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MEC-104

Economics of Growth And Development

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**Sample Preview
of the
Solved
Sample Question
Papers**

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QUESTION PAPER

June – 2024

(Solved)

ECONOMICS OF GROWTH AND DEVELOPMENT

MEC-104

Time: 3 Hours]

[Maximum Marks: 100

Note: Answer questions from both Section as per instructions.

SECTION-A

Note: Attempt any two questions from this Section:

Q. 1. Discuss the structure of the Harrod-Domar model. Describe the main assumptions of this model. What is your opinion on the limitations of this model?

Ans. Ref.: See Chapter-2, Page No. 10, 'Background to the Harrod-Domar Growth Model' and Page No. 15, Q.No. 10.

Q. 2. Explain how the Solow model accounts for long-run economic growth. Describe the structure and working of the Solow model.

Ans. Ref.: See Chapter-3, Page No. 17, 'The Solow Model and Structure of the Model'.

Q. 3. Discuss Kaldor's model of economic growth. In what way is Pasineff's theory of economic growth different from that of Kaldor?

Ans. Ref.: See Chapter-4, Page No. 25, 'Kaldor's Model of Economic Growth' and Page No. 28, Q.No. 5.

Q. 4. Analyse the Ramsey model of economic growth. Explain the 'Golden Rule of Capital Accumulation'. In what way does the Cass-Koopman's model of economic growth extend the Ramsey model?

Ans. Ref.: See Chapter-9, Page No. 59, 'The Ramsey Growth Model' and Page No. 60, 'The Golden Rule of Accumulation'.

SECTION-B

Note: Attempt any five questions from this Section:

Q. 5. Discuss Hicks's classification of technical change.

Ans. Ref.: See Chapter-5, Page No. 31, 'Classification of Technical Change and Hick's Classification of Technical Change'.

Q. 6. Explain the Harris-Todar's model and examine its relevance.

Ans. Ref.: See Chapter-16, Page No. 107, 'Rural-Urban Labour Migration' and Page No. 109, Q.No. 5.

Q. 7. Explain the salient features of endogenous growth models. Discuss Lucas's model of human capital-induced growth.

Ans. Ref.: See Chapter-11, Page No. 73, 'Human Capital in the Neo-Classical Model' and Page No. 74, Q.No. 1, 'The Lucas Model'.

Q. 8. Discuss Kuznets' 'inverted-U' hypothesis. Discuss its relevance today.

Ans. Ref.: See Chapter-7, Page No. 43, 'Kuznets' Inverted-U Hypothesis'.

Q. 9. In what way can economic growth impact democracy? Discuss.

Ans. Ref.: See Chapter-23, Page No. 160, 'The Impact of Economic Development on Democracy and The Impact of Democracy on Economic Development'.

Q. 10. What are the limitations of using per capita income as an indicator of economic welfare?

Ans. Ref.: See Chapter-14, Page No. 94, 'Indicators of Economic Welfare and Alternative Measures of Economic Welfare'.

Q. 11. Describe the processes and components of the global supply chain. Distinguish between global supply chain and global value chain.

Ans. Ref.: See Chapter-17, Page No. 111, 'Global Supply Chain (GSC): Concepts and Features' and Page No. 115, Q. No. 7.

Q. 12. Explain the significance of demographic change in the age-composition of population with particular reference to India.

Ans. Ref.: See Chapter-18, Page No. 120, 'Demographic Change and Age Composition of Population'.

■ ■

Sample
QUESTION PAPER - 1

(Solved)

**ECONOMICS OF GROWTH
AND DEVELOPMENT**

M.E.C.-104

Time: 3 Hours]

[Maximum Marks : 100

Note: Attempt any five questions. All questions have equal marks.

Q. 1. How is the term ‘economic growth’ alternatively, and more formally, defined? In what way does it make the concept dynamic?

Ans. Ref.: See Chapter-1, Page No. 3, Q. No. 2.

Q. 2. What are the main criticisms that can be made of Joan’s model?

Ans. Ref.: See Chapter-4, Page No. 27, Q. No. 2.

Q. 3. Define the term ‘capital intensity’. How is it different from the term ‘capital deepening’?

Ans. Ref.: See Chapter-5, Page No. 33, Q. No. 4.

Q. 4. Outline the meaning of planning as an instrument of resource allocation.

Ans. Ref.: See Chapter-8, Page No. 52, Q. No. 1.

