of their misery, unites together to overthrow the capitalist system to make way for socialism. Under socialism, the guiding principle of the society and economy would be “to each according to his ability and to each according to his deeds”. Technically speaking, wages will be paid according to the marginal productivity of labor and there will be no exploitation. Marx further says, socialism will eventually give away to communism, an economic system in which guiding principle will be

"to each according to his ability and to each according to his needs".

2.3.4 CRITICAL EVALUATION OF MARXIAN THEORY :

The theory has been criticized as follows:

1. **Surplus Value is not generated by Labor Alone.** Other factors of production such as land, capital and enterprise also contribute to the generation of value or output. Labor alone cannot create surplus value. Marx argued that capital is historically accumulated labor. However, other factors do contribute to the production of both capital and consumer goods.

2. **Increase in the Organic Composition of Capital leads to Increasing Employment and Profits.** Unlike the Marxian belief that increase in the organic composition of capital will lead to falling profits and rise in the industrial reserve army, the capitalist development of 19th and 20th century world has shown that not only employment increases in the long run but also profits have gone up. Technological developments are not only labor saving but also capital saving, thereby increasing the productivity of capital.

3. **The Rise and Rise of the Service Sector.** The service sector has emerged as the leading sector across the industrialized nations and even across the newly industrializing nations of the world. The service sector is labor intensive and has the largest share of employment in the countries of the world. During the times in which Marx lived and wrote the death warrant of capitalism, the service sector was very small and employed the least number of people.

4. **Capitalism has actually survived and triumphed over other Economic Systems.** Twentieth century began with the establishment of Socialism in USSR and other Eastern European Countries, China, Vietnam, Cuba and Laos. However, even before the lapse of the 20th century, the socialist systems in USSR and Eastern European countries collapsed and gave away to Capitalism. Economic reforms in China after 1976 have transformed the country into a hybrid system with an expanding private sector along with the overwhelming public sector. The development of Welfare State capitalism in the 1940s, the establishment of mixed economies and the spread of democracy into the new independent countries Asia and Africa led to the success of Capitalism as an economic system. Today, the world as a whole is moving towards a free enterprise economy under the World Trade Organization.

2.3.5 Conclusion : Marxian idea of Socialism caught the fancy of the revolutionary leaders in Russia and the Russian Revolution under Vladimir Lenin transformed Russia into USSR (Union of Soviet Socialist Republics). The Socialist fire spread across Eastern Europe and transformed the economic and political systems there. Asian countries like China, North Korea and Vietnam also adopted Socialism and there were a host of countries like India, Great Britain, France and others who adopted the Mixed Economic System. Marxian ideology was eminently successful in the whole of the 20th century. However, the collapse of the Socialist System was sudden and rapid. With the collapse of the Soviet Union in 1991, the Berlin wall fell. The former socialist East Germany united with the capitalist West Germany and the two Germanys became one. The Socialist system came down like a pack of cards in Eastern Europe and the countries of Eastern Europe adopted Capitalism as the new economic system in the 1990s and thereafter. In conclusion, it can be said that Marx was the only Economic Philosopher and theorist who gripped the minds of the people for over more than one hundred years.

2.4 WW ROSTOW – STAGES OF ECONOMIC GROWTH

The Stages of Growth model was propounded by the American economic historian Walt W Rostow. According to him, the transition from underdevelopment to development can be described in terms of a series of stages through which all countries must proceed. The stages of economic growth as described by Rostow in his book "The Stages of Economic Growth – A non-communist Manifesto (1960)" are as follows:

(A) The traditional society
(B) The pre-conditions for take-off
(C) The Take-off
(D) The drive to maturity, and
(E) The age of high mass consumption

(A) The Traditional Society : In a traditional society, farm output can be increased only through extensive cultivation. Innovations are carried out in a sporadic manner. Industrial progress is limited due to the lack of adequate scientific knowledge. Labor productivity is low. Agriculture is predominant and the hierarchical social structure prevented

vertical mobility. Technical innovations are carried out in an ad-hoc manner. Population, trade and quality of life depended upon nature and political conditions. The society is self-sufficient and political power is concentrated in the hands of the land owning class. Economic surplus was wasted on construction of monuments and observance of religious rituals. **The traditional society was more or less stagnant, reproducing itself without any significant change.**

(B) The Pre-conditions for Take-off : In the second stage, the traditional societies are in the state of transition from agricultural societies to industrial societies. The pre-conditions appeared in Great Britain and Western Europe in the 16th century when the modern age is believed to have begun. Pre-conditions in Western Europe can be explained in terms of Renaissance and Reformation with a reformed monarchy and a new world. Feudalism came to an end and national states came into existence. **Trade and commerce are enlarged and surpluses are invested. When the rate of investment is greater than the rate of growth of population, per capita productivity increases and capital formation takes place. The surplus generated in the agricultural sector is used to fuel industrial development. The government must develop social overhead capital. Centralized national states must come into existence before the take-off stage.**

(C) The Take-off : In this period, growth becomes a natural condition. The rate of investment goes up from five per cent to 10 per cent of NNP. Manufacturing sectors with high growth rates come into existence and the establishment of a political, social and institutional framework ensures economic growth is sustainable. The compound interest phenomenon not only makes growth sustainable but also helps it to progress geometrically. The take-off also requires enterprising people in the society to carry out innovations. It also requires substantial investment. The take off period lasts for about two decades. **According to Rostow, the take-off stage for countries like India and China began in 1952 whereas for Russia, it was during the period 1890-1914 and for the US, it was 1843-1860.**

(D) The Drive to Maturity : It is the period when a society has effectively applied the range of modern technology to the bulk of its resources. It produces anything it wishes. It is a period of long sustained economic growth taking place over a period of four decades. The economy is able to withstand unexpected shocks. During this stage, the agricultural work force declines to 20 per cent, industrial barons are replaced by professional

managers and people in general begins to think about the social costs of the drive to maturity. **According to Rostow, some advanced countries had arrived at maturity. For instance, Great Britain in 1850, the US in 1900 and Russia in 1950 reached the stage to maturity.**

(E) The Age of High Mass Consumption : In this stage, economic prosperity is taken for granted and emphasis is placed on consumption and welfare. The society seeks a balance between the three major objectives of external power and influence, egalitarian society and supra-basic consumption. The tendency towards mass consumption of durable consumer goods, continued full employment and increasing sense of security has led to a higher rate of population growth in such societies. According to Rostow, the US was the first to reach this stage in the early 20th century with Western Europe and Japan reaching this stage in the 1950s.

Beyond High Mass Consumption : The developed countries continue to be in the age of high mass consumption. Some Scandinavian countries according to Rostow are close to the end of this stage. Rostow finally suggests that people should attempt to find ways to eliminate boredom or secular spiritual stagnation that is experienced at the end of the age of high mass consumption.

2.4.1 Critical Evaluation of Rostow's Theory :

The process of growth and development is neither uniform nor linear across time and space. Historical evidence suggests that there is no uniformity in the development experience of the countries of the world. Rostow's theory is criticized on the following grounds:

1. Lack of Factual Evidence. Cairncross says that, Rostow's theory lack empirical or factual evidence. The data used by Rostow pertains to only about 12 countries and the statistical data is found to be incomplete. Rostow's generalizations were tested by economists like Kuznets and were found to be invalid.

2. Traditional Society need not be the first stage of Development. Countries like the US, Canada, New Zealand and Australia did not have traditional societies and they derived the pre-conditions from Great Britain who was instrumental in transplanting the pre-conditions of development in these countries. This shows that development need not be sequential

or linear. Countries can frog-jump stages and begin from a higher level.

3. Developing Countries remain underdeveloped in spite of High Savings and Investment. Rostow stated that India took-off in 1952 because the rate of savings and investment was more than 10 per cent of the GDP. Since then the savings and investment rate has steadily grown to over 36 per cent of the GDP. The rate of growth since the 1990s has been very high. Even after more than 50 years of planned economic development, India remains an under-developed country. What is true of India is also true of most of the developing countries of Asia, Africa and Central America.

2.5 SCHUMPETER'S THEORY OF ECONOMIC DEVELOPMENT

Joseph A Schumpeter presented his theory of economic development in 'Theory of Economic Development' published in German in 1911. The theory was later refined and presented in his Business Cycles (1939) and Capitalism, Socialism and Democracy (1942).

2.5.1 The Theory : Schumpeter assumes a perfectly competitive economy in a stationery state. There are no profits, no interest rates, no savings, no investments and no involuntary unemployment. The economy is in a circular flow without change. According to Schumpeter, development is spontaneous and discontinuous change in the channels of the circular flow which changes the state of equilibrium. Changes are intrinsic and appear in the spheres of industrial and commercial life. Development takes place when new combinations are carried out in the form of innovations.

2.5.2 Innovations : An innovation may consist of:

1. Introduction of a new product.
2. Introduction of a new method of production.
3. Opening up of a new market.
4. Conquest of a new source of supply of raw materials or semi-manufactured goods, and
5. Carrying out new organization of any industry like the creation of a monopoly.

According to Schumpeter, the introduction of a new product and the continual improvements in existing ones lead to development.

Role of the Innovator : The innovator must be an entrepreneur who introduces something entirely new. He directs the use of funds. The entrepreneur is motivated by:

1. The desire to found a private commercial kingdom.
2. The will to conquer and prove his superiority.
3. The joy of creating, getting things done or exercising one's energy and ingenuity.

His nature and activities are determined by his socio-cultural environment. The entrepreneur requires technical knowledge in order to produce new products and the power of disposal over the factors of production in the form of credit. According to Schumpeter, a pool of untapped technical knowledge exists which he can make us of. Hence, credit is essential for development to begin.

Role of Profits : An entrepreneur innovates to earn profits. Profits are a surplus over costs. Under competitive conditions, the price of each product just equals its cost of production and there are no profits. Profits arise due to dynamic changes resulting from an innovation. They continue to exist till the innovation becomes general.

Breaking the Circular Flow : The circular flow is broken with an innovation in the form of a new product by an entrepreneur for the purpose of earning profits. The innovators are financed by bank credit expansion and they pay interest on the money borrowed from the banks. Once the new innovation becomes successful and profitable, other entrepreneurs follow in swarm like clusters. Innovations in one area may induce other innovations in related areas. The emergence of a motor car industry may stimulate a wave of new investments in the construction of highways, rubber tyres and petroleum produces. However, the spread of innovation is never cent per cent.

The spread of innovation is shown in Fig.2.5 The percentage of firms adopting innovation is shown on the vertical axis and time taken on the horizontal axis. The curve OI shows that firms adopt an innovation slowly to begin with and later the pace of adoption increases but it is never cent per cent.

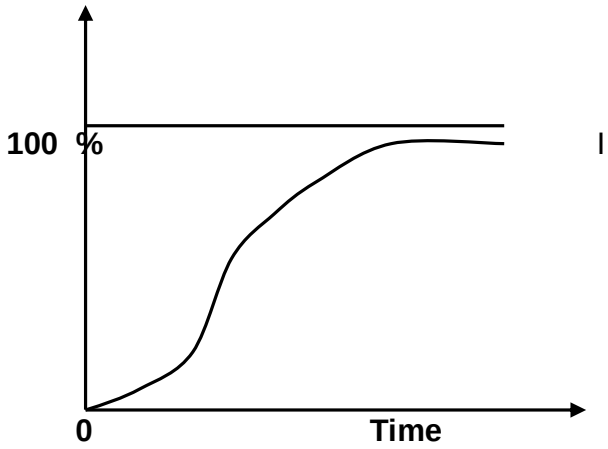


Fig. 2.5 - The Spread of Innovation

Cyclical Process : Investment is constant and financed by bank credit. It increases money incomes and prices and set the forces of expansion in the economy. When the purchasing power of people increases, the demand for products of the old industries increases, supply falling short. Prices rise, profits increase and old industries expand through bank credit. The situation results in a fresh wave of credit inflation superimposed on the innovation induced credit inflation. Over-optimism and speculation adds momentum to expansion. When the new products from new innovation arrive in the market, they displace the old products and a process of liquidation, re-adjustment and absorption begins. The prices of old products fall due to falling demand. The old firms are forced to reduce their output and employment and some have to close down their operations. As the innovators begin to repay bank credits out of their profits, the supply of money falls and prices begin to fall. Profits decline and uncertainties and risks increase. The motivation to innovate disappears and the economy slips into depression. However, after a period of long depression, the forces of recovery appear once again and the equilibrium is restored. Entrepreneurs begin with a new wave of innovations, others follow and once gain expansion begins. Schumpeter describes this process as one of 'creative destruction' in which the old is destroyed and replaced by the new. This process is shown in Fig.2.6 where time is measured on the horizontal axis and output on the vertical axis. The curve YPT shows the long run trade cycles. When there is a new innovation, the economy moves upwards from Y and reaches output level P. When this innovation ends and new one begins, the

output levels fall from P to T. However, point T is higher P indicating a new higher level of equilibrium

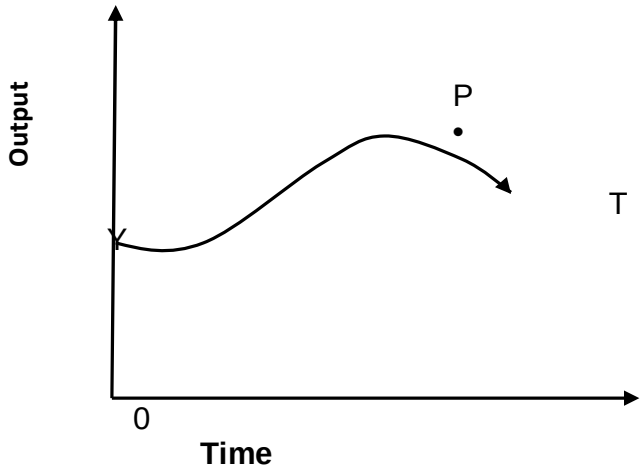


Fig. 2.6 -Innovations and Trade Cycles

Schumpeter's cyclical process of economic development is shown in Fig. 2.7 where the secondary wave of credit inflation is superimposed on the primary wave of innovation. With over-optimism and speculation, development takes place more rapidly in the expansion phase. When recession starts, the cycle continues below the steady growth path to the depression phase. A new innovation brings about recovery and prosperity once again. Entrepreneurs are therefore the main drivers of the economy. They bring about economic development in spontaneous and discontinuous manner. Cyclical swings are the cost of economic development under capitalism. Trade cycles are a permanent feature of a capitalist economy.

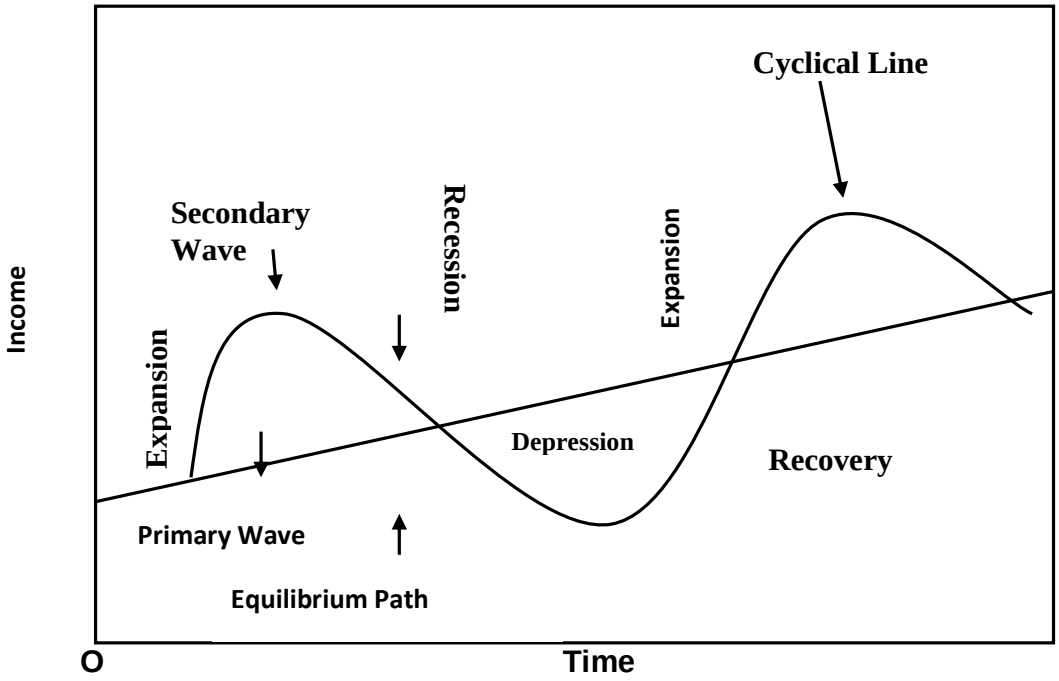


Fig. 2.7: Trade Cycles and Economic Development

2.5.3 The Death of Capitalism : Schumpeter says that capitalism will survive as long as entrepreneurs continue their entrepreneurial activity. Schumpeter says that a capitalist society is a rationalist society. The forces of decadence are set in due to the scientific temperament of the capitalist society. These are: the decadence of the entrepreneurial function, the disintegration of the capitalist family and the destruction of the institutional framework of the capitalist society.

1. In the early stages of capitalism, the entrepreneurs were the driving force behind development. Later on, innovation becomes routine. Technological progress is captained by the new managers, impersonal owners and private bureaucrats. This reduces the industrial family to a class of wage earners and thereby reduces the role of the entrepreneur in a capitalist society.

2. The capitalist families are on the way to destruction because parents adopt a rationalist attitude towards their children. The desire to establish a private kingdom does not exist and hence the will to accumulate wealth also dies its natural death.

3. The entrepreneur also destroys the institutional system of the capitalist society. The tendency towards concentration weakens and destroys the institutions of private property and freedom of

contract. In the case of big firms, the proprietors and the shareholders are made defunct by the professional managers.

The intellectual class become hostile towards capitalism and begins with mass campaigns against capitalism. They bring about anti-capitalist political reforms and capitalism begins to crumble only to be replaced by Socialism.

2.5.4 Critical Appraisal : Schumpeter's theory of economic development is criticized on the following grounds:

1. **The Survival and Progress of Capitalism.** According to Schumpeter the entrepreneur is the ideal behind the success of capitalism. However, in later days, innovation becomes routine in the modern joint stock companies and innovators become defunct. Capitalism comes to an end to be replaced by Socialism. However, the economic history of the 20th century and beyond is the story of the success of capitalism. It is in fact, socialism as an economic system that came to an end in the 1990s.

2. **Economic Development is not Essentially Cyclical.** Trade cycles are not essential for economic development. Trade cycles are a consequence of macro-economic mismanagement and many a times deliberately induced. Innovation is not a discontinuous process and trade cycles are not caused by innovations alone.

3. **Overemphasis on Bank Credit.** Bank credit constitutes only one segment of the financial market. In fact long term capital, both ownership and debt capital comes from the capital market. The capital market has a more important role to play in the process of economic development than the money market which offers bank credit.

2.6 SUMMARY

1. Adam Smith's Theory of economic development is based on the Natural Law. He was a free marketer and believed in the non-interference of the State in economic affairs or laissez-faire. The invisible hand or market mechanism will establish equilibrium in all markets and maximize national income.

2. David Ricardo's Theory of economic development is based on the role of all factors of production and he supplemented this with the Theory of Rent, capital accumulation and also supported the role of the State.

3. Karl Marx provided the materialistic or economic interpretation of history. He brought out the driving forces of capitalism and also predicted the end of capitalism. He also suggested Socialism or planned economic development as an alternative to capitalism.

4. The stages of economic growth as described by Rostow in his book "The Stages of Economic Growth – A non-communist Manifesto (1960)" are as follows:

(A) The traditional society
(B) The pre-conditions for take-off
(C) The Take-off
(D) The drive to maturity, and
(E) The age of high mass consumption

5. According to Schumpeter, development is spontaneous and discontinuous change in the channels of the circular flow which changes the state of equilibrium. Changes are intrinsic and appear in the spheres of industrial and commercial life. Development takes place when new combinations are carried out in the form of innovations.

2.7 QUESTIONS

1. Critically examine Adam Smith's theory of economic development.
2. Examine David Ricardo's theory of Stationary State.
3. Explain the Marxian critique of Capitalism.
4. Critically examine Joseph Schumpeter's theory of economic development.
5. Explain the Stages of Growth theory given by WW Rostow.

3

PARTIAL THEORIES OF DEVELOPMENT

Unit Structure :

3.0 Objectives
3.1 The Lewis Theory of Development (Structural Change Model)
3.2 Leibenstein's Critical Minimum Effort Theory
3.3 Summary
3.4 Questions

3.0 OBJECTIVES

- To study the Lewis Model of Surplus Labor
- To study the Low level equilibrium trap by Prof. Leibenstein

3.1 THE LEWIS THEORY OF DEVELOPMENT (STRUCTUAL CHANGE MODEL)

Structural change theory focuses on the mechanism by which underdeveloped economies transform their economic structures from agricultural orientation into a modern industrial and service oriented economies. It employs the tolls of neoclassical price and resource allocation theory and modern econometrics to describe how this transformation takes place. One representative theory of structural change approach is the "two sector surplus labor" model of W Arthur Lewis.

Basic Model (Two Sector Economy)

The Lewis two sector model became the general theory of the development process in surplus-labor developing countries during the 60s and early 70s. In the Lewis model, the UDC consists of two sectors. The traditional, overpopulated rural subsistence sector has zero marginal labor productivity. The primary focus of the model is on the process of labor transfer and the growth of output and employment in the modern sector. Lewis assumed that urban wages would be about 30% higher than average rural wages to induce workers to migrate from their rural

areas. The urban wages are assumed to be constant and hence at this wage rate, the supply of labor is perfectly elastic. The Lewis model can be diagrammatically represented as in Figure 3.1.

Capitalist Surplus in the Urban Sector

OS represents average subsistence wage in the subsistence sector and OW the capitalist wage in the urban sector. At OW wage rate in the urban sector, the supply of labor is unlimited as shown by the horizontal supply curve of labor WW. In the beginning, when ON_1 labor is employed in the urban sector, its marginal productivity curve is P_1L_1 and the total output of the sector is $OP_1Q_1N_1$. Out of these, workers are paid wages equal to the area OWQ_1N_1. The remaining area WP_1Q_1 is the surplus output. This is the capitalist surplus in the urban sector. When this surplus is reinvested, the marginal productivity curve shifts upwards to P_2L_2. The capitalist surplus and employment are now larger than before being WP_2Q_2 and ON_2 respectively. **This process of reinvestment of surplus goes on till the entire surplus labor is absorbed in the urban sector. After this, the labor supply curve will assume a positive slope and wages and employment will continue to rise with development.**

Capital is formed out of profits earned by the capitalists. If technical progress is capital saving, it will increase the productivity of capital and if it is labor saving, it will increase the productivity of labor. **Technical progress will also generate surplus and increase investment and employment in the urban sector. The structural transformation of the economy will have taken place with the balance of economic activity shifting from traditional rural agriculture to modern urban industry.**

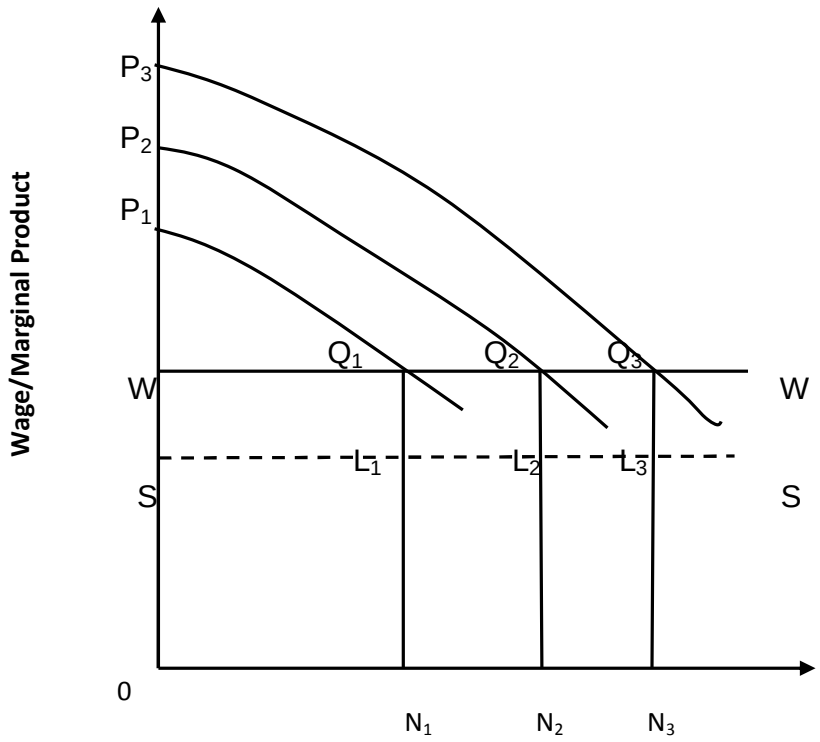


Fig.3.1 – Lewis Model of Unlimited Labor Supply

Role of the State and Private Capitalists

In an UDC, the wage and salary earners save only about 3 per cent of the national income. The dominant classes are engaged in conspicuous consumption. It is therefore the State capitalist and private capitalists who create capital out of profits earned. The private capitalist exploits the new opportunities, widens the market, develops and adopts new techniques that increases the productivity of labor and generates the surplus. **The State capitalist can accumulate more capital by using the profits of the capitalist sector (through taxation) and also use surplus subsistence labor. If the opportunities for using capital productivity increase rapidly, the surplus will also grow rapidly along with the capitalist class.**

Capital Formation through Bank Credit

In an UDC with abundant idle resources and capital shortage, capital formation can also take place through bank credit. However, bank credit led capital formation can also lead to inflation. Inflation takes place because the supply of consumer goods remains constant and the money supply increases as a result of bank credit to the capitalist sector. But the problem of inflation is only temporary because when the capital goods begin to produce consumer goods, the demand supply gap of consumer goods is closed and the prices come back to the original level. **As** capital formation is taking place continuously, output, employment and profit rise continuously. Higher profits lead to higher savings and a time comes when savings increase so much that new investments can be financed without bank credit.

End of the Growth Process

The process of growth comes to an end with the supply of labor becoming perfectly inelastic or when the wage rates begin to rise and profits begin to fall so that there is no surplus left for reinvestment.

Open Economy

In an open economy, capitalist can export to capital to labor abundant countries when domestic supply of labor becomes perfectly inelastic or governments can encourage mass immigration of surplus labor at subsistence wages so that the growth process is continued. **However, according to Lewis, mass immigration is not possible because trade unions will oppose it. Further, capital exports will reduce the cost of production of imported goods and as a result the real wages of workers will rise, thus bringing about a fall in capitalist profits. Therefore what is true of a closed economy is also true of an open economy and the growth process must come to an end.**

Criticism of the Lewis Model

The Lewis theory is relevant to overpopulated UDCs under certain conditions. Its applicability is limited by its assumptions. The following criticisms are made:

1. **Wage Rate is not constant in the Capitalist Sector.** The wage rate in the capitalist sector of an UDC continues to rise over time in the presence of open unemployment in the rural sector. Institutional factors such as trade union bargaining power, civil service wage structure and multinational firms' hiring practices tend to increase the general wage level in the urban sector. Thus, wage rates do not remain constant in the capitalist sector.

2. **Jobless Economic Growth.** If productive capital is labor saving, it would not absorb surplus labor and the distributive effects of reinvestment will be all in favor of the capitalist class with no increase in aggregate social welfare and hence the theory breaks down. The anti-developmental nature of economic growth is shown in Fig. 3.2.

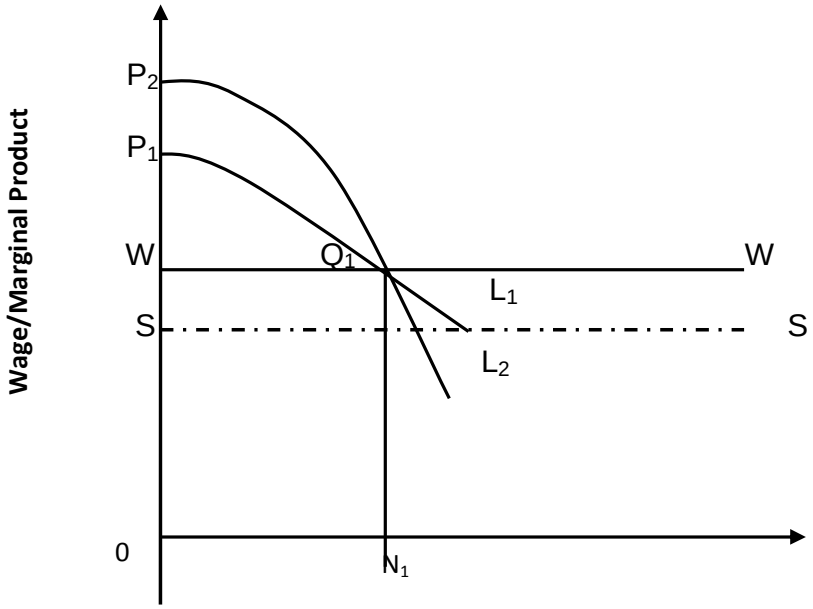


Fig.3.2 – Lewis Model (Anti-developmental Dimension)

In Fig.3.2, the P_2L_2 curve has a greater negative slope than the P_1L_1 curve, indicating labor saving technique. When the marginal productivity curve shifts upwards from P_1L_1 to P_2L_2, the total output increases from $OP_1Q_1N_1$ to $OP_2Q_1N_1$ and the total wage bill remains constant at OWQ_1N_1 because the labor employed also remains constant. Thus when productive capital becomes labor saving, the Lewis model generates **Jobless Growth.**

3. **Supply of Skilled Labor is not a temporary problem.** Lewis assumes the existence of unskilled labor. He feels that skilled labor is a temporary problem which can be removed by providing training facilities. However, skill formation is a long drawn process and the supply of skilled labor force is a serious problem in under developed countries.

4. **Inflation is not Self-liquidating.** Lewis assumes that inflation resulting from bank credit led investment is self-liquidating. However, the fact is that the marginal propensity to consume is very high in poor countries and due to structural rigidities the supply of consumer goods falls short of demand leading to perennial inflation.

5. **Absence of Evidence of Surplus Labor in the Rural Sector.** Some economists like Shultz do not agree that the marginal productivity of labor in rural sector is zero. Further, it is difficult to find the exact number of surplus labor in the rural sector because all workers receive some wages either in kind or in cash. Even when the surplus labor is removed from the rural sector, farm output will fall leading to rise in rural wages and food prices.

Conclusion

Modern technology is labor saving. Capital scarce countries like India cannot prevent the flight of capital because capital has become a colorless commodity under the WTO. Surplus labor does not happen to exist in rural areas. Even if there is some surplus labor in rural areas, there is also the problem of surplus urban labor. Further, the urban wage rates are seen to be continuously rising. UDCs are therefore beset with structural rigidities and institutional backwardness. Under these circumstances, the Lewis model becomes impractical.

3.2 LEIBENSTEIN'S CRITICAL MINIMUM EFFORT THEORY

Introduction :

Harvey Leibenstein developed the theory that underdeveloped countries have the problem of vicious circle of poverty which keeps them in a low equilibrium trap. In order to

come out of the trap, a critical minimum effort is needed to raise the per capita income to a level at which sustained development could be maintained. **According to Leibenstein, every economy is subject to 'shocks' and 'stimulants'. While a shock reduces the per capita income, a stimulant actually increases the per capita income. Some countries are underdeveloped because the magnitude of the shock is greater than the magnitude of stimulant. It is only when the income raising factors are stimulated much beyond the income-reducing factors that the critical minimum is reached and the economy would be on the path to development.**

Growth Agents

The expansion of growth agents increases the stimulating factors. The growth agents are the entrepreneur, the investor, the saver and the innovator. The growth contributing activities result in the creation of entrepreneurship, the increase in the stock of knowledge, the expansion of productive skills and the increase in the rate of saving and investment.

Incentives

The expansion of growth agents will depend upon the anticipated outcome of such activities, the actual result and on the incentives for further expansion or contraction generated by the interaction of the anticipation, the activities and the results. There are two types of incentives:

1. **The zero-sum incentives which do not raise national income but have only a distributive effort, and**
2. **The positive-sum incentives that lead to the expansion of national income.**

Positive-sum activities lead to the expansion of national income and economic development. However, the entrepreneurs in UDCs are engaged in zero-sum activities. They are the non-trading activities for securing a greater monopolistic control, political power and social prestige. The trading activities which lead to a greater monopolistic position but do not add to aggregate resources, the speculative activities which do not utilize savings but do waste scarce entrepreneurial resources and such activities that do use up net savings but the investments involved are in enterprises of such nature that their social value is either zero or their social value is lower than their private value. **Thus the**

zero-sum activities are not real income creating activities but simple transfers of liquidity from some holders to others. The positive-sum activities which are essential for economic development have a limited scope in UDCs. Even if some entrepreneurs take up real investment projects in anticipation of profits, their positive-sum activities will degenerate and be directed towards zero-sum activities in the absence of net growth in the economy. **It is therefore necessary that the minimum effort should be sufficiently large to create an environment favorable to the continuation and growth of positive sum activities.**

Income Reducing Factors in UDCs

In UDCs, the factors which remain rigid tend to reduce per capita income. These factors are:

1. The zero-sum entrepreneurial activities directed towards the maintenance of existing economic privileges through the inhibition and curtailment of potentially expanding economic opportunities.

2. The conservative activities of both organized and unorganized labor directed against change.

3. The resistance to new knowledge and ideas and the simultaneous s attraction of classical knowledge and old ideas.

4. Increase in essentially non-productive conspicuous public or private consumption expenditures that use resources that could otherwise be used for capital accumulation.

5. Population growth and the consequent labor force growth the dilutes the amount of capital available per worker, and

6. A high capital output ratio.

These negative influences can be destroyed by making a sufficiently large critical minimum effort which would increase the per capita income, the level of saving and investment and which in turn would lead to the following positive sum activities:

1. An expansion of the growth agents.

2. An increase in their contribution to per unit of capital as the capital-output ratio declines.

3. A decrease in the effectiveness of factors inhibiting growth.

4. The creation of social and environmental conditions that promote social and economic mobility.

5. Increased specialization and the expansion of secondary and tertiary sectors, and

6. The development of an atmosphere that leads to changes that are more conducive to economic and social changes particularly decline in fertility and decline in the rate of growth of population.

Graphical Explanation

Leibenstein's critical minimum effort theory is explained in Figure 3.3 where the 45-degree line measures induced increases and decreases in per capita income. The curve '**gg**' represents all the per capita income raising forces and curve **'dd'** measures the per capita income reducing factors. If the stimulants raise per capita income from the equilibrium level **Oe** to **Om**, the income raising forces, thus, generated will raise the per capita income level by **na**. But at this level, the income reducing forces **fb** are greater than the income raising forces af which will therefore generate the downward path **abcd** until it reaches the equilibrium position **E**. It is only when the investment program raises the per capita income to **Ok** level that the path of sustained growth starts. Thus if the per capita income level in a period is raised to **Ok**, the income raising forces generated will rise the income level to **sG** which will generate the path of endless expansion of PCI as shown by the arrows rising above G. Raising the PCI to **Ok** level and beyond point **G** is the critical minimum effort. Leibensteain regards the critical minimum effort as a 'a minimum minimorum of all possible efforts that would lead to sustained real income growth' involving an optimum time pattern of expenditure or effort.

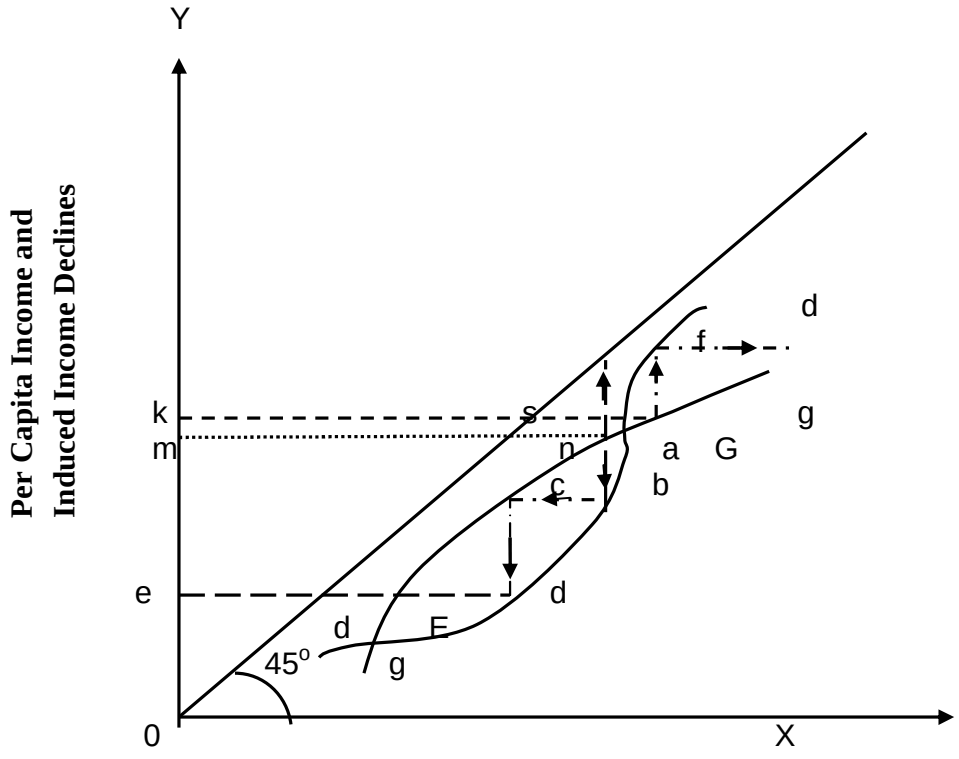


Fig.3.3: Leibenstein's Critical Minimum Effort

Requirements of Sustained Development.

For sustained development, the initial investment effort should be more than a minimum to generate a large increase in per capita income to overcome autonomous or induced income reducing factors. The critical minimum effort may be divided into a series of smaller efforts and optimally timed in order to make the effort more effective. This is shown in Figure 3.4., where the line ee represents the low per capita income level and mm the critical minimum per capita income level. The gap between the two is divided into Area I and Area II. The Area III above mm is of self-sustained growth. If Oa is the per capita income to begin with, the initial injection of investment would raise per capita income to Ob level. Then at time t the second injection of investment would raise per capita income by cd so that the critical minimum level mm is reached. If investment is not optimally timed, the per capita income would follow the cy path of the curve bcy toward the low equilibrium level ee.

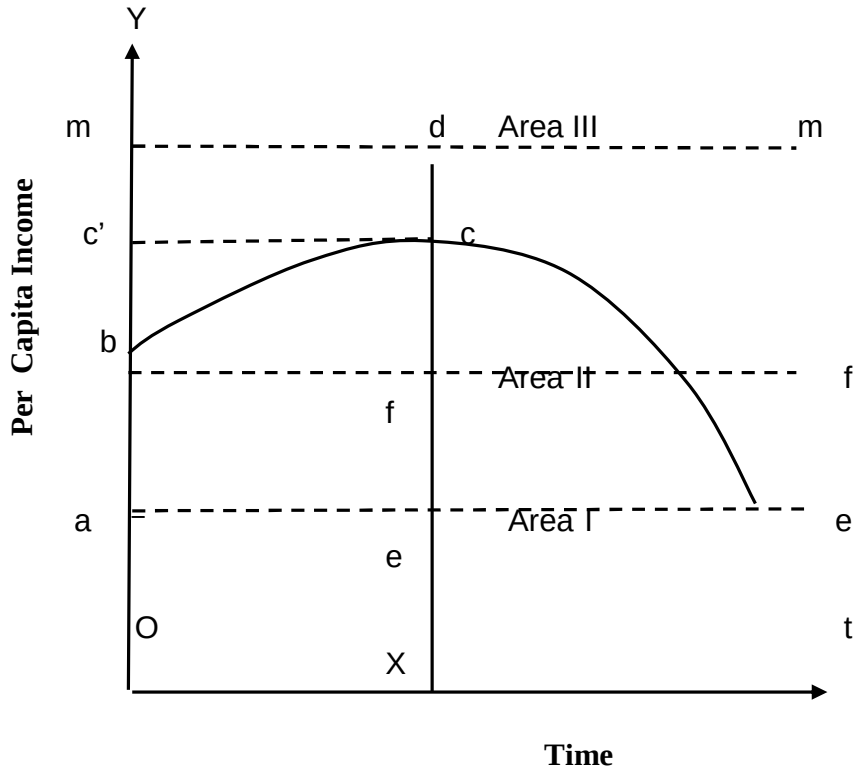


Fig.3.4 – Requirements of Sustained Development

Population Growth a function of PCI

The rate of population growth is a function of the level of PCI. It is closely related to the different stages of economic development. **At the subsistence equilibrium level of income, fertility and mortality rates are the maximum and consistent with the survival rate of population. If the PCI is raised above the subsistence level, the mortality rate falls without any drop in the fertility rate and the population growth rate increases.** However, after a point, further increases in PCI lower the fertility rate and as development gains momentum, the rate of population growth declines. **According to Leibenstein, the biologically determined maximum growth rate of population is between 3 to 4 per cent. In order to prevent this high growth rate, the necessary critical minimum effort should be large. This is shown in Fig. 3.5.**

The curve N measures the PCI. The curve P shows the rate of population growth at each level of PCI. Point **'a'** represents the subsistence equilibrium point where there is absence of population and income growth. If the PCI is raised to **yb**, the population growth rate is one per cent and the income growth rate is than one per cent. At the **yc** level of PCI, the population growth rate is higher than the rate of national income

growth i.e., **ycg > ycc**. Therefore, the PCI should be raised to a level so that the rate of growth of national income is above the rate of growth of population. This is only possible after **ye** level of PCI when the population growth rate starts declining. **Point e is the 3 per cent maximum biologically determined growth rate of population assumed by Leibenstein. Ye is the critical minimum PCI level that is required to generate the process of sustained economic development.**

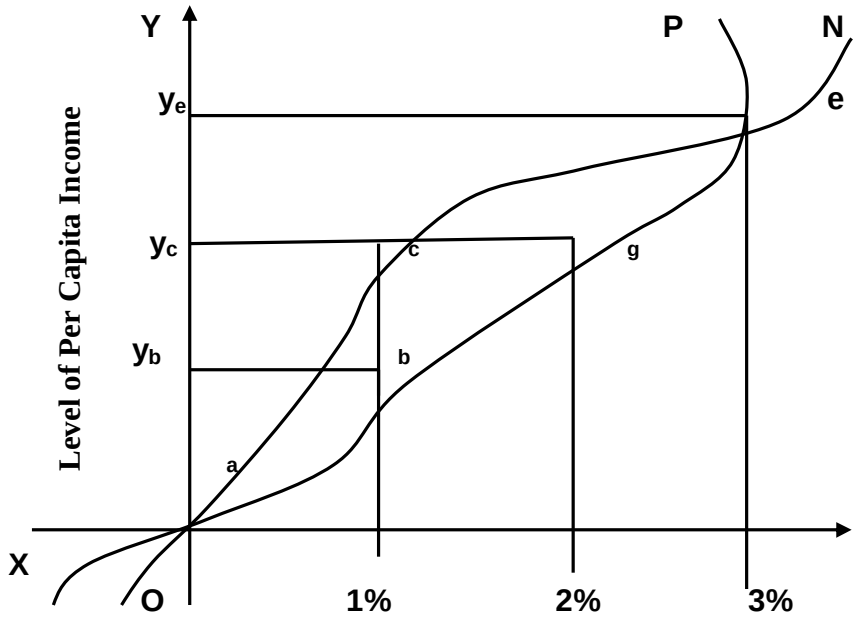


Fig.3.5 – Population Growth a function of PCI

Leibenstein's Projections

Leibenstein has estimated the size of the critical minimum effort in the case of an UDC with a starting population of one million. His calculations of fertility and mortality rates are based on life expectancy and confirm with those of UDCs. Projection 4b applies to those UDCs which hope to check the growth rate of population as the development process gains momentum. With the annual growth rate of population at 2.03 per cent, the capital output ratio 3:1, the required rate of investment is 13.2 per cent for the first five year period. In the 25^{th} to 30^{th} years, the population growth rate is maximum and is 2.42 per cent which requires an investment of 14.5 per cent. Then the population starts declining and in the 50^{th} to 55^{th} years, it is 1.49, thus requiring an investment of 13.08 per cent. The required annual rates of national income growth during these periods are 4.40, 4.84 and 4.36 respectively.

A Critical Appraisal

Leibenstein's theory is more realistic than Rodan's Big Push theory because giving a big push at once is impracticable in UDCs whereas the critical minimum effort can be properly timed and broken up into a series of smaller efforts to put the economy on the path of sustained development. This theory is also workable with democratic planning which is the case with most of the UDCs. However, the theory has following limitations:

1. Changes in Population Growth Rate is related to Death Rate and Birth Rate.

The theory is based on the assumption that the rate of growth of population is an increasing function of the level of PCI up to a point but beyond that it is a decreasing function of the latter. However, the growth rate of population is due to the decline of death rate and not due to rise in PCI. The death rate falls because of availability of health facilities and developments in medical science. Further, the fall in the birth rates after a point is not due to increasing PCI but the emergence of individualism and gender equality and greater levels of education in the society.

2. Complex Relationship between PCI and Growth Rate.

According to Professor Myint, the functional relationship between the PCI and the rate of growth in total income is more complex than what Leibenstein has set out in his theory. The relation of PCI with the rate of saving and investment depends on the distributional pattern of income and the effectiveness of financial institutions in mobilizing savings. Secondly, the relations between investment and output is not determined by a constant capital output ratio as is assumed by Leibenstein but depends on the extent to which the productive organization of the country can be improved and how far land saving innovations can be adopted to overcome the tendency to diminishing returns on additional investment even after the growth rate of population has reached the three per cent level.

3.3 SUMMARY

1. One representative theory of structural change approach is the "two sector surplus labor" model of W Arthur Lewis. The Lewis two sector model became the general theory of the development process in surplus-labor developing countries during the 60s and early 70s. In the Lewis model, the UDC consists of two sectors.

The traditional, overpopulated rural subsistence sector has zero marginal labor productivity. The primary focus of the model is on the process of labor transfer and the growth of output and employment in the modern sector.

2. Harvey Leibenstein developed the theory that underdeveloped countries have the problem of vicious circle of poverty which keeps them in a low equilibrium trap. In order to come out of the trap, a critical minimum effort is needed to raise the per capita income to a level at which sustained development could be maintained.

3.4 QUESTIONS

1. Explain Lewis theory of development.
2. Explain the critical minimum effort theory of development.

4

Module 2

THEORIES OF ECONOMIC GROWTH AND DEVELOPMENT - II

Unit Structure :

4.0 Objectives
4.1 Introduction
4.2 The Harrod – Domar Model of Economic Growth
4.3 The Solow-Swan Neo-Classical Growth Model
4.4 Summary
4.5 Questions

4.0 OBJECTIVES

- To study the Harrod - Domar Economic Growth Model
- The study Solow-Swan Neo classical Growth Model

4.1 INTRODUCTION

After the Second World War, four major approaches to economic development were put forward by development economists. These approaches are:

1. The linear stages of growth model (Rostow's stages of growth and Harrod-Domar growth model).
2. Theories and patterns of structural change (Lewis' model of unlimited supplies of labor).
3. The international-dependence revolution, and
4. The neo-classical free market counter-revolution (Solow's growth theory).

The linear stages of growth model developed in the 1950s and 1960s viewed the process of development as a series of successive stages of economic growth through which all countries must pass. According to these theories of economic

development, the right quantity and mixture of saving, investment and foreign aid were enough to enable developing countries to follow the growth path of developed countries. Development was considered as a process of rapid aggregate economic growth.

In the 1970s, the linear stages approach was replaced by two new theories, namely: patterns of structural change and the international dependence revolution. Theories and patterns of structural change approach to development used modern economic theory and statistical analysis to study the internal process of structural change that a developing country must undergo in order to achieve sustained rapid economic growth.

The international dependence revolution viewed underdevelopment in terms of international and domestic power relationships, institutional and structural economic rigidities and the rising number of dual economies and dual societies both within and among the nations of the world. Dependence theories emphasized external and internal institutional and political constraints on economic development. The need for major new policies to eradicate poverty, to provide more diversified employment opportunities and to reduce income inequalities was emphasized. These objectives were to be achieved within the context of a growing economy without singularly emphasizing economic growth as in the case of linear stages and structural change models.

The neo-classical free market counter-revolution approach was developed in the 1980s and the 1990s. It is also sometimes called the neo-liberal approach. This approach emphasized the beneficial role of free markets, open economies and the privatization of inefficient public enterprises. Failure to develop is not due to exploitive external and internal forces as proposed by dependence theorists but because of excessive government intervention and regulation of the economy. The modern approach to economic development is eclectic. It draws on all these approaches.

4.2 THE HARROD – DOMAR MODEL OF ECONOMIC GROWTH

The model is based on the experiences of advanced capitalist economies and it analyses the requirements of steady growth in such economies.

REQUIREMENTS OF STEADY GROWTH

Harrod and Domar attempted to determine the rate of income growth necessary for the steady working of the economy. Their models are different in details. However, their conclusions are similar. According to the two, investment has a key role in the economic growth process because it generates income and increases the productive capacity of the economy. Rise in income may be known as the demand effect and rise in productive capacity may be known as the supply effect of investment. Expansion in real income and output depends upon net investment. Full employment equilibrium will be maintained if growth in real income and output is equal to the rise in the productive capacity. If growth in real income and output is less than the growth in the productive capacity, excess capacity will emerge and entrepreneurs will reduce investment leading to reduced levels of income and employment in the subsequent periods and the economy will move away from the path of steady growth. The required rate of growth in real income and output in order to maintain full employment is known as the Warranted Rate of Growth or the full capacity growth rate.

ASSUMPTIONS

The Harrod-Domar model is based on the following assumptions:

1. There is an initial full employment level of equilibrium.
2. There is absence of government interference.
3. The economy is a closed economy.
4. There are no adjustment lags between investment and productive capacity.
5. The average propensity to save is equal to the marginal propensity to save.
6. The ratio of capital stock to income is fixed.
7. The marginal propensity to save remains constant.
8. There is no depreciation of capital goods.
9. Saving and investment relate to the income of the same year.
10. The general price level is constant.
11. Interest rate is constant.
12. The proportion of labor and capital in the productive process is fixed.
13. Fixed and circulating capital are lumped together to be capital.
14. There is only one type of product.

(A) THE DOMAR MODEL

The rate at which investment should increase in order to make the increase in real income equal to the increase in the productive capacity can be obtained by linking aggregate supply and aggregate demand through investment.

1. **Increase in Productive Capacity or the Supply Side.** Let the annual rate of investment be 'I' and the annual productive capacity per dollar be 's'. Thus the productive capacity of 'I' dollar invested will be I·s dollars per year. However, new investment will compete with the old for attracting factors of production leading to a lower output from the old plants. As a result, the rise in productive capacity of the economy will be less than I·s which is indicated as Iσ where σ represents the net social average productivity of investment (= $\Delta Y/I$). Thus Iσ < Is. Iσ is the total net potential increase in the output of the economy and is known as the 'sigma effect'. According to Domar Iσ is the supply side of the investment.

