Chapter: 02

Theories of Economic Development

learning outcomes

After completing this chapter, you will be able to:

- Outline the theory behind economic development
- Analyze the classical theories of economic development
- Explain the policy implications of the theories

Rostow's Stages of Economic Development

What is Rostow's Model?

Developed by **W.W. Rostow** in 1960.

The Stages of Economic Growth: A Non-Communist Manifesto

Describes the stages of economic growth that all countries pass through.

Known as a **linear stages theory** of development.

Inspired by the economic history of Western nations.

Rostow's Stages of Economic Development

Characteristics of Rostow's Model

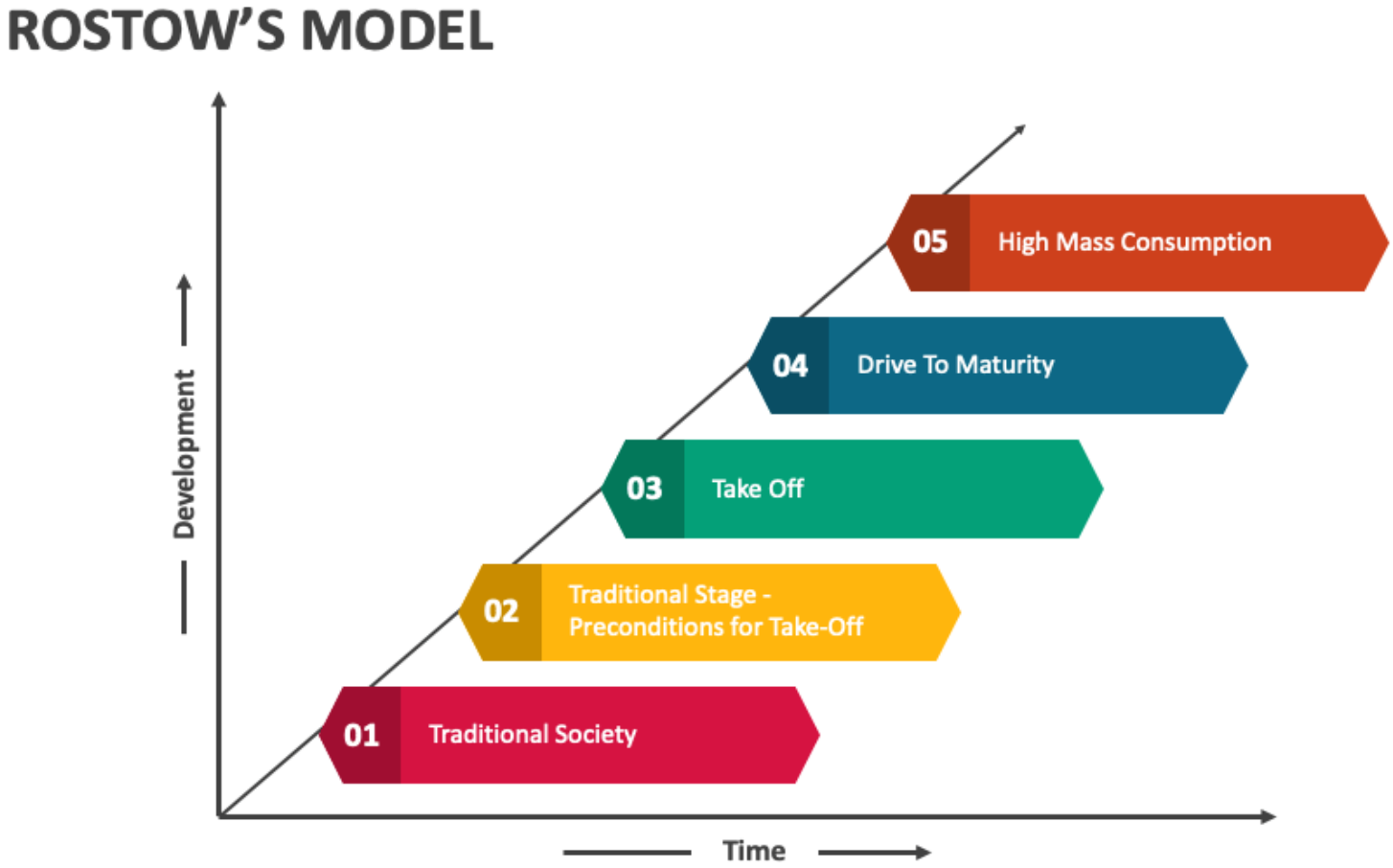
- Linear and sequential development.
- Focus on capital accumulation and industrialization.
- Emphasis on the role of investments and policy.
- Historical framework based on Western experiences.

