MNIT, Jaipur: 21-25 April 2025

Basic Macroeconomic Concepts

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Growing Importance of Economics

Most Important Functions

- Employment
- Inflation
- Exchange Rate
- Exports & Imports
- GDP Growth Rate
- Infrastructure development
- Adequate finances for national security
- Financing for the underprivileged population (Inclusiveness)

Growing Importance

- The Great Depression
- Nobel Prize: Since 1969 [Ragnar Frisch and **Jan Tinbergen**]
- Developed Countries Obj.: Economic Growth v. Recession
- Developing Countries Obj.: Economic Development
- Understanding of the Economy: Socio-Economic-Political Dimensions

Basic Macroeconomic Concepts (1/2)

Economic Growth & Economic Development: LDCs & MDCs

GNP [Nominal]: It is the value of total output of all goods & services produced by a country **at current prices**

Real GNP: It is the value of total output of all goods & services produced by a country **at constant prices**

Growth Rate: It refers to the growth rate of real GNP

GDP [Nominal]: It is the value of total output of all goods & services produced within the geographical boundary of a country **at current prices**

Real GDP: It is the value of total output of all goods & services produced within the geographical boundary of a country **at constant prices**

Basic Macroeconomic Concepts (2/2)

Nominal: At current prices

Real: At Constant Prices (with some past base year)

GNP and GDP

Nominal NNP = Nominal GNP – Depreciation

NNP = GNP – Depreciation [at current prices]

Real NNP = Real GNP – Depreciation [at constant prices]

Nominal NDP = Nominal GDP – Depreciation

NDP = GDP – Depreciation [at current prices]

Real NDP = Real GDP – Depreciation [at constant prices]

GNP and GDP

GNP = Consumption Expenditure + Savings + Government Expenditure + Net Exports + Net Income (Net Remittances)

$$Y_{GNP} = C + S + G + (X - M) + Z$$

Savings (S) = Investment (I)

GDP = Consumption Expenditure + Investment + Government Expenditure + Net Exports

$$Y_{GDP} = C + S + G + (X - M)$$

Estimation of National Income

- **Methods of Measuring National Income**

  ➢ Product or Production Method

    ❖ Value Added Method

  ❖ Income Method

    ❖ Rent + Wages & Salaries + Interest Income + Profits

  ➢ Expenditure Method

Monetary Policy

Objectives

- Investment → Employment Generation
- Economic Stability (Inflation/Deflation/Recession Control)
- Exchange Rate Stability

Instruments/Tools of Monetary Policy: Credit Control

- Bank Rate, Repo Rate, Reverse Repo Rate
- Open Market Operations: Buying/Selling of Govt. Securities
- Cash Reserve Ratio (CRR): Cash Reserves held with RBI as % of Bank's Deposits
- Statutory Liquidity Ratio (SLR): % of deposits reqd. to be held as liquid assets to ensure withdrawal demand

Fiscal Policy

Objectives

- Economic Growth
- Full Employment
- Price Stability
- Raising Resources (Taxation & Public Borrowing) for Govt. Exp.

Instruments/Tools of Fiscal Policy

- Public Expenditure (Budget)
- Taxation: Direct and Indirect
- Public Borrowings
- Deficit Financing