Q. 5. What does the extension of the growth model in given equation (4) essentially mean?

Ans. Ref.: See Chapter-10, Page No. 69, Q. No. 5.

Q. 6. What do you mean by the process of creative destruction? How is it related to investment in research and development?

Ans. Ref.: See Chapter-12, Page No. 82, Q. No. 3.

Q. 7. Describe how history is important for economic development.

Ans. Ref.: See Chapter-15, Page No. 102, Q. No. 1.

Q. 8. What are the contrasting dualities identified by Commons to distinguish the classical-neo-classical schools from that of the institutionalists?

Ans. Ref.: See Chapter-25, Page No. 176, Q. No. 3

Q. 9. How do historical legacies of colonialism and apartheid continue to shape the political economy of South Africa?

Ans. Ref.: See Chapter-30, Page No. 224, Q. No. 1.

Q. 10. Write short notes on the following:

(a) Present bias lowering investment in preventive health

Ans. Ref.: See Chapter-19, Page No. 132, Q. No. 5.

(b) Issue of self-control to improve healthy behaviour

Ans. Ref.: See Chapter-19, Page No. 132, Q. No. 6.

(c) Basic existential thresholds in ‘human rights violation’.

Ans. Ref.: See Chapter-21, Page No. 148, Q. No. 2.

(d) Factors that contributed to Hong Kong’s rise.

Ans. Ref.: See Chapter-28, Page No. 204, Q. No. 4.

■ ■

Sample Preview of The Chapter

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ECONOMICS OF GROWTH AND DEVELOPMENT

Economic Growth: Concepts and Measurement

1

INTRODUCTION

The standard of living has vastly improved for most people over recent decades, as seen when comparing generations. Economic theory helps explain this growth, though it doesn't offer universal laws. Instead, it identifies common constraints in economic development. Economist Paul Romer likens economic growth to cooking by rearranging resources cleverly (like ingredients in a recipe), we create more value. Unlike cooking more of the same, sustainable growth comes from innovation – new “recipes” that reduce side effects and maximize value. Human history shows our under-estimation of potential discoveries; possibilities multiply as people interact over time, pointing to ongoing growth potential.

CHAPTER AT A GLANCE

WHAT IS ECONOMIC GROWTH?

Economic growth occurs when resources are utilized more effectively to generate greater societal value, transitioning a nation from subsistence living to higher standards within decades. This transformation historically accompanies industrialization and increased commercial activity. The formal definition of economic growth is sustained value-added output expansion over time. It's dynamic, not just leading to temporary increases but continuous positive change. Output expansion can be extensive (total output increase) or intensive (per capita increase), impacting both aggregate phenomena like economies of scale and improving standards of living. Growth involves utilizing existing capacity effectively and includes qualitative changes, fostering innovation, improved skills, structural shifts, and expanding choices, ultimately enhancing quality of life.

DISTINCTION BETWEEN ECONOMIC GROWTH AND DEVELOPMENT

Economic growth signifies sustained increases in a nation's real output of goods and services, measured by GDP or NDP. Economic development, broader in scope, involves structural changes like declining agricultural share and rising industrial/service sectors,

altering labourers' occupation, skills, and productivity. Development encompasses more than growth, focusing on social justice and comprehensive transformation.

DISTINCTION BETWEEN DIFFERENT TYPES OF GROWTHS

Growth refers to changes in variables like GDP or population, expressed as a percentage. To calculate growth rates, two values are needed: one for the base year and one for the terminal year. Average Annual Growth Rate (AAGR) depends on these values, while Compound Annual Growth Rate (CAGR) uses logarithmic values.

(a) Growth and Change: The proportional change from initial value x_0 to subsequent value x_1 is calculated as $(x_1 - x_0)/x_0$. To express growth as a rate, this change is multiplied by 100. If dealing with percentages, absolute values for base and terminal years are necessary for accurate calculation.

(b) Types of Growth Rate: When analysing growth rates over multiple periods, the Average Annual Growth Rate (AAGR) formula is essential. It calculates the proportional change between initial and subsequent values, often represented by income.

$$AAGR = (x_1/x_0)^{1/n} - 1$$

By taking the logarithm of the relationship, the constant growth rate (r.o.g) can be determined, assuming a consistent rate of growth.

$$\text{Log}(1 + r) = [\log(y_t) - \log(y_0)] / n$$

If growth isn't constant, the geometric mean of values is calculated. Various types of growth, including arithmetic and geometric, are defined based on the nature of change over time. Linear trend equations are used to estimate growth rates, typically by fitting logarithmic transformations of the data. Continuous and discrete growth rates are compared, highlighting their differences and approximations. Finally, the equivalence of geometric mean growth rate and compound growth rate is demonstrated.