The Five Stages of Development

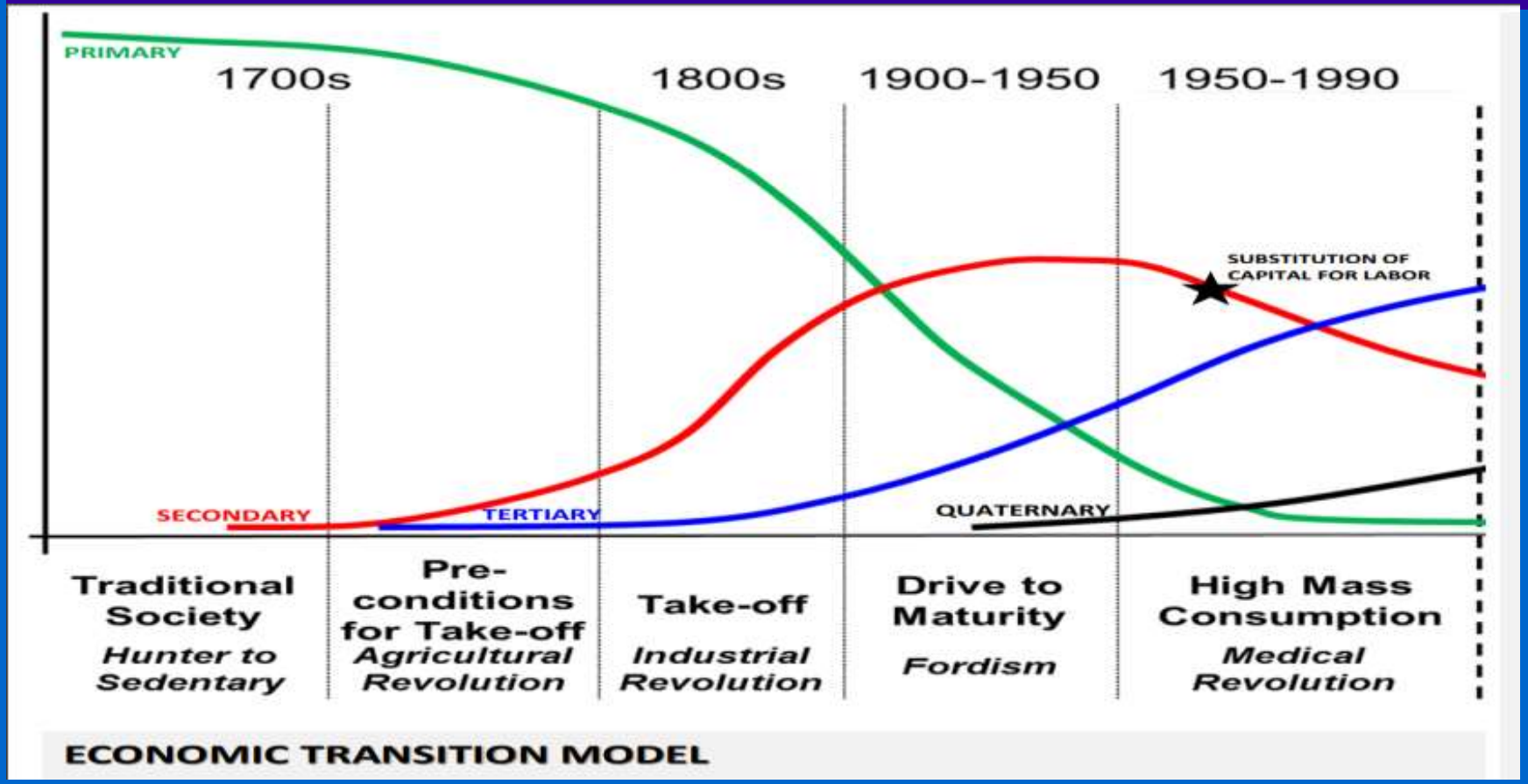
The Stages at a Glance

1. Traditional Society
2. Preconditions for Take-Off
3. Take-Off
4. Drive to Maturity
5. Age of High Mass Consumption

The Five Stages of Development



The Five Stages of Development



Stage 1 – Traditional Society

Characteristics

- Subsistence agriculture
- Limited technology
- Static social structure
- Limited or no industrialization
- No urbanization
- A small portion of population in trade and craftsmanship

- Economy: Pre-modern and stagnant

  Example: Pre-industrial Europe.

Stage 1 – Traditional Society

Economic Drivers

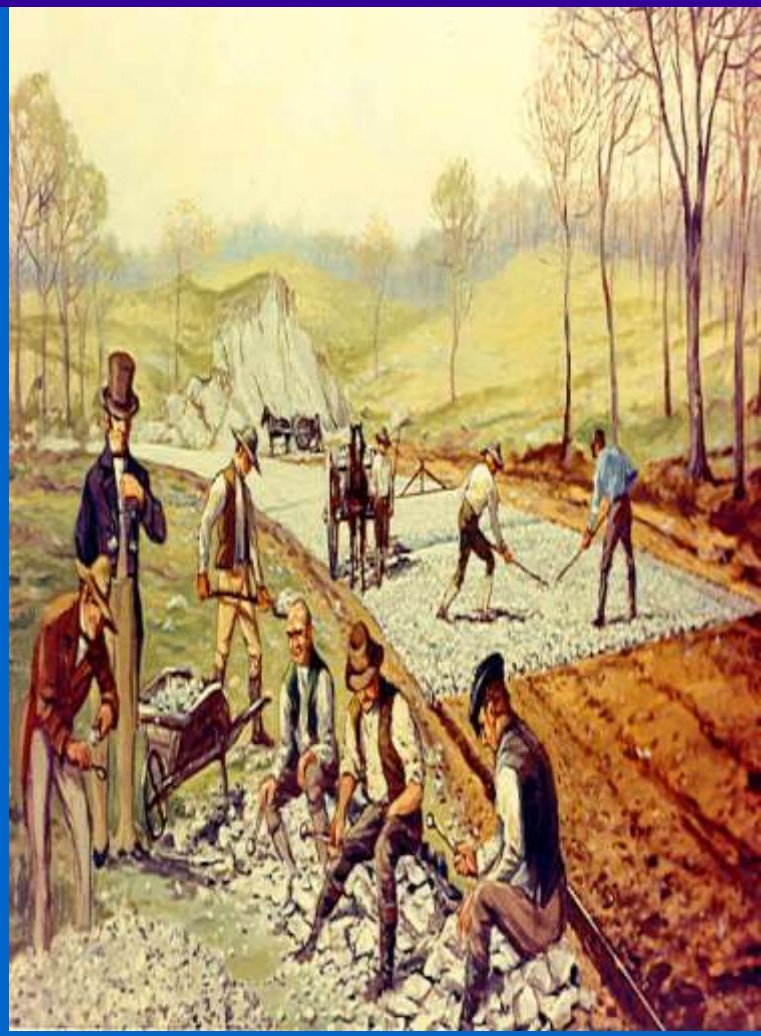
- The lack of technology and capital means the economy operates at a subsistence level
- Trade is limited, and most goods are produced for internal consumption, not for exchange.

Limitations

- This stage faces constraints due to limited access to resources, technology, and infrastructure.