Business Cycles

Business Cycle refers to the fluctuations in economic activities such as GDP, Employment, interest, prices and several other related economic parameters.
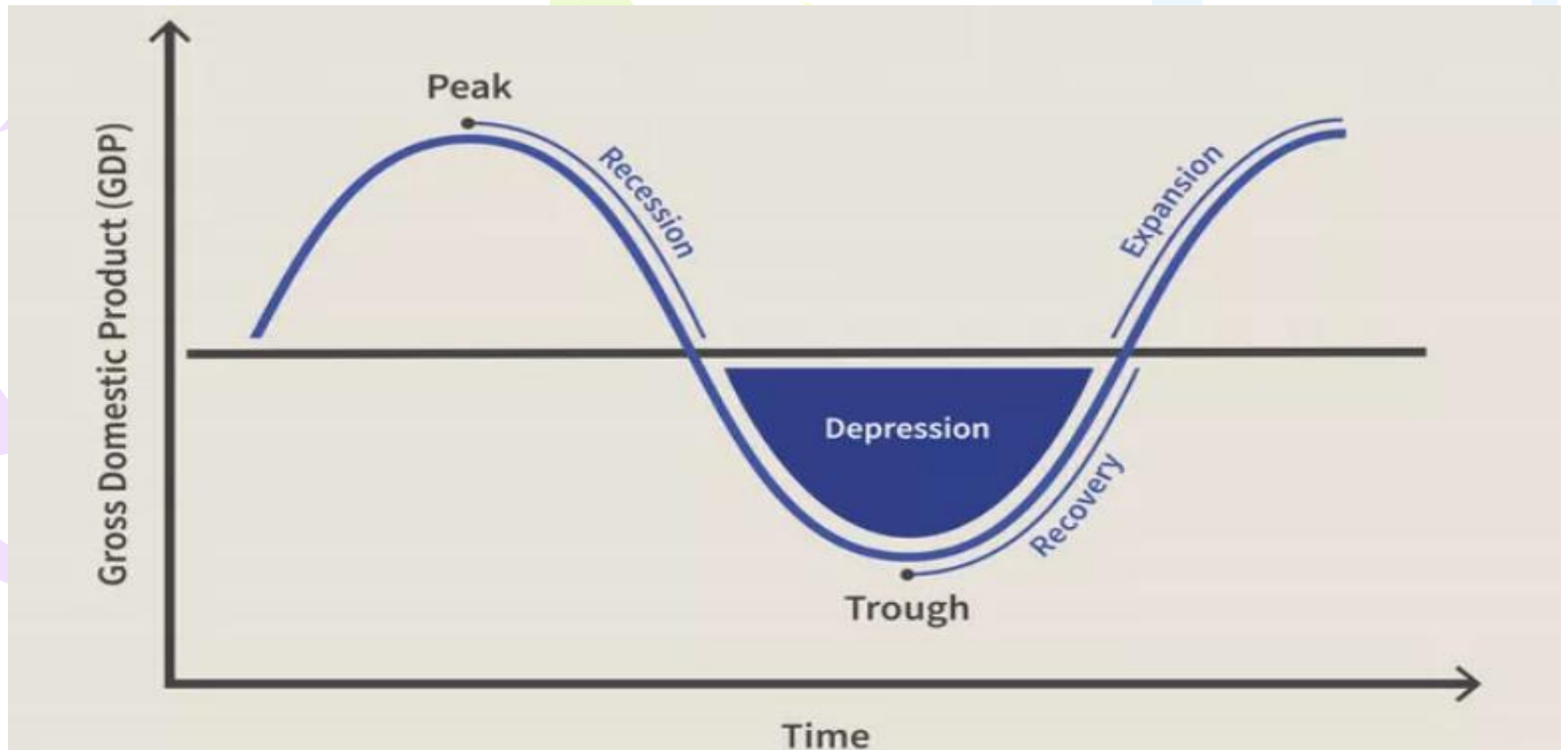
In a Business Cycle, combined effect of several economic parameters leads the economy towards contraction or expansion of economic activities.

An economic cycle, or business cycle, has four stages: expansion, peak, contraction, and trough.