2. **Required Increase in Aggregate Demand.** Let the annual increase in income be denoted by ΔY and increase in investment by ΔI and the propensity to save by α (= $\Delta S/\Delta Y$). Then the increase in income will be equal to the multiplier (1/α) times the increase in investment i.e. $\Delta Y = \Delta I \times 1/\alpha$.

3. **Equilibrium.** In order to maintain full employment equilibrium level of income, aggregate demand should be equal to aggregate supply. Equality between AD and AS is the fundamental equation of the model which is stated as follows:

$$\Delta I \times 1/\alpha = I\sigma \text{ which can be restated as } \Delta Y = I\sigma.$$

Solving the above equation by dividing both sides by I and multiplying by α we get:

$$\Delta I/I = \alpha\sigma.$$

This equation shows that to maintain full employment, the growth rate of net autonomous investment ($\Delta I/I$) must be equal to ασ (mps times the productivity of capital). Aσ is the rate at which investment must grow to ensure the use of potential capacity in order to maintain a steady growth rate of the economy at full employment.

Domar gives a numerical example to explain his point. Let σ = 25% per year, α = 12 per cent and Y = 150 Billion USD per year.

In order to maintain full employment, an amount equal to 150 × 12/100 = 18 billion USD should be invested. This will raise productive capacity by the amount invested σ times i.e. by:

$$\frac{150 \times 12}{100} \times \frac{25}{100} = 4.5 \text{ Billion USD.}$$

The national income will therefore rise by 4.5 Billion USD per year. But the relative rise in income will equal the absolute increase divided by the income itself, i.e.

$$150 \times \frac{\frac{12}{100} \times \frac{25}{100}}{150} = \frac{12}{100} \times \frac{25}{100} = \alpha\sigma = 3 \text{ Percent}$$

Or $$\frac{4.5 \times 100}{150} = \frac{450}{150} = 3 \text{ Percent}$$

Thus in order to maintain full employment, income must grow at a rate of 3 per cent per annum which is the equilibrium rate of growth. Any divergence from the 3 per cent rate of growth will lead to cyclical fluctuations. When $\Delta I/I > \alpha\sigma$, the economy would experience boom and when $\Delta I/I < \alpha\sigma$, the economy would experience depression.

(B) THE HARROD MODEL

Prof. RF Harrod tries to show in his model how steady growth may occur in the economy. Once the steady or the equilibrium growth rate is disturbed, the disequilibrium will continue on account of the cumulative forces leading the economy into secular deflation or inflation. The model is based upon three distinct rates of growth. The actual growth rate 'G' which is determined by the saving ratio and the capital output ratio. 'G' shows the short run cyclical variation in the growth rate. The warranted growth rate is represented by 'Gw' which is the full capacity growth rate. The natural growth rate is represented by 'Gn' which is regarded as the welfare optimum by Harod. 'Gn' may also be called as full employment rate of growth.

The Actual Growth Rate (G)

In Harrod's model, the first fundamental equation is:

GC = s ………………………………… (1)

Where G is the rate of growth of output in a given period of time i.e. ($\Delta Y/\Delta Y$),

'C' is the net addition to capital and is defined as the ratio of investment to the increase in income i.e. I/∆Y and 'S' is the average propensity to save i.e. S/Y. Substituting these ratios in the above equation, we get:

$$\frac{\Delta Y}{Y} \times \frac{I}{\Delta Y} = \frac{S}{Y} \text{ OR } \frac{I}{Y} = \frac{S}{Y} \text{ OR I = S.}$$

The Warranted Rate of Growth (Gw)

It is the rate at which producers will be happy with what they are doing. It is the entrepreneurial equilibrium. Given the propensity to save, the rate of growth of output will be equal to the growth rate in income or demand. The equation for the warranted growth rate is:

GwCr = s ..... (2)

Where Gw is the warranted rate of growth which is equal to ∆Y/∆Y, 'Cr' is capital required to maintain the warranted rate of growth i.e. the required capital output ratio which is equal to I/∆Y. 's' = S/Y or the average propensity to save. Thus if the economy is to grow at a steady rate of Gw, income must grow at the rate of s/Cr per year i.e. Gw = s/Cr.

If income grows at the warranted rate, the capital stock of the economy will be fully utilized and entrepreneurs will be willing to continue to invest the amount of saving generated at full potential income. Gw is therefore a self-sustaining rate of growth and at Gw growth rate, the economy will follow the equilibrium path.

The Origin of Long-run Disequilibria

At full employment growth, the actual growth rate 'G' must equal 'Gw' resulting in a steady grwoth rate and 'C' must equal 'Cr' i.e. the actual capital goods must be equal to the required capital goods for steady growth. If 'G' and 'Gw' are unequal, the economy will be in disequilibrium. For example, if G > Gw, then C < Cr and there will be shortages of goods and equipment leading to secular or general inflation. The ruqired investment will be greater than saving and hence aggregate supply will be less than aggregate demand. There would thus be chronic or continuous inflation. This is shown in figure 4.1(A). Notice that the actual growth rate 'G' follows the warranted growth path 'Gw' from the full employment level of income Y_o up to point 'E' through period t_2. From t_2, 'G'

deviates from 'Gw' and lies above it. In later periods, the gap between G and Gw widens. Conversely, if G < Gw, then C > Cr resulting in a secular or general depression because actual income grows at a rate less than the rate of growth of the productive capacity of the economy. This is a situation in which the actual capital goods are greater than the required capital goods. This means that the required investment is less than saving and aggregate demand is less than aggregate supply. The result is fall in output, employment and income. There would thus be chronic depression. This is shown in Fig. 4.1(B). Notice that from period t_2 onwards, G falls below Gw and the gap widens in the subsequent periods. According to Harrod, once the equilibrium is disturbed, it cannot be automatically restored. Hence public policy should aim at establishing equality between G and Gw in order to maintain long run stability. In this context, the concept of natural rate of growth assumes importance.

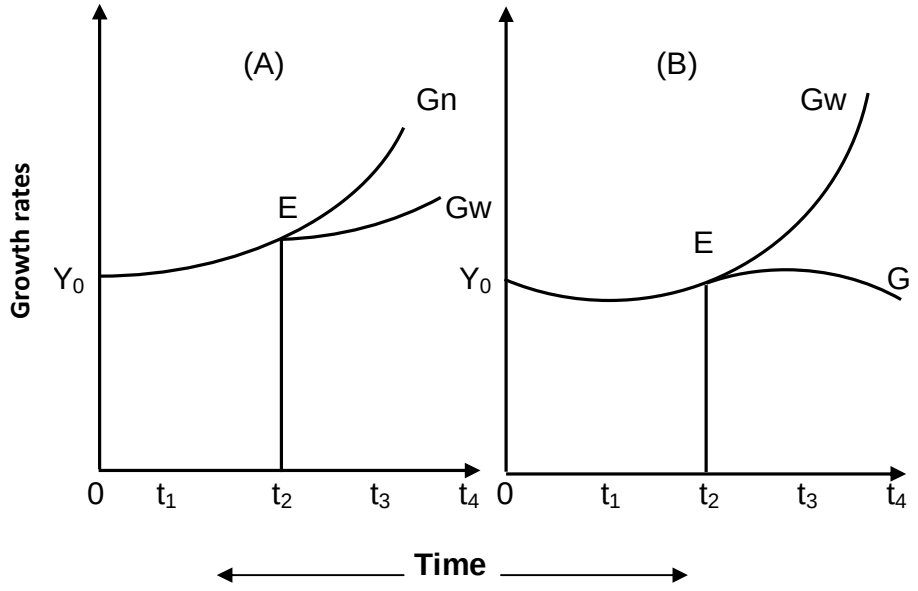


Fig. 4.1(A) Secular Inflation **Fig.4.1(B) Secular Depression**

The Natural Rate of Growth

The natural rate of growth is the rate of growth determined by the increase in population and technological improvements at full employment. The equation for the natural growth rate is:

Gn.Cr = s Or GnCr ≠ s.

Here Gn is the natural or full employment rate of growth.

Divergence of G, Gw and Gn

Full employment equilibrium will be attained when Gn = Gw = G. If there is any divergence between thee rates of growth, there will be either secular stagnation, inflation or depression. If G > Gw, investment increases faster than savings and incomes rises faster than Gw resulting in inflation. If G < Gw, saving increases faster than investment and rise of income is less than Gw resulting in depression. According to Harod, if Gw > gn, secular stagnation will develop. In this situation, Gw is also greater than G because the upper limit to the actual rate is set by the natural rate as shown in Figure 4.2(A). When Gw > Gn, C > Cr and there will be excess of capital goods due to shortage of labor which keeps the rate of increase in output to a level less than Gw. Excess capacity results in reduced investment, employment, output and incomes. The economy will be found in chronic depression and savings will be considered bad. If Gw < Gn, Gw is also less than G as in Fig.4. 2(B), secular inflation will develop in the economy. When Gw < Gn, C will be less than Cr (C < Cr), there is shortage of capital goods and labor is abundant. Profits are high because desired investment is greater than realized investment and businessmen will tend to increase their capital stock. This will lead to secular inflation. In such a situation, saving is good because it permits the warranted growth rate to increase.

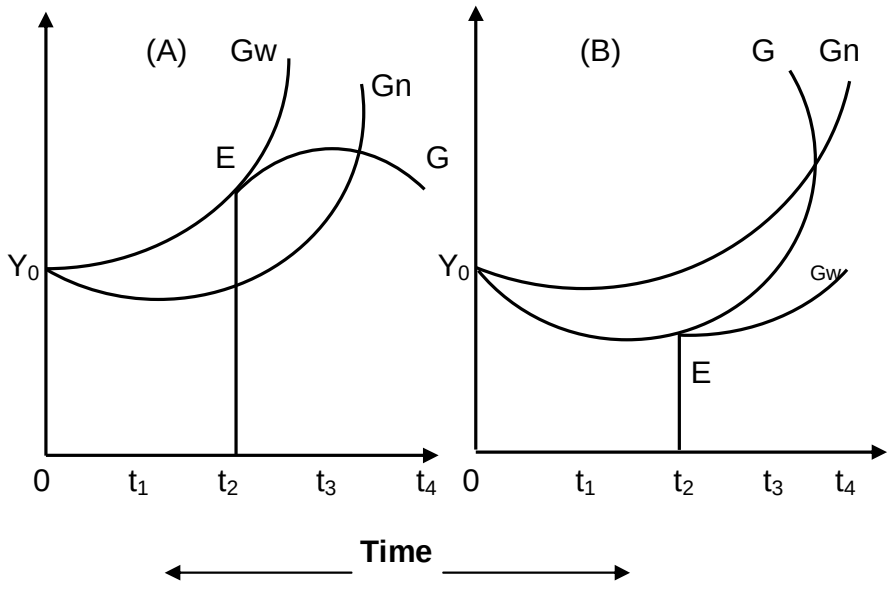


Fig. 4.2(A) Secular Depression **Fig.4.2(B) Secular Inflation**

The policy implications of the model are that saving is good in any inflationary gap economy and bad in a deflationary gap economy. Thus, in an advanced economy, 'S' has to be moved up and down as the situation demands.

LIMITATIONS OF THE HARROD-DOMAR MODEL

1. The propensity to save (α or s) and the capital output ratio (σ) are assumed to be constant. In reality, these do not remain constant in the long run and hence the requirements of steady growth may change. Further, steady growth rate may be obtained even with variable α and σ.
2. The assumption that labor and capital are used in fixed proportions is not acceptable. Labor can be substituted for capital and the economy can move towards a steady growth path.
3. The general price level is assumed to be constant. In reality, prices do change and may stabilize unstable situations.
4. The assumption that interest rate is constant is unrealistic and irrelevant to the model. A reduction in interest rates during periods of over- production can make capital intensive processes more profitable by increasing the demand for capital and thus reduce excess supply of goods.
5. The Harrod-Domar models ignore the effect of government programs on economic growth.
6. The model neglects the entrepreneurial behavior which actually determines the warranted growth rate in the economy.
7. The model fails to distinguish between capital goods and consumer goods.
8. According to Prof. Rose, the primary source of instability in Harrod's system lies in the effect of excess demand or excess supply on production decisions and not in the effect of growing capital shortage or excess capital on investment decisions.

Notwithstanding these limitations, the model is based on a free market economy with fiscal neutrality and is designed to indicate conditions of progressive equilibrium for an advanced economy. The model is important because it attempts to infuse dynamism and secularize Keynes's static short-run saving and investment theory.

APPLICATION OF HARROD-DOMAR MDOEL TO UNDER-DEVELOPED COUNTRIES

The Harrod-Domar models are based on three principal concepts of saving function, autonomous and induced investment and productivity of capital. The model was basically developed to solve the problem of secular stagnation in the advanced economies of the post-war period. The application of these models has been extended to the development problems of the under-developed countries. Let us see as to how these models can be used for planning in UDCs. Let us assume the capital output ratio to be 4:1 and Gw to be 3 per cent per annum. By applying the Harrod-Domar formula, the planners can find out the saving ratio required to sustain the growth rate of 3 per cent per annum. By substituting the above values in Harrod's model GwCr = s, we get:

$$\frac{3}{100} \times \frac{4}{1} = \frac{12}{100} = 0.12 \text{ or } 12\%$$

Thus if the capital output ratio is assumed to be 4:1 in an economy, the domestic savings must be 12% of the national income so that the economy grows at the rate of 3% per annum. Given the saving ratio and the capital output ratio, Harrod's formula for calculating growth rate is Gw = s/Cr and if S is 12% and the value of Cr is 4, then Gw = 12 /4 = 3 per cent. UDCs are characterized by low savings, high level of investment and chronic inflation. Hence, Harrod suggests the financing of large investments through the expansion of bank credit and automatic investment of inflationary profits in the capital markets. In the absence of organized capital markets in the UDCs, bank credit is the only way to finance investments and generate economic growth. Low savings in UDCs are responsible for low rate of growth and mass unemployment and under-employment. Thus the actual level of savings should be raised to the required level of savings by a compulsory tax or a surplus budget so that S = Sr. Further, Harrod also emphasizes the need for changes in the social and institutional factors because social and institutional obstacles are viewed as a cause of low growth rate.

LIMITATIONS OF THE HARROD-DOMAR MODEL IN UDCs

1. **Different Conditions.** The models were not intended to guide industrialization programs of under developed countries.

2. **Savings Ratio.** The growth models require high savings as well as low capital output ratio. In the UDCs, savings and investment decisions are taken by a small percentage of people with the majority of people leading a subsistence life.
3. **Capital Output Ratio.** It is difficult to measure capital output ratio when productivity is hindered by shortages and bottlenecks. According to Prof. Hirschman, the predictive and operational value of a model based on the capital output ratio and the savings ratio is less useful in under developed countries.
4. **Structural Unemployment.** According to Prof. Kurihara, the model fails to solve the problem of structural unemployment in UDCs i.e. unemployment arising out of a faster growth of population than the accumulation of capital.
5. **Disguised Unemployment.** The models begin with the assumption of full employment level of income which is not found in UDCs. Disguised unemployment cannot be removed by these models.
6. **Government Intervention.** UDCs cannot develop without substantial government intervention in the form of public investment, planning and regulating the economy. However, the model is based on laissez-faire policy.
7. **Foreign Trade and Aid.** The models are based on the assumption of a closed economy. However, UDCs are open economies in which foreign trade and aid has a major role.
8. **Price Changes.** Prices are assumed to be constant. However, the development experience of UDCs indicates inflationary growth.
9. **Institutional Changes.** Institutional factors are assumed to be given. However, economic development is not possible without institutional changes in Under developed countries.

CONCLUSION

The Harrod-Domar model is based on assumptions not found in UDCs and hence they are not applicable. Prof. Hirschman suggests that UDCs must have their own independent growth models. However, Prof. Kurihara believes that both the saving and income ratio and the capital output ratio have universal character and they are measurable strategic variables. UDCs which adopt planned and balanced economic growth can definitely use these models because their saving-income ratio and capital output ratios remain constant during the plan period.

4.3 THE SOLOW-SWAN NEO-CLASSICAL GROWTH MODEL

The neo-classical model was an extension to the 1946 Harrod–Domar model that included a new term: productivity growth. Important contributions to the model came from the work done by Robert Solow. In 1956, Solow and T.W. Swan developed a relatively simple growth model which fit available data on US economic growth with some success. In 1987, Solow received the Nobel Prize in Economics for his work.

Extension to the Harrod–Domar model. Solow extended the Harrod–Domar model by:

- Adding labor as a factor of production;
- Requiring diminishing returns to labor and capital separately, and constant returns to scale for both factors combined;
- Introducing a time-varying technology variable distinct from capital and labor.

The capital-output and capital-labor ratios are not fixed as they are in the Harrod–Domar model. These refinements allow increasing capital intensity to be distinguished from technological progress.

Graphical Presentation of the Model

The model starts with a neoclassical production function $Y/L = F(K/L)$, rearranged to $y = f(k)$. From the production function; output per worker is a function of capital per worker. The production function assumes diminishing returns to capital in this model, as denoted by the slope of the production function curve $y = f(k)$. Other identities used in the model are as follows:

n = population growth rate
δ = depreciation
k = capital per worker
y = output/income per worker
L = labor force
s = saving rate

Capital per worker change is determined by three variables:

1. Investment (saving) per worker.
2. Population growth, increasing population decreases the level of capital per worker.
3. Depreciation – capital stock declines as it depreciates.

When sy > (n + δ)k, in other words, when the savings rate is greater than the population growth rate plus the depreciation rate i.e. when the sy line is above the unity line on the graph, then capital (k) per worker is increasing. **The growth of the capital labor ratio is known as capital deepening.** When capital is increasing at a rate only enough to keep pace with population increase and depreciation, **it is known as capital widening i.e. when the new set of workers are provided with the existing amount of capital.**

The sy and (n + d)k curves intersect at point A, the "steady state". At the steady state, output and capital per worker is constant (∆k + ∆o = 0). However total output is growing at the rate of n, the rate of population growth. **The optimal savings rate is called the golden rule savings rate and is derived below.**

Left of point A, point k_1 for example, the saving per worker is greater than the amount needed to maintain a steady level of capital, so capital per worker increases. There is capital deepening from y_1 to y_0, and thus output per worker increases. Right of point A where sy < (n + δ)k, point k_2 for example, capital per worker is falling, as investment is not enough to combat population growth and depreciation. Therefore output per worker falls from y_2 to y_0.

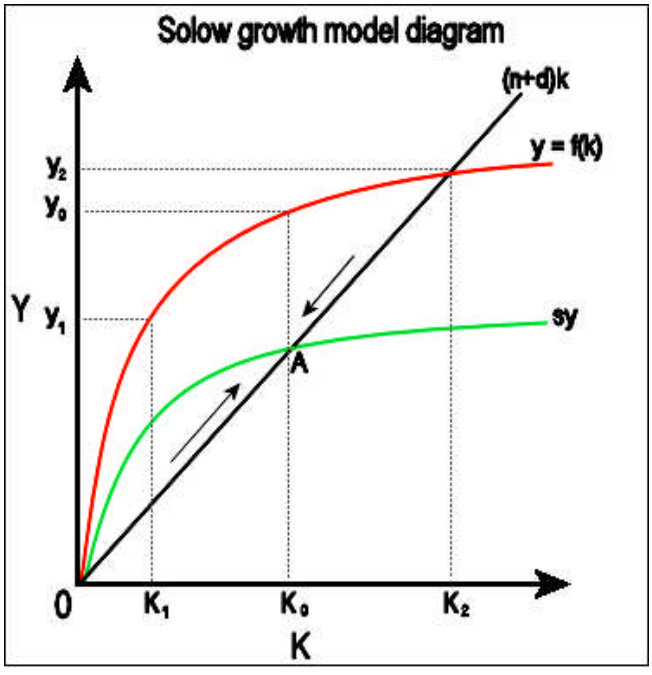


Fig.4.3 – The Solow Model

Changes in the saving rate

This graph is very similar to the one drawn at Fig.4.1. However, it now has a second savings function s_1y. It demonstrates that an increase in the saving rate shifts the function up. Saving per worker is now greater than population growth plus depreciation, so capital accumulation increases, shifting the steady state from point A to B. As can be seen on the graph, output per worker correspondingly moves from y_0 to y_1. Initially the economy expands faster, but eventually goes back to the steady state rate of growth which equals 'n'.

There is now permanently higher capital and productivity per worker, but economic growth is the same as before the savings increase. The economy will reach a higher equilibrium but the rate of growth of the economy will remain the same at the point of steady state. The rate of growth may expand between two steady state points but at various points of steady states, the rate of growth will remain the same.

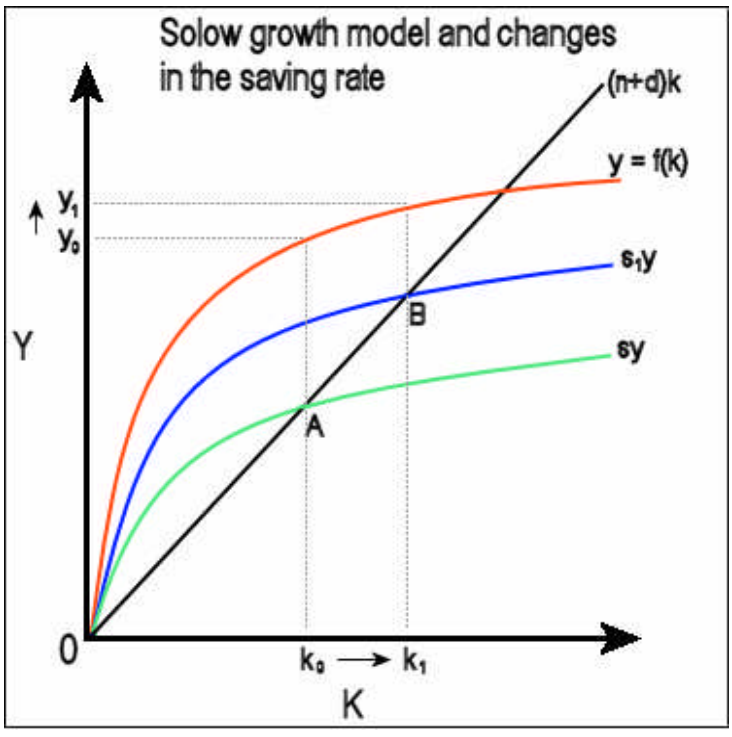


Fig.4.4 Changes in the Saving Rate

Changes in population

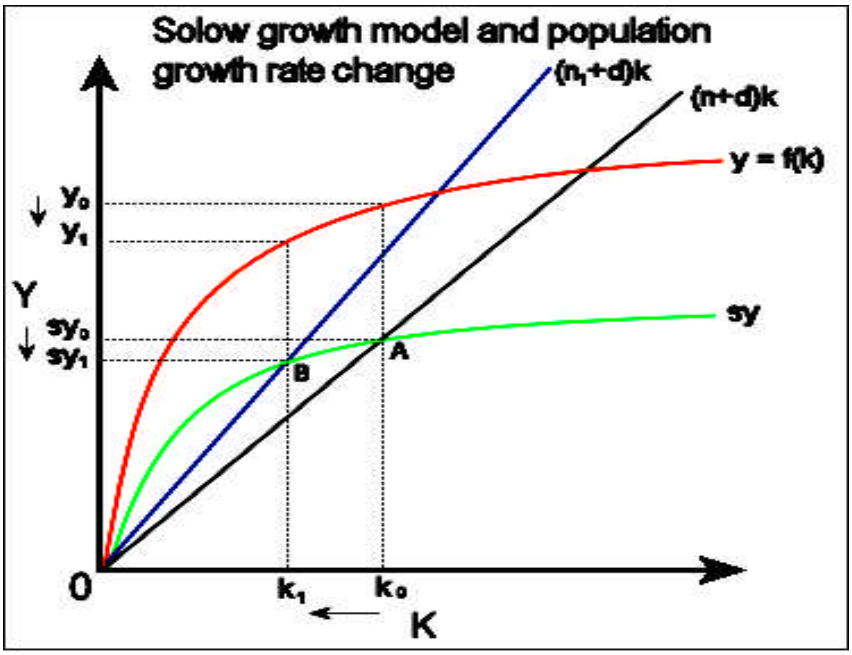


Fig.4.5 Changes in Population

This graph is again very similar to the first one, however, the population growth rate has now increased from n to n_1, and this introduces a new capital widening line ($n_1 + \delta$). As a result of increase in population, the rate of growth of income falls from y_1 to y_0, the capital per worker falls from k_0 to k_1 and the point of steady state growth shifts to the left from point A to point B. Also notice that the saving per worker has also fallen from sy_0 to sy_1.

Empirical Evidence

A key prediction of neoclassical growth models is that the income levels of poor countries will tend to catch up with or converge towards the income levels of rich countries as long as they have similar characteristics – for instance saving rates. Since the 1950s, the opposite empirical result has been observed on average. If the average growth rate of countries since, say, 1960 is plotted against initial GDP per capita (i.e. GDP per capita in 1960), one observes a positive relationship. In other words, the developed world appears to have grown at a faster rate than the developing world, the opposite of what is expected according to a prediction of convergence. However, a few formerly poor countries, notably Japan, do appear to have converged with rich countries, and in the case of Japan actually exceeded other countries' productivity, convergent growth rates are still expected, even after

convergence has occurred; leading to over-optimistic investment, and actual recession.

The evidence is stronger for convergence within countries. For instance the per-capita income levels of the southern states of the United States have tended to converge to the levels in the Northern states. Whether convergence occurs or not depends on the characteristics of the country or region in question, such as:

- Institutional arrangements
- Free markets internally, and trade policy with other countries, and the
- Education policy.

If productivity were associated with high technology then the introduction of information technology should have led to noticeable productivity acceleration over the past twenty years; but it has not. Econometric analysis on Singapore and the other "East Asian Tigers" has produced the surprising result that although output per worker has been rising, almost none of their rapid growth had been due to rising per-capita productivity.

Criticisms of the Model

According to the Solow model, technology and the capital labor ratio are the sole determinants of per capita income and thus of the standard of living. The capital labor ratio depends positively on the saving rate and negatively on the depreciation and population growth rates. The depreciation rate and the population growth rate have hardly witnessed any change over time and the differences in them across countries are hardly significant. It is hard to keep technology secrets for long and high speed communication networks have facilitated its adoption fairly uniformly. This leaves the relationship between the per capita income and the saving rate quite strong. Thus the validity of the Solow model hinges on the strength of this relationship across countries and over time.

Historical data around the world cast doubts on the strong positive relationship between per capita income and the saving rate. As per the 2002 data, the US with high per capita income (US $35,060) has a low saving rate of about 17 per cent as compared to Malaysia’s medium per capita income (PPP USD 8280) and a high saving rate of 47%. India had low per capita income of (PPP US$ 2570) and a medium high saving rate of 26 per cent. Pakistan with

a low per capita income (USD 1940 at PPP) had a low saving rate of only 15 %. Thus historical data neither supports nor rejects Solow's theory. It only shows that there must be some other determinants of the standard of living other than the saving investment rate.

Empirical evidence offers mixed support for the model. Limitations of the model include its failure to take account of entrepreneurship (which may be a catalyst behind economic growth) and strength of institutions (which facilitate economic growth). In addition, it does not explain how or why technological progress occurs. This failing has led to the development of endogenous growth theory, which endogenizes technological progress and/or knowledge accumulation.

4.4 SUMMARY

1. The Harrod – Domar model of economic growth is based on the experiences of advanced capitalist economies and it analyses the requirements of steady growth in such economies.
2. The neo-classical model was an extension to the 1946 Harrod–Domar model that included a new term: productivity growth. Important contributions to the model came from the work done by Robert Solow. In 1956, Solow and T.W. Swan developed a relatively simple growth model which fit available data on US economic growth with some success. In 1987, Solow received the Nobel Prize in Economics for his work.

4.5 QUESTIONS

1. Critically examine the Harrod-Domar Model of Growth.
2. Explain Solow's model of economic growth.

5

THE AK MODEL AND THE FELDMAN-MAHALNOBIS-DOMAR MODELS

Unit Structure

5.0 Objectives
5.1 Endogenous Growth Theory (W.S.R.T. ROMER'S MODEL)
5.2 The Feldman-Domar Model
5.3 The Mahalnobis Model
5.4 Summary
5.5 Questions

5.0 OBJECTIVES

- To study Endogenous Growth Theory i.e. AK Model
- To study The Feldman-Mahalnobis-Domar Models of growth

5.1 ENDOGENOUS GROWTH THEORY (W.S.R.T. ROMER'S MODEL)

The traditional growth theories were not able to explain the sources of long term economic growth. In fact, traditional growth theories believed that economies cannot grow over a long period. According to neoclassical theory, the low capital labor ratios of developing countries promise high rates of return on investment. **However, in the era of World Bank-IMF sponsored globalization, particularly in the context of LDCs, it has been found that most of the LDCs failed to attract new foreign investment or to stop the flight of domestic capital. The paradoxical behavior of developing-world capital flows (from poor to rich countries) led to the development of the concept of Endogenous Growth or the New Growth Theory.**

The new growth theory provides a theoretical framework for analyzing sustained endogenous growth that is determined by the system governing the production process. The endogenous growth

models hold GNP growth to be a natural consequence of long run equilibrium. They explain the growth rate differentials across the countries and growth in itself. They also explain the factors that determine the size of λ (the rate of growth of GDP) that is not explained and exogenously determined in the So low neoclassical growth equation.

The endogenous growth theory differs from the neoclassical growth theories in the following ways:

1. Rejects diminishing marginal returns to capital investments and permits increasing returns to scale in aggregate production.

2. Focuses on the role of externalities in determining the rate of return on capital investments.

3. Assumes that public and private investments in human capital generate external economies and productivity gains that offset the natural tendency for diminishing returns.

4. Seeks to explain the existence of increasing returns to scale and the divergent long term growth patterns among countries.

5. Technology is not considered necessary to explain long run growth.

The new growth theories can be expressed by the equation Y = AK (Harrod-Domar Model). Here, 'A' represents any factor that affects technology and K includes both physical and human capital. But there are no diminishing returns in this equation of growth which means investments in physical and human capital can generate external economies and productivity gains that exceed private gains so as to obtain increasing returns and sustained long term growth. The new growth theory therefore emphasizes the role of savings and investment in human capital investment for achieving rapid economic growth. The new growth theory therefore also differs from the traditional theories in many other ways. **Firstly, there is no convergence of growth rates amongst closed economies. National growth rates remain constant and differ across countries depending on national savings rates and technology levels. Secondly, there is no tendency for per capita income levels in capital-poor countries to catch up with those in rich countries with similar savings and population growth rates. As a result, a temporary or prolonged recession in one country can lead to a permanent increase in the income gap between itself and rich countries.**

The endogenous growth models explain paradoxical capital flows across countries leading to greater wealth inequalities between developed and developing countries. The prospect of high returns on investment offered by developing countries with low capital labor ratios is negated by lower levels of complementary investments in human capital, infrastructure or research and development. There is less benefit to poor countries from alternative forms of capital expenditure because the free market leads to the accumulation of less than the optimal level of complementary capital.

Where complementary investments produce social and private benefits, governments may improve the efficiency of resource allocation by providing public goods or by encouraging private investment in knowledge intensive industries where human capital can be accumulated and increasing returns to scale generated. Further, the new growth theory explains technological change as an endogenous outcome of public and private investment in human capital and knowledge-intensive industries. They therefore suggest an active role for public policy in promoting economic development through direct and indirect investments in human capital formation and the encouragement of foreign private investment in knowledge intensive industries such as computer software and telecommunications.

THE AK MODEL

The Romer model is known to be relevant to the developing countries because it looks at the spill-over effects of industrialization. The model assumes that growth processes are derived from the firm or industry. Each industry individually produces with constant returns to scale. Romer assumes that economy-wide capital stock, $\overline{K}$, positively affects output at the industry level so that there is economy-wide increasing returns to scale. Capital stock includes knowledge which has spillover effects and it is in the nature of a public good. The industry level production function is given at equation (1).

$$Y_i = AK_i \alpha L_i 1 - \alpha \overline{K}^{\beta} \text{ ..... (1)}$$

In Equation (1), Y_i stands for the industry level output, 'A' stands for the knowledge component of capital at the industry level, 'L' stands for labor, 'α' stands for productivity of capital, 1 – α, stands for productivity of labor, $\overline{K}$, stands for economy wide capital

stock and 'β' stands for the productivity (spillover effect) of industry wide capital.

Assuming symmetry across industries so that each industry will use the same level of capital and labor, the economy wide aggregate production function can be stated as in equation (2).

$$g - n = \beta / [1 - \alpha + \beta] \quad \textbf{..... (2)}$$

`In equation (2), 'A' is assumed to be constant because technology is assumed to be constant or that there is no technological progress. From equation (2), the growth rate of per capita income in the economy can be stated as in equation (3).

$$g - n = \beta / [1 - \alpha + \beta] \quad \textbf{..... (3)}$$

Where 'g' is the output growth rate and 'n' is the population growth rate. Without technological progress, the per capita growth would be zero and hence β = 0.

Romer assumed that taking labor, capital, and economy-wide capital together, β > 0, thus g – n > 0, and Y/L is growing (Y/L is the labor-output ratio). If we allow for technological progress in the model, growth will increase proportionately. Thus the Romer model, with a technology spillover, avoids diminishing returns to capital.

Criticisms of the Endogenous Growth Theory

The new growth theory remains dependent on a number of traditional neoclassical assumptions that are not applicable to less developed economies. The theory is criticized on the following grounds.

1. **The assumption of symmetry or that the productivity of capital is constant across the industries.** This assumption does not permit the growth generating reallocation of labor and capital among the sectors that are transformed during the process of structural change.

2. **Economic growth in LDCs is affected by inefficiencies arising from poor infrastructure, inadequate institutional structures and imperfect capital and goods markets.** Since the theory overlooks these important factors, its applicability for the study of economic development is limited. For instance, the

theory fails to explain low rates of factory capacity utilization in LDCs where capital is scarce. May be, poor incentive structures are responsible for poor GNP growth as much as low saving and human capital formation. Allocative inefficiencies are common in transition economies. However, their impact on short and medium term growth has been neglected due to the new theory's overemphasis on the determinants of long term growth rates.

3. Finally, **there is little empirical evidence on the predictive value** of endogenous growth theories.

5.2 THE FELDMAN-DOMAR MODEL

GA Feldman, a Russian economist, wrote an article "On the Theory of National Income Growth" which was published in 1928. The Feldman model is based on the Marxian division of output (W) into category one and two. Category one relates to capital goods used for the production of producer and consumer goods. Category two relates to consumer goods including raw materials. The production of each category is expressed as the sum of constant capital (C) and variable capital (V) and Surplus Value (S). The production equation for each category of goods can be stated as follows:

$$\frac{W1 = C1 + V1 + S1 + W2 = C2 + V2 + S2}{W = C + V + S}$$

In the Feldman production equation, capital is not transferable from one category to the other. The rate of investment is rigidly determined by the capital coefficient and the stock of capital in category one. The output of consumer goods is determined by the stock of capital and the capital coefficient of category two. The division of total output between consumption and investment depends on the relative productive capacities of the two categories. The division of total investment between the two categories is flexible. The fraction of total investment allocated to category one is the key variable to the model. The two sector model presented by Feldman can be stated as follows:

γ = Fraction of total investment allocated to Category one.

I = Annual rate of net investment allocated to the respective categories so that $I = I_1 + I_2$.

t = Time measured in years.

V = The marginal capital coefficient for the entire economy and V_1 and V_2 being the marginal coefficients of categories one and two respectively.

C = Annual rate of output of consumer goods.

Y = Annual rate of national output.

α = The average propensity to save (APC).

A' = The marginal propensity to save (MPC).

I_0, C_0 & Y_0 = The respective initial magnitudes of these variables (when t = 0), the annual rate of investment allocated to category one is given by $I_1 = {}_{\gamma}I$. Since I_1 increases the capacity of Category one, it is shown by the following equation:

$$\frac{dl}{dt} = \frac{l1}{V1} = \frac{\gamma l}{V1}$$

$$\left[\because l1 = \gamma l\right]$$

In time 't', total investment will grow at an exponential rate:

$$I = e^{yt/v1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Total investment will grow at a constant exponential rate of $\gamma/V1$.

The annual rate of net investment allocated to category two is given by $I_2 = (1 - \gamma)I$. I_2 being the source of increased capacity in category two,

$$\frac{dc}{dt} = \frac{I2}{V2} = \frac{(1-\gamma)}{V2} e^{\gamma/v1t}$$

$$\left[\because I = e^{\gamma/v1t}\right]$$

The annual rate of output of consumer goods is given by:

$$C = C_0 + \left(\frac{1-\gamma}{\gamma}\right)\frac{I2}{V2} = \frac{V1}{V2}\left(e^{\frac{\gamma}{v1t}-1}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

The elements which determine the national income and the rate of growth of the economy are given by:

$$Y = I + C$$

By substituting the values of I and C in the above equation,

$$Y = e^{\gamma/v1t} + C_0 + \left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2}\left(e^{\frac{\gamma}{v1t}-1}\right).....\left[From\ (1)\ and\ (2)\right]$$

$$Y = e^{\gamma/v1t} - 1 + 1 + C_0 + \left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2}\left(e^{\frac{\gamma}{v1t}-1}\right)$$

$$= \left(e^{\gamma/v1t} - 1\right) + 1 + C_0 + \left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2}\left(e^{\frac{\gamma}{v1t}-1}\right)$$

$$= \left[1 + C_0 + + \left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2} + 1\right]\left(e^{\frac{\gamma}{v1t}-1}\right)$$

Assuming $I_o = 1$, the equation becomes:

$$Y = Io + Co + \left[\left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2}\right]\left(e^{\frac{\gamma}{v1t}+1}\right)\left(e^{\frac{\gamma}{v1t}-1}\right) \quad \text{Or}$$

$$Y = Yo + \left[\left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2} + 1\right]\left(e^{\frac{\gamma}{v1t}-1}\right)\left[\because Yo = Io + Co\right]$$

The basic equation shows that C and Y each represent a sum of a constant and an exponential in t. Their rates of growth will differ from γ/V1. The values of C and Y will be greater than the value of I. With the passage of time, the exponential $e^{\gamma/v1t}$ will dominate the scene and the rates of growth of C and Y will gradually approach γ/V1. However, this may take longer time unless it so happens that:

$$Co = \left(\frac{1-\gamma}{\gamma}\right)\frac{V1}{V2}$$

In which case the constants will vanish and C and y will grow at the rate of γ/V1 from the very beginning.

Comparison between the Feldman and Domar Models of Growth

In the Domar model, the average propensity to save (α) is equal to the marginal propensity to save (α`) i.e. α = α`. However, in the Feldman model α ≠ α`. In order to compare the Domar model

with the Feldman model, it is essential to rework their results without the assumption that $\alpha \neq \alpha`$, treating $\alpha`$ as a constant. But since $\alpha \neq \alpha`$, 'α' has become a variable. The rate of growth of investment will be $\alpha`/v$ and the rate of growth of income α/v (by disregarding the difference between α and s; s being the reciprocal of v). The expression $\alpha`/v$ is the ratio of MPS to the overall capital coefficient. In the Feldman model, $\gamma/V1$ is the growth rate of investment where γ is the fraction of investment allocated to category 1 and V1 is the capital coefficient of this category only. In the special case when V = V1, we get $\alpha = \gamma$ i.e. Feldman's fraction of investment allocated to category 1 and the MPS become identical. If V1 > V2, then $\gamma > \alpha`$. When V1 = V2, Feldman's γ and Domar's $\alpha`$ are closely related. But it only shows that if a certain fraction of increment in national income ($\alpha`$) is to be apportioned for investment, a similar fraction of investment (γ) must be allocated to capital goods industries to make the production of this increment in investment possible i.e. in a growing economy, some capital is used to make more capital.

Implications of Feldman's Model for Economic Development

There are important implications of the Feldman model for economic development. Since V1 = V2, the expressions I, C and γ in the model are all inverse functions of V1 and V2. Feldman treated the magnitudes of his capital coefficients as variables for the purpose of economic development. If the purpose of economic development is the maximization of national income or investment or their respective rates of growth or of integrals overtime, γ should be set as high as possible. This is true for investment and also for income. A high γ does not imply any reduction in consumption. With capital assets assumed to be permanent, even γ = 1 would only freeze consumption at its original level. If assets were to depreciate, consumption would be slowly reduced by failure to replace them. Finally, a transfer of resources from consumption to investment industries would reduce consumption still further though the latter possibility is excluded from the Feldman model.

According to Domar, the Feldman model contains an important element of truth i.e. a closed economy without well developed metal, machinery and subsidiary industries is unable to produce a sizable quantity of capital goods and thus to invest a high fraction of its income even if the potential saving capacity is high. Treating the capital coefficient as given, the variable γ (the fraction of total investment allocated to category 1) can be varied as

an instrument of planning. Since there is complete intra-category flexibility, γ can vary between zero and one. But the choice of the optimum size of 'r' will depend on the objective of economic development. However, the Feldman does not determine the magnitude of capital coefficient because no attempt is made to relate it to any other variables such as the desirability of the assets, the length of the construction period, the supply of labor and of other factors like the magnitude, composition and the rate of growth of investment and the industrial structure.

Further, it is difficult to distinguish between consumer and capital goods industries when a large number of industries are in the nature of intermediate goods industries which help produce both consumer and capital goods. For example, metals, coal, transportation, chemicals, petroleum, power etc are some of the industries whose goods and services are used in both categories of Feldman.

5.3 THE MAHALNOBIS MODEL

In 1952, PC Mahalnobis developed a single sector model based on the variables of national income and investment. In 1953, the model was developed into a two sector model in which the net output of the economy was supposed to be produced in only two sectors i.e. the investment and consumer goods sectors. Finally, in the year 1955, Mahalnobis developed the four sector model. In this section, the two sector model is discussed.

The Two Sector Model

The model is based on the following assumptions:

1. Closed economy.
2. There are only two sectors i.e. the consumer and capital goods sector.
3. Capital cannot be shifted between the two sectors once it is installed in any one of the sectors. But products of the capital goods sector can be used as inputs in both the sectors.
4. Full capacity utilization takes place in both the sectors.
5. Investment is determined by the supply of capital goods.
6. Prices remain constant.

Mahalnobis divides the economy into two sectors:

1. The proportion of net investment used in the capital goods sector λ_k.

2. The proportion of investment used in the consumer goods sector λ_c.

Therefore,

$$\lambda k + \lambda c = 1 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(1)}$$

Net investment (I) can be divided into two parts in time (t). One, $\lambda_k I_t$ denote increase in the productive capacity of the capital goods sector and $\lambda_k I_c$ denote increase in the productive capacity of the consumer goods sector. Thus,

$$It = \lambda kIt + \lambda kIc \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(2)}$$

Taking β_k and β_c as the output-capital ratios of the capital goods sector and the consumer goods sector respectively and β as the total productivity coefficient, the latter can be shown as:

$$\beta = \frac{\beta k\, \lambda k + \beta c\, \lambda c}{\lambda k + \lambda c}$$

But

$$\lambda k + \lambda c = 1$$

$$\beta k\, \lambda k + \beta c\, \lambda c \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(3)}$$

The income identity equation for the economy would be:

$$Yt = It + Ct \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(4)}$$

A change in national income brings about a change in investment and consumption. Change in investment depends upon investment in the previous year (It – 1) and change in consumption depends upon consumption in the previous year (Ct – 1). Hence, increase in investment in period 't' is ΔIt = It – It -1 and increase in consumption is ΔCt = Ct – Ct – 1. The increase in either sectors is related to the linking up of productive capacity of investment and the output capital ratio. The investment growth path is determined by the productive capacity of investment in the capital goods sector (λk Ik) and its output capital ratio (βk) so that:

$$It - It - 1 = \lambda k \beta k It - 1 \text{ Or } It = \left(1 + \lambda k \beta k\right) It - 1 \quad \ldots\ldots\ldots\ldots \text{(5)}$$

Putting different value for t (t = 1,2,3…..), the solutions of equation (5) are:

$$I1 = (1 + \lambda k \beta k)\, Io$$

$$I2 = (1 + \lambda k \beta k)\, I1$$

$$= (1 + \lambda k \beta k)(1 + \lambda k \beta k)\, Io$$

$$= (1 + \lambda k \beta k)^2\, Io$$

$$= \left[\because I1 = (1 + \lambda k \beta k)\, Io\right]$$

In the same manner by putting the value of t in equation (5), we get:

$$It = Io\,(1 + \lambda k \beta k)^t \text{ t}$$

$$It - Io - Io\,(1 + \lambda k \beta k)^t - Io \text{ Or } It - Io - Io\,(1 + \lambda k \beta k)^t - 1$$

$$It - Io - Io\,(1 + \lambda k \beta k)^t - 1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{ (6)}$$

Similarly, by putting the value of t (t = 1,2, 3…..) in the consumption equation growth path is ΔCt = Ct – Ct – 1 = λcβcIt – 1, we get:

$$C1 - C0 = \lambda c \beta c I0$$

$$C2 - C1 = (\lambda c \beta c) - I1 \text{ and}$$

$$Ct - Co = \lambda c \beta c\,(I0 + I1 + I2 + \ldots + It)$$

By substituting the values of I1, I2…It in equation (6) and its related equations, the above equation can be solved as:

$$Ct - Co = \lambda c \beta c \left[Io + (1 + \lambda k \beta k)\, Io\,(1 + \lambda k \beta k)^2 \right.$$

$$o + \ldots. + (1 + \lambda k \beta k)^t\, Io$$

$$= \lambda c \beta c\, Io \left[1 + (1 + \lambda k \beta k) + (1 + \lambda k \beta k)^2 + \ldots + (1 + \lambda k \beta k)^t \right]$$

$$= \lambda c \beta c\, Io \left[\frac{(1 + \lambda k \beta k)\, t - 1}{(1 + \lambda k \beta k) - 1} \right] Or$$

$$= Ct - Co = \lambda c \beta c\, Io \left[\frac{(1 + \lambda k \beta k)\, t - 1}{\lambda k \beta k} \right] \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

The growth path of income for the whole economy on the basis of equation (4) is as follows:

$$\Delta Yt = \Delta It + \Delta Ct \quad \text{or } Yt - Yo = (It - Io) + (Ct - Co)$$

By substituting the values of equations (6) and (7) in the above equation, we get:

$$= Yt - Yo = \left(Io\left[\left(1+\lambda k\beta k\right)t-1\right] + \lambda c\beta c\, Io\left[\frac{\left(1+\lambda k\beta k\right)t-1}{\lambda k\beta k}\right]\right.$$

$$= Io\left[\left(1+\lambda k\beta k\right)t-1\right]\left[1+\frac{\lambda c\beta c}{\lambda k\beta k}\right]$$

$$= Io\left[\left(1+\lambda k\beta k\right)t-1\right]\left[1+\frac{\lambda k\beta k+\lambda c\beta c}{\lambda k\beta k}\right]$$

Supposing Io = αoYo and substituting it in the above equation, we get:

$$= Yt - Yo = \alpha oYo\left[\left(1+\lambda k\beta k\right)t-1\right]\left[\frac{\lambda k\beta k+\lambda c\beta c}{\lambda k\beta k}\right] Or$$

$$= Yt = \alpha oYo\left[\left(1+\lambda k\beta k\right)t-1\right]\left[\frac{\lambda k\beta k+\lambda c\beta c}{\lambda k\beta k}\right] + Yo\, Or$$

$$Yt = Yo\left[\left[1+\alpha o\frac{\lambda k\beta k+\lambda c\beta c}{\lambda k\beta k}\left\{\left(1+\lambda k\beta k\right)t-1\right\}\right]\right. \ldots\ldots\ldots\ldots\ldots (8)$$

Where, Yt = Gross domestic national income in year t,

αo = the rate of investment in the base year,

λk = the share of net investment used in capital goods sector,

λc = 1 – λk = the share of net investment going to the consumer goods sector,

βk = Incremental output capital ratio in the capital goods sector,

βc = Incremental output capital ratio in the consumer goods sector.

The interpretative value of this model is that total investment in the economy consists of two parts: one part λk is used to increase the production of capital goods and the other part λc to increase the production of consumer goods. Thus the total investment is λk + λc = 1. The ratio:

$$\frac{\lambda k\beta k+\lambda c\beta c}{\lambda k\beta k}$$

Of the equation is the overall capital coefficient. Assuming βk and βc to be given, the growth rate of income will depend upon αo (the rate of investment in the base year) to be constant, the growth rate of income depends upon the policy instrument λk.

Given that $\beta c > \beta k$, it implies that the larger the percentage investment in consumer goods industries, the larger will be the income generated. The expression $(1 + \lambda k\beta k)^t$ of the equation shows that after a critical range of time, the larger the investment in capital goods industries, the larger will be the income generated. In the beginning, a high value of λk increases the magnitude $(1 + \lambda k\beta k)_t$ and lowers the overall capital coefficient:

$$\frac{\lambda k\beta k + \lambda c\beta c}{\lambda k\beta k}$$

But as time passes, a higher value of λk would lead to higher growth rate of income in the long run. If $\beta c > \beta k$, then the reciprocal of the overall capital coefficient will be:

$$\frac{\lambda k\beta k}{\lambda k\beta k + \lambda c\beta c} = \lambda k$$

Which is equal to the marginal rate of saving. This leads to an important policy implication of the model that for a higher rate of investment (λk), the marginal rate of saving must also be higher. A higher rate of investment on capital goods in the short run would make available a smaller volume of output for consumption but in the long run, it would lead to a higher growth rate of consumption.