IMPORTANCE OF ECONOMIC GROWTH

Studying the growth process is crucial for understanding historical economic trends and formulating ef-

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fective policies. It addresses questions regarding why certain countries industrialize first or experience rapid growth. Economic theory offers hypotheses and strategic variables to explain growth disparities. Different growth rates significantly impact per capita incomes, altering social dynamics and resolving tensions. Economic growth expands choices, releases people from basic tasks, empowers women, and fosters humanitarianism. Notably, it effectively reduces poverty, as exemplified by China and India's transformations. Economic growth enhances environmental control and facilitates investments in healthcare and technology. Understanding growth processes informs policy-making, distinguishing short-term measures from long-term strategies, and navigating global economic dynamics.

SOURCES OF ECONOMIC GROWTH

The primary sources of economic growth include investment in physical and human capital, technological advances, and institutional/policy improvements. Additional factors impacting growth are competitive markets, stable prices, free trade, flexible capital markets, lower tax rates, secure property rights, and political stability.

Capital Formation: Capital accumulation through investment is essential for economic growth. Increased capital stock, including machinery and equipment, boosts productivity. A skilled workforce from education and training maximizes capital utilization. High investment rates, like those seen historically in Japan and East Europe, correlate with rapid growth, as reflected in India's investment rate exceeding 30% of GDP in recent years.

Capital-Output Ratio: The capital-output ratio, indicating units of capital needed for output, varies across sectors and economies. Early development stages require more capital for less output, but efficiency improves with time. Investments in basic industries are more capital-intensive, but as economies mature, capital brings larger output increments, depending on managerial efficiency and investment coordination. Efficiently increasing investment and productivity drive national income growth. The growth rate of a country's national income depends on two key factors: the rate of investment and the capital-output ratio. This relationship can be represented as follows:

Rate of Growth of GDP = Investment to Income Ratio/(Capital - Output Ratio)

Thus, achieving a high rate of national output growth requires focusing on two main variables: increasing the rate of investment and enhancing productivity through efficiency gains.

Occupational Structure: The occupational structure of the workforce impacts economic growth. Shifts from primary (agriculture) to secondary (industry) to tertiary (services) sectors occur during growth. This transition optimizes workforce distribution, improving productivity and contributing to overall economic efficiency.

Technological Progress: Technology is a primary driver of economic growth, enabling increased

production with existing resources. The pace of technological change depends on scientific skills, education quality, and investment in research and development.

LIMITATIONS OF ECONOMIC GROWTH

The process of economic growth has certain limitations.

1. Inequality of Income: Economic growth often leads to unequal distribution of benefits, initially widening income disparities. However, with state intervention, growth can reduce poverty, as seen in East and Southeast Asian economies, China, and India. Inclusive growth policies ensure expanded output benefits marginalized populations, eventually uplifting society's lower segments.

2. Pollution (and Other Negative Externalities): Increased output often strains the environment, leading to air, water, and noise pollution. Growing traffic and congestion are prominent consequences of this strain.

3. Loss of Non-Renewable Resources: Economic growth increases resource use and depletes non-renewable resources like oil, minerals, and forests. While it boosts material welfare in the short term, it jeopardizes future welfare by creating scarcity and unsustainable practices, challenging future welfare maintenance.

CHECK YOUR PROGRESS

Q. 1. How is 'economic growth' defined in simple terms? What does it mean?

Ans. Economic growth is a fundamental concept that underpins the improvement in living standards and the transformation of societies. In simple terms, it refers to the process of using resources more effectively to create goods and services that are valued by society. As explained by Paul Romer, economic growth is akin to cooking in a kitchen, where ingredients are combined according to recipes to create valuable final products. However, the key to sustained economic growth lies not in simply doing more of the same cooking, but in discovering better recipes that generate more value with fewer negative side effects.