Recession & Depression:

- Decline in Employment, Industrial Production, Wage Rates, Costs of Production, Prices, Profits, Bank Loans etc.
- Increase in business inventories
- Speculation: Little
- Feeling: Hesitation → Pessimism

Business Cycles

CHARACTERISTICS OF VARIOUS PHASES OF A STANDARD BUSINESS CYCLE

Characteristics	Recession	Depression	Recovery	Prosperity
1. Employment	Decline	Low	Slow Increase	High
2. Industrial Output	Decline	Low	Slow Increase	High
3. Wage Rates	Decline	Low	Slow Increase	High
4. Prices	Decline	Low	Slow Increase	High
5. Bank Loans	Decline	Low	Slow Increase	High
6. Bank Reserves	Increase	High	Decrease	Low
7. Costs of Production	Decline	Low	Slow Increase	High
8. Profits	Decline	Low	Slow Increase	High
9. Business Inventories	Increase	High	Decline	Low
10. Business Failures	Sudden	Many	Few	Few
11. Speculation	Little	Very Little	Slow Increase	High
12. Feeling	Hesitation	Pessimism	Hope	Optimism

24-04-2025

Inflation

Inflation: Continuous rise in prises

Types of Inflation

- **Creeping Inflation:**
  - Moderate, Predictable & Manageable
  - Single digit (< 10%)
- **Walking Inflation:**
  - High 20% to 50%
- **Galloping Inflation:**
  - Exceptionally high inflation rate
  - Double or Triple digit: 50% to 999%
- **Hyper Inflation:**
  - Prices rise very fast: > 1000% (during post-war period)
  - Paper currency tends to become worthless

Causes of Inflation

- Demand-pull: Tax cutting → Demand exceeds Supply

- Cost-push: Cost of fuel, energy, …

- Monetary policy: Increase in money supply.

- Devaluation due to BoP problem

- Rising wages

- Fiscal policy: High public expenditure → Deficit financing

Controlling Inflation

Monetary Policy, Fiscal Policy, Other Economic Policies

World's Top 10 Largest Economies (2023)

Rank & Country	GDP (USD bn)	GDP Per Capita (USD thousand)
U.S.A.	26,854	80.03
#2 China	19,374	13.72
#3 Japan	4,410	35.39
#4 Germany	4,309	51.38
#5 India	3,750	2.6
#6 U.K.	3,159	46.31
#7 France	2,924	44.41
#8 Italy	2,170	36.81
#9 Canada	2,090	52.72
#10 Brazil	2,080	9.67

Top 10 Countries (Highest GDP per capita)

Rank	Country	GDP per Capita (USD)	Region
1	Luxembourg	$132,370	Europe
2	Ireland	$114,580	Europe
3	Norway	$101,100	Europe
4	Switzerland	$98,770	Europe
5	Singapore	$91,100	Asia
6	Qatar	$83,890	Asia
7	U.S.	$80,030	Americas
8	Iceland	$75,180	Europe
9	Denmark	$68,830	Europe
10	Australia	$64,960	Oceania

Purchasing Power Parity

PPP concept developed due to Price Differentials in Goods & Services (in $ terms)

Not correctly valued when using an exchange-rate conversion: Fresh vegetables, tea, snacks, cold drinks, bottled water, haircut, local transport, school fee etc.

Purchasing Power Parity (PPP) Concept:

Solution of Price Differentials vis-à-vis income required to buy same quantity of goods & services.

Purchasing Power Parity (PPP)

Country/ Territory	Region	IMF		World Bank	
		Estimate	Year	Est.	Year
World	—	174,471,283	2023	164,155,327	2022
China	Asia	33,014,998	2023	30,327,320	2022
USA	Americas	26,854,599	2023	25,462,700	2022
India	Asia	13,033,443	2023	11,874,583	2022
Japan	Asia	6,456,527	2023	5,702,287	2022
Germany	Europe	5,545,656	2023	5,309,606	2022
Russia	Europe	4,988,829	2023	5,326,855	2022
Indonesia	Asia	4,398,729	2023	4,036,901	2022
Brazil	Americas	4,020,381	2023	3,837,261	2022
France	Europe	3,872,729	2023	3,769,924	2022
U.K.	Europe	3,846,931	2023	3,656,809	2022
Turkey	Asia	3,572,551	2023	3,180,984	2022
Italy	Europe	3,195,548	2023	3,052,609	2022
Mexico	Americas	3,125,902	2023	2,742,903	2022
South Korea	Asia	2,924,038	2023	2,585,011	2022
Canada	Americas	2,385,124	2023	2,273,489	2022
Spain	Europe	2,363,535	2023	2,181,968	2022
Saudi Arabia	Asia	2,300,967	2023	2,150,487	2022
Egypt	Africa	1,803,584	2023	1,674,951	2022
Australia	Oceania	1,718,097	2023	1,626,940	2022

