Entrepreneurship & Management functions

Session 1

https://sites.google.com/a/iiitdm.ac.in/sudhirvs/courses/entrepreneurship-management

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, DESIGN AND MANUFACTURING, KANCHEEPURAM

- Dr Sudhir Varadarajan
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Introductory Session

- Why entrepreneurship & management
- Learning Objectives & Course Structure
- Entrepreneurs, Managers and Businesses
- Macro and Micro-Economics

Global trends in engineering education and NEET** ways of thinking, MIT (2018)

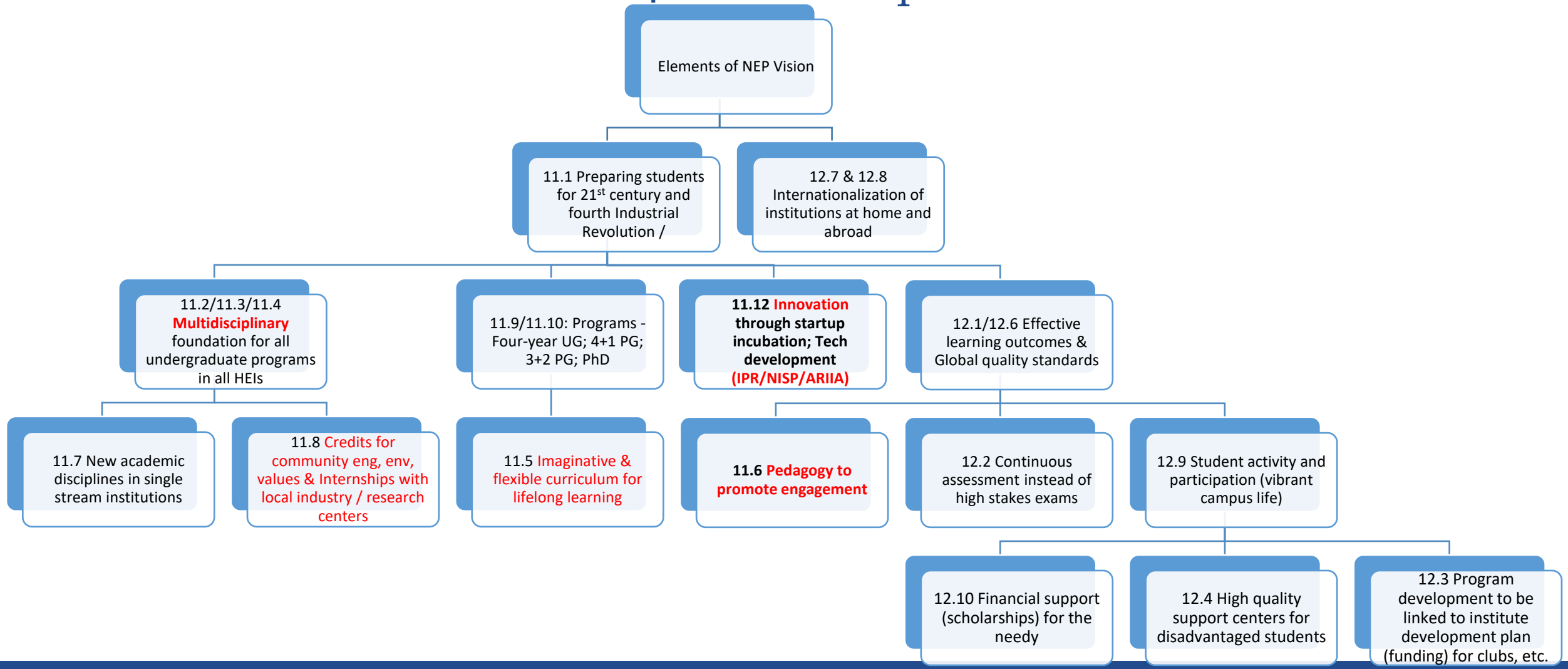
Learning how to learn	Discovering	Creative	Personal skills and attitudes
Interpersonal skills	Humanistic	Critical and Metacognitive thinking	Systems thinking
Making	Experimental	Analytical thinking	Computational thinking