Relation of the Mahalnobis Two Sector Model with the Domar Model

Mahalnobis derived his two sector model from the Domar model. The equilibrium equation for determining investment in the Domar mdoel is:

$$I = \alpha Y$$

Where I is investment, α is the saving income ratio and Y is the national income. The growth of investment in period 't' is:

$$\Delta It = \alpha \Delta Yt \text{ ………………………………(1)}$$

Taking investment in the initial period $Io = \alpha oYo$ ………..(2)

Dividing (1) by (2), we get:

$$\frac{\Delta It}{Io} = \frac{\alpha o}{\alpha} \times \frac{\Delta Yt}{Yo} Or$$

$$\frac{\Delta Yt}{Yo} = \frac{\alpha o}{\alpha} \times \frac{\Delta It}{Io} Or$$

$$\frac{Yt - Yo}{Yo} = \frac{\alpha o}{\alpha} \times \frac{It - I1}{Io}$$

$$\left[\because \Delta Yt = Yt - Yo \;\&\; \Delta It = It - Io\right] Or$$

$$\frac{Yt - Yo}{Yo} = \frac{\alpha o}{\alpha} \left[\frac{It}{Io} - 1\right] Or$$

$$\frac{Yt - Yo}{Yo} = \frac{\alpha o}{\alpha} \times \left[(1 + \alpha\beta)t - 1\right]$$

$$\left[\because \frac{It}{Io} = (1 + \alpha\beta)\, t \; and \; \beta \; is \; output \; capital \; ratio\right]$$

$$Or \; Yt - Yo = \frac{\alpha o}{\alpha} Yo \left[(1 + \alpha\beta)t - 1\right]$$

$$Or \; Yt = \frac{\alpha o}{\alpha} \left[(1 + \alpha\beta)t - 1\right] + Yo$$

$$Or \; Yt = Yo \left[1 + \frac{\alpha o}{\alpha} \left\{(1 + \alpha\beta)1 - 1\right\}\right] \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

The final equation of the two sector Mahalnobis model is:

$$Yt - Yo \left[1 + \alpha o \frac{\lambda k \beta k + \lambda c \beta c}{\lambda k \beta k} \left\{(1 + \lambda k \beta k)\, t - 1\right\}\right] \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

There are certain similarities between the two models. First, the last expressions of the two equations (3) and (4) are similar i.e. (1 + β)t and $(1 + \lambda k \beta k)t$. Since, Domar's αβ is Mahalnobis's $\lambda k \beta k$. Second, both use the concept of time lag. Finally, the policy conclusions of both are the same i.e. investment can be increased by raising the marginal saving rate. Despite these similarities, there is some difference between the two models. The Domar model is a single sector model while the Mahalnobis model is a two sector model. Mahalnobis divides the economy into the capital goods sector and the consumer goods sector whereas Domar treats the whole economy as one sector.

CRITICAL APPRAISAL OF THE MODEL

The Mahalnobis model has proved to be of practical application in India during the second five year plan. However, the model has the following limitations:

1. **The Value of λk is Arbitrary.** Mahalnobis assumes the value λk to be 0.75 without giving a good reason. The assumption is therefore arbitrary and may not help the planners to arrive at correct solutions for the optimum allocation of investments of the different sectors of the economy.

2. **The Technique is not applicable to an Open Economy.** The use of λ technique shows that investment is a single homogenous fund which is utilized for a single type of investment goods. Since investment goods are heterogeneous, this requires the use of loan investment matrix. The λ technique can be applied when constant relative prices are assumed. It cannot be applied to a model of open economy where the system is not homogenous.

3. **Supply of Agricultural Output is not perfectly elastic.** The model is based on the assumption that the supply of agricultural goods is perfectly elastic. In practice, the supply of agricultural goods has failed to meet the growing demand for food and raw materials since the second five year plan.

4. **Labor Supply is not perfectly elastic.** In spite of the problem of open and disguised unemployment in under developed countries, the supply of labor is not perfectly elastic. Particularly, the supply of skilled and technically qualified manpower is not adequate.

5. **The Technique of Production is not Constant.** Technological change is an ongoing phenomenon. It is therefore incorrect to assume technique of production to be constant.

6. **The Values of Structural Parameters are Arbitrary.** The values of structural parameters are arbitrary. For instance, the value of β in an under developed economy cannot be estimated correctly for want of authentic data.

7. **The Model is Silent over the Relative Shares of Investment in a Mixed Economy.** The Mahalnobis model does not determine the relative shares of investment in public and private sectors in a mixed economy.

8. **Neglects Demand Functions.** The model lays emphasis only on the supply functions and neglects the demand functions and hence the model remains incomplete.

9. **Investment Decisions are not linked with Saving Rates.** According to KN Raj, the model fails to link up investment

decisions with the rates of saving. The need for high marginal rates of saving I one of the main considerations in favor of capital intensive techniques of production.

10. **The Problem of Choice of Techniques remains unexplained.** According to KN Raj, the model fails to explain the problem of choice of techniques satisfactorily. The consumer goods sector is divided according to techniques of production whereas the capital goods sector is not. For instance, the manufacture of machine tools involves various degrees of capital-intensive techniques.

Conclusion In spite of the limitations of the model, the model was the basis of the second five year plan and put the Indian economy on the path of development planning and laid the foundations of capital goods sector in India.

5.4 SUMMARY

1. The new growth theory provides a theoretical framework for analyzing sustained endogenous growth that is determined by the system governing the production process. The endogenous growth models hold GNP growth to be a natural consequence of long run equilibrium.

2. The new growth theories can be expressed by the equation Y = AK (Harrod-Domar Model). Here, 'A' represents any factor that affects technology and K includes both physical and human capital.

3. The endogenous growth models explain paradoxical capital flows across countries leading to greater wealth inequalities between developed and developing countries.

4. GA Feldman, a Russian economist, wrote an article "On the Theory of National Income Growth" which was published in 1928. The Feldman model is based on the Marxian division of output (W) into category one and two. Category one relates to capital goods and Category two relates to consumer goods. The production of each category is expressed as the sum of constant capital (C) and variable capital (V) and Surplus Value (S).

5. Mahalnobis derived his model from Domar's model. The Domar model is a single sector model while the Mahalnobis model is a two sector model. Mahalnobis divides the economy into the capital goods sector and the consumer goods sector whereas Domar treats the whole economy as one sector.

5.5 QUESTIONS

1. Critically examine the AK model of Economic Growth.
2. Explain the Feldman-Domar Model of Economic growth.
3. Compare and contrast the Feldman-Domar models of economic growth. Explains the implications of the Feldman model for economic development.
4. Relate the Mahalnobis two sector model with the Domar model.
5. Critically examine the Mahalnobis model of economic growth.

6

GROWTH ACCOUNTING

Unit Structure

6.0 Objectives
6.1 Growth Accounting
6.2 Growth Accounting in per Capita Output
6.3 Cross Section Analysis of Growth Rates
6.4 Empirical Estimates of Growth
6.5 Summary
6.6 Questions

6.0 OBJECTIVES

- To study Growth Accounting
- To understand the concept of Total Factor Productivity
- To study the concept of Cross Section Analysis of Growth Rates

6.1 GROWTH ACCOUNTING

Economic growth takes place over time and when there is substantial growth has taken place, people begin to realize the difference that it has made to their living standards. Growth in real per capita income overtime brings about changes in living standards within a country and between countries. Some countries experiences faster and sustained growth while others experience slower growth. For instance, China and India began their growth story in the second half of the 20^{th} century. By the turn of the 20^{th} century, we find China overtaking India both in terms of GDP and GDP per capita by more than three times. Growth accounting explains the contribution of different factors to economic growth and to indirectly compute the rate of technological progress, measured as a residual, in an economy. This methodology was introduced by Robert Solow in 1957.

Growth accounting explains the growth rate of economy's total output into that which is due to increases in the amount of factors used i.e. the increase in the amount of capital and labor and that which cannot be accounted for by observable changes in factor utilization. The unexplained part of growth in GDP is then taken to represent increases in productivity or a measure of broadly defined technological progress.

The technique has been applied to virtually every economy in the world and a common finding is that observed levels of economic growth cannot be explained simply by changes in the stock of capital in the economy or population and labor force growth rates. Hence, the rate of technological progress plays an important role in economic growth.

For instance, consider an economy whose total output (GDP) grows at 5% per year. During the year, its capital stock grows at 10% per year and its labor force by 2%. The contribution of the growth rate of capital to output is equal to that growth rate weighted by the share of capital in total output and the contribution of labor is given by the growth rate of labor weighted by labor's share in income. If capital's share in output is 1/4, then labor's share is 3/4 (assuming these are the only two factors of production). This means that the portion of growth in output which is due to changes in factors is 0.1*(1/4)+.02*(3/4)=0.04 or 4 %. This means that there is still 1 % of the growth in output that cannot be accounted for. This remainder is the increase in the productivity of factors that happened over the period or the measure of technological progress during this time.

The production function can be used to study the sources of growth. Increase in output takes place through increase in inputs and through increases in productivity on account of better technology and a more capable labor force. The production function offers a quantitative relation between inputs and output. Assuming labor and capital as the only inputs, Equation (1) shows that output (Y) depends on inputs and the level of technology (A). Higher the level of technology (A), higher will be the output for a given level of inputs of labor (N) and capital (K).

$$Y = AF\left(K, N\right) \qquad \text{(1)}$$

The Marginal Product of Labor (MPN = ΔY/ΔN) and the Marginal Product of Capital (MPK = ΔY/ΔK) are both positive. Equation (1) relates the level of output to the level of inputs and the

level of technology. The production function in equation (1) can be converted into a very specific relationship between input growth and output growth. This is summarized by the growth accounting equation:

$$\frac{\Delta Y}{Y} = \left[(1-\theta) \times \frac{\Delta N}{N} \right] + \left(\theta \times \frac{\Delta K}{K} \right) + \frac{\Delta A}{A} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Or Output growth = (labor share × Labor growth) + (Capital share × Capital growth) + Technical Progress.

Where (1 –) and are weights equal to labor's share of income and capital's share of income. Equation (2) summarizes the contributions of input growth and of improved productivity to the growth of output. Labor and capital each contribute an amount equal to their individual growth rates multiplied by the share of that input in income. **The rate of improvement of technology called technical progress or the growth of total factor productivity is the third term in equation (2).**

The growth rate of **total factor productivity** is the amount by which output would increase as a result of improvements in methods of production with all inputs unchanged i.e. there is growth in TFP when we get more output from the same quantity of factor inputs. Substituting the values in our example in equation (2) we find that the contribution of labor and capital to national income is four per cent and the residual growth amounting to one per cent is attributed to(ΔA/A) or technical progress. Changes in A lead to changes in productivity of factor inputs and is explained by the TFP. Inputs and outputs are directly observable but A cannot be directly observed. Hence, economists measure ΔA/A by manipulating equation (2):

$$\frac{\Delta A}{A} = \frac{\Delta Y}{Y} - \left[(1-\theta) \times \frac{\Delta N}{N} \right] - \left(\theta \times \frac{\Delta K}{K} \right)$$

and attributing everything leftover to changes in TFP. Changes in TFP or ΔA/A is called the Solow residual.

6.2 GROWTH ACCOUNTING IN PER CAPITA OUTPUT

Equation (2) explains growth in total output. However, the well being of an individual depends upon GDP per capita. A country with a high GDP may have a low GDP per capita and one with a lower GDP may have a higher GDP per capita. For instance,

the GDP per capita of Sri Lanka is much higher than India. Per capita GDP is the ratio of GDP to population. We can denote per capita GDP by y ≡ Y/N and the capital labor ratio by k ≡ K/N. The growth rate of GDP equals the growth rate of per capita GDP plus the growth rate of the population i.e. ΔY/Y = Δy/y + ΔN/N and ΔK/K = Δk/k + ΔN/N. In order to convert the growth accounting equation into per capita terms, subtract population growth, ΔN/N from both sides of equation (2) and rearrange the terms:

$$\frac{\Delta Y}{Y} - \frac{\Delta N}{N} = \theta \times \left[\frac{\Delta K}{K} - \frac{\Delta N}{N} \right] + \frac{\Delta A}{A} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Equation (3) is rewritten in per capita terms as:

$$\frac{\Delta Y}{Y} = \theta \times \frac{\Delta K}{K} + \frac{\Delta A}{A} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The capital labor ratio or the number of machines per worker, k, is an important determinant of the amount of output a worker can produce. Since □ is about 0.25, equation (4) suggests that a one per cent increase in the amount of capital available to each worker increases per capita output by 0.25 per cent.

6.3 CROSS SECTION ANALYSIS OF GROWTH RATES

Convergence is the process of equalization. During the second half of the 20th century, the standard of living in Japan has converged with that of United States. The following table shows the GDP per capita and the Capital or machinery per capita in the United States and Japan.

Table6.1: Postwar Annual Growth Rates (per cent)

	GDP Per Capita			Capital (machinery) Per Capita		
Period	United States	Japan	Difference	United States	Japan	Difference
1950-1973	2.42	8.01	5.59	2.48	6.92	4.44
1973-1992	1.38	3.03	1.65	2.89	6.38	3.49
1950-1992	1.95	1.95	3.78	2.66	2.66	4.01

Between 1973 and 1992, the GDP per capita growth rate of Japan was higher than that of US by 1.65 per cent per year. In about 20 years, output in Japan grew 36 per cent more than that of the US. Putting the numbers from the table in equation (4), the difference of 3.49 per cent per year in capital per capita growth ($\Delta k/k$) leads to a 0.87 per cent GDP per capita growth differential ($0.87 = \Delta y/y = \theta \times \Delta k/k = 0.25 \times 3.49$) which means the difference in capital per capita accounts for half the difference in the growth differential of 1.65 per cent per annum. During the early postwar period, the GDP per capita growth in Japan was 5.59 percentage points higher than that of the US and the entire difference cannot be shown alone by capital accumulation. Putting the data pertaining to the difference in $\Delta k/k$ for both the countries in equation (4) explains only 1.11 percentage points of the difference ($1.11 = \Delta y/y = \theta \times \Delta k/k = 0.25 \times 4.44$). This leaves 4.48 percentage points ($5.59 - 1.11 = 4.48$) to be explained by relative differences in technological change ($\Delta A/A$). The difference in growth rates and the eventual convergence between Japan and the United States was possible due to technological catching up by Japan. These calculations show that capital accumulation is not the only determinant of GDP. There are other determinants too.

6.4 EMPIRICAL ESTIMATES OF GROWTH

Robert Solow of MIT examined the period 1909 to 1949 in the United States and concluded that more than 80 percent of the growth in output per labor hour over this period was due to technical progress. Between 1909 and 1949, the average annual growth of total GDP was 2.9 per cent per year. Out of this, Solow concluded that 0.32 per cent was due to capital accumulation, 1.09 percent was due to increases in the input of labor and the remaining 1.49 per cent was due to technical progress. Per capita output grew at 1.81 per cent per year with 1.49 percentage points of that increase resulting from technical progress. Solow found that the important determinants of GDP growth are technical progress, increased labor supply and capital accumulation.

When population increases, the GDP of a country increases but the GDP per capita decreases. When the labor force increases, output increases but the increase in output is less than proportionate increase in input (here labor force). According to equation (2), a one percentage point growth rate in the labor force leads to a $1 - \theta$ percentage point increase in output i.e. 0.75 %.

Since the increase is less than one, output grows less proportionately than the number of workers and output per worker (GDP per capita) falls i.e. if you increase the number of workers without proportionately increasing the number of machines, the average worker will be less productive because he has fewer machines to work with. The production function therefore does not figure in a number of other inputs other than labor and capital. Two other important inputs are natural resources and human capital.

Natural Resources

The discovery of natural resources and putting these to new and better uses has contributed a great deal to economic growth across the world. Between 1820 and 1870, the land area of the United States grew at 1.41 per cent per year and this contributed to the economic growth of the United States. Between 1970 and 1990, Norway's per capita GDP rose from 61 per cent of U.S. per capita GDP to 77 percent. A great part of the Norwegian growth was on account of the discovery of new oil reserves.

Human Capital

In industrialized countries, untrained labor is less important than trained and talented labor. The stock of skilled, trained and talented labor in a country increases when investment in human capital is increased i.e. when a greater percentage of the labor force completes schooling, receives training and higher education, their productivity would increase than otherwise. If we add human capital (H) to the production function, the same can be written as:

$$Y = AF(K, H, N) \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

The income share of human capital is large in advanced countries. According to NG Mankiw, D Romer and D Weil physical capital, raw labor and human capital have equal shares in the production function. Differential growth in these three factors explains about 80 per cent of the variation in GDP per capita in many countries. Factor accumulation therefore has an important role to play in accelerating the growth process of a country. Evidence strongly supports the positive relationship between human capital and output and accumulation of human capital can contribute to permanent growth.

6.5 SUMMARY

1. Growth accounting explains the contribution of different factors to economic growth and to indirectly compute the rate of technological progress, measured as a residual, in an economy. This methodology was introduced by Robert Solow in 1957.

2. The growth rate of **total factor productivity** is the amount by which output would increase as a result of improvements in methods of production with all inputs unchanged i.e. there is growth in TFP when we get more output from the same quantity of factor inputs.

3. Inputs and outputs are directly observable but A cannot be directly observed. Hence, economists measure ΔA/A by manipulating equation (2):

$$\frac{\Delta A}{A} = \frac{\Delta Y}{Y} - \left[(1-\theta) \times \frac{\Delta N}{N}\right] - \left(\theta \times \frac{\Delta K}{K}\right)$$

and attributing everything leftover to changes in TFP. Changes in TFP or ΔA/A is called the Solow residual.

6.6 QUESTIONS

1. Explain the role of Total Factor Productivity in growth accounting.

2. Economic growth is not a function of the factors of labor and capital alone. There are other factors at work. Explain the statement with empirical evidence. .

7

Module 3

POLITICAL ECONOMY OF DEVELOPMENT

Unit Structure:

7.0 Objectives
7.1 Radical Approach, Mainstream and Institutional Approach
7.2 Dependencies Theory and Centre – Periphery model
7.3 Role of Institutions
7.4 Political Lessons
7.5 Summary
7.6 Questions

7.0 OBJECTIVES

- To study different approaches to political economy : Radical, Mainstream and institutional
- To study 'Dependencia' theories of development
- To study Centre-periphery models
- To study Role of institutions in political economy of development
- To study political lessons of economic reforms

7.1 APPROACHES TO POLITICAL ECONOMY

(A) RADICAL APPROACH:

Radical Political economy (economics) developed as a distinct school because it thought that Orthodox economics could not provide satisfactory solutions such as Poverty, racism, sex discrimination, destruction of environment, alienation of workers and imperialism. They said that these problems are not pathological abnormalities of the system, but rather are derived directly from the normal functioning of capitalism. They said that major

socioeconomic problems can be solved only through a radical restructuring of our society. This is possible by a change of basic institutions.

Radical economists view societies as integrated social systems existing in concrete historical circumstances. They emphasize the interdependence between the social, political and economic spheres of a society, rather than compartmentalizing these spheres and treating them independently. Their analysis of economic system of a particular society is implemented in terms of that society's specific institutional structure, rather than abstract Universal Propositions.

Radical economists challenge the institutional framework itself. In their view the Public Policy that is Predicted on the acceptance of the basic institutions of capitalism and attempts to solve major socio-economic problem by making marginal "adjustments around the edges' are futile. It is so because it is incapable of challenging the supremacy of those institutions.

The basic pustules that form a beginning point of radical economists.

1) Modes of production : Basic modes of production in capitalist sources differ from capitalists and socialist societies. In capitalist organisation labour is arise by means of the wage-contract.

2) Classes and class conflict : The division of society into economic classes results from the social division of labour characteristic of a particular mode of production. The principal class division is between haves and have-nots. Radicals argue that class consciousness or a subjective identification of the members with their class, is required for comprehensive economic and social action.

3) The drive for capital Accumulation : In a technologically advancing society, competition among owners of capital implies that capitalists who do not accumulate will be eliminated. Thus he needs more profit to accumulate. This is the central driving force.

4) Internal contradictions : Accumulation has resulted in vast increase in productive capacity and wealth. But has also added to the class conflict over division of the surplus product.

5) System-designing Institutions : The core institutions are those that largely determine the nature of social relations among individuals and conflict among groups with different economic interests. These institutions interact with each other and are highly interdependent. The core capitalist institutions tend to subordinate other institutions, e.g. education, family, religion, to serve their needs.

6) State : From the radical Point of view, the operations of the state under capitalism ultimately serve the vital interests of the capitalist class. The purpose of the govt. by the capitalist class means that the primary functions of the state are the protection of Private Property and the preservation of the other system.

In addition to their acceptance of the above stated propositions as valid generalisations about the actual functioning of capitalist economic systems radical economists share a wide variety of commitments and values.

Radical economists are interested in ending – not salvaging or stabilizing monopoly capitalism. Their affirmative aims include.

1. Establishing a socialist society based on participatory planning.
2. Public ownership of the means of production.
3. Elimination of Private appropriation of profit.
4. Genuinely egalitarian redistribution of income and wealth.

Their economic analysis deals with problems of political and economic power.

Radical economists regard the connection of economic with political power as crucial. To them unequal distribution of political power is due to the gross inequalities in the distribution of wealth.

Radicals favour public planning with public ownership in order to widen the publics control over the economy. (already a great deal of planning is carried out by corporation for private ends)

Most of the radical economists subscribe the normative goal i.e. for mass participation in decision-making and the equal sharing of society's output. They want a society based on co-operation, people are able to achieve self realization through the work-process, Consumer goods being produced are needed and are conducive to improving the quality of life.

The following points explain the radical analysis of several contemporary social concerns.

Labour Market Stratification, Urban Poverty and Underemployment :

Mainstream economists argue that an individual's labour market earnings and social status are determined by ability, education and skills acquired through work experience. (i.e. positive relation between worker's productivity and earnings.)

Radical economists rejected this argument stating that it is without an insight into urban poverty and unemployment. To them in capitalism, productive resources are owned by few capitalists (concentration of economic power). Whereas workers do not own the productive resources. Thus it is their separation from means of production and from any alternative way of earning income.

Education : Radicals contend that racism, sexism, urban poverty and underemployment result from the need to put people to undeniable jobs, so that the results are rooted in the functioning of labour market. They conclude that only a radical. Restructuring of labour market institutions can resolve these problems. But mainstream economists are not prone to challenge the basic institution of capitalism. Their solutions to these problems involve education to improve the productivity of low still/wage workers and government programmes to redistribute income.

To Radicals neither of these solutions is feasible. Radicals argue that functions of education are a) the preservation of social statuses along class lines; b) transmission and preservation of cultural norms/attitude/values c) training of technocratic stratum d) generation of an educated workforce.

Thus education in the context of capitalism serves to support capitalist mode of prod. It produces individual with appropriate personality traits.

Government and Income Inequality : To Radicals, state in capitalist societies in unable to bring about equalization of income. Capitalists would oppose a meaningful redistribution and equalisation of income. They said that welfare payments, negative income, family assistance plans etc, cannot rise to livable levels, or no one fell compelled to work at poorly paid, unsatisfying jobs.

Radical economists have also engaged in significant discussions of the nature of imperialism, the destruction of the environment, and the deterioration of the quality of urban life.

To them, the problems of our society either result from or are reinforced by the institution of capitalism. They claim that the unwillingness of mainstream economists to analyse these institutions invalidates the relevance of orthodox theory and the.

(B) MAINSTREAM ECONOMIC APPROACH:

Mainstream economics may be called orthodox or conventional economics by its critics. It deals with the "rationality-individualism – equilibrium nexus." It has been associated with neo-classical economics and with the neo-classical synthesis, which combines neoclassical methods and Keynesian approach macro economics schools of thought have been the "saltwater and fresh water school". Freshwater economists approach was that macro economic had to be dynamic quantitative and based on how individuals and institutions make decision under uncertainty.

Economics has always featured multiple schools of economic thoughts with different schools having different prominence across countries and over time; the current use of mainstream economics is specific to the post world-war II era.

The term 'mainstream economics' came into use in the 20th century. It can be designed as distinct from its assumptions, its methods and topics.

A number of assumptions are made such as rational choice theory, a representative agent rational expectation etc. Much of modern economic modeling consists of exploring the effects that complicating factors have on models, such as imperfect and asymmetric information, incomplete markets, imperfect competition and transaction costs. Main stream economics includes theories of market and govt. failure and private and public goods. These development desirability or otherwise of government intervention.

The 'mainstream' or 'orthodox' economics has many variants. Some mainstream economics is highly theoreticals though most of it is applied and relies on only rather rudimentary theory. Both theoretical and applied work can be distinguished as microeconomics and macro economics.

Microeconomics focus on relations among individuals (firms and households) Individuals have complete and transitive preferences that govern their choices. Consumers prefer more commodities of fewer and have DMRS. Firms attempt to maximise profits in the face of diminishing returns. Economists idealize and suppose that in competitive markets, firms and individuals cannot influence prices, but economists are also interested in strategic interactions, in which the rational choices of separate in strategic interactions, in which the rational choices separate individuals are interdependent. Game theory, which is devoted to the study of strategic interactions, is of growing importance both in theoretical and applied microeconomics. Economists model the outcome of the profit maximizing activities of firms and the attempt of consumers to best satisfy their preferences as an equilibrium in which no excess demand on any market. What this means is that anyone who wants to buy anything at the going market price is able to do so. There is no excess demand, and unless a good is free, there is no excess supply.

Macroeconomics grapples with the relations among economic aggregates, such as relations between the money supply and rate of interest or the rate of growth, focusing mainly on problems related to business cycle and the influence of monetary and fiscal policy on economic outcomes. Few economists have tried to unity macroeconomics and micro economics through 'representative agents.' Econometrics is the 3rd branch of economists, devoted to the empirical estimation, elaboration and to some extent testing of specific microeconomics and macroeconomics models. Macro economics is immediately relevant to economic policy. Branches of mainstream economics are also devoted to specific questions concerning growth, finance, employment agriculture, housing, natural resources, international trade and so forth.

The critics argue that potentially that potentially promising approaches have been excluded in major mainstream publications to them, mainstream economics and theory has failed to describe the actual mechanics of modern fiat monetary economies. Chartalism focus on detailed understanding of the way money actually flows through the different sectors of an economy. He focuses on interaction between central banks, treasury and the private banking system. He rejects critical mainstream theories

such as loanable funds market, money multiplier and the utility of fiscal a austerity.

Some economists, in the vein of ecological economics, believe that the neoclassical “holytrinity” of rationality, greed and equilibrium, is being replaced by the holy trinity of purposeful behaviour, enlightened self-interest and sustainability, considerably broadening the scope of what is mainstream. Ecological economics addresses sustainability issues such as public goods, natural capital and negative externalities (such as pollution).

(C) INSTITUTIONAL APPROACH:

Institutional economics focuses on understanding the role of the evolutionary process and the role of institutions in shaping economic behaviour. Its oriented dichotomy between technology on the one side and the “ceremonial’ sphere of the society on the other.

Institutional economics emphasizes a broader study of institutions and views markets as a result of the complex interaction of these various institutions (e.g. individuals, firms, states, social norms). It forces on learning, bounded rationality, and evolution rather than assume stable preferences, rationality and equilibrium. It was a central part of American economics.

In the 19th century, American capitalism achieved many things viz. an increase in National Income, etc. But the conditions of working class were rather bad. Their levels of living did not increase despite of increase in National Income. on the other hand their working conditions were characterised by long of job security. The monopolies became a powerful institution and economical and political power was concentrated in the hand of big business. Laissez-faire policy was used to the convenience of the influential sections of the society. Whenever it was advantageous to the business community, the govt. did not hesitate to pass legislation granting tariff protection. Political corruption was not uncommon. Thus the society was characterized by big business, absentee ownership, leisure class.

So some of the economists were not satisfied with the existing economic doctrines of the classical and neoclassical school.

The essential Ideas of the Institutionalist School:

1. It emphasized the role of institutions in economic life. The tern institution includes not only school or bank but also customs, social habits, laws, ways of living and modes of thinking eg. slavery is an institution and belief in slavery is also an institution. According to the institutional school, economics life is regulated by economic institutions and not by economic laws. Thus they were interested in analysing and reforming the institutions of credit, monopoly, absentee ownership, distribution of NI and so on.
2. They believed that group social behaviour is more important to the analysis of economic problem than the individual behaviour emphasized by the marginalist economists.
3. They believed that the economy must be studied as a whole. It is in contrast to the 'atomistic' approach of the marginalist school.
4. They advocate the evolutionary approach in economic analysis. The study of the evolution and functioning of economic institutions should be the central theme in economics, one must have knowledge of history, pol. Sc., sociology, philosophy and psychology to understand economic problem.
5. They reject the idea of 'normal equilibrium'. To them, mal-adjustments in economic life are not departures from normal equilibrium but are themselves normal. They reject 'price system' economics.
6. Economic laws are not of universal application. They are relative to time and place. They believed in doctrine of relativity.
7. They reject the classical assumption of harmony of interests. They recognize clash of interests and class conflict.
8. They believe that market economy cannot ensure social welfare. They advocate liberal democratic reforms to reduce inequalities of income and wealth.
9. They advocate inductive method than deductive approach. They reject the abstract reasoning of the marginalists as unrealistic.
10. They repudiated the pleasure pain psychology of the marginalists.

Few Leaders of Institutional school (Approach).

Veblen : Veblen is regarded as the founder of 'Institutional economics' Veblen adopted the evolutionary approach. He pointed out the limitations of marginal utility principle. He attached classical

economic theory based on hedonosm, He rejected the concept of economic man, as always balancing pleasure and pain.

The main idea of Veblen is the institution conditions that determine man's survival and development He centered upon the institutions, its origin and evolution and its reaction upon man adjustment with current experience. A 'cultural lag' results with strains and clashes of interest.

The chief economic institutions are **Property** and **technological methods**. In these, economic life, regarded as a process centers. In the beginning technological information was open to all classes. But as the industrial arts develop, production comes to exceed necessities, and property rights are then used by predatory groups to enable them to seize the surplus and live in leisure. Then self interest clashes with the common good, and personal, money making motives dominate impersonal motives to "effective serviceability." The leisure class comes into existence. It becomes interested in money making. Machinery comes under the control of the moneyed class. They run industrial establishments as absentee owners. Profit is made in number of ways such as restricting output, fixing high prices, financial manipulation through credit etc. All this results in business crisis. To Veblen there is a fundamental conflict in the capitalist society between all those who work in a socially productive way and the members of the 'leisure class' who make money as 'absentee owners' by directing the technique of prod.

Veblen regards life as an endless change. He says the progress is due to survival of the fittest habits of thought and the adaptation of individuals to a changing environment. Institutions must change with changing circumstances must charge with changing circumstances.

J. R. Commons : As a leading member of institutionalist school. Commons concentrated on legal aspects of institutions. (Veblen on sociological). He talked about legal concepts such as 'Property', 'the corporation', 'the reasonable value' and 'going concern'. Common was a great social reformer. He did not believe in the harmony of class interest. He noticed clash of interest in the society. He noticed clash of interests in the society. He advocated an increasing role for government in resolving the conflicting interests among many different groups.

To him institution means 'Collective to Veblen an institution is a widely prevalent habit of thought. But commons emphasized on the mutual dependence of men and the need for co-operation. He insisted on the need for collective action to reconcile the clash of interests which the institution of Private property created.

He also emphasised the role of court in the social arrangement. He classified the transaction in 3 types

1. Bargaining transaction 2) Rationing transaction, 3) Managerial transaction. To him economists have given too much emphasis on the 1st type and have neglected the 2nd and 3rd. It is a market transaction between individuals of equal states. The 2nd transfers ownership and modifies property rights. It is based on the authoritative relationships for e.g. tax burden fixed by govt. and wages feed for individuals by trade unions. The 3rd is also authoritative. For e.g. A company manager commanding the services of workers. To him study of all the transactions is essential for proper analysis of economic problems. He was a great supported of trade union movement. To him it was necessary to the collective bargaining power of workers. But he was not for overthrowing of capitalism or capitalist system. He believed in gradual approach to trade Unionism. He made his institutional economics a tool for social reform.

W-C Mitchell : He gave an empirical basis for institutional economics. His great contribution is the analysis of business fluctuations. He used statistical techniques.

His greatest contribution was in the study of business fluctuations. He attributed business cycles to the imbalance between production and distribution. He said, when imbalance occur, it results in glut on the market with unsold goods. The result is unemployment (of men and machines). He said that the business cycles recurs because there is no proper business planning. Business fluctuations are aggravated by factors such as widening of markets, the growth of monopolies, the migration of people from countryside to cities, dependence of the farmers on markets instead of being self-sufficient as in the post with his statistical investigations he said that

1) Business cycles are a feature of monetary economy. 2) Business fluctuations are widely diffused throughout the economy. 3) Intensity of the cycles depends on the prospects of profits. 4) Business cycles are generated by the economy itself. They are not

accidental disruptions of equilibrium. They are a disease of the capitalism.

He said that a careful social or national planning would mitigate the evils of business fluctuations.

Theory of trade cycles is his another great contribution. Veblen depicted economics as a 'science of change'. Mitchell made it a 'Science of measurement.

Clarence Ayres was another thinker who said that technology was always one step ahead of the socio-cultural institutions. He identified institutions with sentiments and Suspension and in consequence institutions only played a kind of residual role.

Adolf Berle (1895-1971) combined legal and economic analysis. His work stands as a founding pillar of thought in the modern corporate Governance Directors of companies are held to account to the shareholders of companies, or not, by the rules found in company law statutes. It might include right to elect and fire the management, require for regular general meetings, accounting standards etc. To him unaccountable directors of the companies were apt to funnel the fruits of enterprise profit into their own pockets, as well as manage in their own interest. The ability to do so was supported by the fact that the majority of shareholders in big public companies were single individuals, with scant means of communication.

7.2 DEPENDENCY THEORY (CENTER/PERIPHONY MALA)

Dependency theory is a body of social science theories predicted on the notion that resources flow from a 'periphery' or poor and underdeveloped states to a 'core' of wealthy states. Core is enriched at the expense of periphery.

The theory states that the dependence of Less Developed Countries (LDCS) on Developed countries (DCs) in the main cause of underdevelopment of LDCs.

According to dependency economists, the whole world is divided into two sets of countries namely DCs and LDCs. The DCs are center (European economics Britain, USA) and the LOCs are in Periphery (Asian, African, LA) Frank calls DCs as metropolis and LDCs as satellite countries. Some call DCs as dominant and LDCs

as dependent. The LDCs depend on DCs in trade, investment, technology etc. The DCs exploit the LDCs for their own benefits.

Dependency economists belong to different schools of thought and are classified as Maxists, neo marxists and structuralists.

The premises of dependency theory are that:

1. Poor nations provides natural resources, cheap labor, a destination for obsolete technology, and markets for developed nations, without which the latter could not have the standard of living they enjoy.
2. Wealthy nations actively perpetuate a state of dependence by various means. This influence may be multifaceted, involving economics, media control, politics, banking and finance, education, culture, sport and all aspects of human resource development (including recruitment and training of workers).
3. Wealthy nations actively counter attempts by dependent nations to resist their influences by means of economic sanctions and / or the use of military force.

Dependency theory is explained in terms of following characteristics.

1) Dependency a Historical International process:

Dependency theorists like franks, Santos, Suniel, Amil hold that the present socio-economic-political conditions prevailing in the periphery are the result of a historical international process. Both DCs and LDCs are integral part of the capitalist system. But the global system is such that the development of the centre occurs at the expense of underdevelopment of the periphery. Frank traces this process at 3 levels.

At **first level** many countries in the Periphery have been incorporated into the world economy since the early days of colonialism. At the **2nd** level, such peripheral countries have become capitalist economies through incorporation into the world economy. At the 3rd level the incorporation of peripheral countries in the world economy has led to 'metropolis-satellite chain' in which the surplus generated at each level in the periphery is successively drawn off the centre. As a result the periphery is impoverished and the centre is enriched.

2) Foreign Capital : The LDCs are heavily dependent on the Centre for foreign capital. Foreign capital leads to 'external

orientation' of LDCs by exporting primary commodities, importing manufactures and making them depended for industrialization of their economies. To Sunkel, it is the stagnation of agriculture, high concentration & Primary commodities for exports, high foreign exchange content of industrialization and growing fiscal deficit in the peripheral countries which necessitate foreign financing for them. The foreign investors exploit LDCs by insisting on the choice of projects, marketing decisions on pricing, supply of equipments, technical know-how and personnel etc. They impose a development Pattern that is not compatible with local needs. The dependence on foreign capital leads to a much higher outflow of payment principal and interest, declared profits, royalties transfer pricing etc.

3) Technological dependence : The LDCs use excessively capital intensive technologies imported from the DCs. These technologies are inappropriate to the production and consumption needs of LDCs. Technological dependence of LDCs on DCs arises because of the urgency of importing technologies as they cannot innovate them. The centre has spread its monopoly to the peripheral countries through technological transfer.

4) Trade and Unequal Exchange : The DCs exploit LDCs by forcing them to specialise in the export of primary products with inelastic demand with respect to both price and income. Thus LDCs continue to face stagnant export earnings often coupled with disruptive short term fluctuations in prices. This has created shortages of foreign exchange and BOP deficit in LDCs.

Santos gives two reasons for BOP deficit:-

a) DCs keep the prices of their exports to LDCs very high and that of their imports from LDCs very low.

b) Foreign capital from DCs controls major sectors of LDCs with the result that there are large outflows of profit, interest and principal.

The trade between DCs and LDCs is characterized by unequal exchange.

5) Dualism : Dualism at the international plane leads to the dominance of DCs and dependence of LDs in the following ways.

a) by encouraging the flow of foreign investment and capital intensive techniques into LDCs through MNCs.

b) by controlling scarce raw materials and natural resources of LDCs

c) by encouraging exports of primary products of LDCs and manipulating their prices to DCs own advantage.

d) by adopting trade and aid policies against the interests of LDCs and increasing their dependence on DCs.

e) by encouraging consumerism through widespread advertising.

f) by encouraging the elite and rich to study for professional courses in DCs then migration to DCs.

To overcome the dependency there is a need of structural and institutional changes.

Criticism :

1) It is not a coherent, systematic and complete theory.

2) If does not explain development and underdevelopment.

3) Ignores production relations between the centre and the periphery.

4) It ignores the role of internal class structure.

5) MNCs and capitalism are not always harmful.

6) It neglects market forces.

Centre-periphery model: The centre-periphery (or-periphery) model is a spatial metaphor which describes and attempts to explain the structural relationship between the advanced or metropolitan ‘centre’ and a less developed ‘periphery’, either within a particular country, or (more commonly) as applied to the relationship between capitalist and developing societies. The former usage is common in political geography, political sociology and studies of labour-markets.

In sociology, however, centre-periphery models are most likely to be encountered in studies of economic underdevelopment and dependency and tend to draw on the Marxist tradition of analysis. The use of the centre periphery model in this context assumes that the world system of production and distribution is the unit of analysis. It also assumes that underdevelopment is not a simple descriptive term that refers to a backward, traditional

economy, but rather a concept rooted in a general theory of imperialism.

According to the centre-periphery model, underdevelopment is not the result of tradition, but is produced as part of the process necessary for the development of capitalism in the central capitalist countries-and its continued reproduction on a world scale. The theory assumes a central core of capitalist countries, in which the economy is determined by market forces, there is a high organic composition of capital and wage-levels are relatively high. In the peripheral countries. on the other hand, there is a low organic composition of capital and wage-levels do not meet cost of reproduction of labour. Indeed, the cost of reproduction of the labour-force may be subsidized by non-capitalist economies, particularly rural subsistence production. Likewise, in peripheral economies, production and distribution may be determined largely by non-market forces such as kinship or patron-client relations.

The centre-periphery model thus suggests that global economy is characterized by a structured relationship between economic centres which, by using military, political and trade power extract an economic surplus from the subordinate peripheral countries. One major factor in this is the inequality between wage-levels between centre and periphery, which make it profitable for capitalist enterprises to locate part or all of their production in underdeveloped regions. The extraction of profit depends on that part of the cost of the reproduction of the labour-force that is not met by wages being met in the non-capitalist sector. Thus, according to proponents of the core-periphery model, the appearance that capitalism is developing traditional and backward societies by locating enterprises in underdeveloped regions masks the structural relationship by which capital develops and prospers at the expense (or progressive underdevelopment) of non-capitalist economies.

The centre-periphery model has led to two main debates. The first concerns the elaboration of a theory of modes of production, which attempts to conceptualize different economic forms in terms of the relationship between production and distribution in each mode. The other tries to tease out the exact links between particular areas of the centre and periphery through examining the articulation of different modes of production. Both debates may often appear to be excessively theoretical-or at least of little practical significant. The centre-periphery model is also

implicated in various types of world-system theories (see, for example A, G, Frank, Dependent Accumulation, 1978.

7.3 THE ROLE OF INSTITUTIONS

In most developing countries, there often exists a considerable gap between the desire to establish a properly framed adjustment programme and the ability to implement it. One of the most important factors needed to close this gap is the quality of the institutional framework.

Several economists, notably Olson (1982) and North (1990), amongst others, have stressed the role of institutions in economic performance. In this context, several aspects have been emphasized in the many studies which have highlighted the importance of institutions. These include political instability (Barro 1991), property rights and security of contracts. (Tornell and Velasco 1992), and rent-seeking behaviour (Rama 1993), amongst others. some of these have used proxy variables to model institutional characteristics although these proxies have either not been fully developed or being qualitative, have been essentially subjective. Moreover, many of the independent variables used in the studies have been themselves sensitive to economic growth and, as such, it has been possible to hypothesize a reverse causality.

However, there is no doubt that institutions that protect property rights are crucial for private investment and environmental protection and, therefore, economic growth and the quality of life, respectively. In order to test this hypothesis, Knack and Keefer (1995) experimented with variables that included expropriation risk, corruption in the government, quality of bureaucracy, and contractual enforceability by government, quality of bureaucracy, and contractual enforceability by the government, amongst other, and found that institutions were almost as important to economic growth as human capital.

The main determinants, that in investment, educational attainment, inflation, external debt and the initial conditions, influence long-run growth significantly. As far as the other three variables are concerned, while they are negatively associated with the growth rate as would be expected, they are not as significant as the main determinants. However, these institutional variables do add to the explanatory power of the regressions and, by and large,

it is found that, in descending order of importance, government corruption, lack of bureaucratic quality, risk of property appropriation and debt repudiation, and law and order (not reported) help to explain variations in growth rates across the sample of countries.

7.4 POLITICAL LESSONS OF ECONOMIC REFORMS

Political scientists have presented several hypotheses to try and explain the implementation of economic reforms: for example, reforms are successful only under authoritarian regimes, reforms take place only after a crises has occurred, reforms are undertaken only by new governments, reforms are not possible in transitional economies, reforms are possible only with solid legislative support or, alternatively, in the face of weak opposition, reforms need a social consensus, and successful reforms are possible only under visionary leader, amongst other.

The most quoted hypothesis is that authoritarian regimes are better at economic management in developing countries than are democratic government since repressive regimes can blunt opposition to economic reforms and implement a consistent and coherent programme of economic development. However, as was show in the preceding section, there appears little association between economic reform and political regime. Despite this lack of evidence. political scientists have still pursued this hypothesis and, in doing so, have often suggested that a distinction needs to be made between ‘weak’ and ‘strong’ authoritarian states. However, when applied to economic policy, this distinction runs the risk of being almost tautologous, with weak authoritarianism being defined as those states that are unable to frame and execute a coherent and effective macroeconomic policy. Nevertheless, it is true that weak democratic institutions in Turkey, Brazil, and Peru in the 1980s did contribute to the stalling of badly-needed economic reform.

Similarly, it is often suggested that economic policy reforms are only undertaken after a crisis has emerged. However, while a crisis can play a significant role in stimulating reform, it is neither a necessary nor a sufficient condition to initiate reform. For example, crises played a major role in the reform efforts in Indonesia in 1965 and 1982. Chile in 1973 and 1982, South Korea in 1979, Turkey in 1980, Ghana in 1983, Poland in 1989, and India in 1991. However, there are cases such as Australia, Colombia, and Portugal in the

1980s, where a crisis does not appear to have played a role in the reform effort. Moreover, despite the debt crisis in 1982, Mexico imitated a belated response to it and did not embark on reforms until five years later in 1987.

It has also been suggested that the government experiencing the greatest difficulty in introducing economic reforms are those in 'democratic transition', that is those countries in which an authoritarian government has yielded to a fledgling democracy. There have been many examples of this transformation such a Argentina (1983), Turkey (1983), Brazil (1985), Pakistan (1988), and Chile (1989), amongst other. Several reasons, including the need for building political coalitions, are cited as to way democratic transitions are most likely to lead to 'expansionist' economic policies. However, it needs to be noted that these governments are not the only ones to indulge in such policies because, in a sense, nearly all democratically elected government seem to specialize in reconciling conflicting claims by various interest groups on resources by increasing public expenditures.

It is also suggested that new government are more likely to make drastic change in economic policy than are incumbent governments. Such change were introduced by many democratically elected government including Costa Rica (1982), Argentina (1989), Poland (1989), and India (1991), amongst other. The assumption here is that new governments can more easily break with the past and take the necessary steps to reduce the 'chaos' left by the earlier government. Turkey (1980) provides the exception because the military leadership, after overthrowing a democratically elected government, not only continued, but actually strengthened, the economic reforms of their predecessors. the Hawke administration in Australia, the Gonzalez government in Spain, and the Barco administration in Colombia, on the other hand, are examples where successful reforms were implemented at the middle or end of their respective tenures.

A solid legislative support is another factor suggested as a prerequisite for reform. This hypothesis appears to be consistent with the democratically elected government in Australia, Colombia, New Zealand, Portugal, India, Spain, and Turkey. However, in Poland, the Solidarity government had to be supported by smaller parties in the parliament. On the other hand, Chile, Indonesia, South Korea, and Turkey are cases where the opposition was suppressed before reforms were implemented; While Russia is an

example of reforms in the face of weak opposition. While social consensus was important in the reform efforts in Australia, Mexico, Poland, Portugal, and Spain; Brazil and Peru and cases where there was no consensus; and Chile and Turkey are examples of intense opposition to reforms being converted into widespread endorsement as the programme yielded positive results.

Therefore, the evidence suggests no simple answers although a strong political leadership, not necessarily authoritarian in style, backed by a competent economic team is likely to improve the changes of successful reforms.

7.5 SUMMARY

1. In this unit three different approaches of political economy were discussed : Radical, Mainstream and Institutional.

2. Radical economists view societies as integrated social systems existing in concrete historical circumstances. They emphasize the interdependence between the social, political and economic spheres of a society, rather than compartmentalizing these spheres and treating them independently. Their analysis of economic system of a particular society is implemented in terms of that society's specific institutional structure, rather than abstract Universal Propositions.

3. Mainstream economics deals with "rationality-individualism-equilibrium nexus". The current use of mainstream economics is specific to the post World War II era. It includes theories of market and government failure and private and public goods.

4. Institutional economics emphasizes a broader study of institutions and views markets as a result of the complex interaction of these various institutions (e.g. individuals, firms, states, social norms). It forces on learning, bounded rationality, and evolution rather than assume stable preferences, rationality and equilibrium. It was a central part of American economics.

5. The theory states that the dependence of Less Developed Countries (LDCS) on Developed countries (DCs) in the main cause of underdevelopment of LDCs. According to dependency economists, the whole world is divided into two sets of countries namely DCs and LDCs. The DCs are center (European economics Britain, USA) and the LDCs are in Periphery (Asian, African, LA). Some call DCs as dominant and LDCs as dependent. The LDCs

depend on DCs in trade, investment, technology etc. The DCs exploit the LDCs for their own benefits.

6. The centre-periphery (or-periphery) model is a spatial metaphor which describes and attempts to explain the structural relationship between the advanced or metropolitan 'centre' and a less developed 'periphery', either within a particular country, or (more commonly) as applied to the relationship between capitalist and developing societies. According to the centre-periphery model, underdevelopment is not the result of tradition, but is produced as part of the process necessary for the development of capitalism in the central capitalist countries-and its continued reproduction on a world scale.

7. In most of the developing countries, there exists a considerable gap between the desire to establish a properly framed adjustment programme and the ability to implement it. The role of the Institutions through its quality framework is important factor to close this gap.

8. Political scientists have presented several hypotheses to try and explain the implementation of economic reforms. Evidence suggests that these reforms are successful only with a strong political leadership, not necessarily authoritarian in style, backed by a competent economic team.

7.6 QUESTIONS

1. Explain in brief different approaches to political economy.

2. Write notes on : Radical approach and Mainstream approach to political economy.

3. Discuss Dependency theory of development.

4. Explain Centre-periphery models of economic development.

5. Discuss the role of institutions in economic development.

8

Module 4

MICROECONOMICS OF DEVELOPMENT

Unit Structure:

8.0 Objectives
8.1 The need for microeconomic modelling
8.2 Risk and insurance in an agricultural economy
8.3 Fragmented and informal credit markets
8.4 Segmented Labour markets
8.5 Rural land markets and interlinked markets
8.6 Under-nutrition and labour markets
8.7 Efficiency wage hypothesis
8.8 Summary
8.9 Questions

8.0 OBJECTIVES

- To study the need for microeconomic modelling
- To understand the concepts of risk and insurance in an agricultural economy
- To study the fragmented and informal credit markets
- To study the segmented labour markets
- To study Rural land markets and interlinked markets
- To study under-nutrition and labour markets
- To understand efficiency wage hypothesis

8.1 THE NEED FOR MICROECONOMIC MODELLING

An economic model attempts to conceptualise from complex human behaviour in a way that will help gain some insight into a particular aspect of that behaviour. This process inherently ignores important aspects of real-world behaviour, making the modelling process an art as well as a mathematical exercise.

Microeconomics involves the study of models. These are central elements of theories. Applied microeconomics includes a range of specialized areas of study, many of which draw on

methods from other fields. For example, Industrial organization examines topics such as the entry and exit of firms, innovation, and the role of trademarks. Labour economics examines wages, employment, and labour market dynamic.

Dynamic models explain the evolution of the concerning issue as the solution to a dynamic programming model involves economic choices. Dynamic models may be classified into structural and reduced-form models. Structural models generally require solution of the underlying dynamic programming problem. Reduced-form models, while based on a structural specification, do not. Recent innovations in estimation methodologies make both types practical and realistic alternatives.

8.2 RISK AND INSURANCE IN AN AGRICULTURAL ECONOMY

Most economists recognize that farmers face significant risks and have limited opportunity to avoid them through insurance and other tools. Farmers face floods, drought, pests, disease, and a variety of other natural disasters. The weather is their greatest enemy, something that is beyond the control of man. For example in India, the frequency and severity of risks in agriculture particularly in the last few decades has increased on account of climate variability. Throughout history, rising temperatures, erratic rainfall, and increase in the severity of droughts, floods and cyclones have caused huge losses in agricultural production and the livestock population. Yet, farming has been in existence from the time man gave up his nomadic hunter gatherer existence. Though farming has come a long way since then, farmers are still at the mercy of natural factors. These factors not only endanger the farmer's livelihood and incomes but also undermine the viability of the agriculture sector. These factors affecting the farmers' livelihood and income are beyond the control of the farmers. With the growing commercialization of agriculture, the magnitude of loss due to unfavourable eventualities is increasing. The question is how to protect farmers by minimizing such losses.

The criticality of agriculture in the rural transformation and the national economy seen along with its structural characteristics require substantial governmental and financial sector interventions not only to ensure household food and nutritional security of the farming community but also to generate savings and investments in this grossly under funded sector. The poor penetration and development of various risk management tools in the country also represent the huge opportunities for the emerging agricultural insurance and commodity markets to pull the producer from out of the poverty trap by insulating him from income shocks and by

ensuring that a fair share of the price goes to the producer. Agricultural Insurance is a means of protecting the agriculturist against financial losses due to uncertainties that may increase agricultural losses arising from some or all unforeseen perils beyond their control. Crop insurance is a risk management tool that farmers can use in today's agricultural world. Crop insurance is based on the principle of size and extent. The risk is distributed across space and time. The losses suffered by farmers in a particular locality are borne by farmers in other areas or by utilising the reserves accumulated through premiums in good years for the payment of indemnities. Thus, a good crop insurance programme combines both self as well as mutual help principle. Crop insurance brings in security and stability in farm income. For a premium, farmers can pass their weather-related risk onto a third party.