PPP-Adjusted GDP Per Capita

Rank	Country	GDP per Capita (PPP)	Region
1	Ireland	$145,200	Europe
2	Luxembourg	$142,490	Europe
3	Singapore	$133,890	Asia
4	Qatar	$124,830	Asia
5	Macao	$89,560	Asia
6	UAE	$88,220	Asia
7	Switzerland	$87,960	Europe
8	Norway	$82,650	Europe
9	U.S.A.	$80,030	Americas
10	San Marino	$78,930	Europe

Understanding the Economy (1/2)

➢ **Economic Dimensions**

- ▪ Macroeconomic indicators: GNP, GDP, PCI (Nominal & Real), Gr. Rate, …

- ▪ Economy size, Income level, Income distribution, Poverty

➢ **Infrastructure**

➢ **Gender Parity Index** (India, Afghanistan, Iran, Saudi Arabia, …)

➢ **Social Dimensions:** Caste, Occupation, Literacy, Gender, Crime, Women in Workforce, …

Understanding the Economy (2/2)

➢ **Demographic Dimensions:**

- o Distribution of Population by Income, Education, Age at Marriage (particularly females)

- o **Dependency Ratio**

- o Longevity v. Govt. policy related to retirement age

- o BR, DR, IMR, CMR, ..

- o **Occupational Structure**

Characteristics of LDCs (1/2)

- Significant proportion of poor people

- Low spread of technology

- Poor capital markets

- Dual economy

- Varying dependence on international trade

- Rapid population growth (1.6% to 3.5%) vs. DCs @ 0.1%
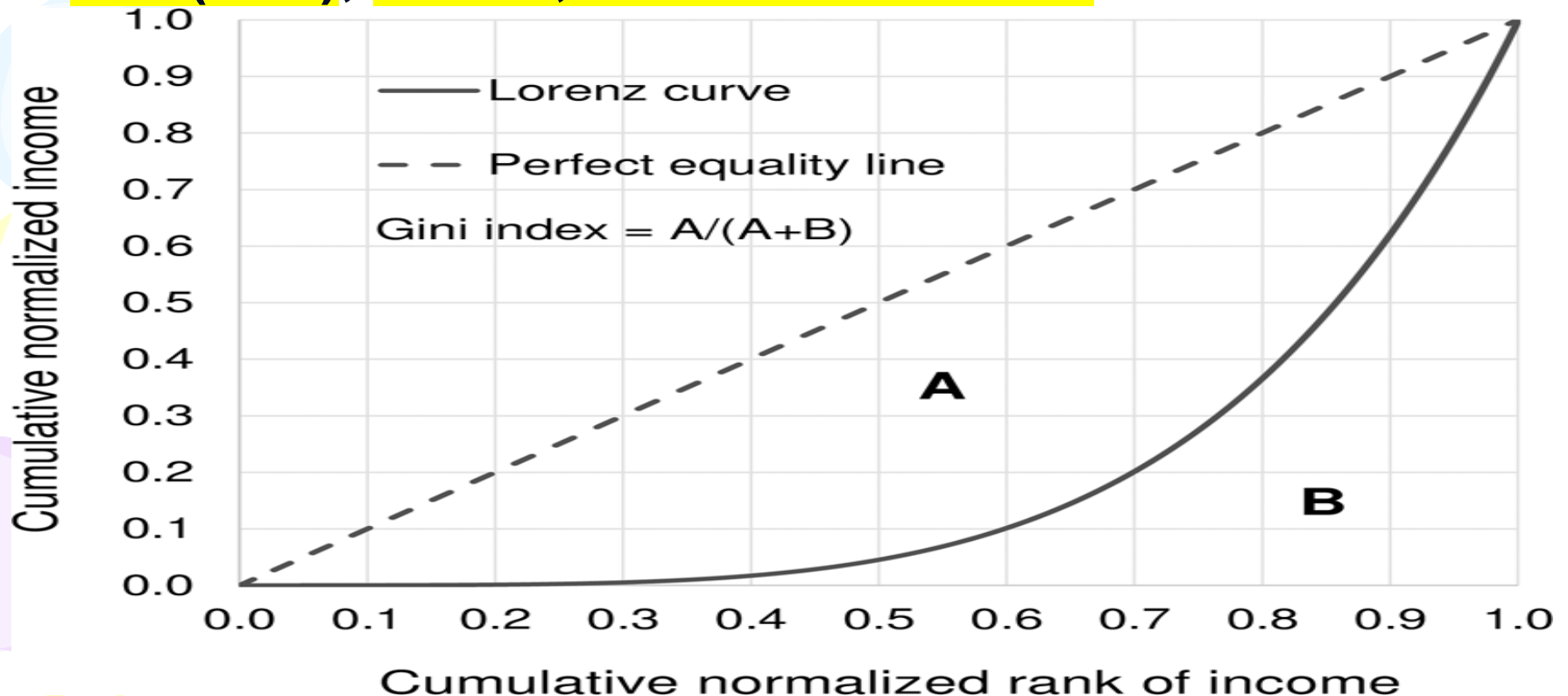
Characteristics of LDCs (2/2)