Stage 2 – Preconditions for Take-Off

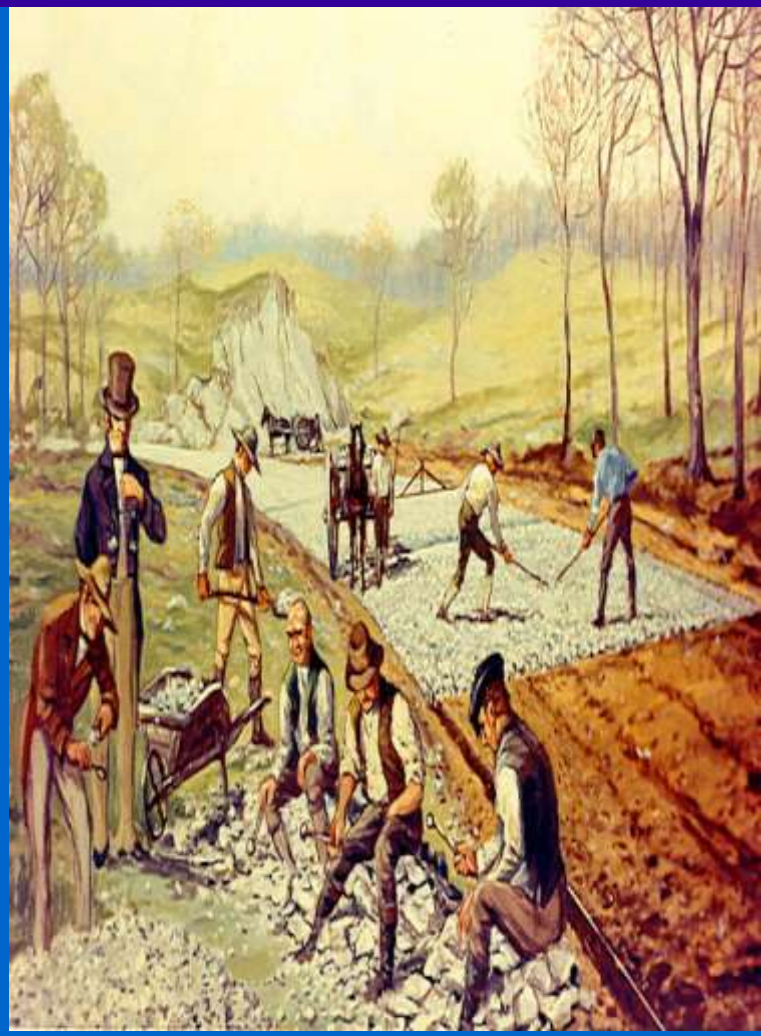
- Characteristics:
  - Transition from traditional to modern society.
  - Shift towards commercial agriculture
  - Emergence of an entrepreneurial class.
  - Introduction of basic infrastructure (e.g., roads, schools).
- Economy: Increasing investment.
  Example: Britain in the early Industrial Revolution.



Stage 2 – Preconditions for Take-Off

Economic Drivers

- External factors, such as the introduction of new technologies, the establishment of institutions supporting trade and investment, and the expansion of foreign markets, can help trigger the preconditions for growth.
- The development of financial institutions like banks can help channel investment into new industries.



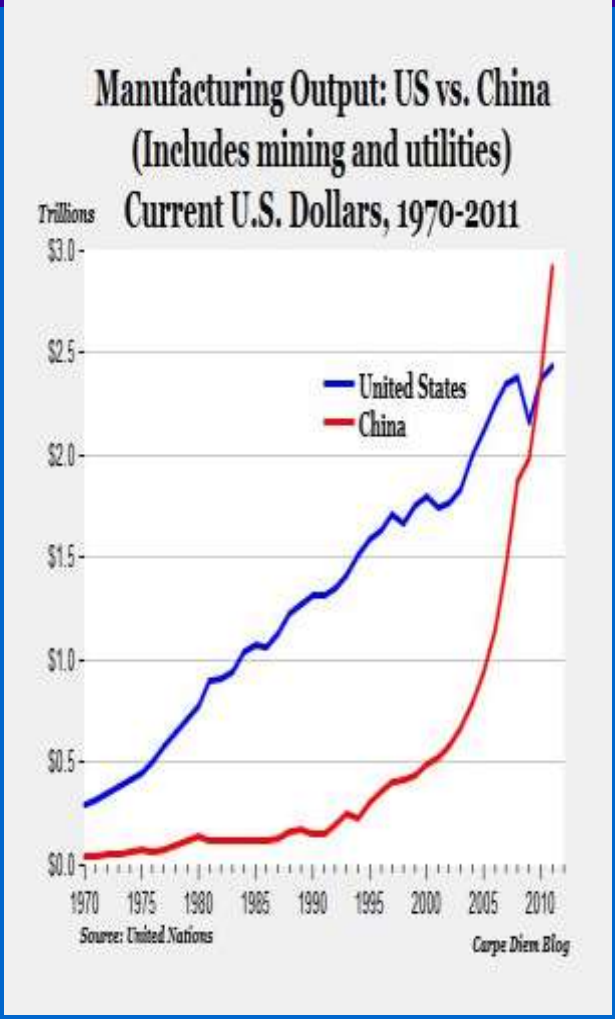
Stage 3 – Take-Off

Characteristics:

- Rapid economic growth
- Rapid industrialization and urbanization.
- Growth in specific sectors (e.g., textiles, steel).
- Investments reach 10%+ of national income.
- Evolution of political and social institutions.

Economy: Self-sustaining growth begins.