In practical terms, economic growth manifests as an increase in the production of goods and services over time, leading to higher levels of output. This expansion is not limited to just producing more of the same, but also involves improving the quality of products and services, enhancing the skills of the workforce, and fostering innovation and technological advancements. Economic growth is dynamic, representing a continuous process of positive change that sustains over the long term rather than short-lived bursts of activity.

Two important dimensions of economic growth are extensive growth and intensive growth. Extensive growth refers to increasing the total output of goods and services, while intensive growth focuses on enhancing output per capita, thus improving the standard of living for the population. Both dimensions are essential for overall economic development.

ECONOMIC GROWTH: CONCEPTS AND MEASUREMENT / 3

Also, economic growth is not solely about increasing output; it also encompasses structural shifts in the economy. This includes transitioning from rural and agriculture-based economies to urban and industry-based ones. Such shifts broaden the range of choices available to individuals and societies, leading to improvements in quality of life, health, education and overall well-being.

It's crucial to distinguish economic growth from economic development. While economic growth primarily refers to the sustained increase in the production of goods and services over time, economic development is a broader concept. It encompasses not only increases in output but also progressive changes in the socio-economic structure of a country. This involves shifts in the composition of output, the allocation of resources, and improvements in skills and productivity.

While economic growth is necessary for economic development, it is not sufficient on its own. True development entails not just higher output but also equitable distribution of income, improvements in social infrastructure, and advancements in human well-being. Thus, while economic growth is a vital component of development, it must be complemented by policies and measures that address broader socio-economic challenges.

Q. 2. How is the term 'economic growth' alternatively, and more formally, defined? In what way does it make the concept dynamic?

Ans. The term "economic growth" can be formally defined as the sustained increase in the level of output of goods and services over a prolonged period, measured in terms of value added. This definition highlights several key aspects that make the concept dynamic and essential for understanding the evolution of economies.

Firstly, economic growth is characterised by its sustainability and continuity. It is not merely a short-term or temporary increase in output but involves a prolonged expansion sustained over time. This sustained growth is crucial for driving improvements in living standards, technological advancements and societal progress.

Secondly, economic growth is measured in terms of value added, which signifies the net contribution of economic activities to the overall output. Value added reflects the increase in the value of goods and services as they move through the production process, capturing the efficiency gains, innovations, and improvements in quality.

Besides, economic growth is dynamic in nature, representing a continuous process of positive change. It involves not only increasing the quantity of output but also enhancing its quality, efficiency, and productivity. This dynamic nature of economic growth is evident in the constant pursuit of better recipes, as metaphorically described by Paul Romer, to generate more value from available resources.

Also, economic growth encompasses both extensive and intensive dimensions. Extensive growth refers

to the expansion of total output, while intensive growth focuses on increasing output per capita. These dimensions are interconnected and essential for achieving sustainable development and improving the standard of living for the population.

Further, economic growth is associated with structural shifts in the economy, such as the transition from agrarian to industrial and service-based sectors. These structural changes reflect the evolving composition of output, employment, and productive activities within an economy, leading to diversification, specialization, and increased economic complexity.

Importantly, economic growth is not solely about the quantitative increase in output but also entails qualitative improvements in factors such as workforce skills, technological innovation, and product diversity. These qualitative enhancements contribute to enhancing the competitiveness, resilience, and adaptability of economies in a dynamic global environment.

Q. 3. How are the terms 'extensive growth' and 'intensive growth' defined?

Ans. Extensive growth and intensive growth are two key dimensions of economic growth that play distinct roles in shaping the development trajectory of economies.

Extensive growth refers to the expansion of total output of goods and services. It is characterized by an increase in the overall volume of economic activities, often driven by factors such as population growth, capital accumulation, and technological advancements. Extensive growth is significant for economies aiming to achieve higher levels of production and consumption. For instance, in developing countries with burgeoning populations, extensive growth helps meet the increasing demand for basic necessities and infrastructure.

On the other hand, intensive growth focuses on enhancing output per capita, thereby improving the standard of living for the population. Intensive growth involves increasing productivity, efficiency, and innovation in the production process, leading to higher levels of output per unit of input. This form of growth is crucial for boosting economic prosperity, reducing poverty, and promoting sustainable development. Intensive growth is particularly relevant in mature economies where population growth rates are slower, and the emphasis shifts towards maximizing the productivity and efficiency of existing resources.