To develop these qualities engineering institutions must approach the overall training very differently, with emphasis on **cross disciplinary, integrative, and problem-based learning**

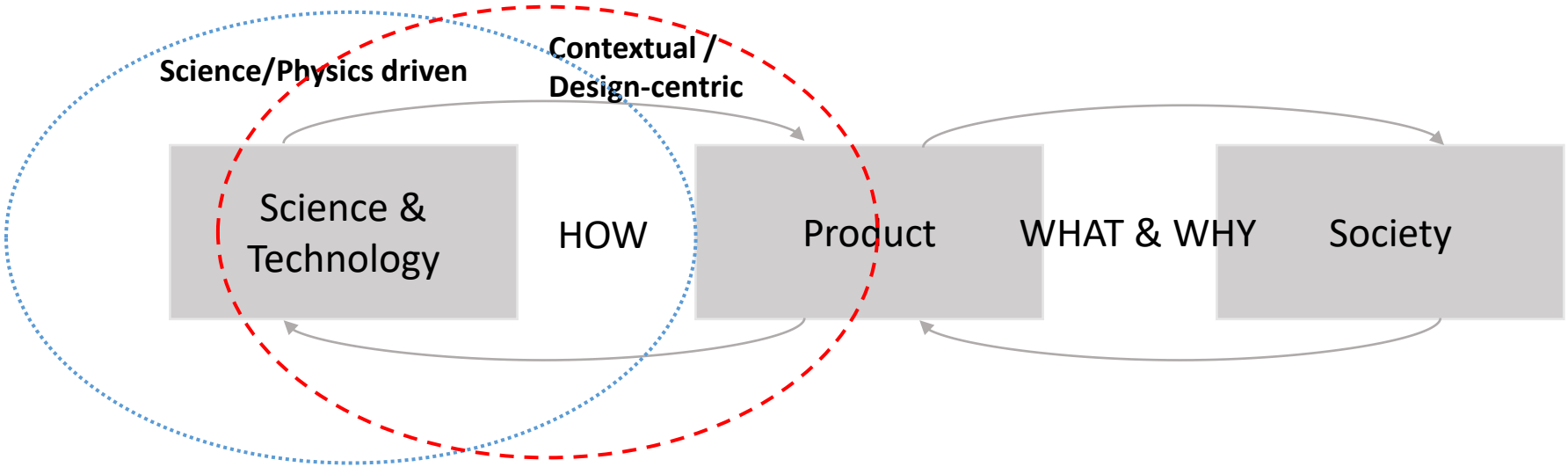
***: New Engineering Education Transformation*

1. ***A move towards socially-relevant and outward-facing engineering curricula***
2. In recent years, STEM educational institutions have begun to leverage entrepreneurship programming to ***create a more entrepreneurially minded technological workforce*** (Shekhar and Huang-Saad, 2021)