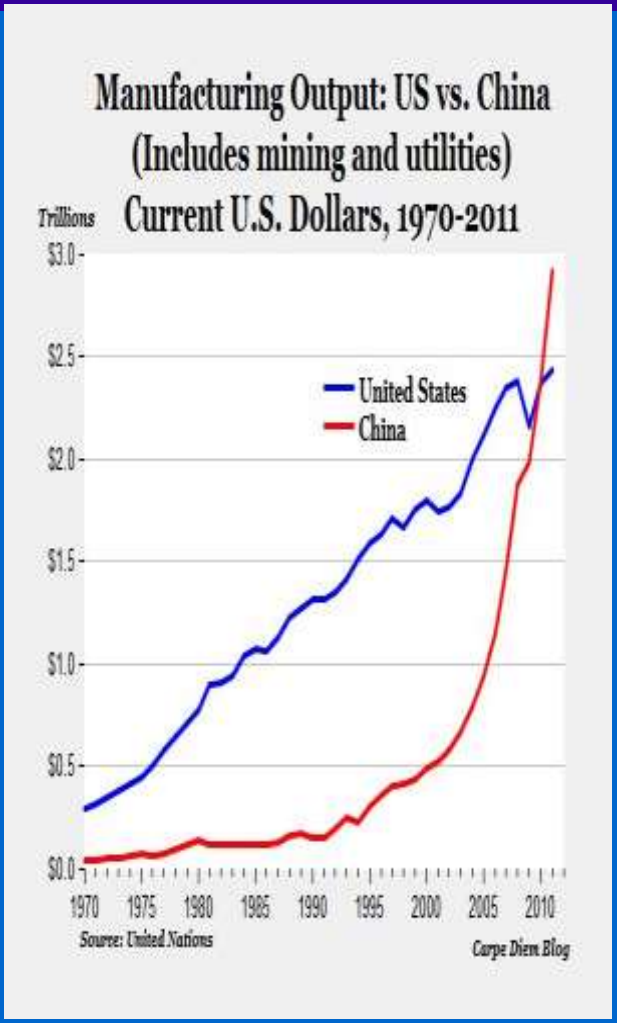
Example: U.S. during the late 19th century.



Stage 3 – Take-Off

Economic Drivers

- An entrepreneurial class drives innovation and economic change.
- Increased productivity and capital investment lead to higher levels of economic output.
- Rising living standards and wages drive domestic consumption, expanding markets for goods and services.



Stage 4 – Drive to Maturity

Characteristics:

- Diversification of the economy.
- Expansion into a wider range of industries.
- Continued technological innovation.
- Focus on efficiency and productivity.
- Integration into the global economy.

Economy: Sustained growth and innovation.

Example: Japan in the mid-20th century.

Stage 4 – Drive to Maturity

Economic Drivers

The development of a highly skilled labor force, continued technological advancement, and strong institutional support for entrepreneurship all contribute to the drive toward maturity.

The economy becomes more resilient, with high levels of innovation, competition, and productivity growth.

Significant investments in infrastructure (e.g., advanced transportation networks, global communication systems) foster global integration.

Stage 5 – Age of High Mass Consumption

Characteristics:

- High level of economic development.
- Mass production and mass consumption.
- Large service sector
- Consumerism as a driving force
- High living standards

Economy: Dominated by consumerism.

Example: Post-WWII Western Europe and U.S.

Stage 5 – Age of High Mass Consumption

Economic Drivers

The economy is focused on advanced technology, luxury goods, services, and high-quality consumer products.

There is a transition from physical labor to service-oriented, knowledge-based employment.

Welfare systems, social security, and other safety nets become more prominent.

Key Features of Rostow’s Theory

1. Linear Development

- Rostow's theory suggests that all countries must follow these stages in a specific order to achieve economic growth.
- However, this model has been criticized for being too simplistic and not accounting for the complexities of historical, cultural, and political factors that may influence development.

Key Features of Rostow's Theory

2. Eurocentric Bias

The model was critiqued for being based on Western experiences and assuming all countries could follow the same trajectory as Europe or the United States.

Key Features of Rostow's Theory

3. Dependency and Globalization

Some critics argue that external factors, such as colonialism or globalization, may prevent certain countries from achieving the same economic growth as the Western world.

Criticisms **of Rostow's Theory**

- Too deterministic
- Doesn't account for unique contexts
- Biased towards Western development paths
- Stages are not always clearly defined
- Not always a linear progression

Conclusion

- Despite limitations, a valuable framework for understanding how countries develop economically over time.
- Highlights key factors contributing to economic growth.
- Provides a useful historical perspective.

Is development a linear, stage-based process?

- Rostow's model assumes that all countries follow a single, linear path of development, progressing through the stages sequentially.
- However, in reality, development is a complex and dynamic process with diverse trajectories.
- Some countries may skip stages, while others may experience setbacks or get stuck in a particular stage.

Is the "age of high mass consumption" a desirable end goal?

- The final stage of Rostow's model, the "age of high mass consumption," has been criticized for promoting consumerism and unsustainable lifestyles.

- Critics argue that this model may not be environmentally sustainable or socially equitable in the long run.

2. Lewis Model of Economic Development

What is the Lewis model?

The Lewis Model of Economic Development, developed by economist Arthur Lewis in the 1950s, is a dual-sector model that emphasizes the process of economic development through the transfer of labor from a traditional, subsistence agricultural sector to a modern, industrial sector.

It is considered a foundational model for understanding the transition from a primarily agrarian economy to an industrialized one.

Key Concepts of the Lewis Model

Dual Economy

Traditional Agricultural Sector: This sector consists of rural, labor-intensive, low-productivity farming. In this sector, workers are typically paid very little, and there is limited technological advancement.

Modern Industrial Sector: This is the urban, capitalist sector that is more productive and often focuses on manufacturing, which includes high wages, advanced technology, and significant capital investment.

Key Concepts of the Lewis Model

Surplus Labor

The core of the Lewis model is the idea that there is a large pool of surplus labor in the agricultural sector. These workers are often low-skilled, and their marginal productivity (additional output from adding one more worker) is close to zero.

The model suggests that a substantial portion of this labor can be transferred from agriculture to industry without reducing agricultural output, because these workers are not fully utilized.

Key Concepts of the Lewis Model

Labor Transfer and Industrialization

As the industrial sector grows, it requires labor to fuel its expansion.

The model proposes that the surplus labor from agriculture is gradually absorbed into the industrial sector.