In general,

Premium = Expected loss + Risk Margin + Administrative Costs

What is of crucial importance to farmers is stabilizing their income, not stabilizing the prices of their produce? Some economists favour the use of futures markets. These have the advantage of allowing a farmer to choose how much of his crop to sell forward and to “adapt” the extent of price stabilization to his own circumstances and preferences. Some of the drawbacks of the futures market are that if the size of crop sizes is uncertain to an extent, no farmer can completely hedge his position unless he purchases crop insurance.

8.3 FRAGMENTED AND INFORMAL CREDIT MARKETS

Informal lending was once the only form of credit available in rural settings. Moneylenders are informal lenders along with the landlords, shopkeepers, relatives and a small group of other informal lenders. Evidence suggests that as farm size increases, banks are able to gain a foothold in rural finance and the importance of private credit sources, village moneylenders and pawnbrokers, chit funds, friends and relatives grow less important.

However, with the implementation of development plans, official lending complements but does not completely wipe out or supersede informal sources. Informal credit markets are still important source of rural finance in developing countries. Despite an increase in the supply of formal credit in rural areas, informal lenders remain the dominant source of credit for the poorest households. Formal lending institutions often require collateral like land from borrowers. The insistence on collateral security by formal

lenders highlights the fact that that there is a potential risk of default that lenders attempt to reduce. The poorest households are often landless and therefore excluded from formal credit programs. Improvements in productivity are important in any development process. Productive investment requires funding and the access to credit is crucial for this purpose. For poor rural folk, credit might also be a mean to tide over bad times caused by sudden illness or an upcoming wedding in the family.

Empirical studies of informal borrowing and lending in developing countries have resulted in a list of common characteristics or "stylised facts" that are often used to describe informal credit markets in poor countries.

1. ***Limited information****:* Lenders have, more often than not, limited information about the borrower and how the money is spent. Information problems typically occur in the credit market. Adverse selection, moral hazard, and strategic defaults are potential problems. Informal lenders must create contracts that minimise these problems.

2. ***Segmented markets****:* Relationships between borrowers and lenders need to be stable. Market segmentation owing to the lack of such relationships is a result of information problems. Hence, village lenders seem to have well defined groups of people that they consider themselves close to. This means that these powerful landowners or lenders have specific preferences with regards to whom they want to deal with. This results in a segmented credit market. The terms and conditions may vary substantially across different transactions, depending upon the characteristics of the borrowers and lenders and the relationship between them. Credit transactions occurring over a short period in a village might include: extremely informal loans between friends; formal sector loans backed by documentation and collateral; commercial loans between a moneylender and his clients some of which are backed by collateral; lending from a trader to the farmers who supply him with their harvest, or backed by the promise to sell the year's harvest to the trader; consumption loans from an employer to long-term employees; group loans from a micro finance institution to self selected group of borrowers lacking collateral and a potentially large number of variations of the aforesaid schemes.

3. ***Interlink ages between markets****:* One often observes that interlink ages exist between markets and the outcome in one market affects the outcome in a different market. Market segmentation is closely related to interlink ages.

4. ***High and varying interest rates****:* Interest rates are higher than the lenders' opportunity cost of lending and may vary even within each village.

5. ***Credit rationing****:* Lenders that are often not able or willing to lend more at the going interest rate, but borrowers want to borrow more at the going interest rate.

6. ***Exclusivity****:* It is common that lenders refuse to lend to individuals who have outstanding loans with other lenders.

All these characteristics are indicators of a credit market that diverts from a perfectly competitive credit market.

8.4 SEGMENTED LABOUR MARKETS

Segmented labour markets theory was sufficiently popular in the late 1960sand the early 1970s. It was, hence, taken seriously by prominent mainstream labour economics. Segmented labour markets are dual labour markets, which consist of various sub-groups with little or no crossover capability. Labour is not a completely homogeneous commodity. Workers differ in their tastes and preferences for leisure and work for monetary rather than non-monetary rewards. They also differ in human capital, their investment in education and training, their work skills and experience. Human Capital Theory seeks to explain wage differentials as a consequence of differing human capital stocks that determine an individual's marginal productivity. Human capital stock is defined as "the stock of knowledge, skills, aptitudes, education, and training that an individual or a group of individuals possess."

Why does segmentation occur? One approach to this question focuses upon the evolution of the product markets, from the competitive and the localised to the producer dominated, and from the national to an international market. Technological change makes capital-intensive methods of production possible. Employers, however, are unwilling to undertake large-scale investment unless the product demand is stable and predictable; when demand is variable, labour-intensive techniques are preferred. A growing division is found between firms which cater for stable markets and those in unstable markets. Firms with stable product demand create primary conditions of employment, including, notably, job security. Firms which face unstable demand operate in the secondary segment of the labour market.

Segmentation into Primary and Secondary Markets: The primary and secondary segments, to use the terminology of dual labour market theory, are differentiated mainly by stability

characteristics. Primary jobs require and develop stable working habits; skills are often acquired on the job; wages are relatively high; and job ladders exist. Secondary jobs do not require and often discourage stable working habits; wages are low; turnover is high; and job ladders are few. Secondary jobs are mainly (though not exclusively) filled by women, and youth.

Segmentation into Formal and Informal Markets*:* Informal activities prove to be quite diverse. Some are activities with easy entry and no fixed hours of operation. By contrast, other informal activities exhibit limited entry due to higher set-up costs, irregular hours of operation, and employment of family labour and unskilled labour with semi-specified work relations. These contrast with formal sector enterprises, which are characterised by restricted entry, regular place and hours of operation, and employment of non-family labour with specific work-relations. These belong in the category of formal sector, even if they are very small in scale. On example would be professional services companies which although small in scale, cannot be viewed in any meaningful way as part of the informal sector.

Another factor observed in many people working in the informal sector was that their employment was voluntary in nature, That is, given the constrained choices open to them, a great many workers are in the sector voluntarily. These people know that job opportunities are available in the urban formal sectors for people like themselves and they could get such jobs. Yet they choose not to seek such jobs, the foremost reason is that they prefer the combination of monetary rewards and psychological aspects of their employment in the informal sector.

A third important conclusion is that the upper-tier informal sector and the easy-entry informal sector are linked to the formal sector in different ways. Whereas most workers in the informal sector who were dissatisfied with their positions sought better jobs in the formal sector, some who had left the formal sector behind and could reach the upper-tier in the informal sector were glad to be in the informal sector.

The formal sector provides training for workers to move into the upper tier small scale employment. Example is the food industry workers who leave jobs to set up their own food processing activities.

The criteria for being informal were: self-employed workers with less than 13 years of education, temporary workers, employers, and family workers in firms with less than 5 employees, and domestic service. In the formal sector all other classifications were included, covering all the blue and white collar workers.

***Segmentation by race*:** While minority workers are present in secondary, subordinate primary, and independent primary segments they often face distinct segments within those submarkets. Certain jobs are "race-typed," segregated by prejudice and by labour market institutions. Geographic separation also plays an important role in maintaining divisions between race segments.

Segmentation by Sex: Certain jobs have generally been restricted to men; others to women. Wages in the female segment are usually lower than in comparable male jobs; female jobs often require and encourage a "serving mentality"-an orientation toward providing services to other people and particularly to men. These characteristics are encouraged by family and schooling institutions.

8.5 RURAL LAND MARKETS AND INTERLINKED MARKETS

Land is a key factor for any economic activity. Land market transactions play an important role in the process of economic transformation and development. Conventionally land is considered as a factor of production. However, it is increasingly becoming a speculative asset. Land has a number of characteristics, which make it different from other assets that may be traded on the market. Besides economic aspects, such as immovability, limited supply, planning regulations and permitted land use etc., geographical location as the unique characteristic of each land parcel.

The trends in land market indicators like size of area, number of sales and price of land are analysed in detail. Within the domestic sectors, economic recession has been visible in the land market earlier than in other sectors. This may be because of the fact that land market transactions involve huge amounts of investment and a higher level of risk. A close watch on the movements in key factors such as number of sales, area transacted, and land prices would therefore help along way in shaping the right policies to ward off economic fluctuations.

Rural land in the region closer to areas that facilitate accessibility to capital has in average a higher market price, also in case when changes of land use are not anticipated in the very near future. This fact can be linked with the attractiveness of rural landscape for living place and development of economic activities in the regions with favourable economic and demographic indicators, and is associated with the urbanisation process.

There are a number of common obstacles faced by the land markets in most developing nations:

- Compensation and/or privatization processes are not finished (unsolved Compensation claims, differences between legal and physical Compensation, registration problems, etc.),
- Political restrictions imposed by the governments to avoid drastic changes in agricultural sector (prohibitions on certain land transactions, incentives to avoid massive decollectivizations, etc.),
- Lack of incentives to undertake private, either individual or collective, farming business (credit, technical assistance, marketing, etc.),
- significant power of state agencies in the land market (as owners or lenders) and as providers of the regulatory framework (in case of land reforms undertaken by the state agencies)
- social and economical differentiation between managers of reformed collective units and private farmers,
- relevant governmental organizations still in a transition and/or redefinition stage involved in the process, and
- Cultural, ethnic and social values strongly attached to land ownership.

The use (and transfer systems) of the state lands, the regulations, and the land reform strategy followed by each country defines the way in which land should become a private and tradable good, and who (and how) can access it. As in the case of any other good in a market oriented economy, the mechanism to access land (to buy or rent) is through the market land prices.

Inter-linked markets: Two markets that are often linked are the rural land markets and the rural credit markets. The landowner decides the amount of loan to be given to the tenant and the tenant either accepts the contract or does not. Further, loans can be taken for Production purpose by the tenant to buy inputs for Production and for Consumption Purpose. If the landlord gives a production loan he can get two sources of income. One, by keeping a share of the produce as a landlord and the other as a direct income from interest payments.

Rural Land markets are also interlinked to Rural Labour markets. As there is very little mobility of labour from agriculture into other sectors, the rural landless labour is often exploited by the land-owners. But this exploitation gets lesser when there is modernisation and development which brings about a degree of education amongst the landless labour, therefore reducing the exploitation. But this issue is relevant for less developed nations where there is very little linkage with other sectors thereby reducing the mobility of labour.

Rural land markets further get linked to the Households, when the rural land is used to produce Cash crops instead of Food crops for which they were used earlier, thereby leading to an increase in the food prices and affecting the household incomes.

Rural land markets are also linked to the export market when modern agricultural entrepreneurs' demand for rural land increases for export crops such as fruits etc. This linkage is found to be more prominent ever since globalisation took place.

8.6 UNDER-NUTRITION AND LABOUR MARKETS

The Indian economist Partha Dasgupta attempts to understand the common circumstances in which people are born in poor countries. He pays a lot of attention to the question of nutrition and its effects on health and work effort. Low income is the major cause and consequence of malnutrition; as malnutrition brings down the efficiency in the work and productivity. The food requirements that nutritionists consider necessary for efficient working and healthy living are far greater than the levels achieved by vast population in developing nations. Calorie deficiency causes weight loss, tiredness and deterioration of mental faculties. Brain damage due to lack of Protein intake is irreversible. Poor nutrition and disease, combined with basic health facilities, lead to low life expectancy and a high incidence of infant mortality.

When it comes to the relation between nutrition and the capacity for physical effort, nutrition is defined generally in terms of the energy requirement. The minimum amount of energy(r) is the daily calorie requirement when a person is engaged in the minimal activities of eating and maintaining essential hygiene, with no allowance for work and play. In the diagram (Fig 8.1) below, the slope of the line is decreasing, but it could be linear or even increasing over certain ranges (in the initial stages, after the minimal requirement of energy intake r is reached). Recent research has shown that the economic and social investment in nutrition and health in terms of increased job productivity, increased productivity on time spent in school is far greater than the trivial cost involved in treating different forms of malnutrition.

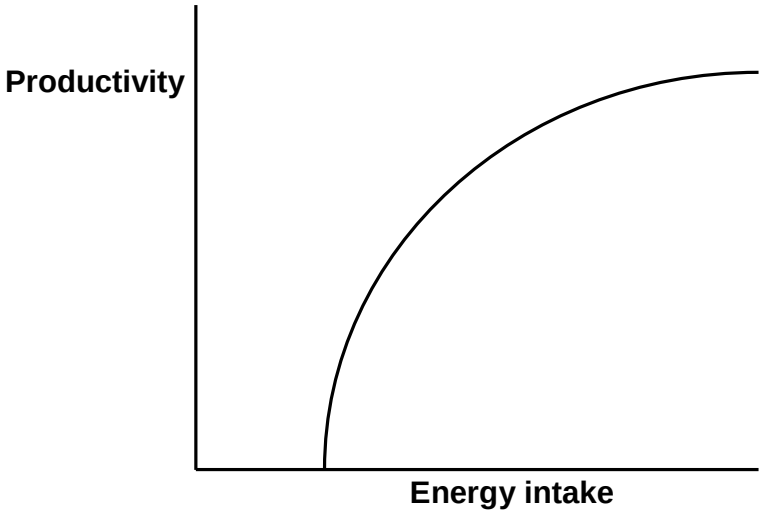


Figure 8.1: Relation between Productivity and energy intake

The Planning Commission of India had accounted for 8 percent of Indians do not get two square meals a day and there are pockets where severe under-nutrition takes its toll even today. Micronutrient deficiencies are widespread; more than half the women and children are anaemic; reduction in Vitamin-A deficiency and iodine deficiency disorders is sub-optimal. Under nutrition and anaemia adversely affect work capacity and productivity.

Improved adult nutrition leads to higher physical productivity and higher productivity in the labour market. Empirical studies find nutritional status and labour productivity, as measured by wages or own-farm output or both, to be positively related. Under-nutrition results in substantial productivity losses, e.g. through high levels of morbidity and impaired cognitive development

The World Health Organisation cites food insecurity as a prime cause of under nutrition. Food security in its most basic form is defined as the access of all people to the food needed for a healthy life at all times. Given the multiple ways of measurement of food insecurity, short-term and long-term, there can be no single indicator for its measurement.

Nutritional well-being is linked to labour markets and production (via productivity effects) and to population (via mortality, fertility and migration) and can be influenced by direct intervention (health, social, educational and other services, transfers and subsidies).Progress towards improving nutrition is good economic and social policy. The pay-offs are short-term and long-term, even intergenerational, as nutritional well-being leads to a sustainable increase in the productivity of societies.

8.7 EFFICIENCY WAGE HYPOTHESIS

In developing countries as labour is more abundant than capital, the LDCs may find it more profitable to use labour-intensive techniques and the Developed countries may use capital-intensive techniques as they may find it more economical, capital being abundant than labour in these nations. Point of tangency between price line and production function for both developed and developing countries is given by A and B respectively in the Figure 8.2

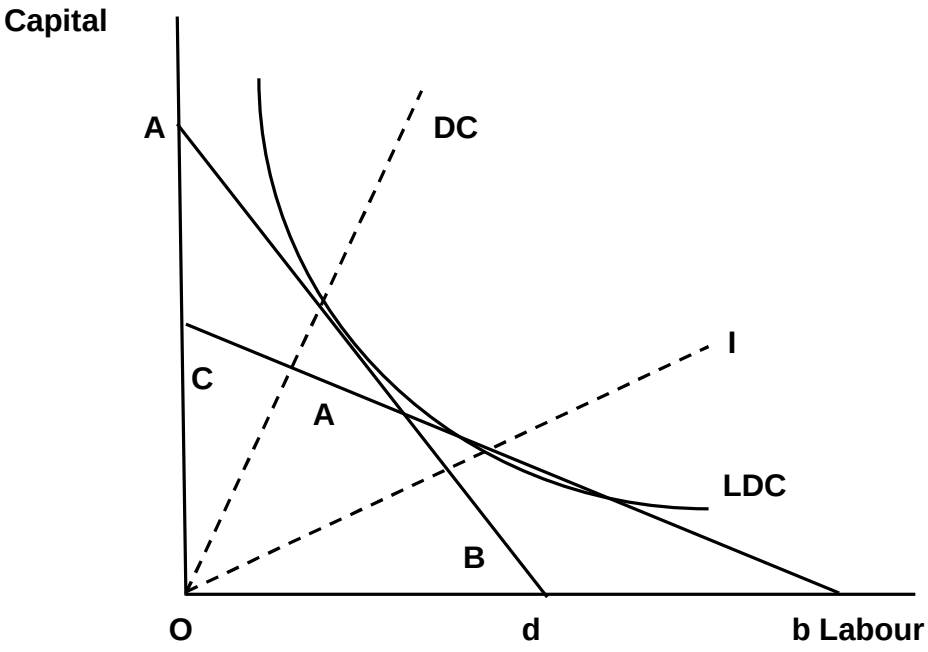


Figure 8.2: Optimal Choice of Technique

In practice, however for the same output produced the capital-intensity of techniques is not very different between the two sets of countries, especially in modern sector. There are a number of reasons why technological choice appears to be largely similar in developing countries than in technologically advanced nations.

First, for a large number of commodities there may not be a wide range of techniques to choose from. There may always be more labour-intensive techniques using both more labour and capital, but then their output would not be competitively profitable. Secondly, the choice for relative capital intensity of production in developing countries is that the market prices of factors very often do not reflect relative abundance or scarcity. The cheaper the capital is made by subsidies and the higher wages are above their Shadow price (a shadow price is the maximum price that

management is willing to pay for an extra unit of a given limited resource), the more capital-intensive the techniques will be.

Thirdly, though labour may be abundant and the money wage may be lower than in developed countries, it is not necessarily cheaper to employ, because it's productivity may be lower. That is, the so-called *Efficiency wage* (Wage rate divided by labour Productivity) alternatively wage costs per unit of output may differ very little between the developing and developed countries. The *Efficiency Wage* model asserts that the productivity of workers in firms is positively correlated with the wages they receive.

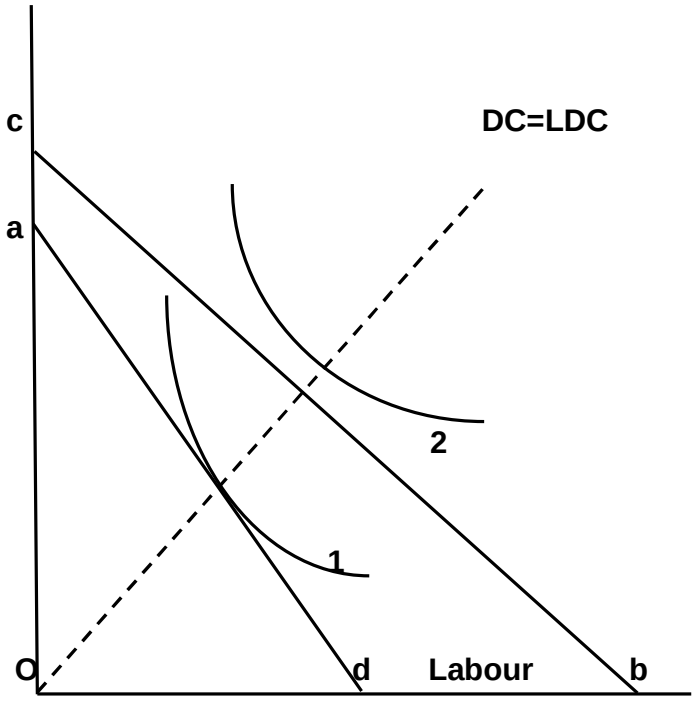


Figure 8.3

In the above diagram (fig 8.3), the production function for the developing country is labelled '2'.Even though labour is relatively cheaper to capital in developing country (slope of cd < slope of ad) however the most profitable capital-labour ratio will be the same in both countries (given by the ray from the origin, *DC = LDC*). It is because of the fact that abundant labour is not necessarily cheap it is observed in trade developing countries exports are at times as capital-intensive as in developed countries, contrary to the prediction of certain trade theories. This apparent paradox (sometimes called the **Leontief Paradox**) can be explained by the fact that it is 'efficiency' wage that matters, not the money wage, and while money wage may be low in developing countries, the 'efficiency' wage is relatively high.

The idea of the *efficiency wage* theory is that it may benefit firms to pay workers a wage higher than their marginal revenue product. The argument is that paying workers a higher wage may lead to increased productivity from the worker. If a worker gets a relatively higher wage, he may feel more loyal and devoted to the company. With a higher wage, he may also fear being made unemployed and so will work harder to make sure he keeps his job. Therefore, although the firm pays more they get more productivity from their workers.

Fourthly, in certain cases capital intensity could be explained by the skill constraint. Labour-intensive techniques require generally a great deal of skilled labour in comparison to the semi-skilled labour required for capital intensive techniques. Since developing countries fall short of skilled labour, capital might be substituted for skill.

The overriding factor that accounts for the relative capital intensity of the modern sector of the developing countries is the fact that many of these techniques are imported from abroad, with a heavy bias in the labour saving direction. These techniques might be employed by indigenous firms or by large foreign-owned multinational corporations, which invest in the country and bring their technology with them. In this case the technology may be 'inappropriate' not because there is a variety of techniques or an inappropriate selection is made, but because the technology is circumscribed by the global profit-maximising motives of the companies investing in the concerned developing countries. It is unlikely that multinationals will undertake major, expensive technological changes simply to suit local conditions.

The essential feature of *efficiency wage* models is the hypothesis that worker productivity is a positive function of wages, at least over some relevant range. Therefore, firms may be reluctant to reduce wages in the face of excess supply, since the associated decrease in productivity may result in an increase in labour costs.

In its simplest form, the efficiency wage hypothesis can be summarized by a production function of the form:

$$Q = f(e(w)L),\ e'(w) > 0$$

where L is the number of workers, w is the real wage and e is the effort per worker, or more general, worker productivity.

8.8 SUMMARY

1. Microeconomic modelling help to understand the different markets in an economy and the issues related to each of them, especially how they can be obstacles in the path of developing of the economy.

2. Most economists recognize that farmers face significant risks and have limited opportunity to avoid them through insurance and other tools. But a good crop insurance programme is the need of today's agricultural world.
3. Despite an increase in the supply of formal credit in rural areas, informal credit remains the dominant source of credit for the poorest households.
4. Segmented labour markets are dual labour markets, which consists of various sub-groups with little or no crossover capability. Labour is differ in human capital, their investment in education and training, their work skills and experience. Human Capital Theory seeks to explain wage differentials as a consequence of differing human capital stocks that determine an individual's marginal productivity.
5. Land market transactions play an important role in the process of economic transformation and development. Two markets that are often linked are the rural land market and rural credit market. Rural land markets are also interlinked to Rural Labour Market, Households, and Export market.
6. Nutritional well-being is linked to labour markets and production and to population and can be influenced by direct intervention. Progress towards improving nutrition is good economic and social policy.
7. The Efficiency-wage model asserts that the productivity of workers in firms is positively correlated with the wages they receive.

8.9 QUESTIONS

1. Explain what do you understand by microeconomic modelling?
2. Write an essay on Risk and Insurance in an agricultural economy.
3. Explain the role of fragmentation and informal credit markets in India.
4. Write a note on Segmented labour markets in India.
5. Discuss the Rural land markets and inter-linked markets in India.
6. Write an essay on under-nutrition and Labour markets.
7. Write explanatory note on Efficiency wage hypothesis.

9

MIGRATION

Unit Structure

9.0 Objectives
9.1 Migration
9.2 Theory of demographic transition
9.3 Economic theories of fertility
9.4 Microeconomics of child labour
9.5 Poverty alleviation: Efficiency, equity and entitlement issues
9.6 Summary
9.7 Questions

9.0 OBJECTIVES

- To understand the meaning of migration
- To study the Theory of Demographic Transition
- To study Economic Theories of Fertility
- To understand Microeconomics of Child Labour
- To study efficiency, equity and entitlement issues of poverty alleviation

9.1 MIGRATION

Rural-urban migration was in the earlier development literatures viewed to be favourable. Internal migration was thought to be a natural process in which surplus labour was gradually withdrawn from the rural sector to provide needed manpower for urban industrial growth. The process was deemed socially beneficial because human resources were being shifted from locations where their marginal productivity was often nil to places where the marginal productivity was not only positive but was rapidly increasing due capital accumulation and technological progress.

The recent developing countries experience indicates that the rural-urban migration rates continue to exceed the urban job

creation rates; it also exceeds the absorption capacity of both industry and urban social services. Migration is no longer seen as an answer to solve problems of growing urban labour demand.

Migration worsens the rural-urban structural imbalances in two direct ways. First, on the supply side, internal migration disproportionately increases the growth rate of urban job seekers relative to urban population growth, which is at unprecedented levels because of the high proportion of well-educated young people in the migrant system. This depletes the rural countryside of valuable human capital. Secondly, on the demand front, urban job creation is generally more difficult and costly to achieve than rural job creation because of the need for substantial complementary resource inputs for most jobs in the industrial sector. Moreover, the pressures of rising urban wages in combination with the unavailability of appropriate labour-intensive production technologies means that a rising share of modern-sector output is accounted for by increases in labour productivity.

Migration in excess of job opportunities is both a symptom of and a contributor to underdevelopment leading to urban unemployment and under employment. Any economic and social policy that affects rural and urban real incomes will directly or indirectly influence the migration process. This process will in turn itself tend to alter the pattern of sector land geographic economic activity, income distribution and population growth. Since all economic policies have an impact on the real income of the people, directly (wages and income policies and employment promotion policies) or indirectly, in both rural and urban areas and either one of them, they'll tend to influence the magnitude of migration stream. There are many policies which may be considered less important. For example, Land tenure arrangements; commodity pricing; taxation; export promotion and import substitution; Social service policy, family planning programmes, exchange rate policies, location of new industries etc. There is a need to identify the central importance of internal migration and in some countries even international migration and therefore to integrate the two-way relationship between migration and population distribution on the one hand and economic variables on another hand into a comprehensive development policy framework.

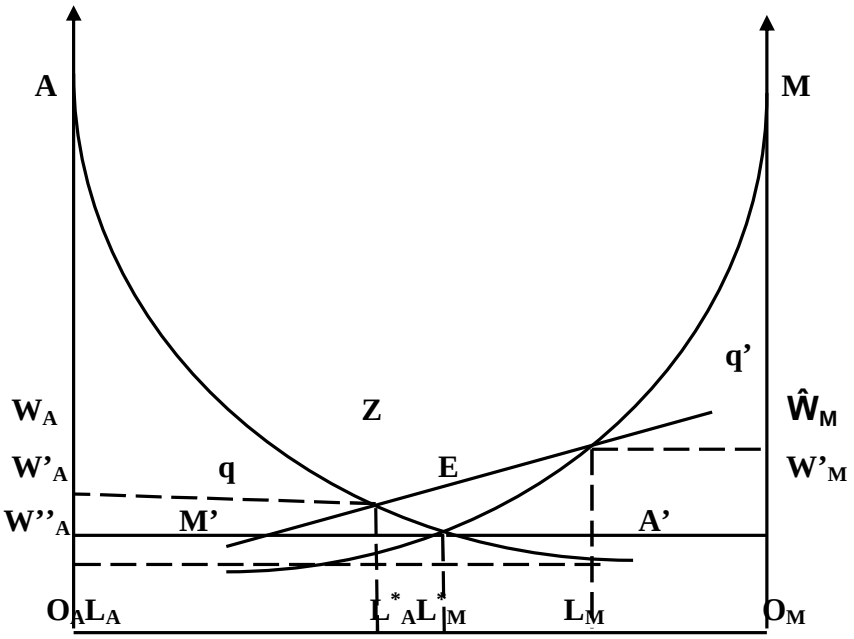
Migration patterns are complex. The most important type of migration from the long-development standpoint is rural-urban migration, but a great deal of rural-rural, urban-urban and even urban-rural migration takes place.

Harris-Todaro migration:

Given the assumption that migration is primarily an economic phenomenon, which for the individual migrant can be quite rational decision despite the existence of urban

unemployment, the Todaro model postulates that migration proceeds in response to urban-rural differences in **expected income** rather than actual earnings. The fundamental premise is that migrants consider the various labour market opportunities available to them in the rural and urban sectors and choose the one that maximises their expected gains from migration.

The explanation of the above is given by the Fig 4.8.1 below, assuming only two sectors, rural agriculture and urban manufacturing. The demand curve (the marginal product of labour curve) is given by AA'. The Labour demand in manufacturing is given by MM'. The total labour force is given by O_AO_M. The equilibrium will take place at $W'_A=W'_M$ with $O_AL'_A$ workers in agriculture and $O_ML'_M$ workers employed in manufacturing sector. All workers are fully employed. Equilibrium will take place at $W'_A=W'_M$ with $O_AL'_A$ workers in agriculture and $O_ML'_M$ workers employed in manufacturing sector. All workers are fully employed.



X-axis: Agricultural wage rate
Y-axis: Manufacturing wage rate

Fig 9.1 : Harris-Todaro Migration Model

But what if urban wages are institutionally determined (inflexible downward) as assumed by Todaro at a level $\hat{W}_M$, which is at a considerable distance above W'_A? If one assumes there is no unemployment O_ML_M workers would get urban jobs and the rest O_AL_M, would get the rural jobs at wages $O_AW''_A$ which is below the free market wages of $O_AW'_A$. The real urban –rural wage gap is

$\hat{W}_M$-W''$_A$, with $\hat{W}_M$ which is fixed institutionally. If the rural workers were free to migrate then the probability of theirs to secure urban job success to equate agricultural wages is given by:

$WA = \underline{L_M} (\hat{W}_M)L_{US}$

thus causing the potential migrant to be indifferent between job locations. The locus of points of such indifference is given by qq' curve in Fig 9.1. The new unemployment equilibrium is at point Z, where the actual urban –rural wage gap is $\hat{W}_M$ -$W_{A'}O_AL_A$ formal sector jobs paying $\hat{W}_M$ wages. The restO_ML_A -O_ML_M are either unemployed or employed in low-income informal-sector activities. Further, note that instead of assuming that all workers are the same, the reality of different levels of human capital (education), one can understand why a larger number of migrants from rural areas are the educated than the uneducated as they have a chance of earning higher urban wages than the unskilled migrants.

Policy Implications:

First, imbalances in urban-rural employment opportunities caused by the urban bias of development strategies must be reduced. As migrants are assumed to respond to differentials in expected incomes, it is of utmost importance to reduce the imbalances between economic opportunities in rural and urban sectors. The heavy influx of people into urban areas not only gives rise to socioeconomic problems in the cities but also create labour shortage problems in the rural areas.

Second, Urban job creation is an insufficient solution for the urban unemployment problem. The creation of more urban modern sector jobs without simultaneous attempts to improve rural incomes and employment opportunities can result in paradoxical situation where more urban unemployment generates further increase in urban unemployment. For every new job created, two or three migrants who are productively employed in the rural areas might come to the cities.

Third, indiscriminate education expansion will lead to further migration and unemployment. Employers tend to use educational attainment as a rationing device. For the same wages, they will hire people with more education in preference to those with less, even though extra education might not contribute to better job performance. Hence for a given urban wage, the probability of success in securing a modern-sector job is higher for people with more education, their expected income differential will also be higher, and they'll be more likely to migrate to the cities.

Fourth, wage-subsidies and traditional scarcity factor pricing could be counter-productive. A standard economic prescription for generating urban employment opportunities is to eliminate factor-

price distortions by using “correct” prices, perhaps implemented by wage subsidies (fixed government subsidies to employers for each worker employed) or directs government hiring. Wage subsidies will encourage more labour-intensive methods of production. But this could also lead to further unemployment as argued earlier.

Fifth, Programs of integrated rural development should be encouraged. So far most of the policies dealt with demand side of labour to alter the problem of migration. But policies such as alleviating unemployment problem influence the supply side of labour and are effective in the long run. However a combination of both kinds of policies is most desirable.

Comprehensive Migration and Employment Strategy and Conclusion:

1. *Creating an appropriate rural- urban economic balance:* To solve the rural-urban migration, an appropriate balance between rural and urban opportunities appears too indispensable to improve both the urban and rural unemployment problem.

2. *Expansion of small-scale, labour-intensive industries:* Expansion of these mostly small-scale and labour intensive industries in both urban and rural areas can be achieved in two ways: directly, through government investment and incentives, particularly for activities in the urban informal sector and indirectly through income redistribution to the rural poor.

3. *Eliminating factor-price distortions:* factor-price distortions need to be corrected by eliminating capital subsidies and curtailing the growth of urban wages through market-based pricing would increase employment opportunities and make better use of scarce capital resources.

4. *Choosing appropriate labour-intensive technologies of production:* Both domestic and international efforts must be made to reduce the dependence of developing countries on imported machinery and equipment from the developed countries by developing technological research and adoption capacities in the developing countries themselves.

5. *Modifying the direct linkage between education and employment:* One way to moderate the excessive demand for additional years of schooling, which is a demand for modern sector jobs, would be for governments, to base their hiring practices and their wage structures on other criteria. Moreover, the creation of attractive rural employment would make it easier to redirect educational systems towards the needs of rural development.

6. Reducing population growth: through reductions in absolute poverty and inequality, particularly for women, along with the expanded family planning provisions and rural health services.

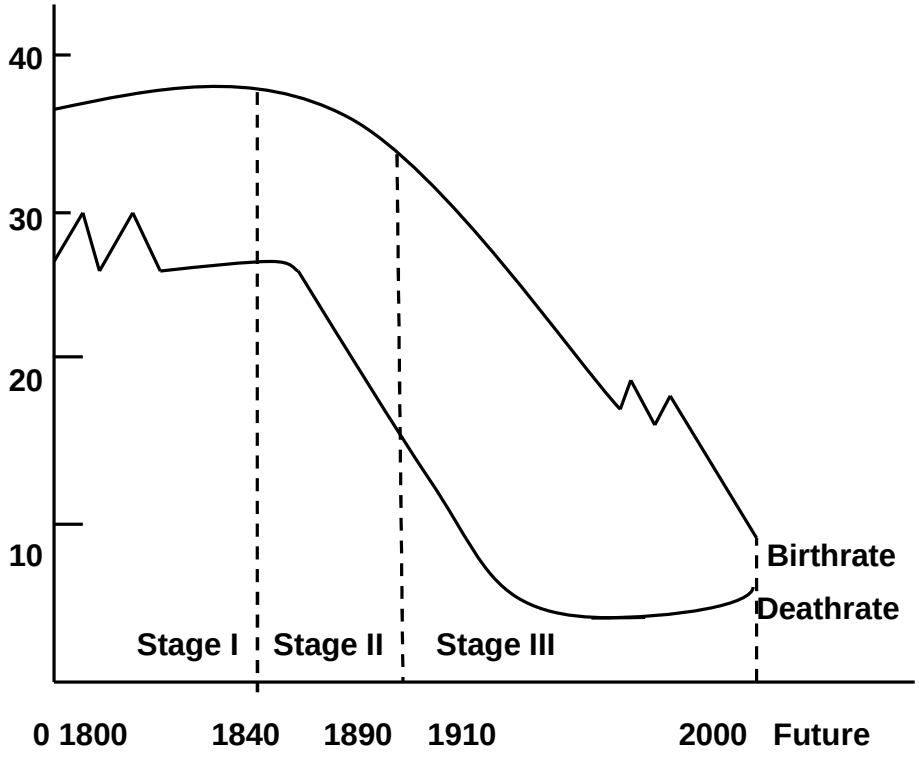
9.2 THEORY OF DEMOGRAPHIC TRANSITION

Like economic growth, population growth is a modern phenomenon. The first point to note is that the "carrying capacity" of the world was enormously different in the Stone Age than in the era of agriculture and considerably lower than it is now. Yet, starvation was common. The advent of agriculture changed all that, or much of that at any rate. With an increase in the carrying capacity of Mother Earth came an increase in population, but the net population was still minimal, because death rates were persistently high due to famines, plague and war. This was the first phase of demographic history. The rise in agricultural productivity meant not only lower famines, which brought down the death rates but with an increases in the agricultural productivity there was need for more labour. Birth rates continued to be high, this meant population growth rates increased. This was the second phase of demographic history. Finally birth rates fell as time overcame inertia. This was the final phase of demographic history where population growth rate fell.

The process by which fertility rates eventually decline to replacement levels has been explained by a famous concept in demography called the ***demographic transition***. The demographic transition attempts to explain the reason behind why all contemporary developed nations have more or less passed through the same three stages of modern population history.

Before their economic modernization, these countries for centuries had stable or very slow growing populations as a result of a combination of high birth rates and almost equally high death rates. This was the Stage I. Stage II began to occur when modernization, associated with better public health methods, healthier diets, higher incomes, and other improvements led to a greater decline in mortality rates that gradually raised the life expectancy from 40 years to over 60 years. As a result the there is a wide divergence taking place between the rapidly declining death rate and increasing birth rate. Stage II thus marks the beginning of the demographic transition, where the population rapidly increases and later the increase takes place in a diminishing rate. Finally, stage III entered with influences of modernization and development caused the beginning of a decline in Fertility rates, where the falling Birth rates converges with lower death rate, with little or no population growth.

Fig 9.2 below depicts the three historical stages of demographic transition in Western Europe. Between 1800 to 1840 Western Europe had birth rates around 35 per 1000 and death rates at around 30 per 1000, leaving the population growth at merely 0.5% per annum. It experienced the Stage II in the second half of the nineteenth century. It entered Stage III in the beginning of the 20th century, where birth rates fell due to late marriages or celibacy, the overall population growth seldom exceeded the 1% level and death rates began to decline.



X-axis: Actual birth and Death rates per 1000 inhabitants
Y axis: Year

Figure 9.2: The Demographic Transition in Western Europe

Whereas, beginning in the 1940s, especially in the 1950s and 1960s, stage II of the demographic transition occurred throughout most of the developing world. Some of the developing countries have already entered Stage III of declining death rates and declining birth rates.

9.3 ECONOMIC THEORIES OF FERTILITY

The Malthusian Population Trap:
R.T. Malthus had put forward a theory two centuries ago, showing the relationship between population growth and economic

development, which is valid even today. Malthus while discussing in his *Essay on the Principle of Population* about the concept of diminishing returns, postulated a universal tendency for the population of a country, unless checked by food supplies, to grow at a geometric rate, doubling every 30 to 40 years. At the same time, because of diminishing returns to the fixed factor, land, food supplies could expand only at an arithmetic rate. In fact, as each member of the population would have less land to work, his marginal contribution to food production would actually start to decline. Since the food supplies growth could not keep pace with the increasing population, per capita incomes would actually start to decline and this would lead to majority of the population existing barely above the stable level. Modern economists have called this *low level equilibrium population trap* or **Malthusian population trap**.

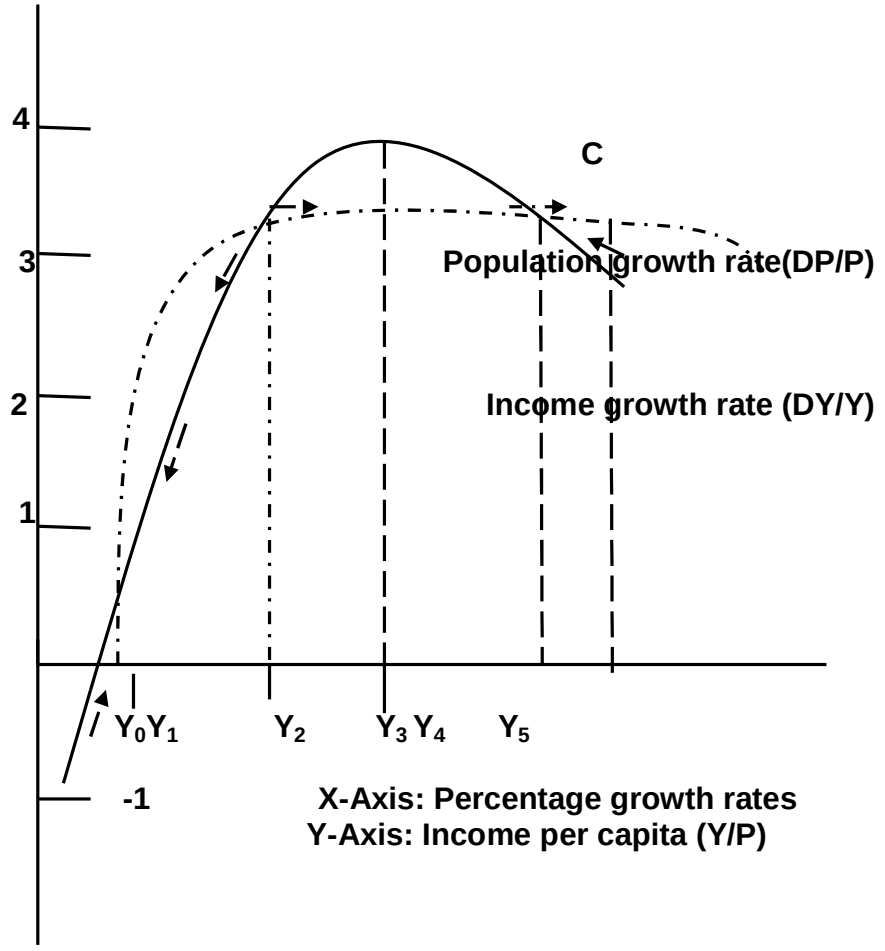


Fig: 9.3 The Malthusian Population Trap

At very low income $Y_0$the rate of population change will be nil, and a stable population will exist. Thus Y_0 is the concept of absolute poverty. Birth rates and death rates are equal. This is equal to Stage I of demographic transition. At per capita income

levels beyondY_0, it is assumed that population size will begin to increase under the pressure of falling death rates. Higher incomes mean less starvation and diseases. This is Stage II of demographic transition. Population remains stable till more per capita income is realised and the population growth declines. This is the Stage III of demographic transition.

The Microeconomic Household Theory of Fertility:

In the application of the consumption theory to fertility analysis, children are considered as a special kind of consumption (and in LDCs, investment) good so that fertility becomes a rational response to the consumer's (family's) demand for children relative to other goods. The desired number of children, other things remaining the same, could be expected to vary directly with household income, inversely with the price (cost) of children, and inversely with the strength of tastes for other goods relative to children. Mathematically, these relationships can be expressed as :

$C_d = f(Y, P_c, P_s, t_x), x=1,.....n$

Where C_d is the demand is the surviving children, Y is the level of household income, P_c is the net price of children (the difference between opportunity cost of mother's time and benefits, and potential child income and old age support) P_s is the price of all other goods, and $t_x$is the tastes for goods relative to children.

$\Delta C_d/\Delta Y > 0$The higher the household income, the greater the demand for children.

$\Delta C_d/\Delta P_c<0$The higher the net price of children, the lower the quantity demanded

$\Delta C_d/\Delta P_s>0$The higher the price of all other goods relative to children, the greater the quantity of children demanded.

$\Delta C_d/\Delta t_x<0$The greater the strength of tastes for goods relative to children, the fewer children demanded.

Household desires for children are expressed in terms of an indifference map representing the subjective degree of satisfaction derived by the parents for all possible combinations of commodities and children. Each IC represents portrays a locus of commodity-children combinations that yield the same amount of satisfaction. Diagrammatically, in fig 4.10.2 below, the optimal combination is represented by point, the tangency point between the budget line band the IC, I_2. At this point, C_3 children and G_2 goods will be demanded. A relative increase in the price of children, other things remaining the same, will shift the equilibrium point from *f*to *e*.

A rise in wages (with expanding female employment opportunities) coupled with tax on children beyond a certain number per family; the budget line will shift to *cd*and equilibrium point shifting to point *g*. Higher level of living for low income families in combination with a relative increase in price of children will motivate households to have fewer children while still increasing their welfare.

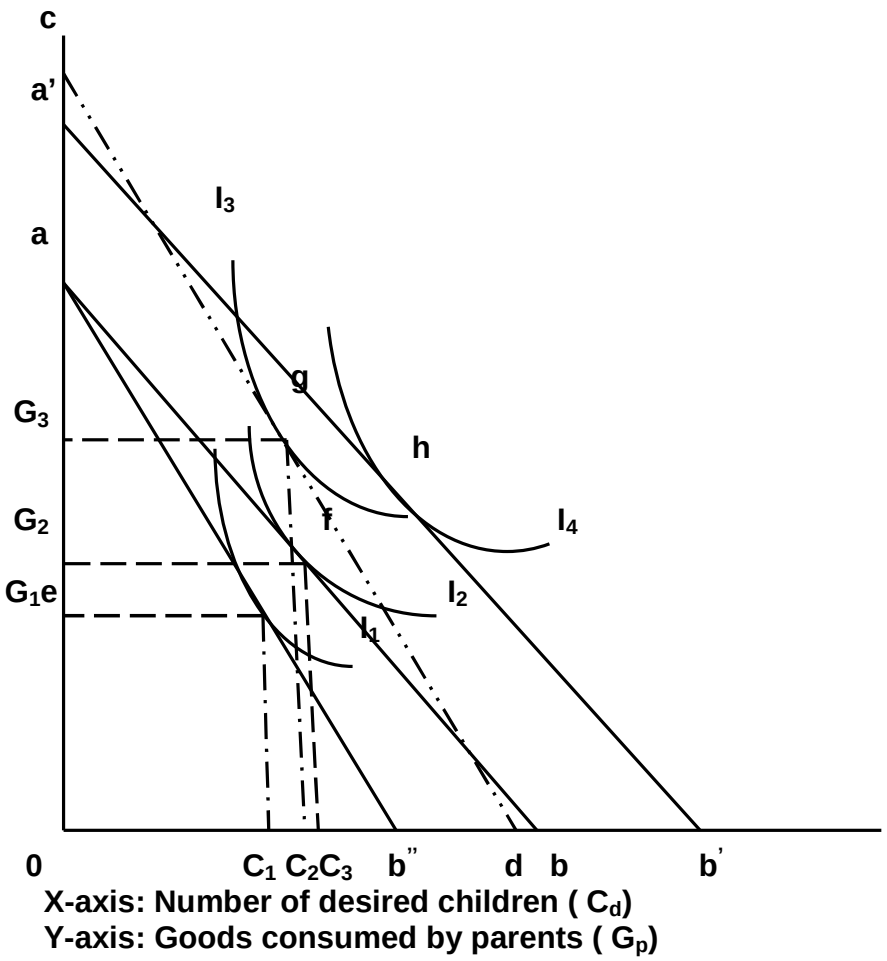


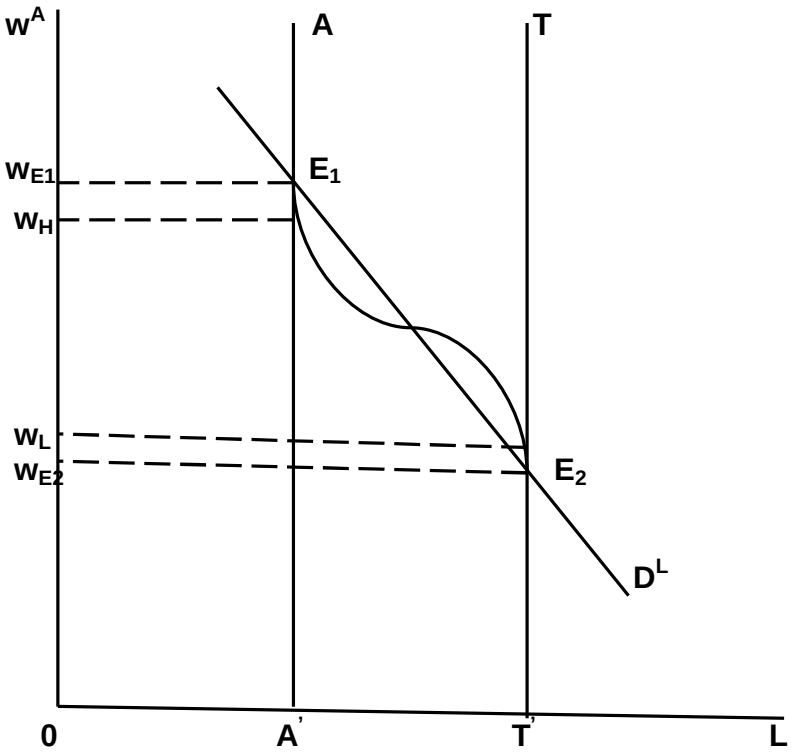
Figure 9.4: Microeconomic Theory of Fertility

9.4 MICROECONOMICS OF CHILD LABOUR

Child Labour is a widespread problem in developing countries. When children under age 14 work, their labour time at minimum disrupts their schooling and in majority of cases, prevents them from attending school altogether. Compounding this, the health of child workers is significantly worse, even accounting for their poverty status, than that of children who do not work; and physical stunting among child labourers is very common. In

addition, a large fraction of labouring children is subject to especially cruel and exploitative working conditions.

The child labour model put forward by Kaushik Basu makes two important assumptions: First, a household with a sufficiently high income would not send its children to work. Secondly, the child and adult labour substitutes.



X-axis: Supply of labour in adults' equivalent
Y axis: Wages

Figure 9.5 : Child labour as a Bad Equilibrium

Labour is assumed to be homogenous. All adults especially work regardless of wages. This gives us a perfectly inelastic, vertical wage labour supply curve, AA'. This adult supply AA' is the number of unskilled adults. When adult wage falls to w_H, then some of the families find they are poor enough and are forced to send their children to work. As the wages continue to fall, the labour supply expands along the S-shaped curve, until wage rate reaches w_L, where all the children are working. As long as wage is above w_H, the supply curve is along AA'; if the wage is below w_L, the supply curve is along TT', and in between, it follows the S-shaped curve between the two vertical lines.

Consider the Labour demand curve, D^L; if the demand is inelastic enough to cut the AA' line above w_H and also cut the TT' line below w_L, then there will be two stable equilibrium, labelled $E_1$and E_2. An effective ban on child labour will remove the bad equilibrium $E_2$and move to the good equilibrium E_1.

Child labour policy in development policy recognises child labour as an expression of poverty and recommends an emphasis on eliminating poverty rather than addressing the problem of child labour. The second policy measure recommends getting more children in school and incentives to induce parents to send their children to school. The third measure emphasis preventing abuse and to provide support services for working children. The fourth measure favours banning of child labour, more associated with ILO. Lastly many activists in developed countries have proposed imposition of sanctions against that country that permits child labour and banning goods on which children work.

9.5 POVERTY ALLEVIATION: EFFICIENCY, EQUITY AND ENTITLEMENT ISSUES

Absolute Poverty may be measured by the number or "headcount", *H*, of those whose incomes fall below the absolute poverty line, Y_p. When the headcount is as a fraction of the total population, N, we define the **headcount index**, H/N. The poverty line is set at a level that below it one would consider a person to live in "absolute human misery", such that one's health is in jeopardy.

Social welfare depends positively on the level of income per capita but negatively on the level of inequality. Extreme income inequality leads to economic inefficiency. This is partly because at any given average income the higher the inequality, the smaller the fraction of the population that qualifies for a loan or other source of credit. One reason why relative poverty occurs is the lack of collateral due to which the poor cannot get a loan to educate their children or start and expand a business. The rich (landlords, business leaders, politicians and other rich elites) are known to spend and save their incomes largely on unproductive assets. A larger part of their resources is derived from the sweat and toil of the uneducated and unskilled poor labourers. Hence the rich in the real sense do not save any more than the poor.