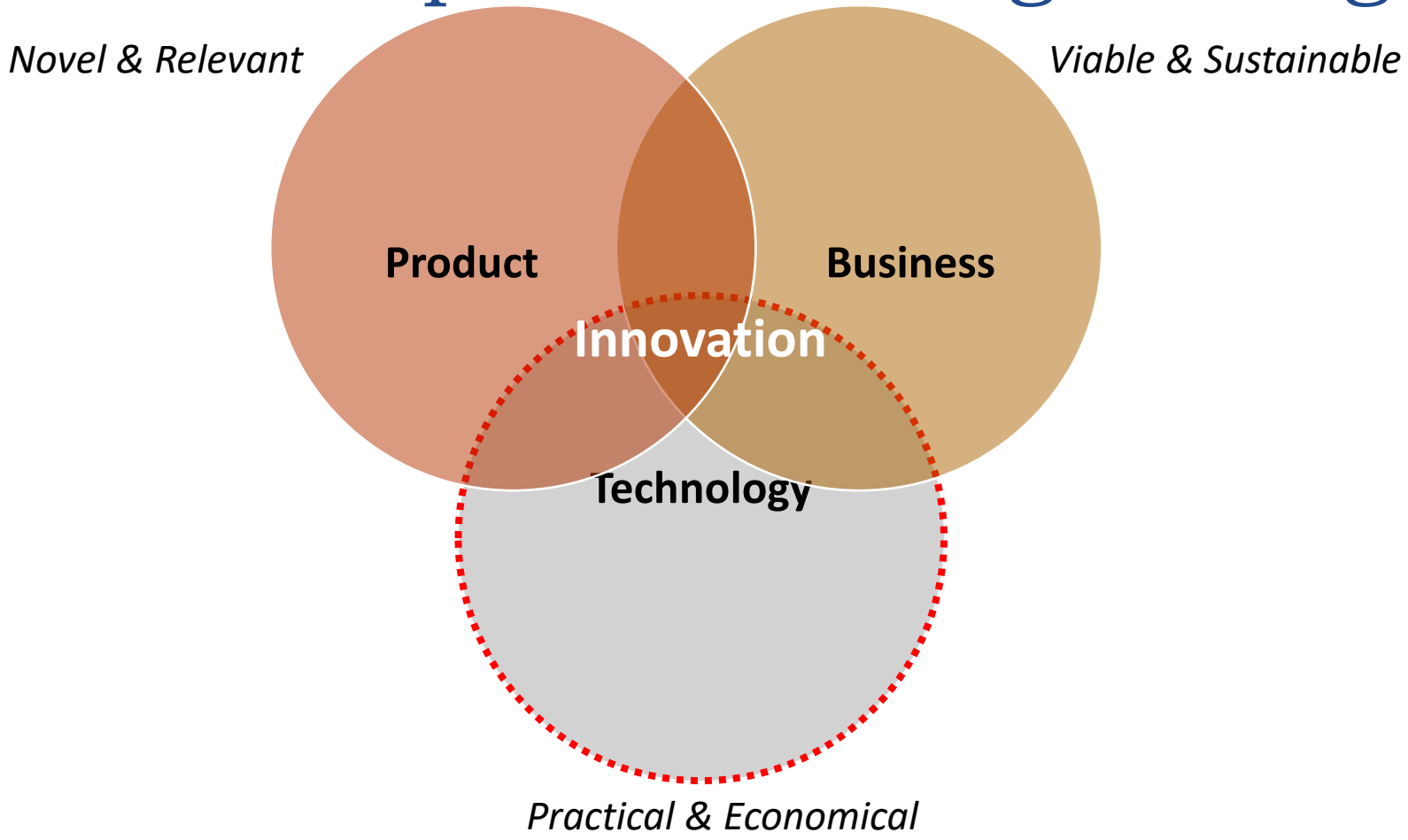
NISP 2019 and NEP 2020 call for alignment of education with innovation & entrepreneurship