Initially, industrial growth is fueled by low-wage labor.

As workers are absorbed into the industrial sector, they will contribute to increased production and investment, leading to further economic growth.

Key Concepts of the Lewis Model

Wage Structure

Agricultural Wages: In the agricultural sector, wages are generally low and determined by the subsistence needs of the workers. In this sector, the marginal productivity of labor is low, and there are few incentives for increased productivity.

Industrial Wages: In the industrial sector, wages are higher to attract workers from agriculture.

Key Concepts of the Lewis Model

Economic Growth through Capital Accumulation

As the industrial sector grows and profits increase, businesses reinvest their profits into further industrial expansion and capital accumulation.

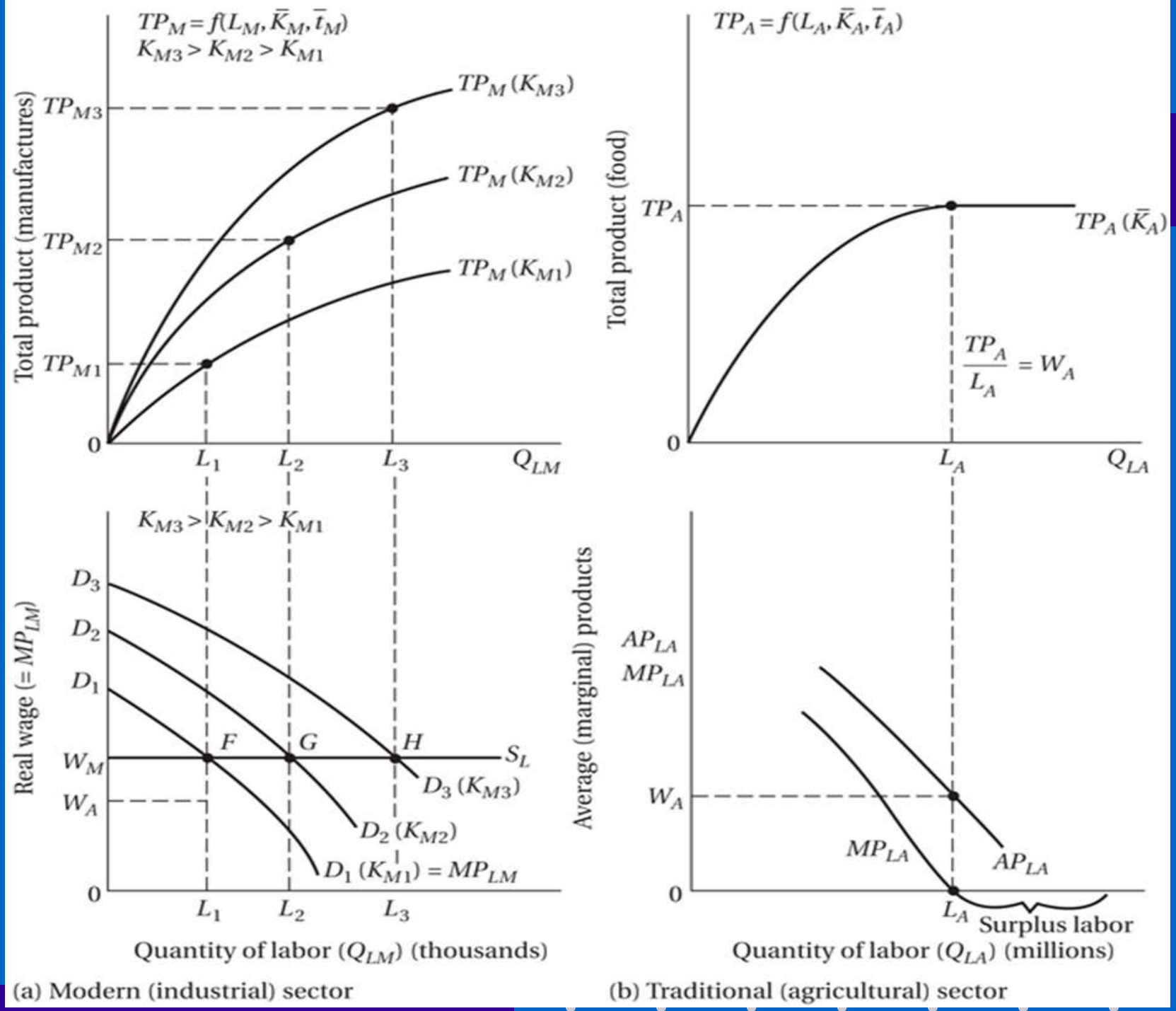
This creates a positive feedback loop, where industrial growth leads to further demand for labor, which in turn accelerates economic development.

Key Concepts of the Lewis Model

Transition to a Mature Economy

As the industrial sector absorbs more labor, the surplus labor in agriculture diminishes, and wages in both sectors rise. Eventually, the economy reaches a point where the two sectors are more balanced.

The model suggests that when all the surplus labor is absorbed into the industrial sector, the economy reaches a stage of modern development, where the agricultural sector's share of total output is reduced, and the economy is more urbanized and industrialized.


$TP_M = f(L_M, \bar{K}_M, \bar{t}_M)$
$K_{M3} > K_{M2} > K_{M1}$
Total product (manufactures)
TP_{M3}
TP_{M2}
TP_{M1}
$TP_M(K_{M3})$
$TP_M(K_{M2})$
$TP_M(K_{M1})$
0
L_1
L_2
L_3
Q_{LM}
$TP_A = f(L_A, \bar{K}_A, \bar{t}_A)$
Total product (food)
TP_A
$TP_A(\bar{K}_A)$
$\frac{TP_A}{L_A} = W_A$
L_A
Q_{LA}
$K_{M3} > K_{M2} > K_{M1}$
Real wage (= MP_{LM})
D_3
D_2
D_1
F
G
H
W_M
W_A
S_L
$D_3(K_{M3})$
$D_2(K_{M2})$
$D_1(K_{M1}) = MP_{LM}$
Quantity of labor (Q_{LM}) (thousands)
Average (marginal) products
AP_{LA}
MP_{LA}
MP_{LA}
AP_{LA}
Surplus labor
Quantity of labor (Q_{LA}) (millions)
(a) Modern (industrial) sector
(b) Traditional (agricultural) sector

The Fei-Ranis Model of Development

A dual-sector model of development that extends the Lewis Model by incorporating agricultural dynamics more explicitly.