To illustrate, extensive growth might involve expanding agricultural land, building new factories, or investing in infrastructure projects to increase the overall output capacity of the economy. Meanwhile, intensive growth may entail implementing technological innovations, improving workforce skills, or enhancing organizational efficiency to extract more value from existing resources and increase output per capita.

Both extensive and intensive growth are essential for achieving balanced and sustainable economic development. Extensive growth lays the foundation for

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expanding the economic base and meeting the growing needs of a population, while intensive growth ensures that resources are utilized efficiently and productively to enhance living standards and quality of life.

Also, the interplay between extensive and intensive growth varies depending on the stage of economic development and the prevailing socio-economic conditions. In developing economies, extensive growth may take precedence initially to address basic needs and infrastructure deficiencies, while intensive growth becomes increasingly important as the economy matures and seeks to improve productivity and competitiveness.

Q. 4. What is meant by a 'structural shift' in an economy?

Ans. A structural shift in an economy refers to a fundamental change in the composition, organisation, and functioning of its economic activities. This transformation involves a movement away from one economic structure towards another, often characterised by significant shifts in the sectoral distribution of output, employment and productive resources.

One common example of a structural shift is the transition from a predominantly agrarian or rural-based economy to one that is predominantly industrial or urban-based. In this scenario, the economy experiences a substantial reallocation of resources from agriculture to industry and services, accompanied by changes in technology, workforce skills, and organisational patterns. As industrialisation and urbanisation take hold, the relative importance of agriculture diminishes, while manufacturing and services sectors expand, leading to a reconfiguration of the economic landscape.

Structural shifts can also occur within specific sectors of the economy, leading to changes in production techniques, product mix, and market orientation. For instance, technological advancements and innovations may trigger a shift towards more capital-intensive production methods, resulting in changes in the skill requirements of the workforce and the adoption of new organizational practices. Similarly, changes in consumer preferences or global market dynamics may drive shifts in the composition of output and trade patterns within industries.

The process of structural transformation is often driven by various economic, social, and technological factors. Economic growth, globalization, demographic changes, technological innovation, and policy interventions can all influence the pace and direction of structural shifts in an economy. For example, rapid population growth and urbanization may stimulate demand for housing, infrastructure, and consumer goods, thereby accelerating the expansion of urban-based industries and services.

Also, structural shifts can have profound implications for the overall development trajectory of an economy. By diversifying economic activities, enhancing productivity, and fostering innovation, structural

transformation can contribute to long-term growth, job creation, poverty reduction, and improved living standards. However, the process of adjustment may also entail challenges such as unemployment, income disparities, environmental degradation, and social dislocation, particularly for those sectors and regions adversely affected by the shift.

Q. 5. How is economic development different from economic growth? What are the two features of the economy which is usually accompanied with economic development?

Ans. Economic growth and economic development are often used interchangeably, but they represent distinct concepts with different implications for a country's socio-economic progress.

Economic growth primarily refers to the sustained increase in a country's real output of goods and services over time, usually measured by indicators such as Gross Domestic Product (GDP) or Net Domestic Product (NDP). It focuses on the quantitative expansion of economic activities and output levels. Essentially, economic growth signifies the ability of an economy to produce more goods and services, reflecting an increase in the overall size of the economy.

On the other hand, economic development encompasses a broader and more comprehensive notion of progress, involving qualitative improvements in various aspects of the socio-economic structure of a country. While economic growth is a vital component of economic development, development goes beyond mere output expansion to include progressive changes in the distribution of income, wealth, and opportunities, as well as improvements in living standards, infrastructure, healthcare, education, and environmental sustainability.

Two key features of the economy that are usually accompanied by economic development are:

Shift in Sectoral Composition: Economic development typically involves a transformation in the sectoral composition of the economy, characterized by a decline in the relative importance of traditional sectors such as agriculture and a corresponding rise in the share of industrial and services sectors. This structural shift reflects the evolving nature of economic activities and is driven by factors such as technological advancements, urbanization, and changes in consumer preferences. Industrialization and the expansion of services sectors play a crucial role in driving productivity gains, generating employment opportunities, and fostering innovation, thereby contributing to overall economic development.

Enhanced Productivity and Human Capital: Economic development is often accompanied by improvements in the productivity and skill levels of the workforce, as well as investments in human capital development through education, training, and healthcare initiatives. A more skilled and productive workforce is better equipped to participate in and contribute to the modern economy, leading to higher levels of efficiency, innovation, and competitiveness.