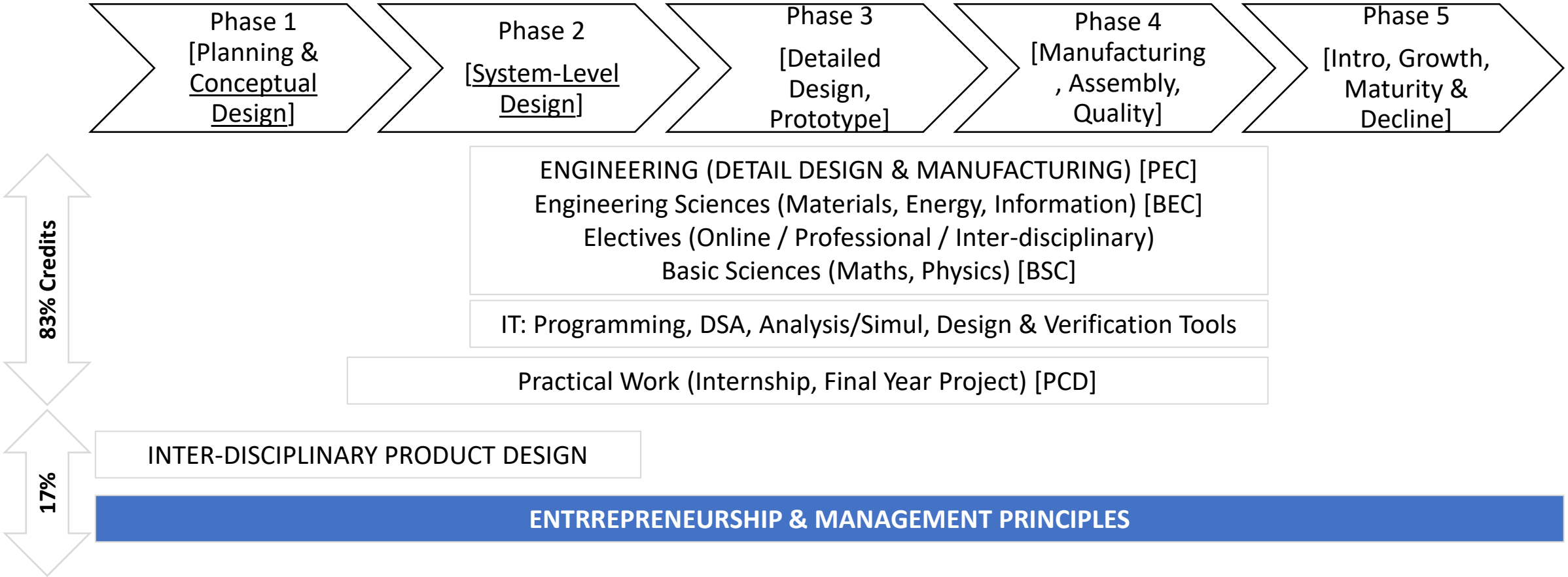
Time for the right shift in engineering curriculum



Inter-disciplinary Product Design, Entrepreneurship Oriented Engineering



Entrepreneurship & Management exposes an engineer to the wider ecosystem of a tech/product



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- Learning Objectives & Course Structure
- Entrepreneurs, Managers and Businesses
- Macro & Micro – Economics, GDP and Other Indicators

Learning Objectives and Outcomes

- The objective of this course is to provide engineering students an introduction to the basic concepts of business, entrepreneurship and management, with a specific focus on the process of turning an idea into a commercially viable business

- At the end of the course the students will be able to
  - Understand the importance of entrepreneurship and management in value creation
  - Understand market, competition and develop a business plan for a new product
  - Understand the process of starting a business and mobilizing resources

- In the previous courses we attempted to develop a new product concept. In this course we will understand how this product can create economic value

Session & Assessment Plan

Aug	Aug	Sep	Oct	Nov
Module 1 (Sessions 1-2)	Module 2 & 3 (Sessions 3-6)	Module 4 (Sessions 7-12)	Module 5 & 6 (Sessions 13-15)	End Semester
Introduction to entrepreneurship & management (1)	Market, Competition & Strategy (2)	Operations & Supply Chain (2)	Digital Enterprise (IS) & Decision Making (1)	*Understand-15%*
Introduction to Macro and Microeconomics, performance indicators	Organization & Process (1)	Human & Financial Resources (3)	Legal & Regulatory Environment (1)	*Apply-15%*
Types of organizations, incl. startups (1)	Midpoint Review (1)	Review (1)	Business Plan (Peer Review)	*Analyze-10%*
Assignment Set-1 (5%)	Assignment Set-2 (10%)	Assignment Set-3 (15%)	Biz Plan Compet'n (20%)	End Semester (40%)