It was developed by John Fei and Gustav Ranis in the 1960s and explains the process of industrialization in developing economies, emphasizing the role of agriculture in supporting industrial growth.

The Fei-Ranis Model of Development

Key Features of the Ranis-Fei Model

1. Dual-Sector Structure

The economy consists of two sectors:

Traditional Agricultural Sector (low productivity, surplus labor)

Modern Industrial Sector (high productivity, absorbs surplus labor)

The Fei-Ranis Model of Development

Key Features of the Ranis-Fei Model

2. Role of Agricultural Surplus

Unlike the Lewis Model, which assumes unlimited labor supply at a constant wage, the Ranis-Fei Model highlights the importance of agricultural productivity.

As labor shifts from agriculture to industry, food production must still meet demand to prevent rising food prices, which could reduce industrial profits.

The Fei-Ranis Model of Development

Key Features of the Ranis-Fei Model

3. Three Phases of Development

Phase 1: Labor Transfer with Agricultural Growth

Initial transfer of surplus labor to industry without a decline in agricultural output.

Phase 2: Disguised Unemployment Disappears

As more workers leave, agricultural productivity per worker starts increasing.

The Fei-Ranis Model of Development

Key Features of the Ranis-Fei Model

3. Three Phases of Development

Phase 3: Full Employment & Industrial Takeoff

Once surplus labor is fully absorbed, further labor movement requires higher agricultural wages, marking the economy's transition to sustained industrial growth.

The Fei-Ranis Model of Development

Key Features of the Ranis-Fei Model

4. Investment and Capital Accumulation

- Agricultural surplus is critical as a source of savings and investment for industrial expansion.
- A successful transition requires reinvesting agricultural profits into industrial development.

The Lewis vs The Fei-Ranis Model

The Lewis Model and the Ranis-Fei Model are both dual-sector models of development that explain the transition from an agrarian to an industrial economy.

However, the Ranis-Fei Model extends and modifies the Lewis Model, placing greater emphasis on the role of the agricultural sector in the development process.

The Lewis vs The Fei-Ranis Model

Features	The Lewis Model (1954)	Ranis-Fei (1961)
Economic Sectors	Two sectors: Traditional Agriculture and Modern Industry	Same two-sector structure, but greater emphasis on agricultural productivity
Role of Agriculture	Passive – simply provides surplus labor to industry	Active – must generate food surplus and capital to support industrialization
Labor Transfer	Assumes unlimited labor supply at a constant wage in industry	Happens in three phases, with rising wages as surplus labor is absorbed
Wage Determination	Industrial wages remain constant until surplus labor is exhausted	Wages rise gradually as disguised unemployment disappears
Source of Investment	Comes from industrial sector profits	Comes from agricultural surplus + industrial profits

Todaro Model of Dualistic Development

The Todaro Model, developed by Michael Todaro (1969), explains the paradox of high rural-to-urban migration despite persistent urban unemployment in developing countries.

Harris and Todaro (1970) extended the model.

Unlike earlier dual-sector models (such as Lewis and Ranis-Fei), which assume smooth labor absorption into industry, the Todaro Model focuses on migration based on expected rather than actual wages.

Todaro Model of Dualistic Development

Key Assumptions

1. Dual-Sector Economy

   Rural Sector: Low productivity, subsistence agriculture with flexible wages.

   Urban Sector: Higher wages, modern industries, but limited job opportunities.

2. Migration is Based on Expected Wages

   The expected wage is determined by the actual wage and the probability of getting a job.

Todaro Model of Dualistic Development

Key Assumptions

3. Urban Wages Are Rigidly High

Institutional factors like minimum wage laws, unions, and government policies keep urban wages above equilibrium levels.

This leads to excess labor supply and urban unemployment.

Todaro Model of Dualistic Development

Key Assumptions

Labor Market Imbalance

Since wages in urban areas do not adjust downward, excess migration creates persistent urban unemployment.

Informal sector jobs absorb some migrants, but many remain unemployed.

Todaro Model of Dualistic Development

Mathematical Representation

The probability of getting an urban job is:

$$P = \frac{L_u}{L_t}$$

where:

- P = Probability of securing a job
- L_u = Number of formal jobs available in the urban sector
- L_t = Total number of job seekers (migrants + unemployed)