- Low literacy & school enrolment rates

- Poor quality of educational & healthcare institutions

- Unskilled labour force

- Life expectancy at birth

- Poorly developed institutions

- Non-compliance of law: Traffic Rules

- High Crime Rate: Ineffective Police, Widespread Corruption

Lorenz Curve and Gini Coefficient

Lorenz Curve helps in understanding the distribution of income in an economy.

Gini Coefficient measures the degree of income inequality; = A/ (A+B); If A = 0, Gini Coefficient = 0

#	Country	[High] Gini Coefficient
1	South Africa	63
2	Namibia	59.1
3	Suriname	57.9
4	Zambia	57.1
5	Central African Republic	56.2
6	Eswatini	54.6
7	Colombia	54.2
8	Mozambique	54
9	Hong Kong	53.9
10	Botswana	53.3
11	Angola	51.3
	India	35.7
	World	38

Countries: Lowest Gini Coefficient

1. Slovakia **(23.2)**

2. Belarus (24.4)

3. Slovenia (24.4)

4. Armenia (25.2)

5. Czech Republic (25.3)

6. Ukraine (25.6)

7. Moldova (26)

8. United Arab Emirates (26)

9. Iceland (26.1)

10. Belgium (27.2)

Human Development Index (HDI)

- **HDI measures each ==country's social and economic development== by focusing on the following four factors:**

1. **Mean Years of Schooling**

2. **Expected Years of Schooling**

3. **Life Expectancy at Birth**

4. **Gross National Income (GNI) per capita**

   (Published by Statista Research Department, Sep 22, 2022)

➢ **==HDI is the geometric mean (equally-weighted) of life expectancy, education, and GNI per capita==**

➢ **The education dimension is the arithmetic mean of the two education indices (mean years of schooling and expected years of schooling)**

S. No.	Country	HDI
1	Switzerland	0.962
2	Norway	0.961
3	Iceland	0.959
4	Hong Kong, China (SAR)	0.952
5	Australia	0.951
6	Denmark	0.948
7	Sweden	0.947
18	United Kingdom	0.929
19	Japan	0.925
21	United States	0.921
132	India	0.633