Further, inequality may lead to an inefficient allocation of assets. Higher inequality leads to more emphasis on higher education at the cost of universal primary education which leads to further inequality in incomes. Inequality ion landownership accompanied by tiny holdings by the larger section of farmers who

are poor, are incapable of supporting even a small family, leads to inefficiency. This can lead to further a lower economic growth and lower incomes when inequality is high.

***Women and poverty*:** Women make up substantial majority of the world's poor. They are more likely to be poor and malnourished and less likely to receive medical services, clean water, sanitation and other benefits. Women's health and nutritional status is a national as well as an individual concern because it affects this generation as well as the next generation, through its impact on her economic productivity and its impact on her children. According to the World Bank report, Women are at particularly high risk for certain health problem, largely due to their low socioeconomic status and reproductive role. The prevalence of female-headed households, the lower earning capacity and their limited control over their spouses' income all contribute to this disturbing phenomenon. Women head roughly 20% of households in India and most of these are situated in the poorest areas. Because the earning potential is considerably below that of their male counterparts, women are more likely to be poor. Women are often paid less. Further, education is crucial for income generation which women are deprived of and hence continue to low incomes which is further responsible for them likely to remain poor.

Legislations often prohibits women from owning property or signing contracts without a husband's signature, and women are often ineligible for institutionally provided resources such as credit or training. Development policies that increase the productivity differentials between men and women are likely to worsen earnings disparities as well as further erode women's economic status within the household. Government programs to alleviate poverty deal exclusively with men and these further worsen the inequalities. Subsequently women and their dependents remain the most economically vulnerable group in developing countries.

***Poverty alleviation - range of policy options*:** Developing countries have many options and alternative policies to operate in the four broad areas of intervention:

1) Altering the functional distribution of income through policies designed to change relative factor prices: - the returns to labour, land, and capital as determined by factor prices, utilisation levels, and the consequent shares of national income that accrue to the owners of each factor. For example, the power of the trade unions to raise minimum wages to artificially high levels even in the spread of widespread unemployment is an example of distorted price of labour. Removal of such *factor-price distortions* would go a long way towards combining more growth, efficiently generated with higher employment, less poverty, and greater equality.

2) Modifying the Distribution size through Progressive redistribution of asset ownership: - The reason why less than 20% of the developing countries population receives over 50% of the national income is that this 20% probably owns and controls over 90% of the productive and financial resources and also human capital in the form of better education and health. The focus should be directly on reducing the concentration of asset control, unequal distribution of power, and unequal access to educational and income-earning opportunities.

3) Reducing the size distribution at the Upper levels through Progressive income and Wealth taxes: Any national policy attempting to improve the living standards of the bottom 40% must secure sufficient financial resources to transform paper plans into program realities. The major source of such development finance is the direct and progressive taxation on both income and wealth.

4) Direct Transfer Payments and the Public provision of Goods and Services: When resources for attacking poverty are limited- as they always are – resources need to be directed to those who are genuinely poor. Second, it is important to see that the beneficiaries do not become unduly dependent on poverty programs. Poverty policies are often limited by resentment from the resentment from the non-poor, including those who are working hard but are not very far above the poverty line themselves.

9.6 SUMMARY

1. Migration patterns are complex. The most important type of migration is rural-urban migration. Harris-Todaro model postulates that migration proceeds in response to urban-rural differences in expected income rather than actual earnings.

2. The process by which fertility rates eventually decline to replacement levels has been explained by a famous concept in demography is called the demographic transition. The demographic transition attempts to explain the reason behind why all contemporary developed nations have more or less passed through the same three stages of modern population history.

3. R.T.Malthus had put forward a theory two centuries ago, showing the relationship between population growth and economic development, which is valid even today. Since food supplies growth could not keep pace with the increasing population, per capita incomes would actually start to decline and this would lead to majority of the population existing barely above the stable level. Modern economists have called this Malthusian population trap.

4. The child labour model put forward by Kaushik Basu. Various measures have been adopted by developing economies to tackle this problem.

5. According to the World Bank Report, women are at particularly high risk for certain health problem, largely due to their low socioeconomic status and reproductive role. Developing countries have many options and adopted alternative policies to operate poverty alleviation.

9.7 QUESTIONS

1. Discuss rural-urban migration with the help of Harris-Todaro model.
2. Explain the Theory of Demographic transition.
3. Write explanatory note on Microeconomic Household Theory of Fertility.
4. Explain Economics of Child labour.
5. Discuss the meaning of poverty and explain the alternative measures of poverty alleviation.

10

ENVIRONMENT, PROPERTY RIGHTS AND DEVELOPMENT

Unit Structure

10.0 Objectives
10.1 Environment, property rights and development
10.2 Unitary versus bargaining models of the household
10.3 Gender and development
10.4 Gender and fertility models
10.5 Women's work participation rates and the development process
10.6 An assessment of development microeconomics
10.7 Summary
10.8 Questions

10.0 OBJECTIVES

- To understand the meaning of environment, property rights and development
- To study Unitary versus Bargaining models of the household
- To study relationship between gender and development
- To study Gender and Fertility models
- To understand women's work participation rates and the development process

10.1 ENVIRONMENT, PROPERTY RIGHTS AND DEVELOPMENT

Environmental degradation can detract from the pace of economic development by imposing high costs on developing countries through health-related expenses and the reduced productivity of resources. The poorest 20% of the world's population will experience the consequences of environmental ills most acutely. Severe environmental degradation, due to population pressures on marginal land, has led to falling farm productivity and per capita food production.

Traditional Economic Model of the Environment Privately Owned Resources

If resources are scarce and rationed over time, scarcity rent may arise even when the marginal cost of production is constant as in Figure 10.1. The owner of a scarce resource has a finite volume of a resource X to sell (75 units)and knows that by saving a portion of it for future sales, she can charge a higher price today. The price of the good rationed over time must equate the *present value* of the *marginal net benefit* of the last unit consumed in each period. That is the consumer must be indifferent between obtaining the next unit today or tomorrow. If she is willing to offer only 50 units for sale today, the market price for scarce resources is P_S. The scarcity rent collected by the owner of the resource is equal to $P_S$abP.

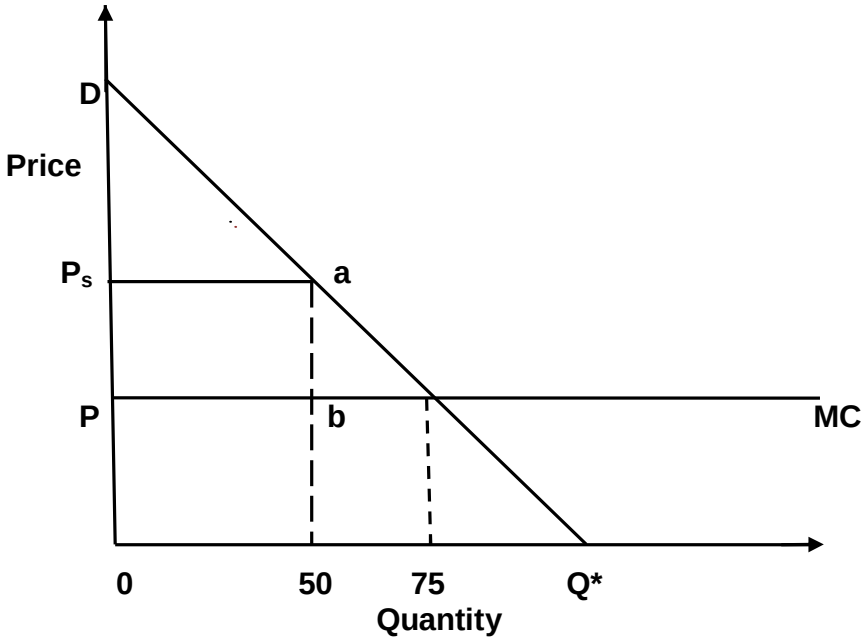


Figure 10.1: Optimal Resource Allocation over time

It is the owner's ability to collect these rents that creates the rationing effect and is thus necessary to ensure the efficient allocation of resources over time. In the absence of scarcity, all of the resource will be sold at the extraction cost P=MC, 75 units will be consumed at one time, and no rent will be collected.

The proponents of neoclassical free-market theory stress those inefficiencies in the allocation of resources result from impediments to the operation of the free market or imperfections in the property rights system. So long as all resources are privately owned and there are no market distortions, resources will be allocated efficiently. Perfect **property rights** markets are characterised by four conditions:

1. Universality – all resources are privately owned.
2. Exclusivity – it must be possible to prevent others from benefiting from privately owned resources.
3. Transferability – the owner of a resource may sell the resource when desired.
4. Enforceability - the intended market distribution of the benefits from resources must be enforceable.

Under these conditions, the owner of a scarce resource has an economic incentive to maximise the net benefit from its sale or use. For example, a farmer who owns his land will choose the levels of investment, technology, and output that maximise the net yield from the land. Because the value of the land may be used as collateral, any viable on-farm investment can be financed by obtaining a loan or the prevailing market rate of interest.

If the foregoing condition are not met simultaneously then the inefficiency than arises (misallocation of resources) due to it need to be removed.

Common Property Resources:

If a scarce resource is publicly owned and thus freely available to all, as is the case with common property resource, any potential profits or scarcity rents will be competed away. The neoclassical theory suggests that in the absence of scarcity rents, inefficiencies will arise. Figure 10.2 describes the relationship between the returns to labour on a given piece of land and the number of labourers cultivating it.

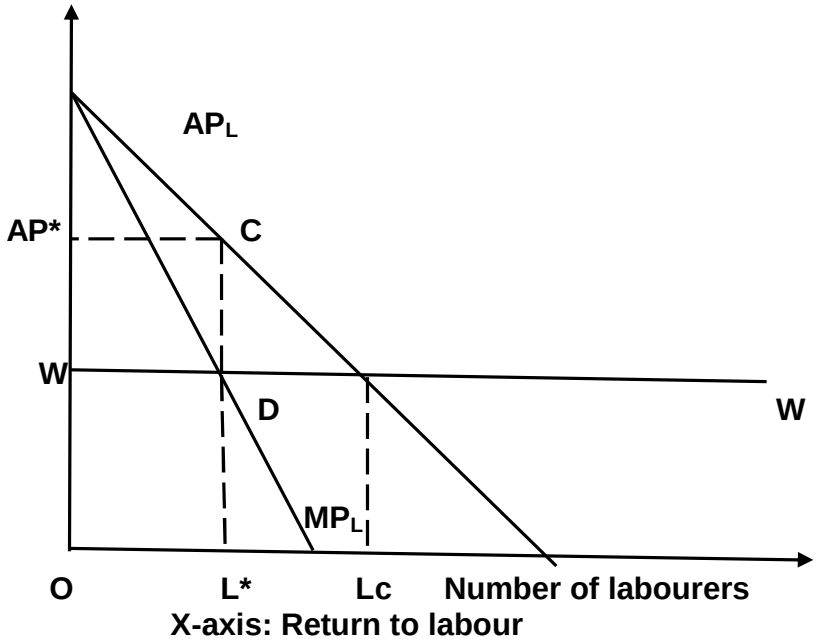


Figure 10.2

Suppose that the land is held privately. The landowner would hire additional labour to work on the land until the marginal product of the last worker is equal to the market wage, W, at point L*. The workload is shared equally among the employees, each of whom produces the average product. A profit maximiser will thus hire L* workers, with a total output equal to average product AP* multiplied by the number of workers, L*. Scarcity rents collected by the landowner equal AP*CDW.

Society's total net benefit from land will be lower under a system of common property, unless workers can coordinate their resource use decisions in a cooperative manner. Workers income will continue to exceed the wage until enough workers are attracted so that the average product falls to the level of the wage, at which point the labour force equals L_c. Though total farm output may either rise or fall the marginal product of the additional workers is below the wage. Assuming that all workers could be employed elsewhere must fall when marginal product falls below W. No scarcity rent is collected at L_c. The implication of the common property model is that, where possible, privatisation of resources will lead to an increase in welfare and an efficient allocation of resources.

10.2 UNITARY VERSUS BARGAINING MODELS OF THE HOUSEHOLD

"Intra-household resource allocation" refers to the allocation of resources among individuals belonging to the institutional forms like the family and household. Though the idea of development focuses on the welfare of the individuals, the complex set of interpersonal interactions (economic and social) that influence such development is largely unacknowledged in economic theories. These interpersonal interactions have a direct bearing on the institutions of family, household and community

How a family as a decision-making unit, behaves in the area of consumption is determined by different external influences and constraints. Family co-ordination and the pooling of resources also help to specify general models of the family. As in societal models, family models too exhibit a 'tension' between efficiency and equity. From the efficiency point of view education, consumption and health of an individual needs to be supported as long as these are made profitable than the available alternatives. Parental altruism would leave each child equally 'well off' as parents consider their well-being as important as their own. However, parents may invest more in children perceived to be more efficient, anticipating natural abilities to increase the returns on such investments.

(A) Unitary Model of the Households:

The economics of the family and household was fully brought into the mainstream by Gary Becker. The essence of Becker's approach was that, given one set of preferences, the household combined time, goods purchased in the market, and goods produced at home to produce commodities that generated utility for the household. The household is considered as if it were an unitary entity. Briefly the classical unitary model of family behaviour assumes a common set of family preferences that it tries to satisfy by allocating the time and other resources of its members ((Becker, 1965)).

Becker considers the case of a household with two members, a benefactor and a recipient. Becker's benefactor is an altruist, deriving utility from his own consumption (c_b), and also from the utility associated with the recipient's consumption. In contrast, Becker's recipient is selfish, deriving utility exclusively from her own consumption (c_r). The benefactor, could in a dictatorial manner, be capable of imposing his preferences on the recipient. Becker gives a solution, "rotten kid theorem" to this problem. Formally, their utility function can be written as:

Benefactor's utility: $U_b = U_b [c_b, U_b(c_r)]$

Recipient's utility: $U_r = U_r [c_r]$

The benefactor allocates resources in such a way that the recipient receives more than an expected share. The incentive is established to encourage the recipient to allocate her time and resources to achieve the common solution chosen by the benefactor. If the recipient tries to increase his own income at the expense of the benefactor, the recipient would become better-off if the amount transferred to the recipient by the benefactor remains unchanged. On the other hand, the benefactor would maximize his utility by making small transfers to the recipient by this means reducing the recipient's consumption level below his original level. Understanding this, the recipient will not behave 'rottenly' in the first place. Hence the altruist's preferences become the preferences of the household and the optimal utility of the household becomes the altruist's utility function. This is assuming that the benefactor is altruistic over all the consumption levels of the others. Also that the consumption of the recipient is neither an inferior nor luxury good or else the threat of reduced transfers will not be credible over all consumption levels.

An alternative to unitary model known as 'Collective models' arose when heterogeneous groups controlled the functioning of the household. These models do not impose the assumptions of the unitary model. Two important features of the collective models are: first, collective models allow decision making in the household to have different preferences; second, collective models do not

require any special household welfare indicator to represent a utility function.

Hence, the logical next step to the unitary model would be the one where there are conflicting interests among family members, which would be resolved under the cooperative models using the Nash solution, which a vast majority of these models have relied on. The family demand system though realistic does not help in predicting which intra-family allocations are more likely to occur. Extending the family demand model to accommodate the conflicting interests of family members is a reasonable next step. These conflicts need to be resolved by a specific bargaining mechanism to be tractable and testable.

(B) Bargaining models of the household:

The intra-household decisions regarding how the composition of the family consumption could influence the well-being of different family members; as family resources are being allocated to various kinds of consumption – nutrition, health and education – that are considered as a form of human capital because they enhance the productivity of labour and augment future earnings. These questions could be more effectively resolved using the bargaining model of family behaviour that accepts the possibility of conflicting objectives within the household.

The Nash Bargaining Game is a simple two-player game used to model bargaining interactions, where two players attempt to divide a good between them. Each player requests an amount of the good. If their requests are compatible, each player receives the amount requested; if not, players receive nothing.

The M B McElroy and M J Horney's model consists of two individuals, a married couple, and their joint allocation of income and time. For a Nash household male and female non-wage incomes are distinct arguments of each utility function. The household good is defined as a "pure public good" within the household: where consumption by one member of the house does not lessen the amount available to another. "Leisure" consists of the time not spent at market work. For a couple the utility of each individual is not only dependent on one's own good, leisure and the household good but also of the nonmarket time and the consumption of the spouse. The married couple in this model is distinguished from two individuals' not only on legal grounds but also on the basis of pooling resources and allocating them jointly. The objective function depends upon individual utilities. It also depends upon the maximum value of utility each person can obtain outside of the household and is therefore dependent upon prices and non-wage incomes. This maximum is not necessarily associated with being single, but instead with attaining the highest level of utility among all alternatives to the marriage. The non-wage

earnings of each spouse appear as an independent variable in each individual's demand function. The bargaining over resources reaches a Nash solution. It is characterized by Pareto efficiency of the resource allocation (best possible allocation), invariance with respect to linear transformations of individual utility functions, independent of irrelevant alternatives (it will also not be affected by changing the available agreements, as long as new agreements are not preferred to the original solution) and symmetry (in terms of utilities) with respect to the roles of the players (each player has the same amount of bargaining powers). The threat points of the individuals may shift if the prospects outside the marriage change

The details of the cooperative household model of McElroy can be depicted with two individuals, m and f, who, when they live separately, have utility functions of $U^0_m(x_0, x_m, l_m)$ and $U^0_f(x_0, x_f, l_f)$, respectively. Here, x_m is a good solely consumed by m, x_f is a good solely consumed by f, l_m and l_f are leisure, and x_0 is a public good consumed both when individuals are a household and when they are apart (household cleanliness, for example). Their utility functions are maximized subject to a full income constraint, if m and f live separately. Their indirect utility functions can be written as V^0_m $(p_0, p_m, w_m, l_m; \square_m)$ and V^0_f $(p_0, p_f, w_f, l_f; \square_f)$, where p is a vector of the prices of all goods, w is the wage rates of m and f, and I_m and I_f their respective nonwage incomes. The $\square$'s are referred to as extra household environmental parameters (EEPs). If the two individuals decide to form a single household then their respective utility functions would be denoted by U_m and U_f, where U is defined over the household public good, individual consumption of goods and leisure. Both individuals gain from household when:

$$U^j - V^j > 0 \qquad \text{for } j = m, f$$

The gains are distributed if one assumes that these individuals negotiate with each other. One such agreement is to assume that individuals agree to maximize a "Nash utility gain function", which takes the form of:
$N = (U_m - V_m)$ (U_f and V_f).

This is maximized subject to a joint full-income constraint, namely:

$$p_0x_0 + p_mx_m + p_fx_f + w_fl_f + w_ml_m = (w_m + w_f)\,T + I_m + I_f.$$

This further yields the demand functions:

$$x_i = x_i\,(p, w, I_m, I_f; \square_m, \square_f) \quad i = 0, m, f$$
$$l_i = l_i\,(p, w, I_m, I_f; \square_m, \square_f) \quad i = m, f$$

In case of the Unitary model the parameters $\square_t$ and I_t are set equal to zero, as unitary model is a special case of Nash model (except that in the unitary model very little bargaining occurs as one person dominates). The extra household environmental parameters variables are variables that shift individual threat point Extra household environmental parameters could include factors such as

the male-female ratio in the marriage market, policies regarding marriage and divorce benefits as well as social and religious norms and traditions.

Nash bargaining model permits and resolves conflicts among family members. Each household member has a utility function and a threat point (maximum level of utility outside the household). The greater a member's threat point, the more strongly that member's relative valuation of goods is revealed in the household demands. Prices, individual-specific non-wage earnings, and parameters controlling how satisfactorily an individual can do outside the household all influence threat points. There arises a huge distinction between the Nash bargained models of household behaviour and that of the neoclassical models. Firstly, in comparison to the Nash bargained models, neoclassical models essentially lead to the conclusion that households behave as if they have only one utility function. Secondly, the main issue that separates the two models is that in neoclassical model only pooled family income holds importance whereas in the bargaining model, who has control over the different income sources holds importance. Thirdly, in the Nash model the opportunity cost of family members is significant for the interfamily distribution of income and therefore for the family demands; in the neoclassical model it does not.

10.3 GENDER AND DEVELOPMENT

Gender studies as well as the studies of other weaker groups have clearly indicated that modern development, as is generally accepted, invariably affects the poor, asset less and weak negatively. Hence the measure of total net development is erroneous. Therefore, it is increasingly acknowledged that an evaluation of the third world development process needs to be done from the improvement point of the women.

Women often bear the disproportionate burdens of poverty, poor education, lack of jobs, and limited social mobility. In many cases, their inferior roles, low status, and restricted access to birth control are manifested in their high fertility. According to this argument, population growth is a natural outcome of women's lack of economic opportunity. If women's health, education, and economic well-being are improved along their role and status in both the family and the community, this empowerment of women will inevitably lead to smaller families and lower population growth. This was the message of the United Nations International Conference on Population and Development held in Cairo in 1994.
As economic development takes place in an economy, it would bring an increase in opportunities for women to be employed. The value structures of households would react to such external

economic incentives. The availability of income-generating opportunities can lead young women to delay marriage by enabling them to become economically self-sufficient and therefore in a better position to exercise control over the partner and the timing of the marriage. It can also reduce family pressures for an early marriage by allowing women to make a contribution to parental household income. An independent source of income also secures a stronger position for married women in the household, reducing their dependence on other family members, particularly male offspring for economic security. Furthermore, it enables the women to consider the opportunity costs of additional children when childbearing competes with income-generating opportunities.

Many urban women run small ventures called *micro enterprises*, which require little or no start up capital and often marketing of homemade stuffs and handicrafts. Though women restricted access to high rates of return on their tiny investments, the extremely low capital-labour ratios confine women to low productivity undertakings. Hence, the legalisation and economic promotion of informal sector activities, where the majority of urban female labour force is employed, could greatly improve women's financial flexibility and the productivity of their ventures. However, to enable women to reap these benefits, governments must repeal laws that restrict their right to property, conduct financial transactions, or limit their fertility. Likewise, barriers to women's direct involvement in technical training programs and extension services must be eradicated.

10.4 GENDER AND FERTILITY MODELS

For explanation refer topic 9.3

Implications for Development &Fertility: The effect of social & economic progress in lowering fertility in developing countries will be the greatest when the majority of the population & especially the very poor share in its benefits. Specifically, birth-rates among the very poor are likely to fall where there is

1. An increase in the education of women & a consequent change in their role & status.

2. An increase in female non-agricultural wage employment opportunities, which raises the price or cost of their traditional child-rearing activities.

3. A rise in family income levels through the increased direct employment & earnings of a husband & wife or through the redistribution of income & assets from rich to poor.

4. A reduction in infant mortality through expanded public-health programs & better nutritional status for both mother & child & better medical care.

5. The development of old-age & other social security systems outside the extended family network to lessen the economic dependence of parents, especially women, on their offspring.

6. Expanded schooling opportunities so parents can better substitute child "quality" for large numbers of children.
   Where such motivation exists, well executed family planning programs can be an effective tool.

10.5 WOMEN'S WORK PARTICIPATION RATES AND THE DEVELOPMENT PROCESS

Disparity in distribution of time and of investments in human capital is usually gender related and subject to technological and ethnic changes. Modern studies on women's labour supply curve identify it as U-shaped. Gender equality is a spur to economic development especially where the well-being of children is concerned and economic development encourages gender equality. In pre-industrial societies, women's work participation rates are high. As the process of urbanization and industrialization start, the first jobs are typically blue collared jobs that are available only to men. As the wage rate improves, women experience an income effect that contracts their labour supply because of introduction of new technology or expansion of the market, owing to lack of education and skill. The decrease in women's work participation rates is partly due to the income effect but could be reinforced by a decrease in the relative price of home produced goods and a decline in the demand for women's employment in agriculture. At this time the income effect is stronger than the substitution effect and they withdraw into the home. Later on, as men begin to move to blue collared jobs, women also slowly take up lower paying blue collared jobs. A further increase in wages, due to increase in economic development, would initially increase the education of men. Only at a later stage would it lead to an increase in investment in women's education and the value of time in the market rise still further. This would bring them back into the labour force, as reflected in the move of the rising portion of the U-shaped curve and now the substitution effect becomes stronger than the income effect. Claudia Goldin had arrived at this conclusion on the basis of study conducted for the period 1890 to 1980 on the data available for U.S, published in U.S Census. She compared and noticed a significant difference in female education levels as well as in the kind of employment undertaken by them.

Paul Schultz in his study assesses patterns in women's labour force participation and the composition of this participation among wage earners, self-employed and unpaid family workers. The data used in his study on the composition of labour force was drawn from ILO Yearbook of Labour Statistics prepared in 1985. Several additional countries and observations were added and ILO data was corrected if inconsistencies emerged. The results indicated that with an increased participation in the labour force, women are more independent economically and come to play a better role in the polity and in society. Women also involve themselves in decision making at home. The allocation of resources may start favouring women once they start obtaining jobs for wages outside of the family. The participation of women in labour force depends on various factors like her education, skill, experience, wages and existing urbanization. Higher prevailing wages for women will result in increased participation in the labour force. Increase in wages raises the opportunity cost of non-market activities as also increases their potential lifetime market earnings. Women may also invest more in education and command higher wages. Education is a prerequisite for effective economic participation. For young and married women there is a partial positive relation between amount of education and hours of market work. If hours of work rise with education then the change in annual remunerations overstates the amount of time spent on leisure and non-market production. Education plays a decisive role in determining the employment rate for women. Women with primary school education are likely to be employed less than women with secondary school education or more. In addition, an increase in male education will lead to lower employment rate for women and a higher employment rate for men.

A study conducted by Gangadharan and Maitra showed that the decision to move from one level of education to another depended on factors that varied from one woman to another, the household characteristics and the schooling level of these women. Higher age at marriage made higher educational attainment possible for women. Parental education had an impact on the probability of continuing education and on the age of marriage. Women residing in urban areas had better education and the women residing in rural areas had lesser education. Higher education is associated with the risk of marriage only in societies in which women face strong structural and normative difficulties in continuing family and career. There exists an inverse relation between the risk of marriage and educational attainment for women. Furthermore later marriage results in later childbirth, it is also increasingly likely that the period of intensive childcare responsibilities will overlap with the provision of care to elderly parents. This is particularly discouraging prospect for women who not only have traditionally been the primary providers of care to

both groups but also increasingly engaged in employment outside the home. Also, differences in age, education, and labour market experience contribute the difficulty. Faced with discrimination against them in the labour market, women may have less encouragement to undertake human capital investments. Women's anticipation of and experience with labour market discrimination could lower their human capital investments. In addition, labour market discrimination directly decreases women's productivity as well as their salary especially when they are deprived access to an employer-sponsored training program.

10.6 AN ASSESSMENT OF DEVELOPMENT MICROECONOMICS

Economic development, distinguished from economic growth, results from an assessment of the economic development objectives with the available resources, core competencies, and the infusion of greater productivity, technology and innovation, as well as improvement in human capital, resources, and access to large markets. Economic development transforms a traditional dual-system society into a productive framework in which everyone contributes and from which receive benefits accordingly. Economic development occurs when all segments of the society benefit from the fruits of economic growth through economic efficiency and equity.

Economic development is a multifaceted concept, embodying not just income & its growth, but also achievements on other fronts: reductions in infant mortality, higher life expectancy, advances in literacy rates, widespread access to medical & health services, & so on. The social & economic empowerment of women may serve to significantly to reduce infant mortality & raise the health & nutritional status of children, yet neither income nor its equal distribution across households fully guarantees the empowerment of women.

Economic development has other dimensions, including economic security. Quite often economic insecurity can relate to the lack of democratic rights & liberties. This further can be responsible for deprivation of basic capabilities rather than merely as low income. Deprivation of elementary capabilities can be reflected in premature mortality, significant under nourishment (especially of children), persistent morbidity, widespread illiteracy & other failures. For example, the terrible phenomenon of "missing women" (resulting from unusually higher age-specific mortality rates of women in some societies, particularly in South Asia, West Asia, North Africa & China) has to be analysed with demographic, medical & social information, rather than in terms of low incomes,

which sometimes tell us rather little about the phenomenon of gender inequality.

Seeing development in terms of the substantive freedoms of people has far-reaching implications for our understanding of the process of development & also for the ways & means of promoting it or removal of unfreedoms from which the members of the society may suffer.

At the same time, the rates of *rural-urban migration* are very high. This is indicated by a large part of the labour force is engaged in a nebulous activity called "services". This category includes all sorts of informal activities with low set up costs, &in developing countries is a good indicator of urban overcrowding. For some workers the informal sector is an attractive employment opportunity, whereas for others – rationed out of the formal sector – the informal sector is a strategy of last resort.

The great contribution of empirical development microeconomics is that we are building up this knowledge piece by piece. Whether the search for that knowledge is informed by theory or not there will always be enough theorists to attempt to put these observations together.

10.7 SUMMARY

1. Severe environmental degradation due to population pressures on marginal land, has led to falling farm productivity and per capita food production. Perfect property rights markets are characterised by four conditions: University, Exclusivity, Transferability, Enforceability. If a scarce resource is publicly owned and thus freely available to all, as is the case with common property resource, any potential profits or scarcity rents will be competed.

2. The classical unitary model of family behaviour assumes a common set of family preferences that it tries to satisfy by allocating the time and other resources of its members.

3. Nash Bargaining model permits and resolves conflicts among family members. Each household member has a utility function and a threat point, the more strongly that member's relative valuation of goods is revealed in the household demands.

4. The effect of social and economic progress in lowering fertility in developing countries will be the greatest when the majority of the population and especially the very poor share in its benefits.

5. Gender equality is a spur to economic development especially where the well being of children is concerned and economic development encourages gender equality.

10.8 QUESTIONS

1. Explain the relation between Environment, property rights and development.
2. Explain the classical unitary model of family behaviour.
3. Write an essay on Unitary versus bargaining models of the households.
4. Relationship between gender equality and economic development.

11

MODULE 5

MACROECONOMICS OF DEVELOPMENT

Unit Structure

11.0 Objectives
11.1 Relationship Between Agriculture and Industry
11.2 Economic Dualism
11.3 Regional Inequalities
11.4 Centre-Periphery Models
11.5 Role of Trade in Development
11.6 Summary
11.7 Questions

11.0 OBJECTIVES

- Understand the inter-relationship between the agricultural sector and the industrial sector in the process of economic development.
- Understand the causes and types of dualism and their effects on economic development.
- Understand the causes and effect of regional differences.
- Understand the nature and effects of trade between the developing and developed countries and its implications to economic development.
- Understand the implications of trade strategy to economic development.

11.1 RELATIONSHIP BETWEEN AGRICULTURE AND INDUSTRY

The agricultural sector plays a vital role in the development of an economy. Broadly speaking, agriculture has four important roles in the process of economic development of an economy. They are as follow:

a. Agricultural sector provides the food articles that are essential for humans. It thus plays an important role in improving the nutritional standards and feed the labour force employed in alternative jobs. The role of food grains supply is highlighted by the concept of 'consumption multiplier'. This concept used by C.N. Vakil and P.R. Brahmananda for India during the 1950s highlights the fact that the opportunities of employment in the industrial sector are constrained by the availability of surplus food grains needed for consumption by these labourers. The performance of agricultural sector becomes important because, a developing country may not command the foreign exchange need to import food grains in the face of food domestic shortages. Historically, the United Kingdom could improve food production and this led to industrialisation. The volume of marketable surplus determines the speed of industrialisation. The experience of Japan during the Meijc Restoration during 1867 and that of USSR during 1920s under Stalin highlights the detrimental effects of agricultural shortages on the cost of food and the lowering of investible surplus in the economy.

b. W.A. Lewis model of 'surplus labour', Nurkse's concept of disguised unemployed as the source of unlimited labour supply are based on the logic that the rate of release of labour by agriculture, its cost are determined by the availability of surplus food grains to be consumed in the non-agricultural sector. In recent years, South East Asia and China have benefited by the food surpluses to help in industrialisation. In case of India, the low agricultural productivity constrained economic growth. With nearly 72 percent population still living in rural areas, the role of agriculture can hardly be overstated. More importantly, since most of this is subsistence activity, there is a direct bearing between agricultural sector and the overall economic welfare.

c. Agriculture is the market for industrial goods. Lockwood observed that the main reason for Japanese development after World War II is growth of its agriculture. Various studies by the World Bank have shown that the purchasing power of rural areas determines the pace of industrialisation. Low farm prices allow industry to obtain raw materials and wage goods at lower prices.

However, low farm prices also imply low purchasing power of the rural population and lower demand for industrial goods. It is therefore essential maintain balanced terms of trade between industry and agriculture. When the agricultural prices are lower than those of industrial goods, investment in agriculture will be discouraged. The income elasticity of demand for agricultural and industrial goods, the terms of trade and the growth of agricultural output will set the limits for the growth of industrial demand. The industrial demand is constrained by either demand or supply. When the prices of food items are too 'low', the purchasing power in the agricultural sector constrains the growth of industrial demand and output growth. Conversely, when the food prices are too 'high', industrial output is constrained by supply of food grains. Thus, it is essential for policy-makers to maintain a balance between the prices of industrial and agricultural goods. The equilibrium terms of trade will ensure a balanced growth of the two sectors.

d. For the developing countries, primary exports are the only source of foreign exchange in the initial stages of development. The agricultural sector thus, becomes a source of supplementing the domestic resources and provides access to imported capital and technology needed for growth. In case of India, the development of railways was possible due to the need to carry agricultural goods to the ports for exporting.

Check Your Progress:

1. What is surplus labour?
2. How is the supply food grains related to the surplus labour?
3. What is consumption multiplier?
4. Why are prices of food grains important for development?
5. How does food grains prices and imports are related?

11.2 ECONOMIC DUALISM

One of the most important characteristics of underdevelopment is the socio-economic dualism. Dualism refers

to the differences in the level of technology between the different sectors or regions of the economy, degree of geographic development, social customs and attitudes, growth of a money economy, economic system of capitalism and so on. These manifest in the differences between the subsistence and exchange sectors. While the former is largely governed by informal arrangements, the later is largely governed by contractual and legal framework. They, do however, interplay and reinforce each other. The more progressive sectors have favourable access to scarce factors of production and causes dualism to persist. Urban bias plays in the institutions plays an important role in the persistence of dualism. It has effects on the pattern and pace of development of the entire economy.

The basic origin of dualism is the introduction of money into a subsistence economy. Moreover, its development depends upon the extension of the money economy to the different sectors of the economy. Following are different manifestations of dualism:

a. Social Dualism: A traditional society is reluctant to alter its ways of life. It should be noted that this dualism is an inevitable consequence of development and not a basic cause of underdevelopment. As money is introduced into a traditional society, it provides unequal access to the factors of production through financial institutions. In such a case, different development strategies are required to each of these sectors. Till such time as they are arranged, the social dualism gets reinforced, with the traditional society becoming increasingly marginalised.

b. Technological Dualism: Dualism is also caused by differences in the access to technology. This is often seen in the agricultural sector, which is based on small family holdings, generating little or no marketable surplus, and the industrial sector that reaps huge profits. The nature of production function determines the economy's ability to absorb surplus labour. If it is a fixed co-efficient, capital-intensive type, then the rate of absorption is constrained by the growth of capital stock. In such a case, capital-intensity will itself restrict employment opportunities in the industrial sector. This results in the dualism with urban unemployment coupled with underdevelopment of rural sector with disguised unemployment. The productivity in agriculture will further slow down due to lack of investment. In case of the industrial sector being foreign-owned, there will be drain on the resources with a proportion of profits generated being remitted to the home country. This will further accentuate the shortage of investible resources.

It should, however, be noted that in the early stages of development process, technological dualism is inevitable. Thus, the development strategy should ensure widespread use and rapid assimilation of technological progress across all sectors of the economy. In this case, it is essential to understand the fact that the factor prices should reflect the relative factor endowments. Otherwise, there will be misallocation of resources as has been noted in case of many developing countries, including India.

c. Geographical Dualism: This particular type of dualism is applicable to both nations, as well as regions within a nation. This type of dualism was termed by Myrdal as 'cumulative causation'. This concept helps us to explain the continued differences in the development indices between and within nations. A geographically dualistic economy will have some regions with access to capital and better infrastructure will attract more capital and labour at the expense of the backward regions. We observe this in case of India where, the urban areas enjoy improvements in the quality of public infrastructure while the rural areas see a decline. This perpetuates the rural-urban divide. The same is the case with the inter-state differences as well. It can be seen that Myrdal's 'cumulative causation' runs contrary to the neoclassical theory that talks of convergence in income between regions. It explains as to why the working of economic forces results in the persistence of spatial differences. The 'circular and cumulative causation' shows as to why international and inter-regional differences in the levels of development tend to widen over time.

Migration will further perpetuate them due to the loss of human resources and enterprise on the one hand and of demand on the other. Once development differences appear, they set into motion a chain of cumulative expansion in the favoured region. Myrdal termed it as 'backwash effect' on the other regions. This causes the development differences to persist or even increase further.

Capital movements and trade also reinforce cumulative causation. The regions or nations having free markets will experience faster growth due to increase in comparative advantage over the relatively lagging regions or nations with small-scale industries. Immigration into the expanding regions will contribute to the expansion of infrastructure, education and health facilities. This will further improve efficiency and productivity in the expanding region relative to the regions experiencing emigration.

Hirschman suggested that the possible adverse effects of cumulative causation can be countered by granting sovereignty to the backward areas and allowing them to follow independent economic policies. However, this suggestion is not easy to implement due to the obvious political implications. The 'polarisation effects' of inter-regional differences can be lowered by providing a separate tax system and protection to certain economic activities in the backward regions. However, the experience of different countries with these measures does not give much hope for this policy.

The 'trickle-down' or 'spread' effects are the favourable repercussions of this process. They are in the form of increased demand for the production of the backward regions and the diffusion of technology and knowledge. However, Myrdal feels that he spread effects are much weaker than the backwash effects. The State should intervene through regional policies or wait for a natural ending of the regional differences. This is because, eventually, the costs in the expanding areas will be increasing with deterioration in the quality of life. While in the developed countries, governments played an active role in developing the backward regions, in many developing countries, governments played an important role in perpetuating the regional differences. The natural drift towards inequalities was supported and magnified by the built-in feudal and other inegalitarian institutions and power structures, which aid the rich in exploiting the poor.

Check Your Progress:

1. How do institutions cause dualism?
2. What do you understand by economic dualism?
3. How is technological dualism related to economic dualism?
4. How does foreign capital cause dualism?
5. What is geographical dualism?
6. How does migration accentuate dualism?

11.3 REGIONAL INEQUALITIES

An important area of development economics has been the explanation of regional inequalities. The neoclassical growth theory reasoned that the regional disparities take an inverted U-shape. They tend to increase first in the initial stages of development and then decrease. Regional disparities arise due to external shocks like foreign capital and export enclaves reinforced by migration. The process is then reversed with the spread effects taking place.

Barro and Sala-i-Martin in 1992 showed that the process of regional per capita income convergence has been going on over the last hundred years. According to them, in the United States, during 1880-1988, there is evidence of convergence except during 1920-30 and 1980-88. In Europe, the evidence is mixed with convergence observed only during 1945-80 period. Regional rate of unemployment differences both within Europe and within industrialised counties were observed to have remained very stubborn. Studies conducted by Fagerberg and Verspagen in 1996 showed that in six European countries covering seventy regions there was convergence up to 1980 but not since. Though the scope for per capita income convergence sexist, other factors like differences in rates of unemployment, the research and development efforts between industrial and agricultural regions in the 1980s pushed these regions towards divergence. Further, regional differences in per capita income are found to be systematically related to differences in the rates of unemployment. Growth rates in poorer regions were observed to be related to unfavourable industrial structure, and weak research and development effort. Migration was observed to be disequilibrating as suggested by Myrdal. The predominance of agriculture is found to be a barrier to growth in the poorer regions due to lesser scope for scale economies and research and development, relative to the industrial sector. Greater regional balances require structural change in favour of industrial activities. This needs physical infrastructure and human capital development to achieve balanced regional development.

The significance of these findings are especially important for India where the pervious attempts at balanced regional development could not yield positive results and regional disparities have acquired a new political dimension and are emerging as divisive force. More importantly, studies by Topolova and others

have shown that after 1991, the inter-State differences in income disparities have worsened significantly. The relatively well developed states have grown at significantly higher growth rates than the backwards after 1991. This was found to be the case within the states itself with the developed districts growing faster than the backward districts. This has implications for the regional tensions on the basis of differences in economic performance. Thus, we need to review the policy of economic liberalisation if the economy is to avoid socio-economic conflicts.

Check Your Progress:

1. What are regional disparities in income?
2. Why does convergence of income take place?
3. What are the observations on income convergence?
4. What is the Indian experience with income convergence?

11.4 CENTRE-PERIPHERY MODELS

An important aspect of underdevelopment is explained with the help of theories of dependence and unequal exchange. According to these, the centre or the developed countries expropriate the economic surplus of the periphery or the developing countries. The dependence on imported foreign technology in the developing countries keeps them open for exploitation. During the booms, the imported technology is costly and therefore, latest technologies cannot be accessed. During recessions in the developed countries, access to the latest technologies is denied. Thus, the latest technologies always remain unavailable to the developing countries. The developing countries export primary products and import manufactures. While the demand for the former is income and price inelastic, the later enjoy higher elasticity. Therefore, any growth of income in the developing countries will result in faster growth in imports and a deterioration in the terms of trade. Further, in the developed countries, productivity gains are

enjoyed in the form of higher factor incomes due to various State regulations. In case of the developing countries, these gains are passed on to the consumers in the form of lower prices. Thus, any productivity gain in the developing countries will leave them worse-off. The socio-cultural aspects are such that, in the developing countries, when incomes increase, there is increased demand for imported luxury goods. Thus for a variety of reasons, the developing countries remain backward. And the developed countries gain at the cost of the developing countries.

A very influential school of the causes of underdevelopment is the centre-periphery models. This school is popularly known as the 'Singer-Prebisch-Myrdal Hypothesis'. This school argues that the very nature of trade between the developed and developing countries is in itself responsible for the continued underdevelopment of certain countries. We shall examine these arguments in turn.

a. According to Myrdal, the nature of international trade with the developed countries forces the less developed countries (LDCs) into producing primary goods with low income and price elasticity. Since the efficiency wage faster in the faster growing areas, the developed countries gained a cumulative comparative advantage in the production of manufactures. Exports of capital to the less developed countries is prevented by exchange controls and incentives to capital accorded in the developed countries. Since the risks are higher in the LDCs, foreign capital inflows into these countries were not significant. Migration further results in the loss of human capital. In such cases, remittences would allow financing of industries in the LDCs. Further, generous immigration policies in the developed countries would provide the necessary development assistance to the LDCs. Myrdal's arguments have been very influential in the 1950s and 1960s. After the wave of globalisation in the 1990s, many countries are realising the significance of these arguments. The experience of LDCs at the WTO and other bodies bears ample support to them. The entire negotiations on the liberalisation of trade in agricultural goods, livelihood concerns are directly related to the process of continuous pressure on the LDCs to concede more than what they can possibly gain from multilateral trade.

b. Raul Prebisch was another influential economist that proposed the mechanism for the exploitation of the LDCs by the developed countries. According to him, the LDCs produce and export primary goods which have low income elasticity of demand. The developed countries produce and export manufactures with high income elasticity of demand. In such a case, free trade results

in the worsening of the LDCs. The following example explains this: Let the elasticity of demand for exports of developed countries, e_m = 1.3 and the elasticity of demand for imports into developed countries, e_p = 0.8, the growth rate of national income, g, be 3% both in the developed and LDCs. In this case, the relative growth rates of imports and exports of the developed and less developed countries would be as under:

1. Exports growth rate in the developed countries, $x_c = g \times e_m = 3.0 \times 1.3 = 3.9\%$

   Imports growth rate in the developed countries, $m_c = g \times e_p = 3.0 \times 0.8 = 2.4\%$.

2. Exports growth rate in the LDCs, $x_p = g \times e_p = 3.0 \times 0.8 = 2.4\%$

   Imports growth rate in the LDCs, $m_p = g \times e_m = 3.0 \times 1.3 = 3.9\%$.

Since the exports of developed countries are the imports of LDCs and their imports are the exports of LDCs, this translates into the imports of LDCs continuously growing at a faster rate than their exports. Under free trade, the potential growth rate of a country is given by the relative growth rates of its exports and imports. Therefore, for the LDCs, $g_p.e_m = x_p$ or alternatively, $g_p = x_p / e_m$ or 2.4/1.3 =1.646%. The relative growth rate in the developed and LDCs is equal to the ratio of the income elasticity of exports. This translates into the potential growth rate of LDCs being continuously lower than that of the developed countries. This is the basic cause of the unsustainable balance of payments of the LDCs. With the clamour for freer trade, the developed countries are seen as forcing economic crisis on the LDCs.

c. Seers presented his version of the trade relations between the advanced and the backward countries. For sustainable growth, given the relative prices in the two countries, the trade balance must balance. These conditions will give us the following relationships:

$M_c = A + BY_t$ and $M_p = a + bY_t$ where, Y is the income in the given time period t, M is imports and subscripts c and p stand for the centre and the periphery. B and b are the marginal propensity to import in the centre and the periphery, A and a are the autonomous demand for imports in the centre and the periphery.

The trade balance is achieved when: $A + BY_t = a + bY_t$ or alternatively, $\frac{Y_p}{Y_c} = \left(\frac{A-a}{bY_c}\right) + \frac{B}{b}$.

Therefore, the exponential growth rate of income in the developed countries gives us the relationships as:

$$d\left(\frac{Y_{Pt}}{Y_{Ct}}\right)/dt = \frac{-r(A-a)}{bY_C^{ert}}.$$

where, r is the growth rate of income. Since the denominator is positive and the numerator negative, the relative income gap will widen with time. Higher population growth rate in the periphery will further accentuates the differences in the growth rates with the centre growing faster than the periphery.

The available data indicates that the hypothesis on the deteriorating terms of trade and worsening of the economic condition of the developing countries cannot be dismissed easily. Studies by Broda and others provides very strong evidence in support of this argument. The experience so far at the WTO, as noted earlier lends ample support to the theory that the developed countries are interested in the continued exploitation of the developing countries.

Check Your Progress:

1. How are the gains of productivity passed on to the developed countries?
2. What are the centre and periphery?
3. What is the relationship between income and export growth rates?

11.5 ROLE OF TRADE IN DEVELOPMENT

Baldwin proposed that 'trade is an engine of growth'. According to him, international trade serves as a means of fostering economic growth by allowing a country to access the inputs available in other countries at a lower price and helps is generating foreign exchange by facilitating exports. This argument is along the lines of comparative advantage proposed by David Ricardo. To this, the arguments of 'learning-by-doing' and 'learning-by-producing' were added to highlight the processes through countries participating in the free trade will develop dynamic advantage and productivity gains that will further help them to experience higher growth rates over a period of time. In other words, free trade ensures that each participating country shall realise the full and proper use of its resources both in the short-run when it is reaping the static gains, and in the long-run when it is reaping the dynamic advantages. For long, the theory of comparative advantage and free trade doctrine on which it was based formed the essentials of development strategy. However, Kravis observed that in the twentieth century, international trade is more like a handmaiden of growth rather than an engine of growth. This is because, developed countries, led by the US have generally been adopting policies that are away from the spirit of free trade and suited more to the domestic interests.

Starting with the OECD-sponsored study of trade policies in developing countries, there has been an argument that the trade strategies in these countries need a relook. This was further supported by NBER-sponsored study of another set of developing countries. Therefore, the World Bank and the IMF started insisting on the trade policy reforms for many developing that sought their assistance. Therefore, we shall first examine the import-substitution industrialisation (ISI) strategy first and then proceed to the export-promotion industrialisation (EPI) strategy. We shall then draw some conclusions based on these.

The import substitution industrialisation (ISI) strategy is based on the infant industry argument of J.S. Mill. According to him, a country should protect its industry if it satisfies certain conditions. These are: i) these industries will not be set up unless they are protected from the foreign competition, ii) they make losses initial years of operation, iii) in the long-run they shall be able to make profits and compete with imports on their own. All

such industries need to be protected in the short-run to develop the domestic industrial sector in an economy. This is known as the 'Mill-Bastable Test'. Interestingly, the US has extensively used this in the initial stages of its economic development. German economist List extended this argument further and suggested that the entire domestic industry should be protected instead of some selected industries since it is difficult to select the industries with potential comparative advantage.

The Singer-Prebisch-Myrdal hypothesis discussed above further supported temporary protection to the domestic industry since the primary exports suffer the problem of secular deterioration in the terms of terms of trade due to inelastic demand. Hirschman recommended the protection to domestic industry as part of his unbalanced growth strategy. Together, these arguments favoured many developing countries, including India, opting for ISI strategy during the early 1950s.

Studies subsequently, mainly by Balassa, showed that the ISI strategy is doomed to fail since it violated the principle of allocative efficiency. To this, the concept of factor market distortions developed by Kindleberger lent further support and many countries were forced to review their development strategies. The example of the Asian Tigers was often shown as the evidence for the efficacy of EPI strategy. This takes us to the logic of the ISI strategy. The LDCs that adopted this strategy did not achieve the high growth rates that were posted by the Asian Tigers. Given this fact, it needs to be seen as to why this is so. The major problem was the developed countries did not co-operate in providing the necessary support to these countries. Often the aid was tied and thus was not always to the use of the recipient country. Bhagwati and Desai in their study show many such cases in the Indian context. The pressure exerted by the advanced countries on the policy-makers of the developing countries forced them to choose projects and plants that were in direct variance of their needs and requirements. Thus, the ISI strategy was not allowed to operate under optimal conditions.

Following the collapse of the Soviet bloc, the world unanimously embraced the free trade strategy. This reached its pinnacle in the establishment of the World Trade Organisation (WTO). The experience of different countries under the WTO during the last twenty years is a sad story of the failure of the

export promotion strategy that was so fondly highlighted by the neoclassical economics. We shall now turn to this.

1. The worsening of socio-economic indicators in the sub-Saharan Africa are a direct, incontrovertible proof that free trade and globalisation are not necessarily the only path to improving the economic conditions of the poor.

2. Those who profess by free trade are themselves the ardent followers of protectionism. This can be seen at the WTO negotiations on the agricultural trade. The USA and the EU linked the lowering of their domestic support to the NAMA (non-agricultural market access). Though they continue to support their domestic agriculture for a variety of reasons, they do not intend to allow the LDCs to do so in the name of freer trade. The livelihood considerations were give scant attention in the name of lowering of trade barriers.

3. Evidence from the disputes at the WTO indicate that the USA is the largest litigant under the new system. Earlier, it forced the Japanese under the voluntary export restraints (VERs) and other measures. Their own failing comparative advantage is being offset at the cost of other countries, mainly the developing countries.

4. Trade policy reforms and international highhandedness are sought to be the instruments. The conclusions of Hong Kong Summit are a mute testimony to the manner in which the advanced countries led by the USA succeed in fulfilling their policy objectives. In each round of negotiations, new issues, often unrelated, are introduced and the developing countries are either forced to accept them due to their own domestic compulsions or due to the pressure brought upon them.