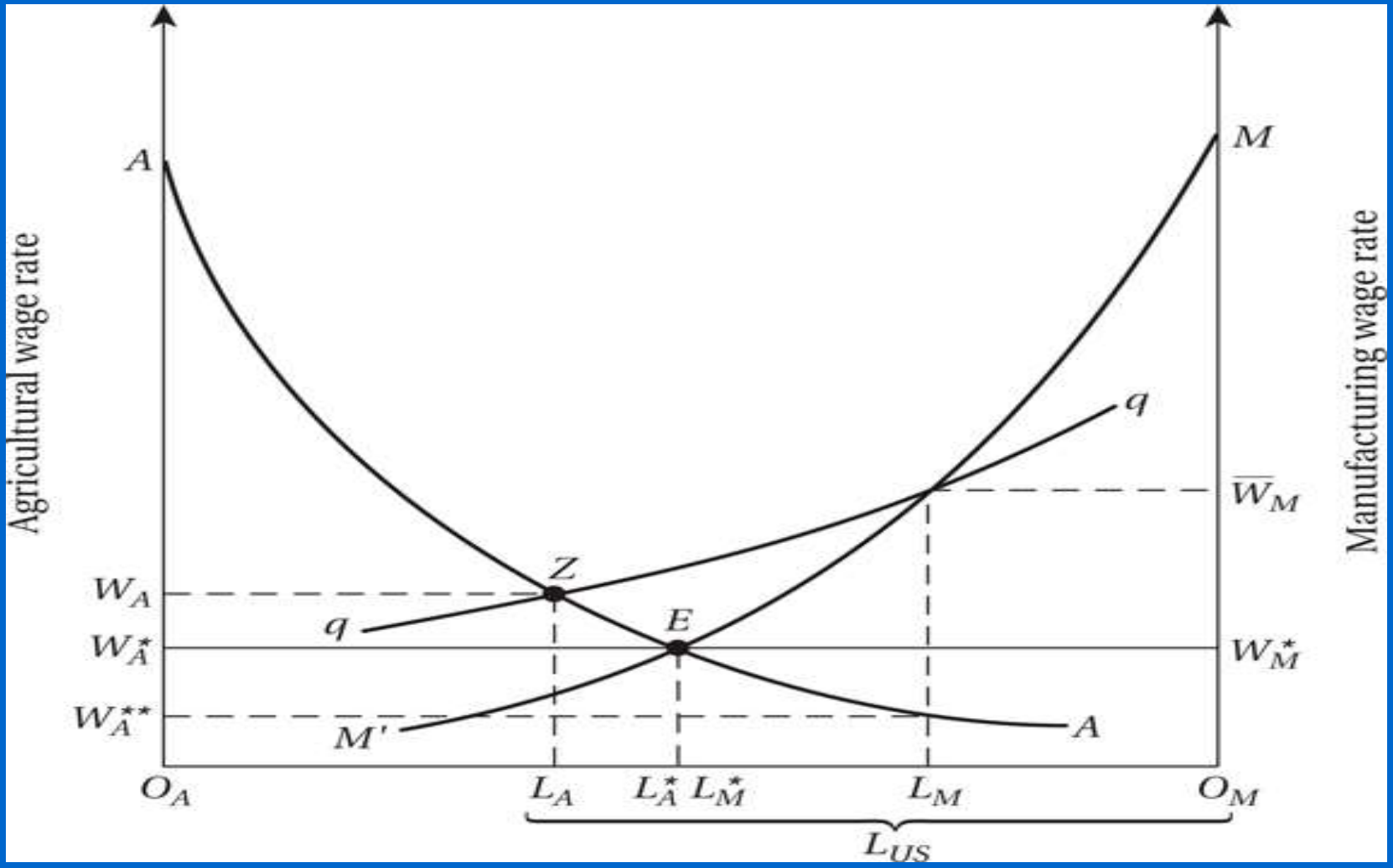
A rural worker will migrate **if the expected urban wage** ($P \cdot W_u$) **is greater than the rural wage** (W_r):

$$P \cdot W_u > W_r$$

where:

- W_u = Fixed urban wage
- W_r = Flexible rural wage

Todaro Model of Dualistic Development



Todaro Model of Dualistic Development

$$W_A = \frac{L_M}{L_{US}}(\bar{W}_M)$$

Where

W_A is agricultural income,
L_M is employment in manufacturing
L_{US} is total urban labor pool
W_M is the urban minimum wage

Todaro Model of Dualistic Development

Generalizing the Harris-Todaro Model

$$W_A = \frac{L_M}{L_{US}}(\bar{W}_M) + (1 - \frac{L_M}{L_{US}})(W_T)$$

Todaro Model of Dualistic Development

Rural wage = $1.50 per day
Urban modern wage = $3 per day
Urban informal wage = $.25 per day

Suppose there is a 0.5 probability of getting a modern job. Will there be migration?

Todaro Model of Dualistic Development

To determine whether migration will occur, we use the Harris-Todaro expected wage condition:

$P \cdot Wu > Wr$

where
P=0.5 (Probability of getting a modern urban job)
Wu=3(Urban modern sector wage)
W r =1.50 (Rural wage)

Todaro Model of Dualistic Development

Compute Expected Urban Wage

The expected wage in the urban sector is:

$$E(W_u) = P \cdot W_u + (1 - P) \cdot W_{inf}$$

where W_{inf} is the informal wage ($0.25 per day). Substituting values:

$$E(W_u) = (0.5 \times 3) + (0.5 \times 0.25)$$

$$= 1.50 + 0.125$$

$$= 1.625$$

Since the expected urban wage ($1.625) is greater than the rural wage ($1.50), migration will occur.

Todaro Model of Dualistic Development

Application of the Harris-Todaro Model

Consider the Harris-Todaro model of rural-urban migration. A country has a total labor force of one million. Assume that the country has rigid barriers to formal-sector employment, and that the size of the formal sector labor force is fixed at 100,000. Suppose also that the formal sector wage is fixed at 25,000 (in $ / year equivalent) and the agricultural wage is fixed at 12,000.

a) If initially no one is employed in the informal sector, what, initially, is the expected urban wage? What does the model predict about migration in this case?

b) Suppose that the informal sector wage is fixed at 8,000. What will the size of the informal sector be in the Harris-Todaro equilibrium?

c) On the following graph, illustrate the equilibrium values as found in (b) (i.e., numerical values for W_A, W_F, L_A ,L_I, L_F.

Todaro Model : Policy Implications

- Five Policy Implications
  - Reduction of urban bias
  - Imbalances in expected income opportunities is crucial
  - Indiscriminate educational expansion fosters increased migration and unemployment
  - Wage subsidies and scarcity factor pricing can be counterproductive
  - Programs of integrated rural development should be encouraged

A. K. Sen’s Theory of Entitlement and Development

Amartya Sen's theory of entitlement and development is a foundational contribution to the fields of welfare economics and development studies.

It provides a powerful framework for understanding poverty, famine, and human well-being.

A. K. Sen’s Theory of Entitlement and Development

1. Entitlement Theory

Amartya Sen introduced the concept of entitlements to analyze famine and poverty, focusing on access to resources rather than their overall availability.