132. India 0.633
161. Pakistan 0.54 (154th in 2020)
World Average: 0.465
South Asia Average: 0.508

Population Explosion and High Dependency

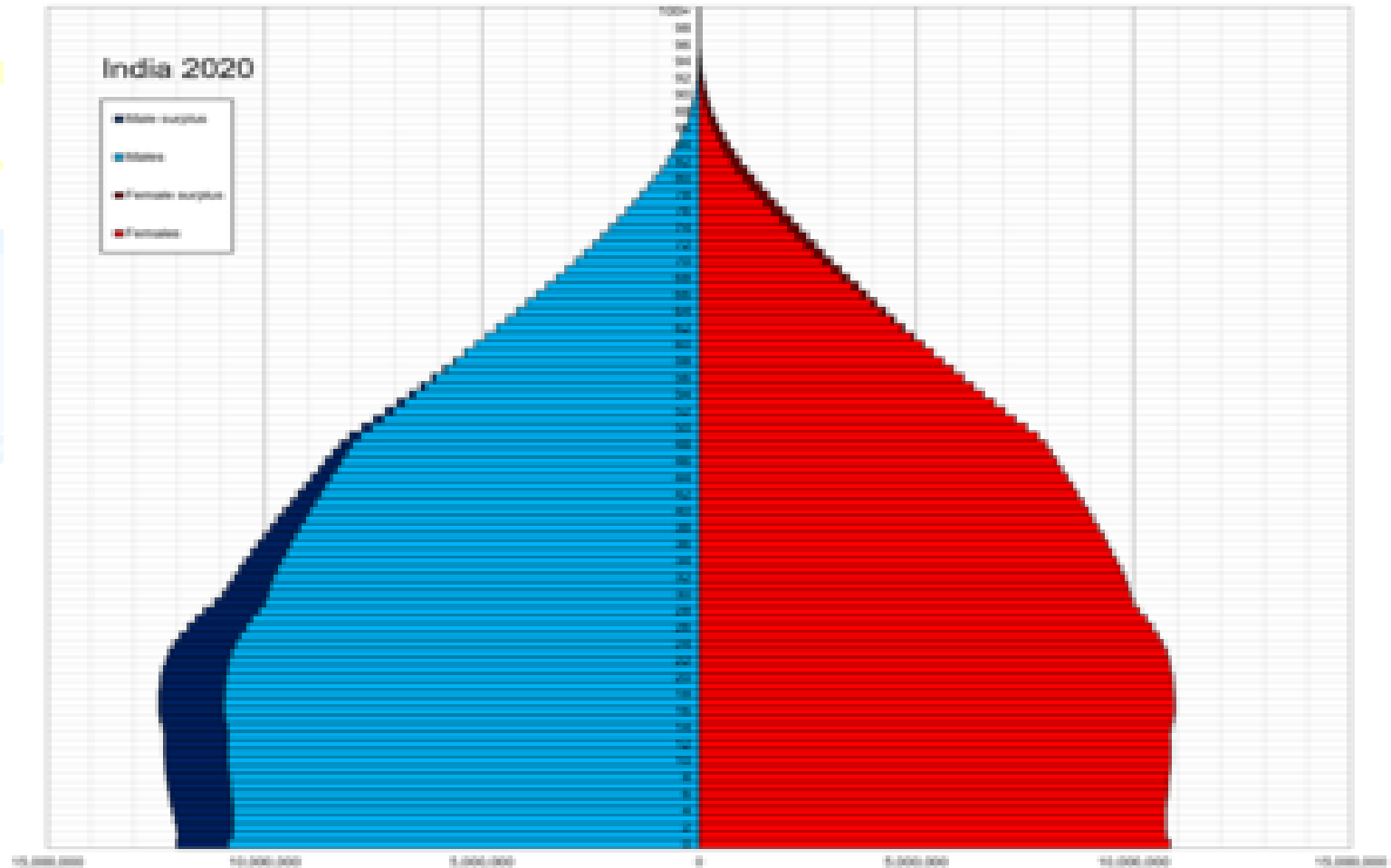**Another major characteristic of LDCs:**

High rate of growth of population

T. R. Malthus Prediction in 1798:
Either humans should check population growth, else the nature will check it

Demography of India
India's Population Pyramid in 2020

India 2020

Legend:
- Male surplus
- Males
- Female surplus
- Females

India's population (1/3)

Population	**1,425,775,850 (2023 est.)**
Density	473.42 people per.km^2 (2021 est.)
Growth Rate	0.68% (2022 est.)
Birth Rate	16.1 births/1,000 population (2023 est.)
Death Rate	6.6 deaths/1,000 population (2023 est.)
Life Expectancy	72.0 years (2023 est.)
Males	70.5 years (2023 est.)
Females	73.6 years (2023 est.)