5. The WTO itself is expressing the concern for the spread of regional trade agreements (RTAs) which are opposed to the spirit of multilateral trade. Significantly, the USA is participant in many of these RTAs. The experience of Mexico in the NAFTA lends enough evidence to the dangers inherent in these arrangements.

6. The role of trade in economic development of the backward countries needs to be looked in terms of the role that it plays in an economy by supplementing the domestic resources. We shall now turn to the financing aspects of economic development.

Check Your Progress:

1. How does free trade promote economic development?
2. What are the static gains from trade?
3. What are the dynamic gains from trade?
4. Why and when should a country provide protection to its domestic industry?
5. How do the developing countries loose by participating in free trade?

11.6 SUMMARY

1. The agricultural sector plays a vital role in the development of an economy. Broadly speaking, agriculture has four important roles in the process of economic development of an economy. It becomes a source of supplementing the domestic resources and provides access to imported capital and technology needed for growth.

2. One of the most important characteristics of underdevelopment is the socio-economic dualism. Dualism refers to the differences in the level of technology between the different sectors or regions of the economy, degree of geographic development, social customs and attitudes, growth of a money economy, economic system of capitalism.

3. An important area of development economics has been the explanation of regional inequalities. The neoclassical growth theory reasoned that the regional disparities take an inverted U-shape. They tend to increase first in the initial stages of development and then decrease. Regional disparities arise due to external shocks like foreign capital and export enclaves reinforced by migration. The process is then reversed with the spread effects taking place.

4. A very influential school of the causes of underdevelopment is the centre-periphery models. This school is popularly known as the 'Singer-Prebisch-Myrdal Hypothesis'. This school argues that the very nature of trade between the developed and developing countries is in itself responsible for the continued underdevelopment of certain countries.

5. The role of trade in economic development of the backward countries needs to be looked in terms of the role that it plays in an economy by supplementing the domestic resources. We shall now turn to the financing aspects of economic development.

11.7 QUESTIONS

1. Examine the inter-relationship between agriculture and industry in economic development.
2. Bring out the characteristics of dualism.
3. Explain the nature and causes of regional inequalities.
4. What are the arguments related to the 'unequal exchange' hypothesis?
5. Discuss the concept of two-gap model. What are its advantages?
6. Bring out the relationship between trade and economic growth.
7. Why is trade not considered as an 'engine of growth'?

12

FOREIGN TRADE, FINANCE AND ECONOMIC DEVELOPMENT

Unit Structure

12.0 Objectives
12.1 Foreign Assistance, Debt and Development
12.2 Trade Versus Aid
12.3 Financial Repression and Reforms
12.4 Financial Liberalisation
12.5 Summary
12.6 Questions

12.0 OBJECTIVES

- Understand the nature and role of foreign assistance in the process of economic development.
- Understand the difference between foreign trade and foreign aid in economic development.
- Understand the use of financial repression in development strategies.
- Understand the process of financial liberalisation and its impact on economic development.

12.1 FOREIGN ASSISTANCE, DEBT AND DEVELOPMENT

The role of external assistance in the process of economic development is a well discussed area. External assistance can be in the form of external debt or aid. It helps in the process of capital accumulation and international lending and borrowing played an important role in the development of most of the major industrial countries.

For long, foreign borrowing was considered to be a supplement to the domestic savings gap. However, Chenery introduced the dual gap model that helped to highlight the role of external resources in a different light. External borrowings are considered as a source of financing the imports need for the development of the economy. When a developing country needs foreign exchange to pay for its imports, exports are less than the imports borrowing will help to secure the necessary foreign exchange. More importantly, domestic and foreign resources are not easily substitutable for one another.

The assumptions of the dual-gap are as follow: 1. there is a lack of substitution between foreign and domestic resources. 2. There are no skill constraints in converting foreign exchange into domestic resources for production, which helps it to explain the backwardness of oil-producing countries despite ample foreign exchange reserves. 3. There is a dominant foreign exchange gap in every non-oil producing developing country.

Chenery showed that historically, countries in the pre-take-off stage experience a dominant savings-investment gap followed by a dominant foreign exchange gap, with a possible skill constraint. Many LDCs experience chronic balance of payments deficits with idle domestic resources. Due to inter-linkages in the world economy, it becomes necessary to finance these deficits by one source of another. The two-gap model can be explained as under:

If in a country, the marginal propensity to save exceeds that of its average, and/or the marginal propensity to export exceeds its marginal propensity to import, the country can address its two-gap successfully. In case of many developing countries, it is not possible to do this without disrupting the entire economic system due the structure of trade. Many developing countries cannot convert their domestic resources into foreign exchange. The following system explains this:

$$Y = C + I + X\text{-}M \text{ and} \quad (1)$$

$$Y = C + S + X\text{-}M \quad (2)$$

$$\text{So, } (I\text{-}S) = (M\text{-}X) \quad (3)$$

Thus, imports will finance the domestic investment. In the Harrod model of growth, the growth rate is given by the following relationship:

g = s/c, where, g = the output growth rate, s = savings rates and c = capital-output ratio. Similarly, rate of growth can be expressed in terms of the incremental output (ΔY)-import (M) ratio: m = ΔY/M and the ratio of investment-goods imports (IM) to income ratio: i = (IM)/Y. In other words, in this system the growth rate of output is given by:

$$g = im \qquad (4)$$

From the above equations, we can write the resource gaps as under:

a. the investment-savings gap is given by the following relationship:

$$I_t - S_t = s^*Y_t - sY_t = g/c(Y_t - sY_t) \qquad (5)$$

b. the foreign exchange gap is given by the following relationship:

$$M_t - X_t = i^*Y_t - iY_t = g/m\ (Y_t - iY_t) \qquad (6)$$

Where, s^* is the required saving ratio, Y_t, I_t, and S_t are the income, investment and savings; i^* is the required ratio of investment-goods to imports, m is the imports to income ratio, X is exports and M is imports in time period t.

In the absence of substitutability between domestic and foreign resources, growth will be constrained by whatever factor is the most limiting, savings or foreign exchange. Growth will be savings limited when the growth rate permitted by domestic savings is less than the rate permitted by the foreign exchange. In this case, a proportion of foreign exchange goes unutilised. Conversely, if the growth is constrained by foreign exchange, a proportion of domestic savings will go unutilised. There will be resource waste as long as one resource constraint is dominant. Improving skills of the domestic labour force can mitigate the under utilisation of resources and governments must pay attention to skill-formation as well. From the above system we can see that if the target growth rate is to be achived, capital imports must fill the largest of the two gaps.

The important point to be noted is that the two gaps are not additive. If the import-export gap is larger, then foreign borrowing undertaken to fill it will also fill the investment-savings gap.

Alternatively, if the investment-savings gap is the largest, foreign borrowing will have to fill the smaller foreign exchange gap as well.

The dual gap model highlights the dual role of foreign borrowing in supplementing the deficient domestic savings gap, but also in filling the foreign exchange gap. It shows the role of imports and foreign exchange in the development process. It synthesises the traditional view that considers foreign assistance as only a boost to domestic savings and the more modern view that the many goods required for growth cannot be produced by the LDCs and must, therefore, be imported with the aid of foreign assistance. It provides a relevant theory of trade for developing countries that justifies protection and import substitution. If the economic growth is constrained by a lack of foreign exchange, free trade cannot guarantee simultaneous internal and external balance, and the underutilised domestic resources may offset the gains from trade.

12.2 TRADE VERSUS AID

In recent years, the developing countries are asking for increasing the volume of trade by liberalising the condition in the developed countries. Due to the higher debt-servicing burden that many developing countries are facing, it is considered that increasing the exports would be desirable than aid. Aid can be defined as ‘a free transfer of resources from the lending country to the recipient country’. In this case, the foreign exchange so received will provide additional resources with out a corresponding transfer of goods due to exports. Aid saves the resources that will be transferred to import substitution in the face of shortage of foreign exchange. Import substitution imposes an excess cost on the economy by diverting resources to high cost activities. The relative worth of foreign exchange from exporting depends upon the excess cost of import substitution. This cost needs to be considered when export promotion is being evaluated. Aid, by allowing foreign exchange to be available, will save this cost. Higher the cost of import substitution, lower will be relative worth of exports. In such cases, a country would be better off through aid rather than import substitution. If the external assistance is in the form of a loan, it still saves the excess cost of import substitution.

The following equation explains the relative significance of a unit of foreign exchange earned through trade and aid.

$$\frac{cX}{(1+c)Fg} \tag{7}$$

X = the value of exports, c = proportional excess cost of import substitution, F = nominal amount of foreign assistance, g = grant element. If the aid is tied, partially or fully, then Eqn. (7) is modified as: $\frac{cX}{(1+c)Fg} \times r$ (8)

Where, r = the amount of tied aid. From the above two equations we can see that the value of exports will exceed the value of aid component of an equal amount of foreign assistance if c > g(1+c) and if cr > g(1+c). In other words, the relative worth of exports is the greater, when the excess cost of import substitution is higher. Similarly, in case of tied-aid, higher the cost of tied-aid and lower the grant or the grant element of assistance, higher would be relative worth of exports.

The direct contribution of external assistance is equal to the grant element of the assistance (Fg) and indirectly equal to the excess cost of import substitution (F_c). Therefore, equation (8) needs to be modified as:

$$\frac{{}_cX}{(F_g + F_c)} = \frac{{}_cX}{(g+c)F} \tag{9}$$

The issue of aid is closely linked to the practice of tied-aid. In this case, the donor country specifies the goods/products that have to be imported from it in exchange for the aid. In this case, the issue will be proportion of tied- and untied-aid. Higher the component of tied-aid for a given amount of foreign assistance, higher would be cost of this aid in terms of resources foregone. This is because, the recipient country has limited choice in importing what is desires/considers necessary. In case of tied-aid, equation (9) needs to be modified as:

$$\frac{{}_cX}{(g+c)F} \times r \tag{10}$$

The above equation helps us to understand the significance of trade vs aid argument. As long as a grant amount is involved, external assistance is worth more than an equal amount of exports. It still helps the country to save resources and access imports without a corresponding transfer of domestic resources to the trading partner.

More significantly, since the exports are likely to be concentrated in a few goods/products, the benefits of foreign exchange earnings may reach the already well off sections of the economy like the multinational firms or domestic producers. Aid will, then helps to access the goods and services needed by less privileged sections of the society and could therefore be more productive. The relative marginal propensity to save from export earnings will also determine the net benefits from exports.

Check Your Progress:

1. What is a domestic resource gap?

2. What is a foreign exchange constraint?

3. What do you understand by ‘dual-gap’?

4. What is external assistance?

5. What is tied-aid?

12.3 FINANCIAL REPRESSION AND REFORMS

An important tool of financing the development efforts was the technique of financial repression. It refers to the government exercising excess control on the formal banking and financial sector. This may take the form of the government having monopoly control over the banking sector. It also takes the form of restrictions on the growth of financial institutions. The private sector may be asked to lend to the government in the form of high cash reserve

ratios, compulsory lending to the government in the form of statutory reserves and so. The central banks often impose credit rationing in this case and may insist on compulsory lending to certain sectors, identified as 'priority sectors' at concessional terms.

The main objectives of financial repression are as under: 1) to keep the cost of debt-servicing low for the government. 2) To make credit available at a rate below the market rate to certain identified economic activities. 3) To ensure an equitable distribution of income and wealth since it is the rich that are believed to be the savers.

An important outcome of financial repression is that the economy is discouraged to acquire interest-bearing financial assets and therefore, the aggregate savings will be less than the potential. The community would be preferring to hold non-financial assets like gold. This will undermine the investible resources. Thus, output growth rate itself would be lower.

Following the work of McKinnon and Shaw, we can show the adverse effects of financial repression with the help of the following figure:

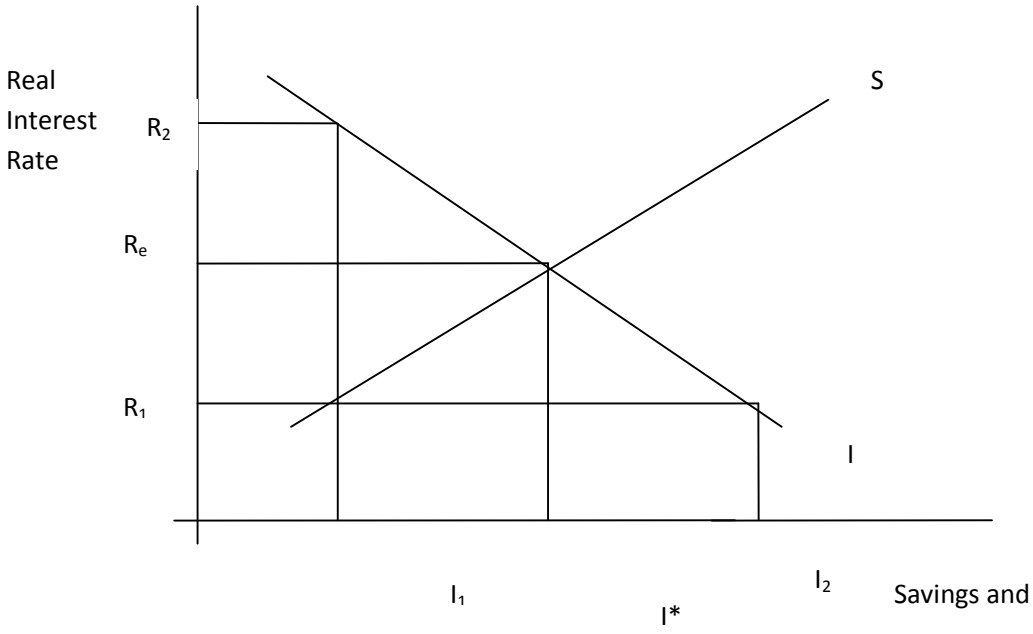


Figure 12.1

In the above figure, I is the investment demand function assumed to be a negative function of the real rate of interest and the expected rate of profit. S is the savings function. Savings are assumed as a positive function of the real rate of interest, and time preference. When the government uses financial repression, the real market rate of interest would be R_1. The volume of savings is I_1 and the demand for investment is I_2. The financial institutions will be charging an interest rate of R_2. This will discourage investment. With out the government intervention, the market-clearing interest would be R_e. Thus, the financial repression discourages savings. Further, it would encourage investment in the more speculative activities and sub-optimal allocation of resources into uses that do not reflect the true needs of the society. If the governments use restrictions on the credit use, through rationing and other measures, the banks will lend only to les risky projects with lower interest rates. This will lower the overall productivity of investment. If the ceilings on interest rate are increased, it will encourage savings but would discourage investment. Thus, financial repression results in misallocation or sub-optimal use of available resources. Therefore, it is argued that the governments should embark upon financial liberalisation and allow the market forces to determine the real interest rates. This would encourage both savings and productive investment. The long-run growth of the economy shall improve. We now look into the experience with financial liberalisation since early 1990s.

Check Your Progress:

1. What is financial repression?

2. What are the objectives of financial repression?

3. What are the adverse consequences of financial repression?

12.4 FINANCIAL LIBERALISATION

During the early 1980s, the IMF and the World Bank started emphasising the role of financial liberalisation. The developing countries that sought the assistance of these institutions were asked to open up their domestic financial sector. The central argument was that when the government imposes restrictions on the market interest rate to finance its own deficits, it results in a reduction in the flow of funds to the formal financial sector and causes distortions in the allocation of resources. This as shown earlier, will cause lower levels of investment, savings and growth. It also impedes the development of financial markets that mobilise and allocate resources among competing sectors. The financial sector liberalisation has been the main plank if structural adjustment programmes.

According to McKinnon, money holdings and capital accumulation are complementary process in economic development. Hence, when the interest rate is market-determined, it will encourage the accumulation of money balances, i.e., financial savings and this will result in investment. Investments are made till such time that the real rate of return on investment exceed the real rate of interest.

Shaw argued that the financial liberalisation will promote financial deepening and the high interest rate will encourage investment and at the same time discourage investments in low-yielding projects. It will also encourage bank deposits and allow banks to efficiently allocate funds for productive investment. The arguments for financial liberalisation are based on the following:

1. When interest rates are liberalised, financial savings will be encouraged. This argument is based on the premise that is an income and a substitution effect. The higher interest rates will make consumption costly. And the higher income in future due to higher interest rate is the income effect. However, as Dornbusch and Reynoso showed the two effects may cancel each other and the total savings may remain the same even after an increase in the rate of interest. Various studies by Gupta, Giovannini, Cho and Khatkhate, Bandiera, Fry and others have not established a positive relationship between interest rate and savings.

2. The Keynesian and Post-Keynesian critique of the financial liberalisation is based on the argument that banks are treated as the only source of supply of loanable funds. If the banks are supported by the central banks, they can create credit based on demand and the interest rate plays minor role. The incentives to investment are more important than the incentives to save. Under such cases, the interest rate needs to be lowered than increased. Davidson argues that as long as banks can create credit by following acceptable banking practices, credit is unlimited. In case of Mexico, it was observed that though the financial savings responded positively to higher interest rates, the long-run effect on investment is adverse. Demetriades and Devereux also found that in case of many developing countries, higher interest rates discouraged investments. According to them, the high cost of capital due to higher interest rates outweighs the benefits of greater supply of investible funds. Greene and Villanueva also found the same with 23 developing countries during 1975-1987.

3. Another argument is that financial liberalisation may result in higher interest rates pushing the economy into a stagflation. As interest rate increases, investments will postponed causing an increase in unemployment. At the same time, higher interest rate will attract foreign capital which will cause an overvaluation of the exchange rate. In this case, the debt-servicing burden will increase and force the governments to lower their social sector expenditure. Fall in public expenditure and on appreciation of exchange rate will push the economy into deflation. Diaz-Alejandreo observed this for Latin America during the seventies and early eighties.

4. In the developing countries, the informal money markets or ‘the curb markets’ are an important source of finance for small producers. These markets have no regulation over the use of funds. The neo-structuralist school points to the fact that higher real interest rates may attract funds away from these markets. This can result in a decline the volume of funds available for the private sector. When the curb loans are used to finance government consumption expenditure, the total level of savings and investment in the economy will be adversely affected.

5. There is a possibility that the banks may shy away from the small producers when the interest rates are higher due to liberalisation. Due to adverse selection, the banks may prefer less productive, but safer proposals to the risky, but more productive projects. If proper regulations are not in place, financial liberalisation will cause

financial distress and the prudential and strategic reasons may force government intervention. The recent experience with the decline of farm loans by commercial banks is an example for this type of outcome due to financial liberalisation. The relationship between real interest rate and economic growth is more likely to be an inverted U-shape. This is because negative interest rates are not conducive for financial development and growth. Very high real interest rates are likely to reduce growth by reducing the volume of investment and credit going to the more risky projects.

The controversy between interest rate liberalisation and growth can be explained with the help of the conditions laid down by Fry after his study of the Asian economies:

a. There should be adequate prudential regulations and supervision of commercial banks with a certain minimum levels of accounting standards and legal infrastructure.

b. There should be a reasonable degree of price stability in the economy.

c. There should be effective fiscal discipline.

e. The commercial banks should operate in competitive atmosphere with adequate attention to profitability.

f. The tax system should be simple and transparent. It should no impose discriminatory taxes on financial intermediation.

Check Your Progress:

1. What do you understand by financial liberalisation?

2. What are the positive effectives of interest rate liberalisation?

3. How does higher interest rate debt servicing?

4. What are the neo-structuralist arguments about higher interest rates?

5. What are the conditions for successful financial liberalisation?

12.5 SUMMARY

1. The role of external assistance in the process of economic development is a well discussed area. External assistance can be in the form of external debt or aid. It helps in the process of capital accumulation and international lending and borrowing.

2. An important tool of financing the development efforts was the technique of financial repression. It refers to the government exercising excess control on the formal banking and financial sector. This may take the form of the government having monopoly control over the banking sector.

3. The main objectives of financial repression are as under: 1) to keep the cost of debt-servicing low for the government. 2) To make credit available at a rate below the market rate to certain identified economic activities. 3) To ensure an equitable distribution of income and wealth since it is the rich that are believed to be the savers.

4. During the early 1980s, the IMF and the World Bank started emphasising the role of financial liberalisation. The developing countries that sought the assistance of these institutions were asked to open up their domestic financial sector.

12.6 QUESTIONS

1. Show how aid is preferable to trade in the process of development.

2. Bring out the rationale of financial repression. What are the adverse consequences of financial repression?

3. Examine the concept of financial liberalisation. Bring out the relationship between economic development and financial liberalisation.

13

FINANCIAL ASPECTS OF TRADE AND DEVELOPMENT

Unit Structure

13.0 Objectives
13.1 Capital Mobility and Monetary Autonomy
13.2 Capital Controls
13.3 Exchange Rate Overshooting
13.4 Speculative Attacks and Target Zones
13.5 Developing Countries' Debt Crisis
13.6 Summary
13.7 Questions

13.0 OBJECTIVES

- Understand the importance of exchange rate system and domestic policy autonomy.
- Understand the dynamics of exchange rate management.
- Understand the relationship between external sector and growth.

13.1 CAPITAL MOBILITY AND MONETARY AUTONOMY

An important dimension of external sector is the issues surrounding the ability of the economy to maintain its exchange rate, capital flows and domestic monetary policy freedom. Authorities would like to ensure a stable exchange rate. This is necessary to encourage trade and investment. They also would like to enjoy free international capital mobility. They would like to ensure a smooth flow of capital and avoid volatility in the flows. At the same time, they would like to engage in a monetary policy oriented towards achieving domestic economic policy goals. Obstfeld and

his associates in an important study in 2004 have proved that these three objectives are mutually contradictory and the policy-makers have to choose two of them and sacrifice the third. They termed this as “trilemma”. We shall now look in to this problem.

Prior to 1945, countries followed the gold standard. During this period, monetary authorities ensured stable exchange rates and free flow of capital across countries. However, they had to sacrifice the monetary autonomy. The domestic monetary policy decisions were guided by the conditions of exchange rate stability.

During the Bretton Woods system, the exchange rates were held stable, with reasonable freedom in formulating domestic monetary policy. However, this was achieved only through extensive controls on foreign capital. After 1973, under the floating exchange rates, experience suggests that these three objectives cannot be achieved at the same time. If the exchange rate is allowed to be determined by the market, it is exposed to the market expectations. Often, adverse news and rumours cause exchange rate instability and volatile capital flows. This necessitated the use of sterilisation and the intervention and in the foreign exchange markets. This further entailed the loss of foreign exchange. Many countries tried to avoid this by linking their currency to some other currency. However, in this case, following an independent monetary policy becomes difficult. The IMF began to emphasise the need to eliminate the capital controls and countries were encouraged to allow free flow of foreign capital. Since these flows are influenced by considerations outside the control of the central banks, they are inherently speculative and destabilising. The experience during the Asian currency crisis during 1997-98 points out to this fact. Some capital controls in place would have avoided this situation. Thus, the issue of ‘trilemma’ is associated with the situation where countries would like to simultaneously pursue the three objectives.

Check Your Progress:

1. What are the three objectives of monetary policy in an open economy?

2. How are exchange rate stability and monetary independence related under gold standard?

3. How are the exchange rates held under the Bretton Woods system?

4. What does the experience during Asian currency crisis suggest?

13.2 CAPITAL CONTROLS

International capital movements are a means of promoting economic efficiency. Capital flows from the low productivity countries to the high productive countries. This would obviously promote international output and efficiency. Under the fixed exchange rates, countries enjoyed free capital flows with controls on the exchange rates. Under the floating exchange rates, most of the international capital flows are speculative and destabilising. To the extent that the capital flows are due to the differences in the marginal productivity of capital across countries, they are desirable. However, there is no way of distinguishing the 'productive capital movement' from a 'destabilising' or 'speculative' capital flow.

The experience of the Asian countries during 1997-98 has led to a renewed interest in the role of foreign capital and the effects of destabilising capital movements. When the changes in exchange rates are unrelated to the fundamentals, when rumours and self-reinforcing speculation takes place, we say, the capital movements are 'speculative'. In this case, the 'herd instincts' or the 'bandwagon effects' dominate the capital account transactions and hence are destabilising. Capital movements are considered to be destabilising or speculative when the fluctuations in the exchange rate are caused by excess changes in the capital flows. There could be a speculative attack on the currency when the market expects the exchange rate to depreciate further. In this case, there will be an outflow of capital. Conversely, when the exchange rate is expected to appreciate further, there would be an increased inflow of foreign capital into the country. The daily movements of speculative funds are considered a hindrance for the effective allocation of resources due to the wrong signals. Fluctuations in the real exchange rates would further contribute to the waste of resources. Various instruments are historically used/discussed to

prevent the flight of capital and to control speculative capital movements. Some of them are as under:

1. Historically, dual exchange rates or multiple exchange rates were used to regulate capital flows. Under this system, there will be different exchange rates for normal trade transactions and long-run overseas investments. These transactions are conducted at a lower rate than the short-run capital transactions. It is assumed that the higher price for short-run capital transactions will discourage the speculative activities. For example, in India, before 1992, this system was extensively followed. Government used prescribe the limits on the foreign exchange that can be sanctioned to individuals and firms for various purposes and the exchange rate for each of them was prescribed. However, as our own experience showed, this is not a viable or effective means of preventing speculative capital transactions. It may result in 'over-invoicing' of imports and 'under-invoicing' of exports to siphon out the foreign exchange.

2. Moral suasion by the central banks was also used and often found to be more effective. The Fed used this during the late 1960s to discourage speculative capital outflows from the USA.

3. An important proposal in this respect is the one suggested by James Tobin. According to Tobin, on all spot transactions that involve converting of securities into foreign exchange there should be an international tax. Tobin recommended a tax rate equal to 0.5 percent of the value of the transaction. However, to be effective, the transactions tax should be applicable to the financial institutions also. They are the 'market makers' also. Any tax on their operations would adversely affect the growth of foreign exchange market itself. Further, if the spot transactions are taxed, agents will take refuge in the derivatives market. Taxing the initial transactions value in the derivatives market will adversely affect the liquidity in the system. Differential tax on derivates would be arbitrary and difficult to operate. If only destabilising transactions are to be taxed, identifying them would be arbitrary and difficult to administer.

Spahn suggested a two-tier tax on the nominal value of the transaction cost plus an exchange rate surcharge during periods of volatility. Though this is a useful short-run tool to stabilise the exchange rate, it need not deter speculation. It will only enhance the transactions cost. It fails to address the underlying structural causes that cause volatility in the exchange rates due to speculation. It is also widely felt that Spahn's proposals mix-up the

fiscal and monetary policies that operate under different frameworks. As of now, there is no consensus as the how the country should deal with speculative attacks on its exchange rate.

Check Your Progress:

1. What is speculation in the foreign exchange market?

2. Why the foreign capital movements are desirable?

3. What are multiple exchange rates?

4. What are the dangers with the use of multiple exchange rates?

5. What do you understand by 'Tobin tax'?

13.3 EXCHANGE RATE OVERSHOOTING

An important contribution of Dornbusch is the concept of exchange rate 'overshooting'. This concept deals with the adjustment path of the exchange rate and the price level to the changes in money supply. Assuming a small open economy, we can use the model to explain changes in the exchange rate. When the money supply changes, asset prices change faster than the goods prices. This leads in the short-run to an immediate and abrupt change in the relative prices and competitiveness. Let us assume that the monetary authority increases the money supply by fifty percent, the exchange rate will depreciate by more than fifty percent. As a result, the short-run relative prices of imports will increase sharply. There will be a transitory increase in income. The product prices will also start increasing with a lag and the exchange rate starts adjusting and appreciate. The initial overshooting is then smoothened out. In the long-run, the money supply, exchange rate and price level will all rise in the same proportion. The real balances and the relative prices of imports remain unchanged.

At the initial equilibrium point, an increase in money supply will result in improvement in competitiveness and the output increases beyond the potential causing inflation in the domestic economy. With increase in prices, and the appreciation of exchange rate, the effects of an initial depreciation are undone. Prices will rise to match the increase in money supply and the exchange rate will match the higher level of money supply and prices.

However, in the long-run, real variables are unchanged, but in short-run, changes in money supply will produce large changes in the exchange rate.

Check Your Progress:

1. What happens to the exchange rate when the money supply is increased?

2. What is the long-run relationship between the exchange rate and the money supply?

13.4 SPECULATIVE ATTACKS AND TARGET ZONES

An important problem in exchange rate management is the issue of speculative attacks on a country's currency. Historically, even during the Bretton Woods system there were cases of a country's currency coming under strain due to continuous selling pressures. When a country faces persistent balance of payments problem, excessive fiscal deficits , or when the market players feel that the exchange rate cannot defend the currency due to lack of foreign exchange reserves, the currency of that country will come under thee strain of persistent selling in the market. The par values of a few countries were revised during 1945-1973 to address this problem. As the gold reserves of the USA started dwindling, it came under pressure and the suspension of convertibility clause and the end of the pegged exchange rates.

Under the floating exchange rates, it was argued that the market would adjust the rates and there is no need to worry about defending the exchange rates. However, experience shows that the market behaviour is quite different. The sharp increase in the volume of foreign capital makes them a force to reckon with. The daily turnovers in the foreign exchange markets in various countries involve such huge funds that it is virtually impossible for the authorities to regulate them. Countries need foreign capital to supplement their own domestic resources to promote economic development. Thus, foreign capital cannot be avoided in a modern economy. The experience during the Asian currency crisis only highlighted the severity of the problem. The speculative attacks are not rooted in the fundamentals of the economy. They may be guided by 'adaptive' expectations or by 'rational expectations'. In either case, the effect is the same. There would a loss of output, employment and trade. Some of these effects could be permanent. Thus, the problem of speculative attacks on a currency needs closer look and to be addressed effectively. In this context, two important proposals are made. We shall examine each of them.

John Williamson suggests the first proposal. According to him, countries should negotiate a set of mutually consistent targets for their real exchange rates. The target exchange rate is set in such a way that it is consistent with the domestic and external balance over a medium term. It includes a desired rate of growth of output, employment and inflation. The external balance is defined in terms of a desired rate of growth of export and import volumes, current account deficit/surplus and so on. A zone of ± 10 percent of the target exchange rate is the corridor along which the exchange rate is allowed to move. These movements need not invite any official intervention. If the exchange rate moves close to the ceiling or floor of the zone, it is an indication that policy steps should be taken to moderate or reverse the movement. The zone is more like soft margins rather than hard boundaries of the exchange rate.

Monetary policy, rather than fiscal policy that is to be used to stabilise the exchange rate. Fiscal policy is to be used to achieve and maintain internal stability (defined in terms of a desired level of employment, price stability and so on). Monetary policy can affect both the internal and external equilibrium. The immediate policy objective should be to restore the real exchange rate stability around the target rate.

When the domestic economic policies are too restrictive, the real exchange rate will appreciate and move downwards. In this case, the domestic monetary policy needs to ease up. Conversely, when the real exchange rate depreciates, it indicates high domestic inflation and the monetary policy should increase the interest to moderate inflation and allow capital inflows. With capital mobility, monetary policy has the added advantage of stabilising the exchange rate.

Williamson's model has the advantage of giving prominence to domestic policy objectives and thus, faces lesser chances of opposition. Further, it rightly recognises the significance of real exchange rates in influencing the economic activity.

The major policy implications are, the real exchange rate is sensitive to the base year and the price index selected; selecting a proper target rate of real exchange rate is not easy. If the target selected is a wrong one, attempts to maintain it will only perpetuate the misalignment of exchange rates and the system will never reach the equilibrium. In case of stagflation, monetary policy alone may not be effective and this case is unexplored in this model. More importantly, the question arises, to what extent will the major central banks co-operate in determining and maintaining the target zones? Experience with the Bretton Woods system is certainly not a guide here.

Paul Krugman suggested an alternative to the real exchange rate targeting. He chooses the nominal exchange rate instead. This model is based on the monetary/asset market framework. It assumes that money supply, velocity of circulation, and the expected exchange rate determine the domestic price level. In the foreign exchange market, the uncovered interest parity holds.

Krugman suggests that permanent limits be set for the nominal exchange rate. The monetary authority shall act only when the nominal exchange rate hits the limits. Accordingly, if the nominal exchange rate appreciates to its limit, the money supply is increased and lowered when the exchange rate depreciates to its limit. In this framework, Krugman postulates that the monetary authority may never have to act if the market participants have full confidence in the ability of the monetary authority to maintain the limits. However, Krugman's model is attractive; it suffers from some serious limitations.

1. The actual existence of uncovered interest parity is never proved conclusively. In such a case, assuming it can result in serious policy implications.

2. Krugman spends little time on the internal policy objectives and the pressures on monetary authorities to stick to the exchange rate limits. The target zones may not by politically viable.

3. The most serious implication of the model is what has come to be known as “policy credibility”. In simple terms it means, what the market participants feel about the ability of the monetary authorities to act and maintain the target zones. It is suggested that the turn over in the foreign exchange markets is so huge that no monetary authority can sustain a continued speculative attack on the exchange rate. Therefore, the credibility is considered to be the final determinant of the effectiveness of the proposed nominal exchange rate limits.

Check Your Progress:

1. What is an exchange rate zone?

2. What are the main proposals of Williamson?

3. What are the difficulties with real exchange rates?

4. What are the difficulties with Krugman’s proposals?

13.5 DEVELOPING COUNTRIES’ DEBT CRISIS

The external debt crisis of 1980s resulted in paying special attention to the problems of developing countries. This resulted in the International Monetary Fund (IMF) introducing the Extended Finance Facility (EFF) and the Structural Adjustment Facility (SAF). These schemes were intended to provide medium-term official assistance to the debt-redden developing countries and to help them through balance of payments difficulties. These programmes

were based on the premise that the excess public expenditure was the main cause of the continuous adverse payments conditions. The overvalued exchange rates were also considered to be the cause of sluggish export growth and the unsustainable current account deficits. Thus, these programmes called for devaluation, lowering of trade barriers in the developing countries. The reduction in government expenditure on unproductive, social sectors was also widely recommended. Subsequently the experience suggested that often the structural adjustment facilities resulted in adverse socio-economic consequences and hence the IMF introduced the Poverty Reduction and Structural Adjustment (PRSA) Facility in 2000.

The experience during the recent global financial crisis indicated that the developing countries are still vulnerable to their external debt related problems and hence, need some concrete measures. Following table provides an idea about the nature of debt problem in the developing countries:

Developing Countries' External Debt (in b $ US):

Type of Debt	2005	2006	2007	2008	2010
Total External Debt Outstanding	2.514	2.675	3,221	3499	4076
a.Long-term Debt(including IMF)	2.013	2,082	2,457	2,740	3,040
of which i) Public and Publicly Guarantee (including IMF)	1,332	1,266	1,371	1,423	1.647
Private Non-guaranteed	681	815	1,085	1,317	1,393
b. Short-term Debt	501	594	764	760	1036

Source: World Bank (2012): "World Debt Tables."

The share of long-term debt is higher and this is a positive sign. On incremental basis, the rise in the short-term debt is higher than that of long-term debt. The short-term debt is mostly trade related. It therefore, is directly related to the trade flows. Further, the share of private sources indicates a sharp increase. This is attributed to the role played by foreign institutional investors (FIIs). Some of the following positive developments are noted:

a. The average external debt to gross national income ratio has improved from 26.6 percent in 2005 to 21 percent in 2010 for all developing countries.
b. External debt to exports ratio also improved from 76 to 69 percent during this period.

c. Reserves to external debt ratio increased from 79 to 137 percent. However, the short-term debt to imports ratio worsened from 15.3 to 17.2 percent during this period.

The top ten borrowers account for nearly 64 percent of the total debt in 2010. India stood at fifth place with 7.1 percent of the total outstanding external debt in 2010. India accounted for 9.1 percent of the net inflow of private capital.

The fortunes of the developing countries are closely linked to that of the developed countries. During the 2007-09 global financial crises, the developing countries have seen a marked fall in exports and worsening of the debt positions. Huge current account deficits and fiscal stimulus programmes led to unsustainable debt positions. Developing countries in Europe and Central Asia region are the worst affected during this period. The debt crisis in Ireland, Greece, and Spain are indicative of this problem.

East Asia and Pacific region has historically been the maximum recipient of external funds. The total funds to this region increased from $ 209 b in 2005 to $ 447 b in 2010. Most of these countries attracted private equity funds, which increased from $ 67.5b to $ 128.4 b during 2005 and 2010.

The Heavily Indebted Poor Country (HIPC) Initiative is instrumental in providing debt relief to the developing countries. The major donors of multilateral aid write off the debt of developing countries subject to certain macroeconomic parameters. Under this scheme in 2010, six developing countries obtained debt relief equal to $ 13.2 b.

Check Your Progress:

1. What is the extent of debt problem?

2. What is the relationship between trade flows and debt?

3. What is HIPC Initiative?

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13.6 SUMMARY

1. An important dimension of external sector is the issues surrounding the ability of the economy to maintain its exchange rate, capital flows and domestic monetary policy freedom.

2. Obstfeld and his associates in an important study in 2004 have proved that these three objectives are mutually contradictory and the policy-makers have to choose two of them and sacrifice the third. They termed this as “trilemma”. We shall now look in to this problem.

3. International capital movements are a means of promoting economic efficiency. Capital flows from the low productivity countries to the high productive countries. This would obviously promote international output and efficiency.

4. An important contribution of Dornbusch is the concept of exchange rate ‘overshooting’. This concept deals with the adjustment path of the exchange rate and the price level to the changes in money supply.

5. An important problem in exchange rate management is the issue of speculative attacks on a country’s currency.

6. Williamson’s model has the advantage of giving prominence to domestic policy objectives and thus, faces lesser chances of opposition. Further, it rightly recognises the significance of real exchange rates in influencing the economic activity.

7. Paul Krugman suggested an alternative to the real exchange rate targeting. He chooses the nominal exchange rate instead. This model is based on the monetary/asset market framework. It assumes that money supply, velocity of circulation, and the expected exchange rate determine the domestic price level. In the foreign exchange market, the uncovered interest parity holds.

8. The external debt crisis of 1980s resulted in paying special attention to the problems of developing countries. This resulted in the International Monetary Fund (IMF) introducing the Extended Finance Facility (EFF) and the Structural Adjustment Facility (SAF). These schemes were intended to provide medium-term official assistance to the debt-redden developing countries and to help them through balance of payments difficulties.

13.7 QUESTIONS

1. Write a note on ‘trilemma’ in open economies.
2. What are capital controls? Explain the use of capital controls in open economies.
3. Discuss the concept of ‘exchange rate overshooting’.
4. Explain the concept of exchange rate target zones.
5. Write a note on the problem of external debt problem of developing countries.

14

Module 6

DEVELOPMENT STRATEGY, DEVELOPMENT PLANNING AND DEVELOPMENT POLICY - I

Unit Structure:

14.1 Objectives
14.2 Shadow Prices
14.3 Dual Gap
14.4 Growth Programming: RMSM
14.5 Summary
14.6 Questions

14.0 OBJECTIVES

- To study the meaning, need, determination, difficulties, and uses of shadow prices
- To understand the concept of dual gap analysis
- To study growth programming though RMSM

14.1 SHADOW PRICES

Introduction :

In underdeveloped countries, for project evaluation and programming the distribution of factors on the basis of market prices is imperfect because there exist fundamental disequilibria which are reflected in mass underemployment at existing wage levels, in the deficiency of funds at existing interest rates and in the scarcity of foreign exchange at the prevalent exchange rate. In such a situation, the equilibrium level of wages would be much below the market rates and the equilibrium rate of exchange would be lower than its market rate. In order to overcome these difficulties

J. Tinbergen, H. B. Chenery and K. S. Kretchemer have emphasized the use of shadow or accounting prices.

Need For the Use of Shadow Prices:

The price mechanism operates imperfectly in underdeveloped countries. Market prices do not correctly reflect relative scarcities, benefits and costs. This is because perfect competition is entirely absent; structural changes do not respond to price changes; institutional factors distort the existence of equilibrium in the product, labour, capital and foreign exchange markets; and prices fail to reflect and transmit the direct and indirect influences on the supply side and the demand side. Markets are not in equilibrium due to structural rigidities. Labour cannot be usefully employed because of the shortage of other cooperant factors. The rate of interest understates the value of capital to the economy. And disequilibrium persists in the balance of payments which cannot be reflected in the official rate of exchange. For instance, in such economies wages are much lower in the non-organized agricultural sector while they are even higher than the opportunity cost of labour in the industrial sector where labour is organized in strong trade unions. In the capital market, the market rate of interest is much higher than the bank rate, and the current rate of foreign exchange is much lower than in the black market. Thus market prices, particularly those of the factors of production, form a very imperfect guide to resource allocation in underdeveloped economies, because there exist fundamental disequilibria which are reflected in the existence of massive underemployment at present levels of wages, the deficiency of funds at prevailing interest rates and the shortage of foreign exchange at current rate of foreign exchange. To overcome these problems, the use of shadow prices has been suggested by economists for he allocation of resources in development planning, for evaluating projects and as a device in programming. To conclude with Streeten, “The call for the use of shadow prices (or accounting prices) in planning for development stems from the obvious fact that actual market prices do not reflect social benefits and social costs. Some are fixed by administrative fiat. Others are free, but influenced by restrictive practices or monopolies. Others again are influenced by quantitative controls. The shadow price is the price which would prevail if prices were equilibrium prices. . . . .”

The fixation of shadow price for irrigation water in illustrated in Fig. 14.1. The supply and demand for irrigation water is taken on the horizontal axis and price in the accounting period is taken on the vertical axis. In the initial accounting period, OQ_1 quantity of water is needed by the farmers of the area. But the government is supplying only OQ_2 quantity of water from the irrigation project at OP_1 price. In the next accounting period, the government may set the price equal to marginal cost or charge the price of irrigation water too low as part of its strategy of regional development. After the low price OP_2 is charged by the government, the demand for irrigation water will exceed its supply. In such a case the government may adopt the policy of rationing of water. It may ask each farmer to limit their land-area for irrigating. In the next accounting period, the government uses OP_s as the shadow price which is the equilibrium price when OQ_2 of irrigation water is supplied and demanded.

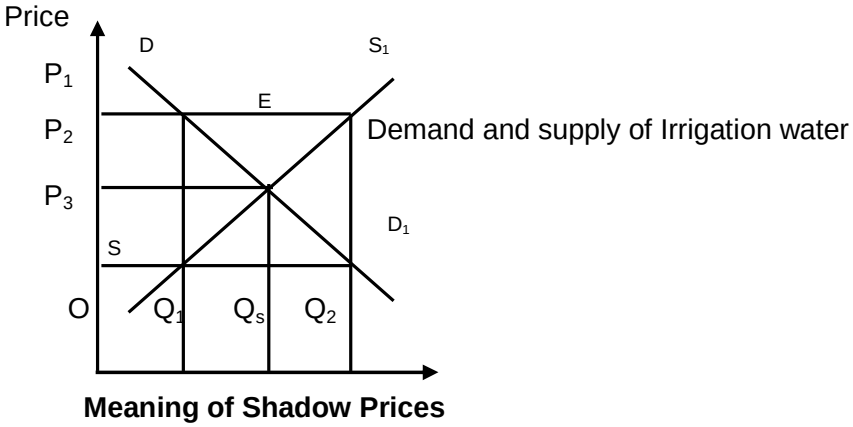


Fig 14.1

Shadow prices reflect intrinsic or true values for factors or products.

J. Tinbergen defined them for the first time in 1954 in these words; “Shadow Prices are prices indicating the intrinsic or true value of a factor or product in the sense of equilibrium prices. These prices may be different for different time periods as well as geographically separate areas and various occupations (in the case of labour). They may deviate from market prices.” In 1958, Tinbergen defined shadow prices as those that correspond to intrinsic values and “that would prevail if : (*i*) the investment pattern under discussion were actually carried out and (*ii*) equilibrium existed on the markets just mentioned (i.e. labour, capital, foreign

exchange markets)" This definition is clear and exhaustive, but is silent about the behaviour of accounting prices over time.

A UN report defines shadow prices in terms of the opportunity cost of the factor or product. The shadow price of an output such as capital labour or foreign exchange represents its. "opportunity cost" or the loss to the economy that would result from a reduction in its supply by one unit. A factor that is lower than its market price. A, Quayyum, however, defines shadow prices in terms of the marginal productivity of factors, In his words, accounting prices are the values of the marginal productivity of factors when a selection of techniques has been made which produces the maximum possible volume of output, given the availability of resources, the pattern of final demand and the technological possibilities of production. It would require the calculation of the marginal productivity of factors by the government manipulating the system of subsidy and taxation in such a way that the supply prices of factors to the producers equal the value of their marginal productivity. E. J. Mishan gives the simplest definition in these words, "A shadow or accounting price is the price the economist attributes to a good or factor on the argument that it is existing price if any.

Thus there is hardly any unanimity over defining accounting prices and the different concepts present so many difficulties in their calculation that the concept becomes ambiguous.

Determination of Shadow Prices

The determination of shadow prices can be done through the general equilibrium or the partial equilibrium analysis.

1. General Equilibrium Method: In the general equilibrium method, equilibrium is established among all factors by taking their final demand and supply. For this, the data relating to the different sectors of the economy are collected and the accounting price of every factor is expressed in algebraic symbols and added up for the whole economy. A number of simultaneous equations are required to be solved for which correct and adequate data are not available. Since the shadow price is the price which would prevail if prices were equilibrium prices, the existence of full equilibrium is essential for the establishment of an equilibrium price for every factor production. The evaluation of shadow prices can be done in two ways; one by trial and error and two, by a systematic method. If the method of trial and error is adopted the evaluation of accounting

prices may be based on arbitrary values for products, factors and foreign exchange, calculating the priority figures for all investment projects and finding out whether equilibrium has been attained in the markets or not. If this method fails, a systematic method is required which consists, "in introducing algebraic symbols for each of accounting prices, trying to express supplementary demand for the factors and supply of the products concerned, and then equating total demand to total supply." But the existence of full equilibrium situation for the entire economy is not realistic because in order to find out the equilibrium prices, the knowledge of total demand and supply curves and the production and consumption functions underlying them is essential. These functions depend upon the varied social institutions. So the determination of accounting or shadow prices through the general equilibrium method is a difficult affair.

2. Partial Equilibrium Method : According to the partial equilibrium method, the shadow prices of capital, labour and foreign exchange are determined separately. This is therefore, a simple and correct method of determining shadow prices. We discuss below the determination of the shadow or accounting prices of capital, labour and foreign exchange.

a) Determination of the Accounting Price of Capital. To determine the shadow price of capital or the accounting rate of interest, it is essential to study factors which influence the demand and supply of capital. But in underdeveloped countries, the knowledge of these factors is imperfect, Moreover, there is little relationship between the supply of capital and the interest rates prevalent in such economies. There is wide disparity between the prevailing interest rates in different regions and areas. As such, the accounting or shadow rate of interest can be estimated on the basis of the interest rates paid by private investors. But while so doing, it is essential to make allowance or allow discount on different types of loans for differences in risks involved. In the UN Manual of Economic Development Projects, the following formula has been used for calculating the shadow price of capital. Social return to capital used in the sector.

Value of output minus cost of materials,

$$= \frac{\text{depreciation and labour}}{\text{Investment}}$$

In this, the costs of materials, labour, foreign exchange and other inputs are valued at accounting prices and to calculate the return on capital invested (rate of interest) these costs are deducted from the value of output. Thus the accounting price of capital can be known for a sector. Tinbergen opines the it is better to take higher price of capital than interest rates at which limited sums can be borrowed under certain conditions in underdeveloped countries. He, therefore, suggests an interest rate of 10 per cent for underdeveloped countries on the plea that even some of the developed countries were having an interest rate of 7 to 8 per cent till recently, whereas personal loans are being made now at an interest rate of 25 to 30 per cent in the former.

Its Difficulties, But there are certain difficulties in the calculation of the shadow rate of interest in underdeveloped countries. First, to base the shadow rate of interest development programme may raise the interest rate over the long run.

Second, the calculation of the marginal product of capital as the basis of the shadow rate of interest for the whole economy is not easy when projects of higher and lower capital intensity are started, and there is considerable waste of capital in substituting capital for labour in moving things about, in the handling of materials inside the factory, in packaging in moving earth, in mining, in building and construction and their failure to develop an appropriate technology in keeping with their factor endowments.

Third, in the shadow rate of interest 'double index number ambiguity' is present which makes its use somewhat dubious. The rate of interest is both a stock and flow concept. The shadow rate of interest is thus not a single measure but is concerned with relations between stock and flow. In fact, in a developing economy there is a very large variety of stocks with different degrees of durability. Thus the calculation of the shadow $R = \frac{G}{S_p + \frac{1-p_y}{P_y} S_w}$ rate of interest becomes very complicated.

However, the appropriate formula for the calculation of the shadow rate of interest for the economy is: (see page 529) where R is the shadow rate of interest, G is the rate of growth, S_p is the savings rate of profit receivers, P_y is the share of profit in total income, and S_w is the savings rate of the wage earners.

Assuming G = 5 per cent, S_p = 25 per cent, P_y = 50 per cent, and S_w = 5 per cent, the shadow rate of interest.

$$R = \frac{5}{0.25 + \frac{1-05}{0.5} \times 0.05} = \frac{5}{0.3} = 16.6 \text{ per cent}$$

(b) Determination of the Price of Labour. The determination of the shadow price of labour is difficult problem because labourers differ in efficiency. Therefore shadow price of labour cannot be the same for both the unskilled and skilled labour and for different types of skilled labur. There has to a different shadow price for different types of labour because labour is not like other factors. In underdeveloped countries there is surplus labour in the rural areas having almost zero marginal product. But its shadow price cannot be assumed to be zero, it should be positive and provide a minimum subsistence level when such labour is employed on construction works. “But even if the marginal product of labour is less than the wage (or subsidized income), it does not or all the wages which they are paid. Thus, the payment of wages constitutes a real cost to the economy, even if there is no alternative employment for labour.” Therefore, some economists are of the view that the accounting price for labour can be fixed anywhere above the zero marginal product of labour and with the increase in the marginal product of labour its accounting price can also be raised. But, according to the UN experts, assuming no surplus of skilled labour but ample supplies of agricultural and unskilled labour the accounting prices of different kinds of skilled labour can be based on the cost of moving workers from villages to industrial areas, providing them with houses and other facilities, and training them.”

(c) Determination of the Rate of Foreign Exchange. The shadow price of foreign exchange is essential for underdeveloped countries suffering from balance of payments difficulties. An artificial equilibrium is achieved in the balance of payments by fixing a higher shadow rate of exchange than the official rate of exchange. “In an optimum development plan, the accounting price of foreign exchange through exports and to the incremental cost of saving foreign exchange through import substitution. The former may be easier to estimate in many cases because there are relatively few potential exports, at least in the near future in underdeveloped countries.” For this, weight is attached to the cost of foreign exchange in the project. If say, “the accounting price of foreign

exchange is 50 per cent higher than its market value, the net effect of a project on the balance of payments should be given a weight of .5 in addition to the effect on the national income. This is equivalent to valuing all foreign exchange costs and earnings at a price of 1.5"[9] According to Dr. Little, Israel is the only developing country in which the accounting price of foreign exchange is estimated in this way. It is not essential that every project should be weighted equally because the foreign exchange component of each project is different.