His framework shifts attention from aggregate food supply to individuals' abilities to acquire food and other necessities.

A. K. Sen's Theory of Entitlement and Development

1. Entitlement Theory: Core Concepts

- Endowments: Resources that an individual owns, such as land, labor, skills, and other assets.
- Entitlement Set: The set of goods and services a person can acquire through:
  - Production and exchange (e.g., farming, selling labor).
  - Trade (e.g., selling goods or services).
  - Transfers (e.g., aid, inheritance, government programs).
- Exchange Entitlements: The goods and services one can access based on their ability to trade their endowments in markets.

A. K. Sen's Theory of Entitlement and Development

1. Entitlement Theory: Key Insights

Famine occurs not necessarily because of a lack of food but due to a failure of entitlements.

For example , during the Bengal Famine of 1943, food was available, but many people couldn't afford it due to unemployment and soaring food prices.

A. K. Sen’s Theory of Entitlement and Development

2. Development as Freedom

In his broader framework, Sen connects entitlement theory to development.

In his book Development as Freedom (1999), he argues that development should be seen as a process of expanding people's freedoms and capabilities, not just as economic growth.

A. K. Sen’s Theory of Entitlement and Development

2. Development as Freedom: Key Dimensions

A. Capabilities Approach

- Focuses on individuals' ability to achieve well-being.
- Capabilities are the freedoms to do or be what people value (e.g., being healthy, educated, or politically active).
- Poverty is a deprivation of basic capabilities rather than just low income.
- Two people may both be undernourished, but one may have had no access to food while the other may be fasting by choice. The difference lies in capability.

A. K. Sen's Theory of Entitlement and Development

Food & Undernutrition (Nutrition Example)
Person A: Lives in poverty and has no access to food. He is undernourished because of deprivation.
Person B: Has access to food but chooses to fast (e.g., for religious reasons). He is undernourished by choice.
Functioning: Both are undernourished.
Capability:

- Person A has **no capability** to be nourished, because he lacks real access to food.
- Person B has the **capability** to be nourished but chooses not to use it.

Difference: For A it is deprivation, for B it is freedom of choice.

A. K. Sen's Theory of Entitlement and Development

2. Development as Freedom: Key Dimensions

B. Freedom as a Means and End

- Freedom is both the primary goal of development and the principal means of achieving it.
- Political freedoms, economic opportunities, social protections, and access to healthcare and education are interlinked.

A. K. Sen's Theory of Entitlement and Development

2. Development as Freedom: Key Dimensions

Entitlement Failures and Development

Sen links entitlement failures to broader issues of injustice, inequality, and governance. For example:

- Famine and poverty can arise due to unequal power structures, corruption, or lack of accountability, not just natural disasters or resource scarcity.
- Ensuring entitlements (through social safety nets, equitable policies, and markets) is essential for fostering capabilities and freedoms.

A. K. Sen's Theory of Entitlement and Development

Applications of the theory

1. Famine Analysis

Sen's entitlement framework has been applied to analyze historical famines, showing that they are often caused by socio-economic inequalities rather than food shortages.

A. K. Sen’s Theory of Entitlement and Development

Applications of the theory

2. Policy Design

His ideas have influenced poverty alleviation programs emphasizing access to education, healthcare, and social security to expand capabilities.

A. K. Sen's Theory of Entitlement and Development

Applications of the theory

3. Human Development Index (HDI)

Sen's capabilities approach underpins the HDI, which measures development beyond GDP by considering education, health, and income.

A. K. Sen's Theory of Entitlement and Development

Critiques

Market Dynamics: Critics argue that Sen's entitlement theory underestimates the complexities of market dynamics and structural factors like global trade.

Cultural Contexts: Some suggest the framework should include cultural and psychological dimensions of well-being.

A. K. Sen’s Theory of Entitlement and Development

Conclusion

Despite those critiques, Sen's theory remains a cornerstone in understanding poverty, inequality, and development, shifting the focus from aggregate metrics to individual freedoms and entitlements.

Theory / Model	Key Author(s)	Core Idea	Policy Implications
Classical Growth Theory	Adam Smith, David Ricardo, T.R. Malthus	Growth driven by capital accumulation, specialization, and resource use; limited by diminishing returns and population pressure	Encourage free markets, specialization, and trade; manage population growth
Harrod–Domar Model	R.F. Harrod, E.D. Domar	Savings and investment determine growth rate; capital-output ratio is key	Increase savings and investment rates; mobilize capital
Solow–Swan Model	Robert Solow, Trevor Swan	Long-run growth from technological progress; diminishing returns to capital	Invest in technology and education; maintain capital formation
Lewis Dual-Sector Model	W. Arthur Lewis	Transfer of surplus labor from traditional agriculture to modern industry boosts growth	Promote industrialization; invest in rural productivity
Fei–Ranis Model	J.C.H. Fei, Gustav Ranis	Extended Lewis model; stresses agricultural productivity to sustain industrial growth	Balance agricultural and industrial investment
Balanced Growth Theory	Ragnar Nurkse	Simultaneous investment in multiple sectors to create demand linkages	Large-scale coordinated investment programs
Unbalanced Growth Theory	Albert O. Hirschman	Strategic, selective investment in key sectors to trigger growth	Identify and invest in sectors with strongest linkages
Big Push Theory	P.N. Rosenstein-Rodan	Large-scale coordinated investment needed to overcome underdevelopment traps	Government-led industrialization plans
Dependency Theory	Raúl Prebisch, Andre Gunder Frank	Underdevelopment is caused by dependence on developed nations	Promote self-reliance; reduce dependency on primary exports
Endogenous Growth Theory	Paul Romer, Robert Lucas	Knowledge, innovation, and human capital drive sustained growth	Invest in R&D, education, and skill development
Capability Approach	Amartya Sen	Development as expanding human freedoms and capabilities, not just GDP	Focus on health, education, and rights
Sustainable Development Theory	WCED	Growth must balance economic, social, and environmental goals	Integrate environmental policies into development planning