India's population (2/3)

Fertility Rate	**2.03 children born per woman (2021)** **(No. of live births per 1,000 females of childbearing age 15-44)**
Infant Mortality Rate	29.94 deaths/1,000 live births (2018)

Age structure (2021 est.)

0–14 years	25.68% [Males: M & Females: F] [M: 183,695,000; F: 166,295,000]
15–64 years	67.49% [M: 472,653,000; F: 447,337,000]
65 and over	6.83% [M: 44,275,000; F: 48,751,000]

India's population (3/3)

Sex Ratio (2023 est.): Males/Female

Total	1.06
At birth	1.1
Under 15	1.11
15–64 years	1.07
65 and over	0.85

Language

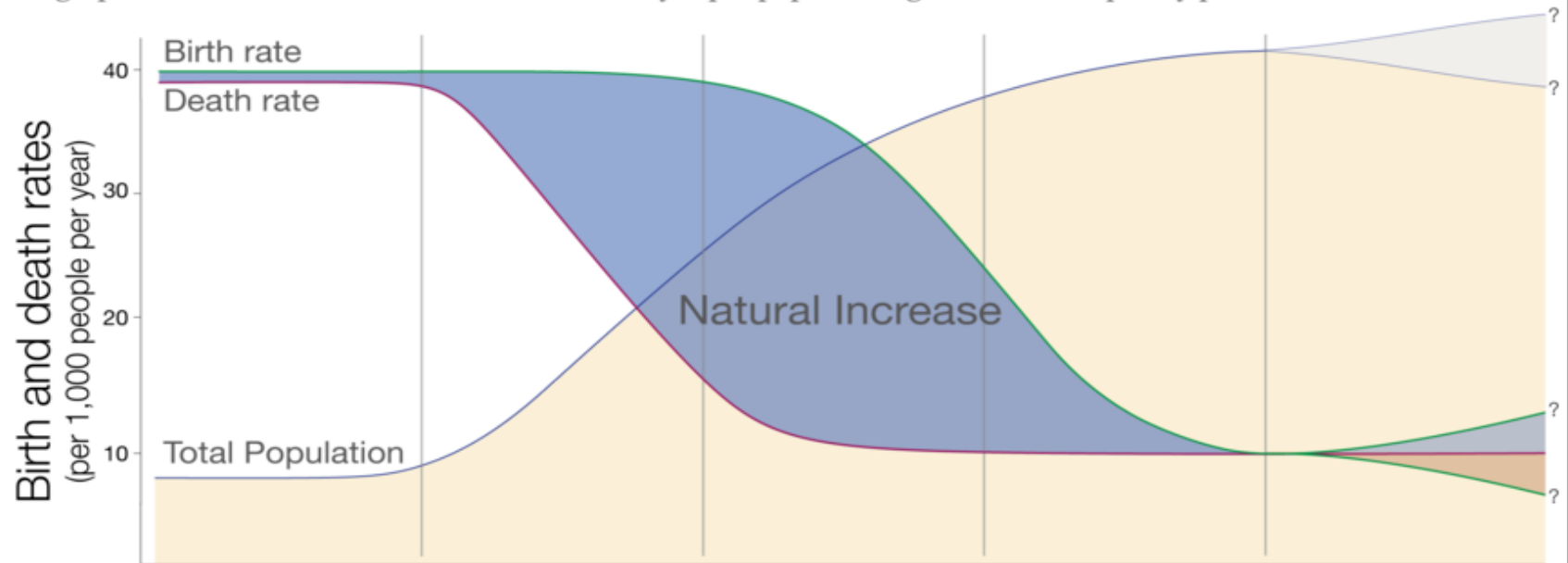|	
Spoken	• Hindi 43.6%
	• Bengali 8%
	• Marathi 6.9%
	• Telugu 6.8%
	• Tamil 6.7%
	• Gujarati 4.6%
	• Urdu 4.2%