As an alternative, it is suggested that the demand for and the supply of foreign exchange should be computed which should then determine the rate where the two equilibrate. But this procedure is not practicable in developing economies where the foreign exchange requirements differ sector-wise and project-wise. Further, a single shadow rate of exchange cannot be applied over time. It will have to be reviewed and raised at different points of time on the basis of the 'black' and 'free' rates of exchange, because the market for some important international currencies like the dollar and the sterling is imperfect. Professor Tinbergen suggests the calculation of the shadow rate of foreign exchange based on the 'black' and 'free' rates of exchange. If the official (free) exchange rate is Rs. 7.5 a dollar and the black rate is Rs. 15 a dollar and the conversion of the official rate is four times as great as that at the black rate, then the shadow rate would be the weighted average.

$$\frac{4\times 7.5+1\times 15}{5}=9$$

Rs. 9 per dollar would then be the most serviceable shadow rate instead of the official rate of Rs. 7.5.

Difficulties of Shadow Prices

Apart from certain difficulties already mentioned in the determination of shadow prices for capital, labour and foreign exchange, there are other difficulties of a general nature.

First, the calculation of shadow prices pre-supposes the availability of data, but adequate data are not easily available in less developed countries.

Second, in order to establish the intrinsic value of a factor or product requires the existence of full equilibrium in all markets. In an underdeveloped economy which is characterized by a number of

fundamental disequilibria, the knowledge of full equilibrium conditions for the entire economy is not possible. Thus the notion of shadow prices corresponding to intrinsic values is arbitrary.

Third, the assumption of full employment equilibrium in the whole economy makes the concept of shadow prices indeterminate. It requires a complete knowledge of demand and supply functions which are based on the existing social institutions, in the economy. "Land prices will depend upon the system of land tenure and on agricultural policy generally. The supply price of labour will depend upon the motivation and education of potential workers, on acceptability of employing women and on the attitudes to different kinds of work. The price of capital will depend upon degrees of monopoly in the economy."[11] Thus shadow prices are difficult to ascertain under the existing institutional framework of underdeveloped countries.

Fourth, another difficulty arises with regard to the time dimension. The concept of shadow prices is static and timeless, for shadow prices is static and timeless, for shadow prices are used to overcome the difficulties involved in project evaluation and programming when factor prices change over time. All inputs and outputs are valued at fixed shadow prices in such cases. This is not/realistic because, as Tinbergen himself pointed out, "the realization of investment pattern will itself influence these intrinsic values, but only after some time, since investment processes are essentially time-consuming."[12] If accordingly, labour, capital, foreign exchange and other products are assigned different shadow prices, they may give contradictory results in accordance with the time-period considered. Hence the concept of shadow prices remains essentially a static one.

Fifth, if shadow prices are calculated in terms, of Quayyum's definition, they require the calculation of marginal productivity of factors by the government and the manipulation of the system of subsidy and taxation in such a way as to equate the supply prices of factors to the value of their marginal productivity. But it is not easy to calculate the marginal productivity of factors (especially of capital and labour), and producers' response to changes in taxes and subsidies and taxation in such a way as to equate the supply prices of factors to the value of their marginal productivity. But is is not easy to calculate the marginal productivity of factors (especially of capital and labour), and producers' response to changes in taxes

and subsidies. Thus the shadow prices based on marginal productivity are also indeterminate.

Sixth, another practical difficulty that arises is that of using shadow prices in the economy where the private enterprises buy inputs and sell outputs at market prices. The government, on the other hand, uses shadow prices for the evaluation of its projects but buys all inputs at market prices and sells outputs at competitive market prices where she does not possess a monopoly.

Seventh, the determination of shadow prices is difficult in the case of projects with high capital-intensity and which are substitutes and complementary to each other. Suppose there are two projects in which the input of one is the output of one is the output of the other, and vice-versa. In such cases the determination of the accounting prices of the inputs of labour, capital and foreign exchange will not only be difficult but impossible because the decision about the construction plans of the two projects cannot be the same.

Eighth, often prices of such services as electricity and transport are regulated by the government, and are not fixed on the basis of social opportunity cost. For example, the prices of electricity used in fesasibility studies of industrial projects in many developing countries are derived as an average charge of a two-part tariff. Since a two-part tariff charges a consumer according to his individual demand, rather than the system peak demand, it will fail to reflect the long-run incremental cost (hence the social opportunity cost of electricity)."

Conclusion. Professor Myrdal in his, "Asian Dranma" regards shadow prices as "utterly unreal and other worldly in concept, particularly in underdeveloped countries like those in South Asia.. . . as it is recognized that they cannot be definitely ascertained…..*This* abstract and metaphysical concept cannot help to solve the theoretical and practical problems facing South Asian planners. It stands out as a typical example of the pseudo-knowledge, given a learned and occasionally mathematical form, that unfortunately has formed a major part of the contribution of Western economies to the important tasks of ascertaining the facts in underdeveloped countries and creating a framework for policies designed to engender and direct development."

Uses of Shadow Prices

Despite these difficulties shadow prices possess the following uses:

1. **In Project Evaluation.** The use of market mechanism for the determination of product and factor prices is not a perfect and correct method because it leads to a wrong allocation of resiurces. In underdeveloped countries, the market mechanism operates imperfectly due to a number of economic and social obstacles. Therefore, it is not possible to have project evaluation on this basis. Even otherwise, the rise in prices being inevitable during the process of planning, it is therefore not possible to correctly assess the of planning, it is therefore not possible to correctly assess the costs and benefits of a project. “Accounting prices are a convenient tool for evaluating investment projects in different sectors of the economy….A factor that is expected to be in short supply should have an accounting price higher than its market price, while one that is surplus should have a valuation that is lower than its market price.”

Thus shadow prices are used for evaluating the effects of a project on the national income which are also termed as external effects. This is often done on the basis of the profitability criterion or cost-benefit analysis where both costs and benefits are calculated at accounting prices. Sometimes even rough estimates of shadow prices also help. “They may, for example, show how sensitive the priority figures of a number of projects are to changes in such accounting prices. They may enable us to classify products in groups that are attractive under certain specified emergency circumstances… It may nevertheless have a rough guide for emergency cases.”

2. **In Public Policy .** The success of development planning depends upon the correct operation of public policy. Shadow prices are intrinsic prices on whose correct determination depends the success of a plan to a considerable extent. In a mixed economy, the public sector cannot be developed unless the prices of labour, capital, foreign exchange and other inputs are determined in accordance with shadow prices. Though very often shadow prices are rough estimates, yet the state should try to bring market prices close to the shadow prices of products and factors through fiscal, monetary and other measures for the successful implementation of the plans.

3. **In Programming.** Shadow prices have the greatest importance in programming. Programming is the working of the economy in a rational, consistent and coordinated manner. The main aim is to maximize the national income through time. For this, it makes an optimum use of the amount and composition of investment and adopts public investment, fiscal, monetary and commercial policies. In the context of underdeveloped countries, programming implies the optimum use of investment whereby there is no difficulty in the production proves. But in reality, the difficulties of supplies of factors, rise in market prices and the scarcity of foreign exchange is apparent in such economies. All such difficulties are overcome with the help of shadow prices, and fiscal, monetary and other policies help in bringing the market prices of factors, products and foreign exchange in conformity with their shadow prices and thus make programming a success.

In the case of linear programming for a wide class of problems, the variables in the dual solution can be interpreted as shadow prices or accounting prices, in as much as they are the 'correct' input prices being consistent with the maximum value of the primal objective function….. When these shadow prices are imputed to the given inputs, the value of the dual objective function is minimized. It can then be interpreted as the minimum input cost, subject to the constraints, and to the requirement that no profits. be made. These shadow prices are, therefore, no different from the factor prices that would emerge in perfectly competitive equilibrium in which product prices are exogenously determined."

Thus the technique of shadow prices serves as a useful computational shorthand in devising a relatively efficient system of *project* evaluation and helps in achieving success in programming and public policy.

6.2 DUAL GAP MODEL

Itoll, Chenery and other writers put forth the 'two-gap' approach. The idea is that 'savings gap' and 'Foreign-exchange gap' are two separate and independent constraints on the attainment of a target rate of growth in LDCs. Chenery advocated foreign aid as a way of filling these two gaps in order to achieve the target growth rate of the economy.

To calculate the size of gaps, a target growth rate of the economy is postulated along with a given capital output ratio. A

saving gap arises when the domestic savings rate is less than the investment required to achieve the target For e.g. if the growth target of national real income is 6% per annum, and the COR is 3:1, then the economy must save 18% of its NI to achieve this growth target. If only 12% os saving. Can be mobilized domestically, the saving gap is 6% of NI. The economy can achieve the target growth rate by filling this saving gap with foreign aid. Similarly, a fixed relationship is postulated between targeted foreign exchange requirements and net export earnings. If net export earning fall short of foreign exchange requirements, a foreign exchange gap appears which can be filled up by foreign aid.

The two gaps are explained in terms of the NI accounting identities.

$$E\text{-}Y = I - S + M - X + F$$

Where E= National expenditure, Y = National output, I = Investment S = Saving, M = Imports, X = Exports and F = Net capital inflow.

I-s is domestic saving gap and M-X is the foreign exchange gap. Like the basic NI accounting identities, the two gaps are always equal ex-post in any given accounting period.

But they may differ in ex-ante because in the long run those who make decisions about saving, Investment, exports and imports are different people. So during planning process, the plans of savers, investors, importers and exporters are likely to be different. Ex-ante (or Planned) investment is related to the target growth rate of the economy. If the target growth rate is high, Investment will also be high. But domestic savings depend upon the level and distribution of income in the society. Ex-ante imports include imported inputs needed for development. They are also affected by the size of NI and the distribution of income among the people (public) and the different sectors of the economy. Exports are exogenously determined by world prices and by quantities that change with weather or natural conditions. As these elements are assumed to be independent of each other, the saving gap and foreign exchange gap are unequal in size in the ex-ante sense. It is also assumed that savings and foreign exchange cannot be substituted for each other Further, the country cannot transform its Potential savings into exports.

The following diagram explains the two ex-ante gaps and their relation to different target growth rates of income. The ex-ante savings gap is represented by (I-S) curve and the ex-ante foreign exchange gab by (M-X) curve. Both are in equilibrium at point E and the target growth rate is OG and it is achieved with of inflow of net foreign aid. If the target growth rate is OG, then the foreign exchange gap is lower than the saving gap is lower than the savings gap by ab. This growth rate will not be achieved because the inflow of foreign capital is not sufficient to fill the larger foreign exchange gap of. If the target growth rate is OG2, then the sq. gap is larger than the forex gap by cd. Again growth will not be achieved because the inflow of foreign capital is inadequate to fill the savings. Gap. It requires a larger inflow of foreign capital to meet the larger saving gap GFz.

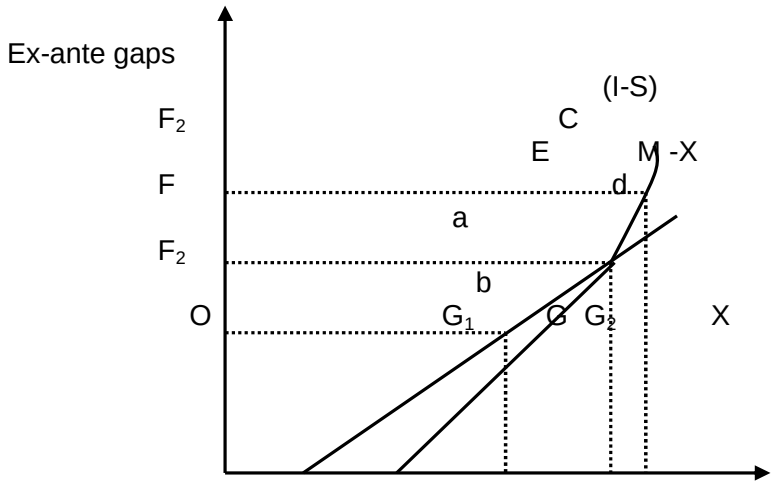


Fig 14.2

To overcome the structural rigidities, Chenery suggests restrictions on the pattern of consumption, the distribution of income, the level and growth of employment and changes in the exchange rate.

Assumptions :

1) Increase in domestic savings cannot be utilised as a substitute for the required foreign exchange to maintain investment for the target growth rate.

2) The country cannot follow export promotion and import substitution policies.

3) There are structural rigidities and non-substitutability between different types of goods.

4) If foreign exchange gap is larger than say. Gap, under given rigidities, then the domestic saving potential can be used neither to produce capital goods nor exports.

Criticism : It is based on unrealistic association.

1) LDCs with dominant savings constraint do not need foreign aid. A dominant savings, gap, implies that the country is functioning as a full employment level.

2) This approach does not consider the absorptive capacity of the economy, and ability to formulate and execute productive projects with aid.

3) It is a highly aggregative approach which treats all types of capital investments as homogeneous. It is unrealistic because the capital requirements of LDCs are meant for specific needs and they receive foreign and for different sectors, industries and projects.

4) The two gaps are mechanistic. They assume stable values of parameters in future. But this is unrealistic because the capital output ratio and marginal savings rate change overtime, depending on domestic conditions and policies.

14.3 GROWTH PROGRAMMING: RMSM

The Revised Minimum Standard Model

The Revised Minimum Standard Model was originally created in 1973 as a means of ensuring a consistent approach to World Bank projections and thus facilitate inter-country comparisons. These objectives are met through the provision of a standardized list of variables and a minimum set of economic relationship.

The RMSM is thinking and glancing tool. Its primary purpose, like the original two-gap models, is to show the user what levels of investment, imports, and external borrowing will be required for a targeted real GDP growth rate. The planner’s choice of a real growth rate will determine what level of investment will be necessary. If the RMSM is run as a trade-gap model, then the level of imports needed to sustain this rate of growth is driven by GDP, investment, and consumption which is, in turn, residual. If the

TMSM is run as a two-gap model and the savings constraint is binding, then import rather than consumption are residual. Real export growth is exogenous in both cases. The difference between exports and imports determines the need for external borrowing. This is reflective of the Bank's" needs" o r "requirements " approach and stands in contrast to the " constraints " or" availabilities" approach which determines the real rate of GDP growth given available foreign capital.

On the other hand, the RMSM cannot provide any guidance as to the sorts of policies or prices that would be needed in order to reach the indicated levels. At first glance is would seem that the model has a rather limited scope. This is not so. The usefulness of any model is determined by the questions asked of it. One can easily and quickly discover whether or not capita consumption and external financing needs. It is also easy to manipulate the models' parameters in order to find out how the economy might be restructured in order to make a targeted growth rate practical. This sort of experimentation can lead to some very useful observations about the path a country should take in the future.

The RMSM uses a two-gap accounting framework. It ensures consistency between projections of the Balance of Payments and the National Accounts via the resource gap which both accounts share in common. The accounting identities are : 4

GDP - C + I + X - M 1)

GDP - C + S 2)

I - S M - X 3)

These identities are expressed in real terms where gross domestic product (GDP) is the sum of consumption (C), investment (I) and exports (X) less imports (M). Alternatively, GDP is the sum of consumption plus saving (S). Identity 3 states that the two gaps between investment and savings and between imports and exports are the same. If the level of savings is inadequate to finance a targeted level of investment, then investment must be financed from abroad in the form of net import. This will necessitate external borrowing.

Exogenous Variables

In the RMSM, real GDP growth is exogenous and must be targeted by the user. There are two common strategies. The first is

to choose a rate which will ensure a constant or increasing GDP per capita growth rate in order to find out what sort of investment and external borrowing will be needed. The second is to choose a level of growth that results in levels of investment and borrowing that are consistent with ones' expectations of ability and availability. This latter approach is a parallel to the "availabilities" method and usually ends up as an iterative process as growth rates are adjusted to produce the expected feasible levels of borrowing and investment.

Real export growth is also set by the user. This growth rate describes export sales rather than production. The user will have to reflect all his or her assumptions about trading partner demand, market shares and reactions to changes in prices and exchange rate into this growth path.

GDPt - GDPt1 * (1 + gdp_grt)

Xt - Xt – 1 * (1 + x_gr)

There is no linkage of exports to GDP. Note that the growth of real export sales can be temporarily higher than GDP growth only if there are substantial stocks to draw down – or if the planner is willing to sacrifice consumption and/or investment growth. Investment

The RMSM investment function is a function of desired GDP growth. There are two methods of providing this linkage: a marginal propensity to invest (MPI) or an incremental capital-to-output ratio (ICOR). Equation below can accommodate both. It kt + Alt * GDPt + A2t * (GDPt – GDPt- 1) Parameter k represents autonomous investments. Parameter A1 represents the marginal propensity to invest (MPI) when parameter A2 equals zero. Parameter A2 represents an incremental capital-to-output ratio (ICOR) when parameter A equals zero.

14.4 SUMMARY

1. The technique of shadow prices serves as a useful computational shorthand in devising a relatively efficient system of *project* evaluation and helps in achieving success in programming and public policy. The determination of shadow prices can be done through the general equilibrium or the partial equilibrium analysis.

2. Itoll, Chenery and other writers put forth the ‘two-gap’ approach. The idea is that ‘savings gap’ and ‘Foreign-exchange gap’ are two separate and independent constraints on the attainment of a target rate of growth in LDCs. To overcome the structural rigidities, Chenery suggests restrictions on the pattern of consumption, the distribution of income, the level and growth of employment and changes in the exchange rate.

3. The Revised Minimum Standard Model was originally created in 1973 as a means of ensuring a consistent approach to World Bank projections and thus facilitate inter-country comparisons. Its primary purpose, is to show the user what levels of investment, imports, and external borrowing will be required for a targeted real GDP growth rate.

14.5 QUESTIONS

1. Explain the meaning and uses of Shadow prices.

2. Discuss the problem of resource allocation and shadow prices.

3. Explain the major constraints of economic growth in LDC’s.

4. Write notes on:

a) Growth programming

b) Dual gap analysis

5. Discuss the Revised Minimum Standard Model.

15

DEVELOPMENT STRATEGY, DEVELOPMENT PLANNING AND DEVELOPMENT POLICY – II

Unit Structure

15.0 Objective
15.1 The Merged Bank - Fund Model
15.2 Adjustment with Human Face
15.3 Sustainable Development
15.4 Quality of Growth
15.5 Summary
15.6 Questions

15.0 OBJECTIVES

- To study the Merged Bank Fund Model
- To study the adjustment with human face , redistribution with growth and quality of growth
- To study the concept of sustainable development

15.1 THE MERGED BANK - FUND MODEL

The 1980s witnessed a significant increase in the importance and influence of the World Bank and IMF on macroeconomic policy formulation and implementation in the developing countries. Initially the policy stance of these institutions was very restricted with the IMF mandate being limited to financing of temporary BOP disequilibria in attempt to stabilize the economy. IMF argued that, when BOP problems were more of a permanent nature and needed to be corrected by appropriate policy measures, such measures are beyond the preview of IMF. It is so because they said that i.e. would involve a gestation period which is beyond

the permissible time framework for IMF support. It was held that they were within the competence of the IMF's sister institution, the World Bank.

Such a dividing line between IMF and WB implied that the IMF received guidance from the WB on development issues and, in turn, the WB followed the IMF advice on domestic macroeconomic and exchanger rate policies, adjustment of temporary BOP disequilibria, and stabilization programme. This distinction became blurred during the turbulent years after the breakdown of the Bretton wood par value system.

The fund programmes, they argued, are in some sense inimical to growth. The growth aspects of adjustment programmes are started receiving grater attention. Growth is accepted as an indispensable component of any adjustment strategy aimed at macroeconomic stabilization and growth oriented adjustment became important.

The Fund in collaboration with bank supports for low-income countries financial programmes which are formulated in the context of a long term growth oriented adjustment programme. It was supported by the special IMF facilities to help low income developing countries.

The Merged Bank - Fund Model given by Khan, Montiel And Haque (1990) is the most important source which describes that how it is possible to merge the Fund and Bank approaches within a consistent framework. Given the Funds emphasis on financial variables and the Bank's focus on the real variables, it turns out to be relatively straightforward to merge the macroeconomic approaches of the two institutions because each of the models provide the 'missing' equation of its counterpart. Their general framework revolves round three key balance equations, that is the monetary balance, the external balance and the saving - investment balance. These are

$$\Delta M = \Delta DC + \Delta R, \qquad 1$$

$$\left(Z - X\right) = \Delta F - \Delta R, \qquad 2$$

$$I = S + \left(Z - X\right) \qquad 3$$

These balance sheet constraints are then utilized to relate the approaches of the Fund and the Bank as well as subsequently merge them.

The essence of this approach can be synthesized in the following four simple steps.

The Fund Approach : The equation for monetary and external balance, is equation 1 and 2, which together constitute the Fund Approach, are initially used to solve for ΔR and ΔP , for given values of $\Delta DC, \Delta E$ and ΔY . This yields,

$$\Delta R = f\left(\Delta DC, \Delta E, \Delta y\right), \qquad 4$$

$$\Delta P = g\left(\Delta DC, \Delta E, \Delta y\right), \qquad 5$$

It is seen that

$$\frac{\delta \Delta R}{\delta \Delta DC} < 0, \text{ and } \frac{\delta \Delta R}{\delta \Delta E} > 0 \qquad 6$$

The Missing Link : Substituting equation 2 onto 3 yields :

$$I = S + \Delta F - \Delta R; \qquad 7$$

And by substituting equation 4 into 7

$$I = S + \Delta F - f\left(\Delta DC, \Delta E, \Delta y\right) \qquad 8$$

$\therefore$ given exogenously projected levels of domestic savings (S) and foreign borrowings $\left(\Delta F\right)$ and the solved value of ΔR by the Fund approach, it is possible to arrive at a given level of nominal investment (I).

The Bank Approach : It is assumed by the Bank that the change in real output. ΔD is equal to the incremental output capital ratio (K) times the level of real investment, i.e. nominal investment (I) deflated by the aggregate price level $\left(1+\Delta P\right)^2$. Therefore we have :

$$\Delta y = K\, 1/\left(1+\Delta P\right), \qquad 9$$

Which allows one to obtain expansion of real GDP based on available level or investment. This relationship can also be rewritten to provide the required level of investment consistent with a target level of output expansion as follow :

$$I = (1/K)\,\Delta y\,(1+\Delta P) \qquad 10$$

The Merger : Substituting equation 8 into 10 and ignoring the second order interaction term $(\Delta P \Delta y)$ yield the merger :

$$S + \Delta F - f(\Delta DC, \Delta E, \Delta y) = (1/K)\,\Delta y \qquad 11$$

Which, given projected levels of S and ΔF and alesireal values of ΔDC and ΔE, can be solved to yield equilibrium level of output expansion (Δy^*) and this solution, when substituted back into equation 4 and 5, yields the corresponding equilibrium levels of reverse accretion (ΔR^*) and Price increase (ΔP^*) respectively. Therefore, the resulting integration of the Fund and Bank approaches into a unified model goes a long way towards addressing what are perceived to be the Principal weakness of the two models because by linking them up, it allows for the simultaneous determination of growth, inflation and the BOP which is consistent with the projected set of exogenous and policy variables.

15.2 SUSTAINABLE DEVELOPMENT

The world's population is projected to increase to 8 billion by 2031 and to 9 billion by 2051 from the current level of 6.1 billion. Virtually the total population growth will be in developing countries and the bulk of it in urban areas. In these countries about 2.5 to 3 billion people subsist on less than $2 a day. Most of these people lack productive work and have been denied dignified existence. Environmental degradation has also added to their plight. The core challenge for future development is to ensure productive work and better quality of life to all these people. This will require not only substantial economic growth in these countries but also reduction in economic inequalities and environmental protection.

The challenge is surely daunting. But if recent development record is of any help, then it is clear that despite some negative social and environmental patterns economic growth has been accompanied by considerable improvement in human well being. Average per capita income (population weighted in 1995 dollars) in developing countries rose from $989 in 1980 to $1,480 in 2004, infant mortality declined from 107 per 1000 live births to 58 and adult illiteracy, from 47 to 19 per cent over the same period.

During the 1950s and 1960s, it was widely apprehended that the most populous developing countries with their growing population, particularly China. India and Indonesia were fast advancing towards their doom. But the green revolution in agriculture in these countries saved them from disaster. This was definitely an impressive performance as millions of lives were saved from famines and starvation. However, the Club of Rome and many other groups discarding complacency asserted that the Earth was fast running out of key natural resources. So far crisis has been arrested because technology allowed sustainable of new resources for existing ones and thus economic growth has persisted unhampered. But accompanying these gains were same negative patterns which must not be repeated in further if development is to be sustained.

THE CORE DEVELOPMENT CHALLENGES

Widespread poverty, widening inequality and devastating conflicts are serious challenges to future development. Economic growth in the past two decades has led to a significant decline in poverty (that is, living on less than $ 1 per day). The absolute number of poor people declined between 1980 and 1998 by about 200 million. Despite substantial decline in poverty South Asia and East Asia still account for around two-thirds of the world's very poor people; and sub-Saharan Africa for one-quarter. Development strategies in future must do better to eliminate abject poverty, otherwise consequences of poverty will arrest the process of development itself.

"The average income in the richest 20 countries is now 37 times that in the poorest 20. This ratio has doubled in the past 40 years, mainly because of lack of growth in the poorest countries. Similar increases in inequality are found with many (but not all) countries." This trend clearly suggests that the gains of economic growth in the past have been appropriated by the already well-off people and it seems that the benefits have not trickled down along the expected lines.

In the 1990s, more than half of the poorest countries were involved in civil conflicts. "These conflicts have very high costs, destroying past development gains and leaving a legacy of damaged assets and mistrust that impedes future gains. "

The mindless economic growth in recent decades has also put great pressure on local and global environmental resources. Air Pollution, water contamination, soil degradation, deforestation, declining fisheries and biodiversity destruction are the direct consequences of accelerated industrialization and automation of transport system. Now the ability of the biosphere to absorb waste and regulate climate is very much diminished.

These social and environmental patterns are not conducive to sustained growth over a long period. Past development strategies have created both social and environmental stresses and if not changed cannot sustain development any more. Now the goal of improving human well being world wide requires that development process "does better". It must eliminate poverty, reduce income inequality and integrate environmental concerns in pursuit of sustained improvement in human well-being.

THE CONCEPT OF SUSTAINABLE DEVELOPMENT

For a given preference structure, known resource base and technology, there are some socially approved utilisation rates which cannot be sustained. Awareness of the unsustainability of these rates is not enough. What is required is that the pattern of preferences, resource utilisation and the production and consumption technology must be changed so as to make development process sustainability. This raises the problem of conceptualising sustainability. Defining sustainability is not easy but several attempts have been made. The most widely accepted definition is the one provided by the Brundtland Commission (World Commission on Environment and Development 1987). The Commission defined sustainable development as "progress that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The merit of Brundtland Commission's definition is that it highlights the need to balance the interests of the present generation with those of the future generations. It however does not explain the concept of needs and its implications. Brundtland Commission's definition may imply that each generation should satisfy its needs in a manner that its well-being is no less than that of previous generations. This definition may also mean that well-being should not fall below some minimum for future generations. Alternatively, it may mean that all generations, including the present one enjoy a constant level of well-being. Not with standing this

ambiguity of Brundtland Commission's definitions, its core ethic of intergenerational equity has found many takers. For instance, J. Pezzey in his definition of sustainable development emphasises the current generation's moral obiligation to ensure that future generations have as good a quality of life as the present generation currently has.

There are three pillars of sustainability : economic, environmental and social. So far economic and environmental aspects of sustainability have received the required attention. The thinking about social sustainability is not yet as advanced as for the other two pillars. The need to conserve natural resources has always been recognised for sustainable development. The Brundtland Report states, "If needs are to be met on a sustainable basis, the Earth's natural resource base must be conserved and enhanced." It is some what indirectly suggested in the Report of the International Union for the Conservation of Nature that natural resources should not be allowed to deplete if development is to be sustainable to ensure intergenerational equity. The Report refers to maintaining "essentail ecological processes and life support systems," "preserving genetic diversity" and ensuring" sustainable utilisation of species and ecosystems" as necessary conditions for sustainable development.

Economic aspects of sustainability are generally highlighted in the context of ensuring at least a constant flow of consumption for maintaining equity in intergenerational well-being. But what is to be done to achieve this objective? Economists argue that a country's ability to sustain flow of consumption depends largely on change in its capital stock or wealth. According to World Development Report 2003. "Intergenerational well-being will rise only if wealth (measured in shadow prices and excluding capital gains) increases over time – that is, only if a country's adjusted net savings are positive".?

Ideas about social sustainability are not as yet fairly developed. Societies have transformed in the past and will continue to change over time. In the process of transformation social stresses and often social conflicts develop which lead to not only destruction of existing assets but hamper accumulation of new assets. This continuous activity disrupts maintenance of equity in intergenerational well-being.

An important issue with regard to equity in intergenerational well-being is substitutability of assets. Some natural assets, or more precisely some of the functions performed by these assets, such as global life support cannot be substituted by others. Thus sustainability of development and intergenerational well being becomes suspect. So far substitutability among assets has been high for most inputs used in production. Technology may continue to increase potential substitutability among assets over time. But it has now become increasingly clear that for many essential environmental services there are no alternatives and potential technological changes are not necessarily expected to provide substitutes for depleting natural assets, such as forests and clean water. Ensuring that the well being of the posterity does not decline requires maintaining sufficient level of certain natural assets for the future, particularly when these assets are non-renewable. Of course, as people's preferences and technologies change, the mix of assets that would be needed to sustain improvement in human well-being is likely to change. With these developments taking place, the concept of sustainability itself may undergo some change.

Human actions on complex ecosystems have done large irreversible damage in the past. What has actually happened is that small changes accumulated and got translated into losses of whole ecosystems. This process is continuing even now and unless conscious attempts are made to reverse it, the process may continue even in future. Technological innovations have the potential to combat the damage caused by human actions. However, technological solutions cannot be taken for granted. Therefore, the wise course of action now is to proceed along growth path with caution in utilising environmental and social assets.

MEASURING SUSTAINABILITY

The world has registered significant development over the years but how far it is sustainable is difficult to say. As yet we do not have consensus among economists as to what assets are to be measured for assessing sustainability. Moreover, how to measure these assets remains one big challenge which we do not know how to meet. Since the Brundtland Commission, several attempts have been made to develop indicators of sustainability. However, the progress in developing indicators for measuring sustainability is restricted to environmental and economic sphere. Social indicators

are yet to be concretised and refined. In discussions on sustainability of development, sometimes certain social indicators such as transparency, trust, and conflict are mentioned, but these indicators are still at early stages of development. We shall therefore restrict out discussion to environmental and economic indicators only.

The main approaches to developing indicators of environmental sustainability are the followings : (Source: World Development Report 2003, Box 2.2):

- **Extended National Accounts**

Green Accounts System of Environmental and Economic Accounts. United Nations, A framework for environmental accounting.

Adjusted Net Savings. World Bank, Change in total wealth accounting for resource depletion and environmental damage.

Genuine Progress Indicator, Redefining Progress and Index of Sustainable Economic Welfare. United Kingdom and other countries. An adjusted GDP figure reflecting welfare losses from environmental and social factors.

- **Biophysical Accounts**

  Ecological Footprint, Redefining Progress. World Wildlife Fund and others. A measure of the productive land and sea area required to produced food and fibre, and in renewable form, the energy consumed by different life styles within and among countries.

- **Equally Weighted Indexes***

  Living Planet Index. World Wildlife Fund. An Assessment of the population of animal species in forests, fresh water, and marine environments.

  Environmental Sustainability Index. World economic forum. An aggregate index spanning 22 major factors that contribute to environmental sustainability.

- **Unequally Weighted Indexes***

  Environmental Pressure Indexes. Netherlands, EU. A set of aggregate indexes for specific environmental pressures such as acidification or emissions of greanhouse gases.

Well-being of Nations. Prescott-Allen. A set of indexes that capture elements of human well-being and ecosystem well-being and combines them to construct barometers of sustainability.

- **Eco-efficiency**

  Resource Flows. World Resources Institute. Total material flows underpinning economic processes.

- **Indicator Sets**

UN Commission for Sustainable Development and many countries.

Of all the indicators for measuring sustainability listed above "extended national accounts" are the most comprehensive and are thus considered to be the most appropriate to assess sustainability of development. World Development Report 2003 has mentioned three systems of extended national accounts of which green accounting and adjusted net savings have received extensive attention as they have been found useful indicators at the aggregate level. We shall briefly write about these two indicators.

Green Accounts System

Green accounts system of environmental and economic accounts has been developed by the United Nations. This system of accounts has its focus on the measurement of `a green GDP', while the traditional measure of gross domestic product (GDP) provides a partial picture of changes in welfare – capturing mainly flow of goods and services commonly transacted in markets. Environmental assets, especially those that function as `sinks' receiving waste and pollution and those supporting life are not transacted in markets and are thus not included.

Besides the United Nations some other environmental organisations have also made efforts to estimate green GDP. They include environmental services, changes in stock of natural capital and environmental damage to modify national income accounts. But there have been problems in environmental accounting on account of valuation difficulties and some conceptual issues. For example, it is still not clear whether expenditure on environment protection is final consumption or intermediate.

Lately there has been a change in the focus of environmental accounting. It is no longer on estimating green GDP. Now efforts are being directed towared constructing `Satellite accounts' that try to relate environmental data sets with national income accounts information. In principle, it is agreed that environmental damages and other costs, environmental benefits, environmental protection and natural resource assets should be presented in flow accounts and balance sheets. However, considering the difficulties in valuation, in practice the common approach has been to use information on physical qualities from environmental accounts.

Adjusted Net Savings

In developing economies, growth is commonly seen as a function of capital formation and ability of a country to make investments depends on domestic savings and net inflow of foreign capital. However, now it has become abundantly clear that inflow of foreign capital being uncertain cannot be relied upon for long-term development. No doubt domestic savings remain important determinant of economic development but they by themselves cannot sustain economic development. In recent attempts to identify indicators of sustainability the focus is on adjusted net savings which is computed by making adjustments in wealth defined as a comprehensive or complete set of assets.

From the discussion above, it is clear that adjusted net savings is a better indicator of sustainability than traditional savings and investment measures. However, measure of adjusted net savings still requires refinement. In practice also, it needs to take care of certain specific issues. First, is its existing form the measure of adjusted net savings does not take note of population growth. If a country's population grows faster than its adjusted net savings, it cannot hope to sustain its development. For sustainability of development increase in adjusted net savings is to exceed the population growth rate. A lower rate of increase in adjusted net savings as compared to the population growth rate implies that the country is running down its assets on per capita basis. Such a country treads an unsustainable development path leading to eventual decline in the well-being of the people. Second, if production processes in a country are subject to diminishing returns to scale, a positive per capital adjusted net savings may fail to sustain development for long. In such cases, an adjustment to net

per capita savings is to be made if it is to be used to correctly assess the sustainability of development.

The adjusted net savings is a useful aggregate indicator. Sharing traits of national accounts and monetary based indicators, it uses an integrating framework within which weighting and aggregating of disparate elements of the environment and economy is possible. An important merit of this indicator is that it allows for comparisons across economies – by income or by region. It may be noted that in all groups of countries adjusted net savings are substantially lower than gross domestic savings which implies that in each group of countries sustainability of development is far less than that is suggested by traditional indicator of gross domestic savings. Interestingly, in Middle East and North Africa, energy depletion is so much that adjusted net savings are negative which means that countries in this region are de-capitalising. However, from the negative figure of adjusted net savings it should not be inferred that development in this region cannot be sustained for long. In fact, the proven reserves of energy are so vast in this region that despite rapid energy depletion and negative adjusted net savings the sustainability of development is not to be doubted.

Range Of Assets And Well-Being Of The People

Well-being of the people in a society at a point of time depends on the level and quality of its assets. How will this society grow and whether its development will be sustainable will also be determined to a great extent on the range of assets and how these are deployed by the society. Broadly these assets are as follows :

1. **Natural assets** both renewable and non-renewable. These assets either provide direct utility (such as air) or enter as inputs into production (such as forest products, mineral ores etc.) . They also perform sink functions (air, water and soil) to accommodate waste and pollution generated by human activities. In fact, nature performs the most useful life-support services sustaining human well-being. So far, despite all the technological advancements, man has not been able to fully replace these services by assets that he has created.

2. **Human-made assets** both physical and financial assets. Physical assets include human-made physical products, particularly those used in production, such as plant, machinery, equipment, buildings and physical networks.

3. **Human assets** include both innate capabilities of humans and effects of education and health.

4. **Knowledge assets** refer to codified knowledge which is easily transferable across space and time. This is to be distinguished from tacit knowledge which entails experience and learned judgment of individuals. Tacit knowledge cannot be easily transferred until codified.

5. **Social assets** include interpersonal trust and shared values which facilitate cooperation among individuals as well as groups.

Environmental assets contribute directly as well as indirectly to human well-being. Lately interest in these assets has been revived with the realisation that they are of critical importance for the sustainability of development. The importance of human – made assets both physical and financial has been over-emphasise in development economics. These assets definitely contribute to economic growth in a decisive manner but they alone cannot sustain development for long. Both human assets and knowledge assets alongwith other assets contribute to large production and thereby facilitate improvement in consumption of material goods. This raises the level of well-being and also enhances the sustainability of development. Social assets enhance human well-being through their very existence but how they interact with other assets is not clearly understood. Moreover, their role in sustainability of development. Social assets enhance human well-being through their very existence but how they interact with other assets is not clearly understood. Moreover, their role is sustainability of development is not quantifiable. Figure 30.1 reproduced from World Development Report 2003 attempts to show how society's assets enhance human well-being.

Assets generally complement each other in the process of development and improving human well-being. When assets complement each other in the production process, productivity of each type of assets usually rises which in the long run increases the sustainability of development. So far interacting role of assets other than social capital has received all the attention in economic literature. Only lately role of social capital in the productivity of other assets – environmental, physical and human capital is being examined. Now from these studies it has become clear that social capital can improve the management and productivity of

environmental assets and physical capital. It can also enhance human capital accumulation.

Most assets are not only subject to diminishing marginal returns but are also substitutable only within certain limits. It has been observed that when the level of an asset falls below a threshold further susbtitution will jeopardise not only the productivity of other assets but also overall production.

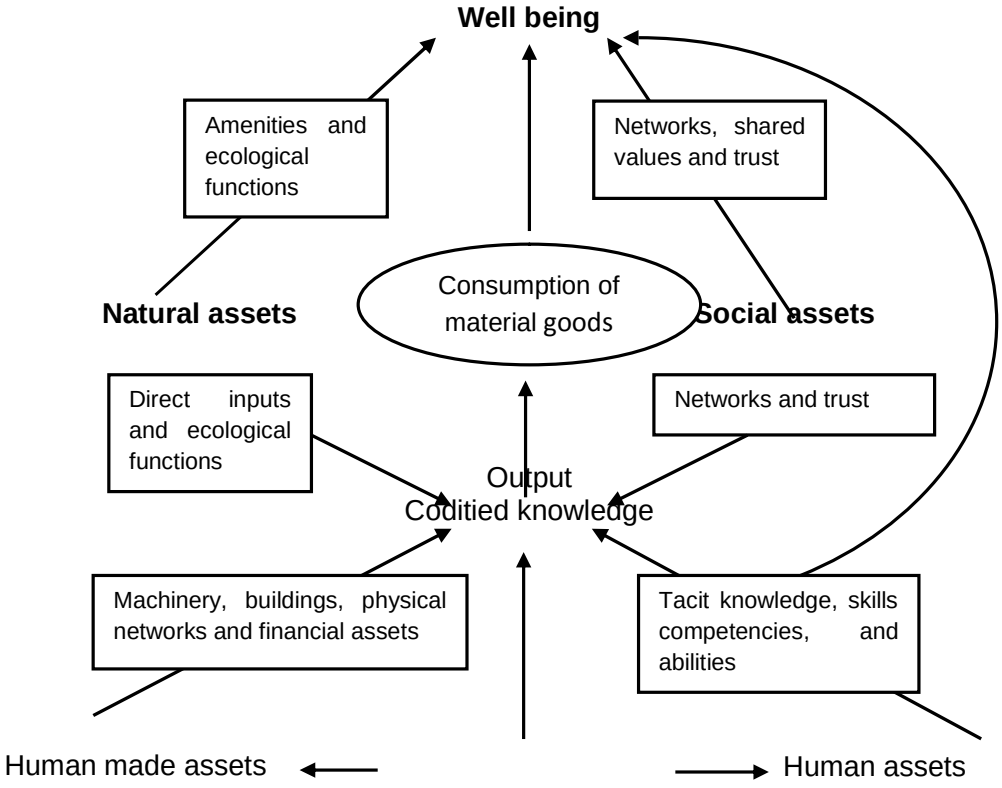


Figure 15.1 How Society's assets enhance human well being

When natural assets are abundant relative to human-made assets, substitution of the former by the latter may yield higher returns. However, this situation is no longer there is most of the countries. It has now become abundantly clear that there are limits to substitution of natural assets by human-made assets.

Development strategy so far has relied on substituting environmental assets by human-made assets. Natural resources have, however, often been misused and mismanaged. This has

been the approach of today's industrial countries. Most developing countries have also been following this approach which focuses largley on physical capital (human-made assets). The limits of focusing entirely on physical capital are now well established. A World Bank econometric study of 70 developing countries has found "that countries with low physical capital-labour rations tend to experience a rise in their growth rates with increases in the stock of physical capital. But after countries reach a certain capital intensity, the contributions of further physical capital accumulation to growth- for any given human and natural capital – decline."

From the point of view of sustainability of development, there can be serious consequences of ignoring the complementarity of environmental assets and breaching thresholds. For example, in 1998 floods in the Yangtze Valley of China were some of the most severe in its history. Indeed, rainfall was about 38 per cent more than the normal. But that does not explain the severity of floods. The floods were essentially caused by soil erosion due to logging of the river's watershed. These floods had very high costs in terms of human lives and in the lost production. Similarly, although expansion of irrigation facilities in the Aral Sea basin of Uzbekistan has generated millions of jobs and output worth billions of US dollars yet the agricultural production has not been sustained and there are serious adverse effects on the health of the people in areas immediately surrounding the sea. In some cases, there are no substitutes for an environmental asset. In such cases, if thresholds are breached, the damage may be irreversible. An example of this is breach of ozone level.

World Development Report 2003 contends. "Thresholds can apply to all assets … the long-term neglect of any set of assets – human, social or environmental – can at some point sharply reduce the productivity of other assets, whether for commodities, sectors, regions or nations. Therefore, while countries may be able to grow for a period based on a strategy of accumulation of physical capital, the prolonged neglect of other assets is likely to endanger the durability and sustainability of the growth process."

A System Of Indicators To Judge Sustainability Of Development

As stated above, the green GDP and the adjusted net savings are headline indicators. They are particularly useful at the

aggregate level. But in one respect, the green GDP and the adjusted net savings indicators are different from GDP that is used to measure economic growth. While GDP is affected by economy-wide prices, such as exchange rates and interest rates which are usually affected by economy-wide policies, there are no policy-relevant indexes in respect of environmental status. For policy purposes, environment related aggregate indexes are to be disaggregated. For instance, consumption of fixed capital, energy depletion, mineral depletion, net forest depletion, carbon dioxide damage and education expenditure are the indicators that may help in identifying the source of problem and once the source of problem is known, policy prescriptions become easier. Headline indicators are useful to assess the state of environment but unless we have disaggregated indexes, we cannot judge the sustainability of development. Indicators are most useful when they address particular problems. However, not many attempts have been made to develop such indicators and therefore as yet it is not easy to say firmly what determines the sustainability of development.

Trade-Offs and Sustainable Development

Sustainable development leads to improvement in human well-being overtime while economic growth focuses primarily an output growth. In the post industrial revolution period and lately since the World War II overriding priority accorded to economic growth has led to a strict approach of “grow now, clean up later. “The implications of this approach are disproportionately heavy costs falling on today’s poor and imparied sustainability of development. So to ensure that the well-being of today’s poor and or future generations is not compromised, the society has to be careful about the pace and pattern of growth.

It is now generally agreed that over the longer period, economic development is unlikely to be sustained unless adequate attention is paid to environmental assets. But over the short period, developmental activity may be carried out ignoring environmental interests as the latter can be taken care of later without jeopardising the sustainability of development. However, scarcity of resources often makes it necessary to determine priorities between trade-off. But economic growth should not always receive priority over environmental matters or vice versa. However, this fact must not be overlooked that environmental depletion has already taken place and if environmental matters are left unattended, the situation may become irreversible and sustainability of development may be

seriously jeopardised. Yet ranking of priorities should vary with the specific conditions of the region or nation.

Broadly three sequencing of priorities will meet the requirements of different countries :

1. Simultaneously dealing with environmental issues alongwith economic growth.
2. According a higher priority to economic growth in the short run and leaving environmental issues to be tackled late.
3. Accordingly a higher priority to maintaining or restoring the environment.

For countries that rely heavily on natural resources for their economic activity, it is necessary that environmental issues are addressed alongwith economic growth. In these countries, environmental degradation is likely to become irreversible if not tackled simultaneously with economic growth. These countries are usually poor in human and human-made assets. Therefore, they cannot hope to address environmental matters effectively later. For these countries, maintaining natural assets is a critical component of sustainable development.

When environmental degradation is reversible and is not critical for sustainable development, higher priority is placed on economic growth. Relying on the environmental Kuznets curve which suggests that environmental degradation gets worse initially and then the process gets reversed resulting in environmental improvement as a country develops, the strategy of “grow first, clean up later” is justified. However, evidence collected for different countries does not justify this view. In fact, when environmental assets show a positive association with per capita income growth the association is not structural. According to World Development Report 2003, “the better environmental outcomes reflect the impact of regulations and other policies put in place in response to public action and pressures from society as preferences for environmental quality become stronger with higher per capita incomes – not to any natural changes in the composition of production or consumption.”

Moreover, it must be appreciated that even when environmental degradation is reversible, its impact on human well-being is not. In fact, improvements in environmental conditions in future cannot compensate the generation that suffers due to

environmental degradation caused by economic growth. Therefore, the correct approach is to address environmental concerns simultaneously with economic growth.

At times, environmental degradation is irreversible or depletion of natural resources has long-lasting implications. In such cases, environmental matters must be tackled on priority bases. If economic growth receives priority in such cases even in the short run, the environmental degradation may be so much devastating that development becomes completely unsustainable.

Overuse of Certain Assets And Sustainable Development

For sustainable development, there has to be better management of assets. But there is a major problem is pursuit of this objective. Some assets, particularly environmental assets have characteristics of public goods. The use of the assets generates externalities – spill over benefits or costs to others – that are not taken into account by any individual or group. As a result, these assets are usually overused and tend to be unprovided from society's perspective. Market or policy failures are responsible for this state of affairs.

Since environmental assets are non-excludable, it is not possible to prevent their overuse. While on individual or group has little incentive to preserve or provide an environmental asset, he or the group has every incentive to free-ride efforts of those who attempt to preserve or provide these assets. Some environmental assets, such as offshore fisheries are non-excludable and rival. Consumption of these assets by one individual or group reduces supply for others. In such cases, an individual or group gains in the short-run by overusing the assets, but everyone loses in the long-run as excessive use of the asset depletes its supply so much that its renewal becomes impossible. Deforestation, emission of ozone depleting substances, land use practices that release carbon dioxide and release of industrial pollutants are results of market failures.

Policy interventions to correct market failures may also result in overuse or underprovision of an environmental asset. For example, some times governments provide subsidies to induce use of certain commodities which leads to environmental degradation. Subsidies provided to induce use of fertilisers, insecticides,

electricity and water if continued beyond their economical useful life can be detrimental environmentally. These are called perverse subsidies. Since they are beneficial to certain groups, their wtihdrawal is opposed by these groups. However, dismantling perverse subsidies may be in the larger interests of the society.

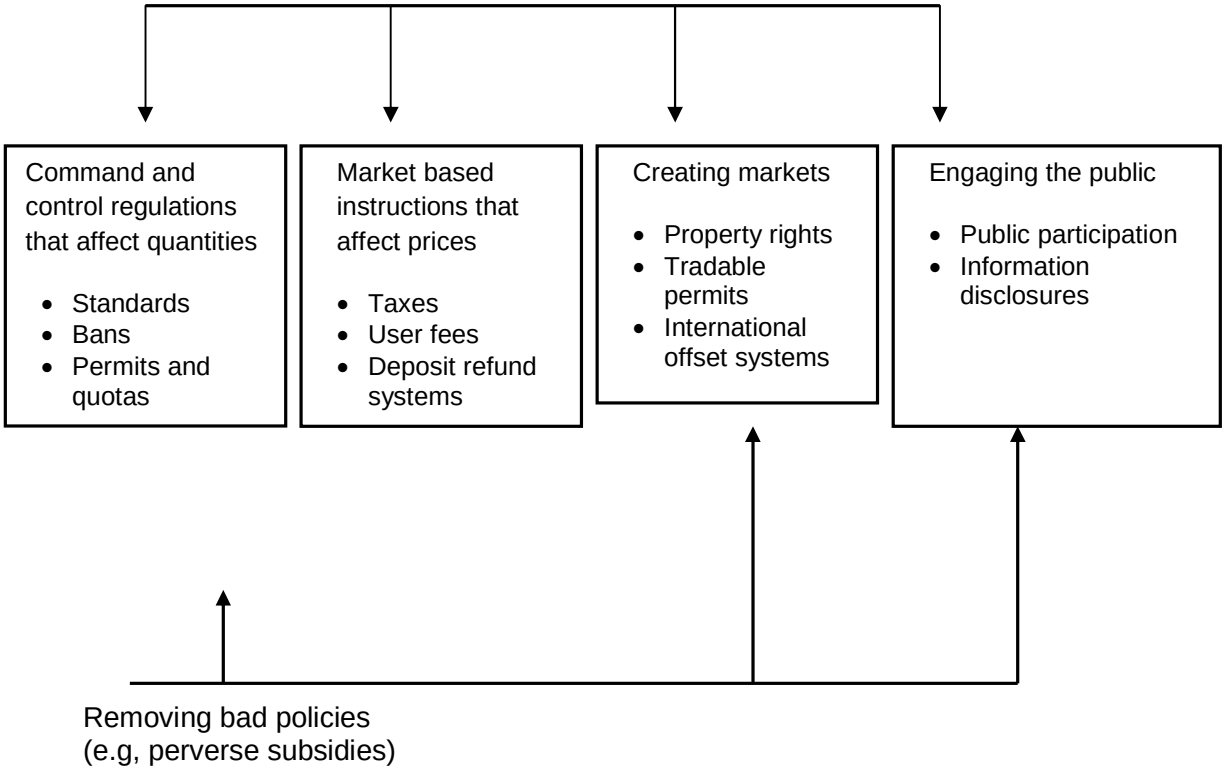
Overuse or underprovision of environmental assets resulting, from both market and policy failures jeopardises sustainability of development. Therefore, the problem of ovreuse or underprovision of these assets must be addressed at all costs. Figure 30.2 reproduced from World Development Report 2003 (Fig. 2.5) shows mechanism to address market and policy failures.