Engagement during the course (classroom & offline) – 10%

Key References

1. Lots of material on the Internet
2. University of Delhi (2014), Foundation course: Business, Entrepreneurship and Management, Pearson, Delhi (Library / Purchase)
3. Peter Drucker (1999), Management: Revised Edition, Harper Collins (e-book in portal)
4. Michael Porter (1985), Competitive Advantage: Creating and sustaining superior performance, The Free Press (e-book in portal)
5. Keely L. Croxton, Sebastián J. García-Dastugue, Douglas M. Lambert and Dale S. Rogers, The Supply Chain Management Processes, The International Journal of Logistics Management (portal)
6. KSV Menon and Garima Malik (2016), Funding options for startups: A conceptual framework and practical guide, NotionPress (Library)

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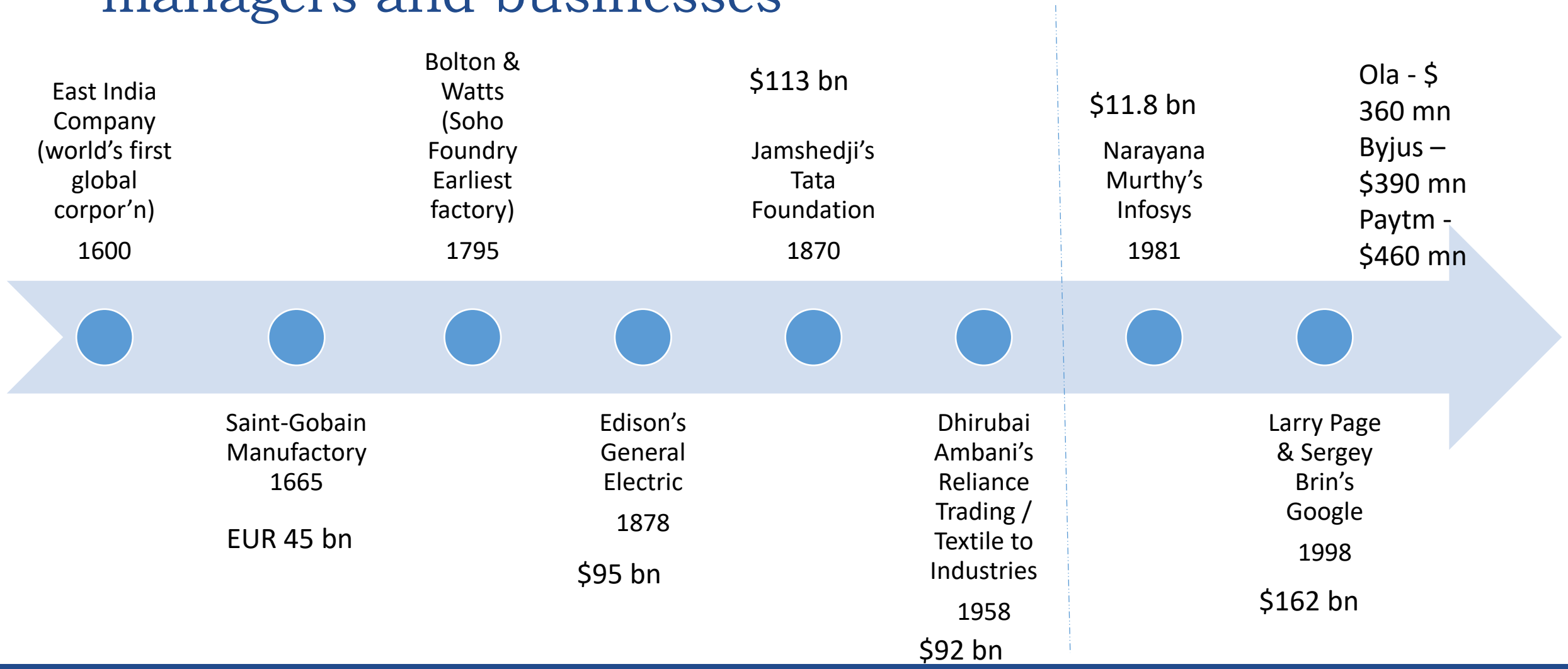
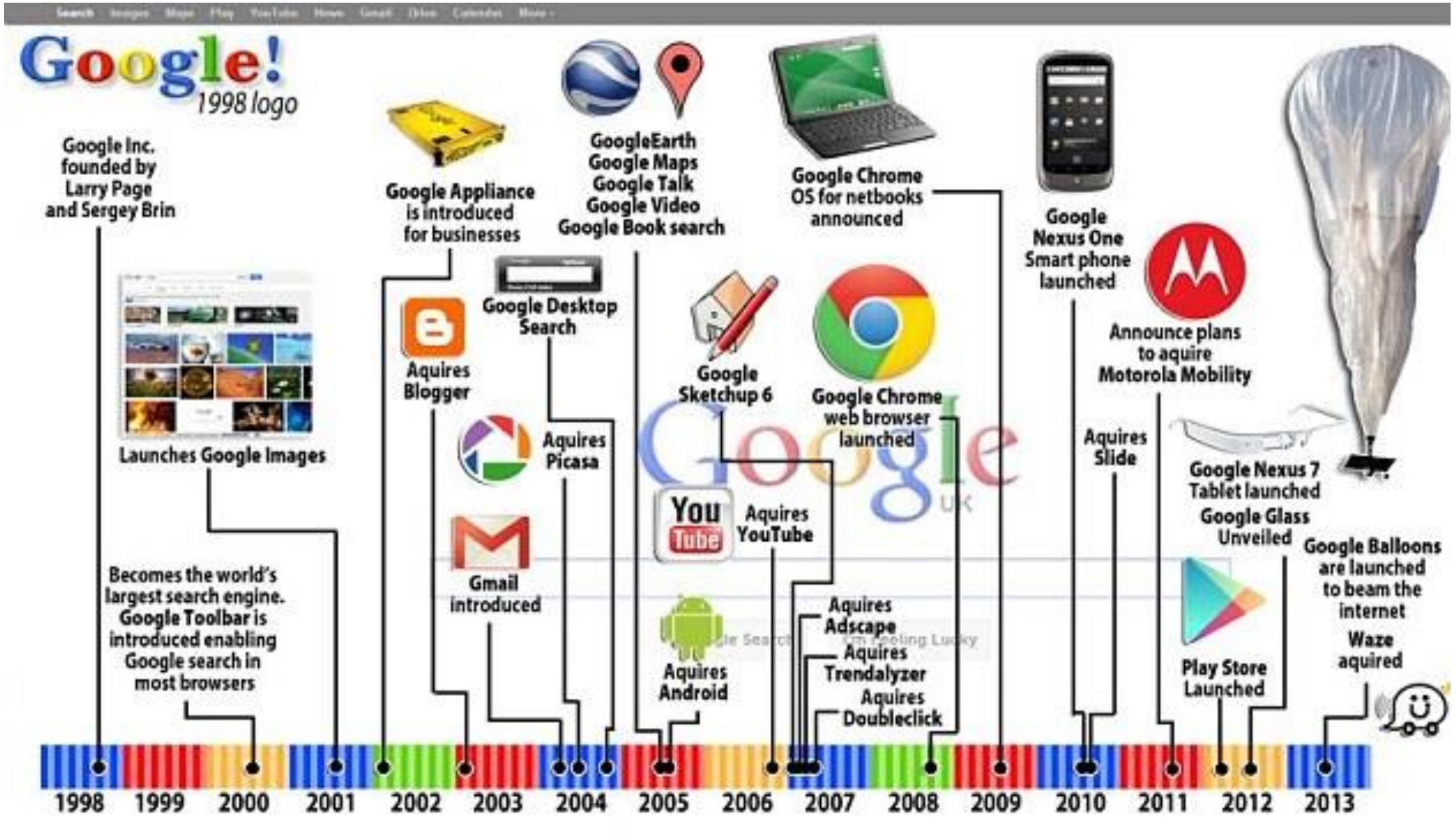
Let us discuss about some entrepreneurs, managers and businesses