Demographic Transition

- A sudden fall in the death rate (due to improved health systems, better hygiene knowledge,)

- Slowly declining birth rate

  → **Population Explosion**

- **Important: Controlling duration of demographic transition**

- Several African countries' demographic transition is getting prolonged.

The five stages of the demographic transition

The demographic transition is a model that describes why rapid population growth is a temporary phenomenon.

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Birth rate	High	High	Falling	Low	Yet to be seen (Possibly falling further, possibly rising again)
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Rapid increase	Increase slows down	Falling and then stable	Little change
Population Pyramid	Men Women	Men Women	Men Women	Men Women	Men Women

Demographic transition overview, where "stage 5" is shown as unknown.

World Population by Year

Year	World Population	Yearly Change	Net Change	Density (P/Km²)
2023	8,045,311,447	0.88 %	70,206,291	54
2000	6,148,898,975	1.34 %	81,140,517	41
1975	4,069,437,231	1.85 %	73,920,154	27
1927	2,000,000,000			
1804	1,000,000,000			
1600	**500,000,000**			
900	240,000,000			
800	220,000,000			
-500	100,000,000			
-1000	50,000,000			
-2000	**27,000,000** **Delhi's Pop**			

Countries Ranked by Fertility Rate :2023 (1/2)

Country Name	Fertility Rate
Republic of Congo	5.464
Angola	5.213
Nigeria	5.076
Zambia	4.381
Mauritania	4.321
Cameroon	4.295
Sudan	4.154
Solomon Islands	4.145

Country Name	Fertility Rate
Ghana	3.647
Vanuatu	3.619
Timor-Leste	3.598
Kiribati	3.409
Papua New Guinea	3.377
Kenya	3.259
Pakistan	3.238
Egypt	3.131

Countries Ranked by Fertility Rate :2023 (2/2)

Country Name	Fertility Rate	Country Name	Fertility Rate	Country Name	Fertility Rate
Lesotho	2.967	Honduras	2.321	Indonesia	2.220
Eswatini	2.803	Uzbekistan	2.309	India	**2.139**
Mongolia	2.731	Morocco	2.296	Sri Lanka	2.128
Micronesia	2.722	Nicaragua	2.279	Myanmar	2.073
Bolivia	2.577	Indonesia	2.220	Vietnam	2.019
Djibouti	2.522	Honduras	2.321		
Philippines	2.454	Uzbekistan	2.309		
Cambodia	2.394	Morocco	2.296		

India: Historical Fertility Rate

Year	Fertility Rate	Growth Rate
2023	2.139	-0.930%
2020	2.200	-0.900%
2015	2.334	-1.310%
2010	2.636	-2.950%
2005	3.002	-2.250%
2000	3.346	-1.990%
1991	4.006	-2.130%
1977	5.061	-1.690%
1971	5.535	-1.130%
1961	5.892	-0.030%
1951	5.906	-0.020%

Religious Groups & Fertility Rates

NFHS: National Family Health Survey → Changing Demography

Religious Group	NFHS-1 1992-93	NFHS-2	NFHS-3	NFHS-4	NFHS-5 2019-21
Hindu	3.3	2.78	2.59	2.13	1.94
Muslim	4.41	3.59	3.4	2.62	2.36
Christian	2.87	2.44	2.34	1.99	1.88
Sikh	2.43	2.26	1.95	1.58	1.61
Buddhist	–	2.13	2.25	1.74	1.39
Jain	–	1.9	1.54	1.2	1.60

Thank you

- Prof. Sudhir K. Jain