Let us first consider the problem of market failures. Whenever externalities exist there is a problem of divergence between private marginal cost of benefits and social marginal costs and benefits and policies that align the two address the problem. Usually the best way to deal with market failures is to internalise the externality. However, this may not always be possible by harnessing market forces or creating markets. Hence other formal mechanisms – command and control regulation that affect quantities – have been in use. Lately governments have started engaging the public to correct market failures.

Regulatory measures also known as command and control measures include permits, licenses, quotas, prohibitions, process standards, product standards, emission standards and quality standards. These measures can more easily target a desired level or quality of an asset than any other instrument. Although these measures are considered to be less efficient and effective than market based instruments by the economists, in practice the governments have relied more on regulatory instruments than on the latter. Taxes, user fees, deposit refund systems and subsidies are market based instruments that affect prices. Known as economic instruments they are receiving greater attention due to their flexibility and efficiency. Market failure may be corrected by creating markets for property rights and tradable permits. Though these instruments are said to be cost effective from the point of view of the users of environmental assets, they have been found to be costly to administer. By publicising and sharing information with the public about environmental degradation pressure may be created on individuals as well as groups for compliance with environmental regulations.

Policy failures have not been addressed adequately to arrest environmental degradation. This is not the result of lack of understanding about the policies to be adopted. About 13 years ago World Development Report 1992 had dealt with policies for environmental improvement and sustained development. Such `win-win' policies include removing subsidies that encourage excessive use of fossil fuels, irrigation water, and pesticides and excessive logging. These policies remain valid even now. In the past, these have been implemented only partially. Interestingly, despite adverse consequences of perverse subsidies their use remains widespread across the globe.

Government helping to correct market failures



Private sector and civil society helping to correct policy failures
Fig. 15.2 : Mechanisms to address market and policy failure

15.3 ADJUSTMENT WITH HUMAN FACE REDISTRIBUTION WITH GROWTH

Until the 1960s, much of the focus of development economics was on capital accumulation and growth. However, several studies that highlighted the continuing and significant inequalities around the

world and the failure of widespread economic growth to remedy the problem, which had been ‘assumed away’ by the ‘trickle down’ theories of the 1940s and 1950s, led to widespread disillusionment with the postwar economic progress despite its impressive growth record - and, in that context, emerged a new professional interest in income distribution and its relationship with growth in the mid - 1970s.

However, unfortunately, distributional issues only had ‘one brief shining moment’ at centre stage before the second oil price shock of 1980 and the debt crisis of 1982 commanded most of the attention of the developing countries. Adjustment issues began to dominate and the balance of payments (BOP) became the determining factor in policy. Countries were forced to focus not only on getting their macroeconomics right, via appropriate monetary, fiscal, and exchange rate policies, but also on an entire spectrum of related issues - including financial sector reforms, trade reforms, external debt management policies, amongst others - which eventually ‘crowded out’ distributional concerns.

Growth - of rather its absence - became the recurrent theme and this led inevitably to the role of the state in guiding the development process. However, since the 1990s, the differences in the regional performances have been wider that at any other time in the post - war era. Africa and Latin America have stagnated while Asia has moved rapidly ahead.

Several organizations belonging to the United Nations system, to which the Bretton Woods institutions, that is the World Bank and the IMF, are formally attached, have over the past decade or so voiced an increasing concern over the design and implementation of orthodox stabilization and adjustment programmes in developing countries. Prominent amongst this group of institutions is the UNICEF which, in line with its institutional mandate and concerns with the situation of the world’s children, has consistently argued that the adjustment experiences of most countries cannot be considered as unqualified successes.

Although it is readily recognized by the UNICEF that without some form of adjustment, the situation would often be far worse, nonetheless, it is held that standard adjustment policies have aggravated poverty and caused social setbacks, especially amongst the vulnerable groups. Thus, it is felt that alternative adjustment policies, which take into account such negative social

consequences and provide a basis for equitable growth, are required.

Accordingly, the UNICEF has called for ‘adjustment with a human face’, an expression originally coined by Cornia, Jolly, and Steward (1987a, b). At the heart of their proposal is the notion that if adjustment is not people - oriented, it is wrongly conceived. Therefore, the human dimension must be made an integral aspect of all adjustment policies, rather than being ignored completely or treated as yet another welfare component to be incorporated residually into the structure of the model.

Under their framework, economic policies should seek to improve the productivity and incomes of the poor directly, and essential services and subsidies should be increased rather than reduced. Furthermore, since the social sectors are central to the formation of human capital, basic health and education should not be treated as consumer goods, but rather as capital goods which need to be augmented. For unless these are provided, the further ability to produce would be affected and, consequently, the future potential for productivity growth would be seriously impaired. This perspective contrasts starkly with the widespread reductions in social sector budgets which have often been a consequence of structural adjustment programmes.

It is argued by the IMF and the World Bank, that many adjustment programmes are intended to move societies towards greater equality by reducing the prevailing urban bias, such expectations about positive distributional outcomes are neither analytically nor empirically grounded. Given this lacuna, there is, in fact, a prima facie case to infer that standard adjustment programmes could increases urban inequality, without alleviating rural poverty. This is because the dynamics of poverty and income inequality are far more complex than a simple urban - rural dichotomy seems to indicate.

The ‘trickle down’ theories of the 1940s and 1950s came under close scrutiny during this period, and the resulting empirical evidence led to widespread disillusionment with the progress made in the 1960s, despite its historically impressive growth record. Attention then switched to ‘human capital’ formation and, in the process, ‘basic human needs’ and ‘redistribution with growth’ soon acquired the status of paradigms in development economics and

subsequently became cornerstones in the World Bank development approach of the 1970s. The World Bank was in the forefront of much of the new thinking in these areas and, along with other organizations such as the International Labour Organization (ILO), fully supported the emphasis on equitable growth. In effect, the pendulum of mainstream development economics had by the early 1970s swung away from its exclusive emphasis on growth per se.

However, these broader perceptions and views did not retain their dominance in development theory and practice for very long and, by the early 1980s, distributive concerns somehow became submerged in the adjustment debate partly because the stabilization programmes of the IMF continued to focus only on the economic, and not the human, dimensions of adjustment; but mostly because, the World Bank, even after the stand it had taken during the 1970s, failed to consider a more perceptive view of the distributional consequences of development aid and, more importantly, was unable to ensure the success of projects which were being targeted towards poverty alleviation. This neglect of social issues was reinforced by the fact that the more delicate and decentralized process and sectoral details which are required during the formulation of an adjustment programme geared towards promoting equitable distribution were, by and large, overlooked in the 1980s.

Consequently, the UNICEF approach is a reminder of the distributive concerns and the development insights of the previous decades, and ‘adjustment with a human face’ therefore adds the poverty alleviation dimension to adjustment in much the same way as ‘redistribution with growth’ added the distribution dimension to growth. In such a context, ‘adjustment with a human face’ can be thought of as the ‘basic needs approach to adjustment’ and the importance of this dimension is even more significant now than during the growth experiences of the 1960s and 1970s since per capita incomes are stagnating, if not declining, in so many countries around the world.

The alternative UNICEF policy package which is geared towards the goal of a more satisfactory adjustment process comprises five key elements which can be briefly summarized as follows implicitly comparing them with a typical or orthodox IMF/World Bank - supported programme :

1. More expansionary (that is, less austere) fiscal, monetary, and wage policies which are aimed at sustaining levels of production, employment, and basic needs over the adjustment period.
2. Sectoral policies aimed at restructuring production to provide greater emphasis to income - generating and productive employment of the poorer sections of the society.
3. Restructuring of social expenditures towards low - cost basic education and primary health care, with a view to improving equity as well as efficiency in service provision.
4. Compensatory programmes that provide temporary, but additional and targeted, support for those affected by adjustment programmes, with a view to protecting basic health and nutritional standards.
5. Appropriate 'meso' policies which combine macroeconomic instruments (such as government expenditure, taxation, and credit policy) with selectivity, such that distributional concerns are taken into account.

The UNICEF approach implies that adjustment policies are not merely intended only to reduce macroeconomic imbalances but are seen as an integral part of a longer - term development strategy. As such, the approach takes account of, both the economic as well as the non-economic aspects of society, Focusing only on economic policy, to the exclusion of the 'human face', is, in the opinion of the UNICEF, a far too narrow approach, which would only endanger the future growth and development potential of the economy.

15.4 QUALITY OF GROWTH

Environmental quality is a key ingredient in the well - being of people. While some environmental changes have no bearing with human activities, most other forms of environmental degradation are directly related to economic expansion largely because most economic activities, by and large, require some form and amount of environmental inputs. This leads to the trade-off between the benefits of economic growth (as a result of depleting natural resources) and the costs of the ensuing environmental damage. However, the latter aspect, in view of the hidden costs involved, has been difficult to quantify largely because of our incomplete understanding of the complex relationship between environment damage, human activity, and economic growth.

In such a context, two polarized views have dominated the debate over environment and economic growth. The ‘anti - growth’ view that economic growth and development are essentially damaging to the environment because of the inevitable depletion of natural resources involved; and the ‘pro-growth’ view that economic growth will lead to an increase in per capita incomes which, in turn, will be more conducive for environmental protection. In between them is the ‘green growth’ hypothesis which contends that while, in the short term, growth could have an adverse impact on environmental resources, in the longer term, higher growth and per capita incomes will lead to sustainable economic development and growth. In addition, there is the ‘environmental transition’ hypothesis of Ruttan which states that growth is likely to be accompanied by environmental degradation at low income levels, but as income increases, the demand for environmental quality would also increase, thereby leading to sustainable economic development.

The anti - growth view is based on the two - way association between growth and environmental degradation : in effect, there is a limit to the renewal rate of the environment and therefore rapid growth would eventually lead to a depletion of natural resources. The consequent environmental degradation, if untreated, would impose limits on future growth. Even if contained through stricter environmental regulations, these would raise costs and, by diverting investment away from production, would reduce growth. In this context, there is no doubt, as pointed out by the 1987 Brundtland Commission Report (World Commission on Environment and Development), that economic growth, especially in the industrial countries, by emphasizing needs rather than resource limitations, had exhausted a relatively high share of global resources.

However, at an empirical level, the anti - growth view finds very limited support. If growth does cause environmental depletion or damage, then the industrial countries should have exhibited a gradually declining trend in environmental quality and their environmental state should have been far inferior to that of the developing countries. However, the fact that this has not happened does not mean to imply that unfettered growth and economic development will be beneficial to the environment because enough examples abound regarding the harmful residual effects of growth on the environment.

Regardless of such evidence, or the lack of it, the growth - environment trade - off faced by countries during the process of development is yet to be fully understood. While in the short term, such a trade - off may be observed, in the longer term, even in a world in which environmental quality does not command a market price, economic growth may not necessarily lead to environmental degradation. This is because, with increasing economic growth and per capital incomes, the negative external effects of environmental degradation can be contained by policies which ensure that a larger share of the gross national product (GNP) is committed to environmental protection activities. Moreover, it has also been observed that as economies mature, there is a gradual shift away from environmentally degrading industries towards 'cleaner' technologies and services that are less environmentally demanding. For example, during the period 1986-91, on a per capital basis, the United States is estimated to have emitted ten times the carbon dioxide than that emitted by China (see World Bank 1995). However, the same data on greenhouse gas emissions, when examined relative to GNP, suggest that as a result of greater efficiency and changing economic structures fromn manufacturing to services based industries, the emissions in the richer countries have declined with increases in their GNP.

Considering that the observed income elasticity of demand for environmental quality is quite high, the above evidence implies that consumers in richer nations would be more willing than those in the developing countries to spend (or be taxed) a larger proportion of their incomes for environmental protection. Such environmental regulations are likely to increase resources expended on research and development which, in turn, may lead to technological innovations with a positive impact on environmental quality. Moreover, increases in investment costs due to forced compliance of environmental regulations could change the composition of the aggregate capital stock that could leave the long -term growth unaffected. To sum up, environmental regulations and policies could not lead to 'green growth' but could also improve the quality and productivity of human capital and, therefore, raise the long - term growth rate.

15.5 SUMMARY

1. The Merged Bank - Fund Model given by Khan, Montiel And Haque (1990) is the most important source which describes that

how it is possible to merge the Fund and Bank approaches within a consistent framework in growth oriented adjustment programmes in LDCs.

2. The Brundtland Commission (World Commission on Environment and Development 1987) defined sustainable development as “progress that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

3. There are three pillars of sustainability : economic, environmental and social. So far economic and environmental aspects of sustainability have received the required attention. The thinking about social sustainability is not yet as advanced as for the other two pillars. The need to conserve natural resources has always been recognised for sustainable development.

4. The UNICEF has called for ‘adjustment with a human face’, an expression originally coined by Cornia, Jolly, and Steward (1987a, b). At the heart of their proposal is the notion that if adjustment is not people - oriented, it is wrongly conceived. Therefore, the human dimension must be made an integral aspect of all adjustment policies, rather than being ignored completely or treated as yet another welfare component to be incorporated residually into the structure of the model.

5. Environmental regulations and policies could not lead to ‘green growth’ but could also improve the quality and productivity of human capital and, therefore, raise the long - term growth rate.

15.6 QUESTIONS

1. Explain the Merged Bank Fund model.
2. Write notes on :
   a) Adjustment with a human face
   b) The quality of growth
   c) Sustainable development
   d) Human development

16

STRUCTURALIST APPROACHES TO ADJUSTMENT

Unit structure

16.0 Objective
16.1 Structuralist approaches to adjustment
16.2 The Three Gap Framework
16.3 Liberalisation with Stabilisation
16.4 Structural Adjustment Programmes
16.5 Summary
16.6 Questions

16.0 OBJECTIVES

1. To study the structuralist approaches to adjustment

2. To study the Three Gap Framework

3. To study the concept of liberalization with stabilization

4. To study structural adjustment programmes

16.1 STRUCTURALIST APPROACHES TO ADJUSTMENT

INTRODUCTION

Macroeconomic management consists of Stabilisation and structural adjustment programmes. With these programmes, both the IMF and World Bank deal with economic issues and focus their efforts on broadening as well as strengthening the economies of their member nations.

Stabilisation involves short term measures to restore balance of payments, while structural adjustment measures are

implemented on a longer term basis, to `restructure the economy and generate economic growth.' These policies are closely linked and usually involve devaluation of currency, cuts in public spending, elimination of subsidies, cuts in the civil service, privatization of state owned industries, opening of local economies to foreign investment and an emphasis on export promotion in order to earn foreign currency to apply to debt servicing.

Whilst Stablisation programmes are generally associated with the IMF, structural adjustment is dealt with by the World Bank. The IMF focuses primarily on BOP management, the World Bank, on the other hand, gives priority to the longer-term development of an economy.

The IMF pays an important attention to monetary and fiscal policy, exchange rate management and foreign borrowing. Thus, the IMF has played a key role in ensuring prince stability, strengthening the balance of payments (BOP) and provision of loans to countries needing assistance. IMF activities revolve around typical financial and monetary issues such as the exchange rate, interest rates, credit, money supply, inflation, government expenditures and revenues, and balance of payment aggregates.

The original dividing line between the IMF and the World Bank, implied that IMF received guidance from the World Bank on development issues. In turn, the World Bank followed IMF advice on domestic macroeconomic and exchange rate policies, adjustment of temporary balance of payments disequilibria and Stabilisation programmes. The distinction however became blurred during the turbulent years after the breakdown of the Bretton Woods par value system from 1968 to 1973 and during the debt crisis in the 1980s.

Following the economic problems of developing countries (hereafter LDCs) in the 1970s (oil price shocks in 1973-74 as well as 1979-80, decline in terms of trade, debt crisis in 1979-80s, fiscal deficits and high inflation), the two institutions formulated structural adjustment programmes designed specifically to resolve the economic problems of LDCs. The problems can be traced initially to the collapse of the Bretton Woods exchange rate system in 1971, which contributed to the volatility of the exchange rate.

Throughout the 1970s, the IMF and World Bank were marginalised as lenders to countries who could instead borrow from commercial banks anxious to recycle the massive surpluses of the Organization of Petroleum Exporting Countries (OPEC) and a new excess of liquidity within international capital markets. The IMF initially responded by expanding access to its resources, particularly to countries with no access to commercial finance. The World Bank undertook more policy-based lending and expended its focus to include rural development.

The festival of lending ended when the US Federal Reserve increased interest rates in 1979. Suddenly indebted governments found that their creditors would not roll over their loans. The borrowers could not meet their debt repayment obligations.

Several large commercial banks were on the brink of failure. The IMF and World Bank were called upon to extend loans to the debtors to ensure that they would repay their over-exposed creditors and therefore avert an international banking crisis.

The conditional loans re4quired borrowers to undertake stringent measures to stabilise and ensure adjustment in their economies in order to access credit from the IMF or World Bank.

The debt crisis which began in Latin America in the early 1980s drew the IMF and World Bank into a new role. Since 1980s, the IMF and World Bank have played key roles in planning and management of LDCs.

Conditionality in the first phase of the debt crisis emphasized Stabilisation. This meant that governments were required to :

(i) Reduce inflation,
(ii) Rationalize and stabilise the exchange rate.
(iii) Increase interest rates,
(iv) Reduce public sector expenditure and investments,
(v) Increase taxation, and
(vi) Eliminate subsidies.

These are the staple requirements of IMF conditionality. They are reinforced by requirements made by the World Bank in its structural adjustment loans which require government to :

(i) Liberalise trade and minimize tariffs,

(ii) Privatise state-owned industries,

(iii) Encourage foreign investment, and

(iv) Dergulate their economies.

Taken together the conditionality of the IMF and World Bank came to be labelled the Washington Consensus.

Stabilisation

Definition : Stabilisation policy can be defined as the policy response to correct macroeconomic imbalances when an economy is off-track from its potential growth.

The term `Stabilisation' came about because the economy's balance of payments (BOP) crisis was thought of as spiralling out of control, with inflation increasing, capital flight intensifying, and debt-servicing difficulties mounting at increasing rates.

Stabilisation circumstances arise because of overseas and domestic macroeconomic shock. The former shocks mainly refer to adverse movements in the terms of trade, the debt and interest rate crises, and foreign exchange shortage, while the latter shocks usually include hyperinflations, financial collapses, irresponsible policy teams, and natural disasters. (Taylor 1988).

Goals / Targets : The general goals of Stabilisation policy are :

(a) Improving the current account balance and attaining a viable overall balance of payments.

(b) Satisfactory long-term growth performance (sustainable, stable growth rate),

(c) Reducing inflation (stable price level), and

(d) High level of employment (low unemployment).

There are no conflicts over the goals of the Stabilisation policy but policy conflicts arise over the ways these objectives are achieved.

Necessity : Generally, a country needs a Stabilisation programme when it experiences an imbalance between aggregate domestic demand and aggregate supply. Thus, the primary role of the IMF. Focusing on aggregate demand, is to assist the member country in

designing a policy package that applies measures to restore a sustainable balance between aggregate demand and supply, and to simultaneously expand the production of tradable goods.

Approach : The IMF's Stabilisation programmes are primarily designed to improve the current accounts balance and the overall balance of payments of countries experiencing external payments difficulties. A typical Fund programme mainly employs monetary measures, exchange rate policies, and fiscal measures, and combined aggregate demand policies, supply enhancing measures, and relative price policies.

The IMF follows a three-pronged approach to confront balance of payments problems :

(i) Securing sustainable external finance.

(ii) Adoption of demand-restraining measures consistent with available financing, and

(iii) Procreeding with structural reforms to promote growth and adjustment in the medium and longer term.

The latter IMF programmes are to two types :

(a) Short-term, in which the macroeconomic disequilibrium is thought to be reversible in one or two years, e.g., The Standby Arrangement (SBA). The priority course of action in SBAs is expenditure reduction.

(b) Medium-term in which the macroeconomic disequilibrium in caused by structural impediments to growth or a heavy external debt burden. IMF medium-term programmes aim to correct a serious external payments disequilibrium due to structural impediments to growth and debt overhang. The programme involves a strategy that keeps expenditures in line with output and increases growth. E.g., the Structural Adjustment Facility (SAF), Extended Structural Adjustment Facility (ESAF) and Poverty Reduction and Growth Facility (PRGF).

The reliance on, and the relative importance of each of three above mentioned components depends on the specific circumstances of the member country for instance, the blueprint for a country whose international reserves are depleted as a result of unsustainable fiscal imbalances will place considerably more (initial) emphasis on demand-restraining measures than that for a

country whose overall external position worsened suddenly as a consequence of an adverse terms of trade shock, a natural disaster, or negative spillovers from events in other countries.

Once the crisis has been contained and confidence restored, external financing constraints often become less pressing and the macroeconomic policy stance can become more supportive of domestic demand.

It should be stressed however, that the role of the IMF is to contribute to design the adjustment strategy, help the country secure external financing and monitor the progress in overcoming the external crisis, but that it is up to the country's authorities to implement in a timely and credible manner the policy measures contemplated in the strategy.

A member's more basis objectives of high output growth, alleviating poverty, and so forth are not explicitly among those core areas. This doesnot mean that the IMF is unconcerned about these objectives. It is simply a reflection of the IMF belief that a country experiencing severe balance of payments difficulties must set its priority to reducing this difficulty and correcting the macroeconomic and structural imbalances at their root in order to achieve the more basic objectives in a sustainable manner over the longer term.

The IMF has generally insisted that Stabilisation must occur before structural reform is attempted. However, more recent statements seem to indicate a growing recognition by the fund that to the extent that efforts to channel resources away from inefficient uses are impeded by institutional rigidities, structural reform can play a critical role in achieving balance of payments viability and growth.

Features of IMF's approach to Stabilisation :

1. **Quantitative features :** IMF's approach to economic Stabilisation has vital quantitative features.

   (i) Projections are made for key macroeconomic variables (e.g., national output, price level, current account balance) under the policies to be adopted under the programme.

   (ii) Attention is paid to the likely availability of external financing to assure that viability restored to the country's external payments position.

2. **Performance criteria :** IMF's programmes also contain quantitative "performance criteria" for key variables related to macroeconomic policies (popularly referred to as conditionality) which typically include ceilings for the fiscal deficit and the central bank's net domestic credit and floors to net international reserves. These criteria are calculated using a flows-of-funds frame work known as "financial programming." Financial programming is a method that has gradually evolved over the years taking into consideration; (i) the major institutional and structural developments in the economies which have requested IMF assistance, (ii) the considerable changes in the international economy, (iii) progress in the study of macroeconomic and international issues.

3. **The process :** The IMF approach to Stabilisation and how it functions is best understood by considering the process of an IMF supported Stabilisation programme.

   A typical IMF-supported programme is not set in stone at its inception. It is flexible. It does not proceed exactly in accordance with the initial plan nor is it terminated because of some minor deviation.

   An IMF programme begins with an explicit request from a member. The IMF staff then prepares a blue print of the programme which is used as the basis for the negotiations. When an agreement is reached after bargaining over the key elements of the programme the arrangement has to be cleared by the IMF management and then approved by the IMF executive board. Thereafter disbursements proceed automatically if all the performance clauses are met as initially specified. If various conditions are not met deviations may be accompanied with "waivers," projections may be revised and numerical targets changed.

16.2 THE THREE GAP FRAMEWORK

Since the 1980s, with the advent of fiscal adjustments programmes, the government budgets of most developing countries have been tightened. This has squeezed out public expenditures, with the result that public investment programmes and recurrent expenditures towards maintenance of essential infrastructure have been drastically reduced. As a result, the government budget

constraint (GBC) has become the main constraint to growth, a situation which has been further exacerbated because of the possible 'crowding-in' effects of public on private investment. In response, structuralist economists, have noted that a third fiscal gap should be added to the savings and foreign exchange gaps of the two-gap models. Their three-gap formulations, which are based on flow-of-funds identities. Carry a considerable potential for becoming relevant in the analysis of growth and adjustment issues.

In the two-gap model, if domestic savings plus foreign savings (or the current account deficit) is less than or equal to investment requirements, then the savings gap is said to be the binding constraint. On the other hand, if the flow of foreign resources is not adequate to fill the gap between imports and exports, then foreign exchange is said to be the binding constraint. In such a framework, in order to understand the tree-gap model saving investment constraint, as follows.

$$1 = Sp + (T - G) + (Z - X), \qquad (1)$$

where I is nominal investment, (Z - X) is the CAD defined as the difference between imports (Z) and exports (X), Sp is private sector savings, and, following (eqn 2.9), government saving (Sg) have been equated to the difference between total government revenue (T = Yg) and expenditure (G = CEXPg)

The external sector budget constraint, is given by:

$$Z - X = \Delta F - \Delta R. \qquad (2)$$

Where ΔF is net foreign borrowings and ΔR is the change in foreign reserves.

Substituting (equ-2) into (eqn 1) and rewriting the result in constraint notation yields:

$$l \leq [Sp + (T - G) - \Delta R] + \Delta F. \qquad (3)$$

which states that total investment (I) is constrained by the sum of private savings (Sp), public saving *(Sg = T -G)*, and net foreign borrowings from abroad (ΔF) less the change in international reserves (ΔR). $In\ \Delta F - I$ space, this so called 'savings gap' has a slope of unity.

Under the assumption that imports *(Z)* are a linear function of income *(Y)* and investment (I), we have :

$$Z = \Theta I + mY, \qquad (4)$$

where $0 \leq \Theta \leq l$ is the import content of investment and m is the marginal propensity to import out of income.

Substituting (eqn 4) into (eqn 2) above, and rewriting the result in terms of l in constraint notation yields:

$$l \leq \left[(1/\Theta) X - (\mu/\Theta) Y - (1/\Theta) \Delta R \right] + (1/\Theta) \Delta F, \qquad (5)$$

Which states that total investment (*I)* is basically constrained by a shortage of exports *(X)* and foreign borrowings (ΔF), for given levels of income *(Y)* and reserve changes (ΔR). In the $\Delta F - 1$, implying that foreign borrowings (or capital inflows) have a larger impact on the growth rate in foreign - exchange constrained economies.

Beginning with the external debt cries in the early 1980s and as a result of the more recent tight budgetary situations in several Western countries, external borrowing by the governments of developing countries have been curtailed. Given that domestic capital markets are still at an incipient stage in several developing countries, most government are unable to raise resources from the domestic economy through the sale of government bonds and securities. Under the circumstances, and to prevent the government budget constraint from becoming an impediment to growth, governments generally resort to the inflation tax)or forced savings) to captures from the excess savings *(Sp - Ip)* of the private sector. Based upon we know that inflation tax revenue is given by $\pi m \; where \; \pi$ is the rate of inflation and m denotes the stock of real money balances *(m = M/P)*. Therefore, we have:

$$Sp - Ip = \pi m \qquad (6)$$

In addition, let public investment *(Ig)* be complementary to private investment *(Ip)* which is the 'crowding-in' hypothesis according to which public sector investment. This implies that:

$$Ip = a \lg, \qquad (7)$$

where a > 0. Therefore, total investment *(I)* is given by:

$$I = Ig + Ip = (I + a)\, Ig \qquad (8)$$

Rewriting (eqn 1) in terms of public sector investment *(Ig)* yields:

$$Ig = (Sp - Ip) + (T - G) + (Z - X) \qquad (9)$$

Substituting (eqn 2) and (eqn 6) into (eqn 9), and the resultant into (eqn 8) yields the following expression for total investment (I) in term of constraint notation:

$$I \leq (1 + a)[\pi m + (T - G) - \Delta R] + (1 + a)\Delta F, \qquad (10)$$

which states that total investment in constrained by a shortage of forced savings (πm), public sector savings *(T - G)* and foreign borrowings (ΔF), for given levels of reserve changes (ΔR). In the $\Delta F - I$ space, this so-called 'fiscal constraint' has a slope of $(1 + a) > 1$; and the relative magnitudes of $(1/\Theta)$ and *(1 + a)* would determine whether foreign borrowings have a larger impact on the growth rate in foreign exchange constrained or in fiscal constrained economies.

If the fiscal gap is binding, apart from the fact that public investment is automatically lower, because of the complementarity assumption, private investment will also be reduced, thereby adversely effecting overall investment and growth. Hence, in other to relax the constraint, governments invariably resort to inflationary financing of public investment because, under the complementarity assumption, maximization of public sector investment implies maximization of total (public and private) investment. However, a better option would be that governments generate an adequate budget surplus in order to leverage domestic private investment. In this context, external debt relief, including debt forgiveness, by lowering the debt service costs would enable government to reduce budget deficits. In addition, there is a need for government to facilitate the development of capital markets in order to channel private savings for public investment purposes.

From the savings and fiscal constraints, (eqn 3) and (eqn 10) it can be seen that if there is a reduction in foreign transfers (ΔF), for whatever reason, the domestic economy should be in a position to

generate additional savings (either from the private or public sectors) in order to maintain the existing level of investment. However, since the fiscal budget of most developing and transition economies is usually in deficit (implying negative public sector savings), if orthodox policies to generate additional private savings are not successful, then investment would need to be reduced unless the government resorts to inflationary financing of public investment. If, however, the government is averse to raising the inflation rate deliberately, it has the final option of using international reserves until they are exhausted, at which stage public sector investment has to be finally reduced. However, it is fairly certin that long before this stage is reached, most governments would have imposed strict foreign exchange controls to prevent further reserve erosion.

(Eqn 10) also provides a clue as to why there is a greater likelihood of an economy facing a fiscal constraint after a devaluation. Not only is the fiscal deficit worsened after a devaluation as it raises the domestic currency value of increased. The widening of the fiscal gap is exacerbated, it the public sector also imports (as is usually the case), for the domestic currency value of these imports would also have increased. In order to keep the budget deficit within reasonable limits, the government is thus locked into a position of cutting back on its expenditures (especially investment). Moreover, devaluation raises the price of imported capital goods and because it is often a large component of investment in most developing countries, this raises the price of investment, as well. Thus, total investment in real terms could decline, especially if credit in nominal terms to the private and public sectors is kept constant. This situation of declining real investment could be further compounded by rising interest rates as a result of monetary contraction.

In summary, therefore, the three-gap structural model of economic growth is a 5-equation system in the five unknown variables: inflation, capacity utilization, the trade surplus, the interest rate, and investment. Its solution procedure would primarily involve deriving the binding constraint and the minimum level of investment before attempting to solve for the remaining four variables. This represents a considerable improvement over the existing Bank approach where, despite using the two-gap model, the solution is usually obtained by solving the model in its one-gap (either savings or trade) mode.

16.3 LIBERALIZATION WITH STABILIZATION

Financial and trade liberalization, with borrowing and lending at substantial real rates of interest made possible by a stable price level, is not easy and is full of potential pitfalls. Nevertheless, it remains the only game in town as far as successful economic development is concerned.

The rich and growing literature on both the theory of liberalization and the experience of a number of countries which have embarked on such programmes of macroeconomic stabilization and structural adjustment seems to suggest that there is a clear need for reform of the financial system of many developing countries, both to increase the efficiency of existing financial markets and to develop new markets in order to enable the financial system to serve better the needs of the real economy. However, aside from the transitional problems that usually reform packages face, many economists have started questioning the very content of these packages and have argued that it may be misleading to view all forms of government intervention in financial markets as 'financial repression' calling for a policy of 'liberalization'. It is for this reason that Gibson and Tsakalotos (1994), in their comprehensive survey on the scope and limits of financial liberalization, suggest that McKinnon's view (cited above) on financial liberalization being 'the only game in town' is unhelpful.

Under the circumstances, what is needed in developing countries is a better understanding of how financial markets work and in what way institutions are important, the aim being to develop and promote strategies which combine measures of financial liberalization with the development of old or the creation of new financial institutions. This is clearly an important issue since the liberalization of domestic financial markets has been the leitmotif of a number of developing economies of late, including India, all of whom seem to be motivated by a common goal: less government intervention. One reason for this motivation seems to be the widely held notion that government - led development policies in many LDCs have resulted only in 'shallow finance' rather than 'deepening finance' which, inter alia, is what really matters in promoting economic growth. If inflation occurs, although nominal finance rises, real finance does not rise by the same proportion since it is taxed away by inflation and this state is referred to as shallow finance. When finance is shallow as a proportion of income, real rates of

return tend to be very low, even negative. When finance is deepening (one index of which is an increase in liquidity reserves), governments can tend to be less dependent on taxes and foreign savings, capital flight is reversed and real savings grow in financial rather than physical assets.

Thus the policy prescription of domestic financial liberalization entails a move towards a more market-oriented system. The typical programme of liberalization comprises two main components.

1) First there is an attempt to allow interest rates to be market determined. Thus, control on both deposit and lending rates are abolished or reduced.

2) Second, liberalization involves reducing quantitative controls in an attempt to allow financial intermediaries greater control over the use of their liabilities subject to certain minimum controls required for prudential supervision.

However, most literature surveys on the set of policies carried out by many developing countries in the 1970s and 1980s seem to suggest that there could be certain theoretical limitations within the corpus of the financial liberalization literature which could have led to mistaken, or at least incomplete, policy programmes. Central to much of what is being said there is: (i) that the definition of financial repression is too broad, including as it does not only intervention which leads to genuine inefficiencies in financial markets but also intervention that can be seen as a response to market failure, and (ii) the need to take the design, operation, and sequencing of reforms much more seriously than it has been done hitherto.

While much of the focus of the discussion so far has been largely on the macroeconomic effects of specific reforms, the determination of the sequential order of specific policies as well as the appropriate pace of reform that policy makers should follow when implementing comprehensive reform programmes raise important practical and conceptual questions.

Most developing economies undertaking liberalization and stabilization programmes are open economies. Experience has show that the question of exchange-rate policy is crucial to the success of liberalization, not least because it affects capital flows through its impact on the expected rate of depreciation. Usually liberalization leads to capital flows because it entails an increase in

the domestic interest rate above world levels and, since stabilization programmes often involve a prior devaluation in the exchange rate, the resulting interest rate differential may not be offset by any further expected depreciation of the domestic currency. In addition, capital flows are likely because, since the marginal productivity of capital is usually higher in recently liberalized developing countries, firms can afford to borrow from abroad. However, such inflows could undermine the ability of the monetary authorities to control the monetary base, therefore putting the stabilization programme in jeopardy.

All these possibilities raise the issue of the optimal order in which an economy should liberalize and these, and a host of related issues, from the two main concerns of the literature on the sequencing of reforms. The first one is to determine the optimal order for liberalizing the domestic real sector, the domestic financial sector, the external real sector, and the external financial sector. Should all these sectors be liberalized simultaneously or does the existence of 'adjustment costs' imply that there is an optimal path? The second concern is how the order of liberalization first into the framework of macroeconomic stabilization and structural adjustment programmes. In particular, this is a major concern of much of McKinnon's later work (for example McKinnon 1991) where he seeks to determine whether there are any macroeconomic prerequisites to liberalization. Was he disenchanted by the experience of liberalization programmes in many developing countries or did he, in fact, fainally succumb to the rather belated realization that there should exist a set of 'rules' before one can play the 'only game in town'.

SEQUENCING OF ECONOMIC REFORMS

	Domestic	External
Real	**1** • Setting up a market-price system • Removal of subsidy • Tax base widening • Privatization	**3** • Removal of trade barriers (current account), that is trade account convertibility
Financial	**2** • Raising domestic interest rates • Central Bank Autonomy • Improving domestic capital markets	**4** • Removal of capital controls, that is short-term capital account convertibility

This table describes the kind of reforms which liberalization of each sector broadly entails and the numbers in each box suggest, by and large, the accepted order of the sequencing of reforms. It is generally agreed that domestic financial liberalization should come only after domestic real liberalization but before external financial liberalization. Assume, for example, that a country decides to liberalize the financial system before it has liberalized the domestic real sector. In such a scenario, credit is likely to flow only to industries which are considered profitable because relative prices are distorted.

The issue of whether domestic financial liberalization should come before or after external real liberalization is however not entirely clear. If, for example, a country liberalizes its domestic financial sector before it liberalize its external real sector, then once again credit could flow to a tradeable sector which could be profitable because of the barriers to trade. Alternatively, if the sequence is reversed, then this would hamper the ability of the domestic industry to compete in the world markets. Finally, it is agreed that domestic financial liberalization should come before external financial liberalization. If external liberalization occurs while domestic interest rates are still below world levels, then a capital flight could take place. More generally, domestic banks would find it difficult to compete with foreign banks because they are still subject to a variety of controls and regulations which only serve to increase the cost of intermediation. Overall, this therefore leads to the conclusion that domestic financial liberalization should be second in the overall sequence of reforms.

There are two main macroeconomic prerequisites to successful liberalization. First, there is the need for fiscal control. May of the regulations imposed on the domestic banks raise revenue which helps to finance the government deficit. Since liberalization involves the removal of many of these regulations, it is clear that other sources of need to be tapped. Thus, this sets up a case for widening the finance base as well as developing a proper means of tax collection before liberalization. Second, there is a need for control over domestic banks or monetary policy purposes. Often financial liberalization is associated with a loss of control by the authorities over credit creation. Such arguments often warn against the removal of reserve requirements as a means of liberalization. The consensus view in this regard is that liberalization is more likely to be successful if controls on interest

rates are removed gradually while the necessary preconditions of a strong and effective system of bank supervision are established.

The issue of financial liberalization is now seen as much more complex than what was originally envisaged. Because the needs of the real economy can be met only through liberalization, the literature still holds as its ultimate goal the full liberalization of the economy. However, the speed and sequencing of liberalization, the manner in which liberalization should be integrated into macroeconomic stabilization and structural adjustment programmes, and the prerequisites for the eventual success of liberalization are all still maters of ongoing concern. Much of the work on these transitional problems has arisen from the experience of liberalization in a number of developing countries and it is on such experiences that we must draw upon if we are to determine whether or not there might actually be limits to the liberalization process.

Many economies in the process of liberalization find themselves in serious internal or external macroeconomic imbalance. A double-digit, or even triple-digit, inflation is one indicator of such an imbalance. A balance of payments (BOP) crisis and a run on foreign exchange reserves are other indicators. Policies adopted to tackle one set of problems frequently exacerbate another set: for example, a devaluation may worsen inflation, whereas a temporary price freeze may accentuate a foreign exchange crisis. The liberalization process often begins at a time of simultaneous internal and external disequilibrium, and even if it does not, these problems are bound to arise at some stage or the other during the process unless appropriate stabilization measures are in place. ‘One is thus invariably led to ponder the necessary links between the choice of stabilization policies and the maintenance of the liberalization process’ (Bruno 1988, p.239).

When an economy, in the course of opening up, encounters prolonged period of inflation. the problem in most cases lies in the government budget deficit. A lack of a sufficiently broad tax base leads governments to rely on the inflation tax mechanism, and even if a broad tax base exists, high inflation, by causing fiscal erosion (via the Olivera-Tanzi effect), increase the budget deficit. In addition, of the capital account is opened up prematurely, as was the case of Israel in 1977 and Mexico in 1991, inflation is bound to accelerate because of the loss of control over the monetary base.

More importantly, the destabilizing effects of a budget deficit in an open economy are not confined to inflation alone. The budget deficit, which constitutes negative public sector savings, increases the current account deficit of the BOP (when it is viewed as the difference between domestic investment and savings). Thus, inflation and BOP crises often go hand in hand with budget deficits. It is thus a necessary condition for both stabilization as well as an orderly conduct of the liberalization process to close the government budget deficit as rapidly as possible.

However, the elimination of budget deficits is not a sufficient condition for rapid stabilization from an initially high-inflation trap because, although the source of prolonged inflationary pressures is in most case a large budget deficit, elements of inertia in the dynamic of inflation

16.4 STRUCTURAL ADJUSTMENT PROGRAMMES

Since the early 1980's, the International Monetary Fund (IMF) and the International Bank of Reconstruction and Development (IBRD) or the World Bank, have implemented economic policies known as Structural Adjustment Programmes (SAPs).

DEFINITION :

"Structural Adjustment" is the name given to a set of "free market" economic policy reforms imposed on developing countries by the World Bank and IMF as a condition for receipt of loans.

ORIGINS :

Structural Adjustment Policies originated due to a series of global economic disasters during the late 1970; the oil crisis, debt crisis, multiple economic depressions, and stagflation. These fiscal disasters led policy makers to decide that deeper intervention was necessary to improve a country's overall well being.

In 1980, the World Bank began to do more than just lend money for specific projects and introduced structural adjustment programmes (SAP), long term loans to countries experiencing recurrent balance of payments problems.

In 2002 SAPs underwent a transition, with the introduction of Poverty Reduction Strategy Papers. PRSPs were introduced as a result of the World Bank's belief that, "successful economic policy

programmes must be founded on strong country ownership." In addition, SAPs with their emphasis on poverty reduction have attempted to further align themselves with the Millennium Development Goals (MIDG). As a result of PRSPs, a more flexible and creative approach to policy creation has been worked out at the IMF and World Bank.

Necessity : The World Bank and the IMF argue that SAPs are necessary to bring a developing country from crisis to economic recovery and growth. Economic growth driven by private sector foreign investment is seen as the key to development. These agencies argue that the resulting national wealth will eventually "trickle down" or spread throughout the economy and eventually to the poor.

The achievement of social well-being is not an integral component of SAPs but a hoped-for result of applying free market principles to the economy. The process of adjustment, as described by many World Bank and IMF officials to developing countries, is one of "sacrific," of "present pain for future hope."

Focus : While the main focus of SAPs has continued to be the balancing of external debts and trade deficits, the reasons for those debts have undergone a transition. Today, SAPs and their lending institutions have increased their sphere of influence by providing relief to countries experiencing economic problems due to natural disasters, as well as economic mis-management.

Low-income countries are offered loans against the acceptance of an adjustment programme containing a set of policy reforms in different areas. To this end, the IMF introduced to forms of enlarged credit facilities, the Structural Adjustment Facility (SAFs) and the Enhanced Structural Adjustment Facility (ESAFs), intending to address the problems of poor (often African) countries. The World Bank designs structural supply-side or growth policies.

Over the years, however, this division of tasks between the two institutions has blurred as it became increasingly obvious that supply-side issues were also critical in efforts to stabilise an economy. In a similar vein, the World Bank as a development bank has come to realize that sound financial and monetary policies are a must for promoting economic growth. Thus the two institutions have gradually moved closer together and in practice have combined their policies in a unified package of structural

adjustment policies that is subject to negotiation with client countries.

GOALS :

(i) After the Second World War, the IMF's main goal was to help prevent another world wide depression like that of the 1930s. That depression was caused by a liquidity failure. The IMF was intended to counter this by lending money to some countries and pressuring other to pursue more expansionary policies.

(ii) The 1980s were marked by large fiscal and external imbalances; falling output and high inflation. Governments concerned with inflation, budget deficits and trade deficits, kept interest rates high, spending low, and restricting imports. The goals of IMF accordingly were to secure immediate improvements in external finances as part of the process of establishing conditions for greater efficiency, saving, investment and growth, over the long term.

(iii) SAPs are designed to improve a country's foreign investment climate by eliminating trade and investment regulations, to boost foreign exchange earnings by promoting exports, and to reduce government deficits through cuts in spending.

CONTENTS :

Structural reform programmes of the IMF comprise all types of policies aimed at reducing government imposed distortions and other structural and institutional rigidities that impair an efficient allocation of resources in the economy and hinder growth.

The reforms cover a wide spectrum of activities beyond the domain of macroeconomic policy, including measures related to trade specialization, price liberalization, foreign exchange market reform, tax reform, government spending reform, privatization, pension reform, financial sector reform, banking sector reform, banking system restructuring, labour market reform and the strengthening of social safety nets.

Moreover, in many cases increasingly in the recent years, IMF arrangements are designed in close coordination with the programmes of the World Bank and / or the regional development banks.

Of course, the specific structural reform content in any arrangement depends on the characteristics and circumstances of the country requesting IMF support. One reason is the wide differences in the levels of income and stage of development among member countries. For example, in the Asian crisis, the structural reform content focussed on the financial sector because this was the critical problem area. In the arrangements for transition economies privatisation and the building of basis institutions of a market economy were key structural priorities.

CONDITIONS :

The structural loans came with a variety of conditions aimed at restructuring he economies so they could earn the foreign currency needed to repay outstanding loans. Restructuring consisted of reducing public expenditure; liberalising trade, investment and capital controls; deregulation; and the privatization of state-owned enterprises. Conditionality is a set of targets or obligations undertaken by developing countries in order to obtain aid or loans. Although SAPs differ somewhat from country to country, they typically include the following conditions :

(i) Removing restrictions on foreign investments in local industry, banks and other financial services. Thus, local industry or banks cannot be protected against gaint foreign intervention.

(ii) Cutting tariffs, quotas and other restrictions on imports.

(iii) Trade liberalization, or lifting import and export restrictions.

(iv) Liberalization of investment and high interest rates to attract foreign investment :

(v) Currency devaluation measures which increase import costs while reducing the value of domestically produced goods to make exports more competitive.

(vi) Increasing the stability of investment by supplementing foreign direct investment with the opening of domestic stock markets.

(vii) Balancing budgets and not overspending, cutting social expenditures (health, education and housing and massive layoffs in the civil service), aslo known as austerity.

(viii) Removing price controls and state subsidies.

(ix) Improving governance and fighting corruption.

(x) Privatizing state enterprises, thereby providing further access for foreign capital.

(xi) Reducing wages or wage increases to make exports more competitive.

(xii) Abolishing food and agricultural subsidies to rduce government expenditures;

(xiii) Reducing government spending on health, education and welfare combined with wage reduction would control inflation and ensure that all available money would be channelled into increasing production for exports.

(xiv) Undertaking a deregulation programme to free export oriented corporations from government controls that protect labour, the environment and natural resources, thereby cutting costs and further increasing export competitiveness.

(xv) Reorienting the economy toward exports in order t earn the foreign exchange required for servicing the debt and to become correspondingly more dependent on the global economy.

(xvi) Shift from growing diverse food crops for domestic consumption to specializing in the production of cash crops or other commodities (like rubber, cotton, coffee, copper, tin etc.) for export.

PHASES :

The Bank-IMF sponsored SAP has two phases.

(1) The first phase is short-term macro-economic Stabilisation.

(2) It is followed by implementation of a necessary structural reforms phase.

CRITICISM :

(i) SAPs over-emphasize the restoration of balance of payments instead of adopting a more just and equitable approach to resolving the debt crisis.

(ii) Undermine the state's soverignty and limit its role for socio economic intervention through a fixation on deregulation, privatization and dismantling of the state enterprises in the name of unfettered "free markets."

(iii) Worsen the disparities between rich and poor by facilitating income concentration by the wealthy and the exclusion of the poor from decisions and control over resources.

(iv) Undermine democracies and democratic process. Southern governments must accept SAP measures imposed by non-democratically elected bank officials even if they conflict with government policy and the will of the people – the alternative is default and bankruptcy.

(v) Lack transparency, accountability and public participation in their design and implementation.

(vi) Hurt the poor disproportionately through deep cutbacks in social programmes. User fees, privatization, massive layoffs and cutbacks of social services have led to malnutrition, school and hospital closures, recurrence of previously eradicated disease, and deepening poverty :

(vii) Undermine national food security through an over-reliance on investment that is short-term, concentrated in the export sector;

(viii) Make many basic necessities inaccessible to local people as currency devaluation reduce the buying power of local wages;

(ix) Violate the UN Convention on the Rights of the Child, the UN Declaration on the Right to Development, and the Convention on the Elimination of Discrimination Against Women;

(x) Focus on domestic economic adjustment to the exclusion of the goals of sustainable development, self-sufficiency and greater popular participation in economic planning and decision-making.

(xi) Impact of mega-projects. The types of development project funded by the Group are a cause for concern. Many infrastructure projects have negative social and environmental consequences. e.g., displacement of

indigenous peoples without proper compensation and destruction of fragile ecosystems.

(xii) Undermining state provision. The Bank, working the partnership with the private sector, is accused of undermining the role of the state as the primary provider of essential goods and services.

(xiii) Many groups argue that SAPs impose harsh economic measures which deepen poverty, undermine food security, and self-reliance and lead to unsustainable resource exploitation, environmental destruction, and population dislocation and displacement.

(ixv) The also believe SAP policies have increased the gap between rich and poor in both local and global terms.

(xv) The acceleration of resource extraction and commodity production the results as countries increase exports is not ecologically sustainable. Deforestation, land degradation, desertification, soil erosion and salinization, biodiversity loss, increased production of greenhouse gases, and air and water pollution are but among the long germ environmental impacts that can be traced to the imposition of SAPs.

(xvi) Women are bearing a disproportionate share of the burdens imposed by SAPs. The macro-economic thinking on which SAPs are based, takes little account of the gender-based division of labour. In addition, cutbacks to public services result in a greater workload for women as they struggle to pay extra fees to secure health care and education for the family.

EVALUATION : Structural adjustment programmes are designed to address instabilities in macro-economic factors and thus the common measure of the effectiveness of these programmes has been to look at the condition of the balance of payments, economic growth, government deficits and inflation. A common indicator of success has been economic growth as an overall measure of economic health. However, even this simple measure bears contradictory results, with some authors reporting economic growth slowed for countries undergoing adjustment while others reported that SAP works with higher growth, exports and savings and yet others could not find evidence that the adjustment programmes affected growth. Others felt that the criterion of success should be

extended to include other indicators of economic success as well as social and cultural indicators.

Some economists have suggested the elimination of all conditions except those relating to transparency and the prevention of corruption in public spending. Introduce peer review mechanisms for countries. Respond to the analysis of UN specialized agencies on broader governance issues, rather than conduct such analysis.

16.5 SUMMARY

1. Macroeconomic management consists of Stabilisation and structural adjustment programmes. With these programmes, both the IMF and World Bank deal with economic issues and focus their efforts on broadening as well as strengthening the economies of their member nations.

2. The three-gap structural model of economic growth is a 5-equation system in the five unknown variables: inflation, capacity utilization, the trade surplus, the interest rate, and investment. Its solution procedure would primarily involve deriving the binding constraint and the minimum level of investment before attempting to solve for the remaining four variables.

3. There is a clear need for reform of the financial system of many developing countries, both to increase the efficiency of existing financial markets and to develop new markets in order to enable the financial system to serve better the needs of the real economy. For this purpose financial and trade liberalization is suggested.

4. Since the early 1980's, the International Monetary Fund (IMF) and the International Bank of Reconstruction and Development (IBRD) or the World Bank, have implemented economic policies known as Structural Adjustment Programmes (SAPs). "Structural Adjustment" is the name given to a set of "free market" economic policy reforms imposed on developing countries by the World Bank and IMF as a condition for receipt of loans.

16.6 QUESTIONS

1. Explain the meaning of stabilisation and structural adjustment programmes (SAP). Why do the IMF and World Bank impose them on loan seeking countries?

2. Discuss the meaning, need and features of IMF's Stabilisation programme.

3. Examine the structural adjustment programmes of the IMF and World Bank.

4. Discuss the conditionalities imposed by the IMF and World Bank on borrowing member countries.

5. Write Short Notes on :

   (a) Features of stabilisation and SAP

   (b) Negative effects of conditionality

   (c) Three gap framework