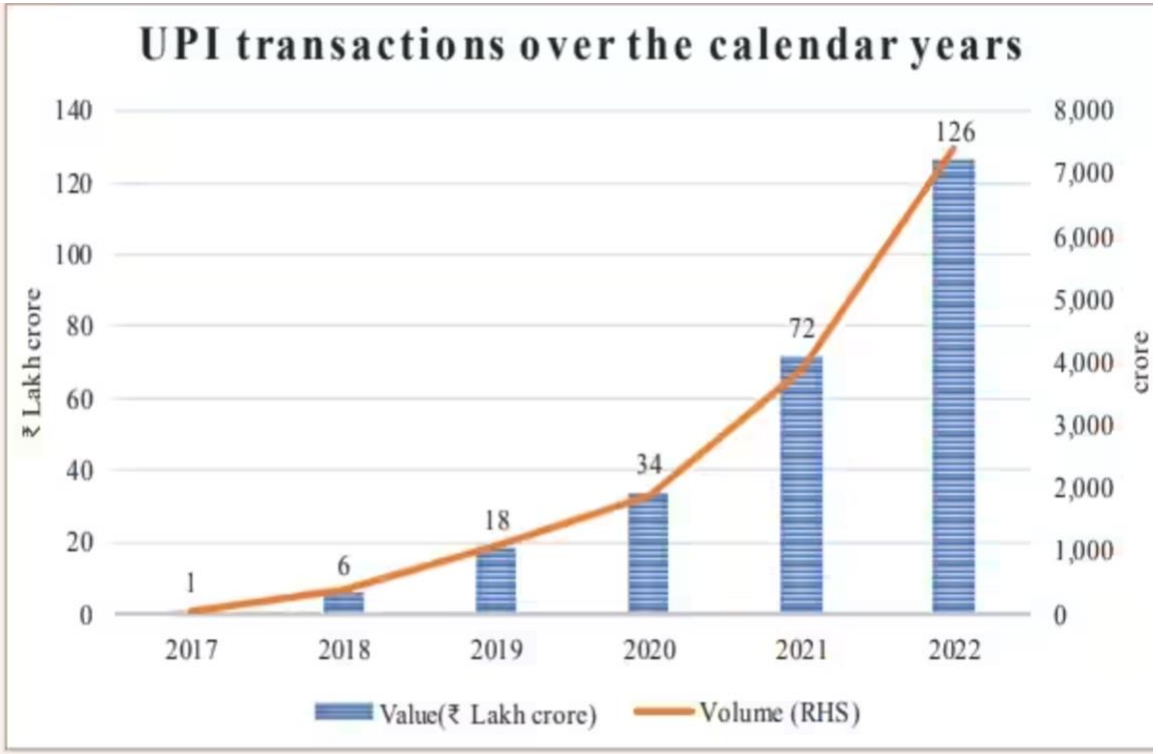


Source: Tata group sites



Source: Business Insider

Universal Payment Interface (UPI): Government



Source: NPCI

- Conceived , built and Managed by National Payments Corporation of India
- UPI launched in 2016
- Managing multiple Stakeholders like Banks, Intermediary, RBI, consumer
- Impact reflected by the rapid growth in Volume of Transactions and Value
- Monetization of services being considered for a small fee based on the success of the system

Other impactful initiatives from Government include

- Computerised Reservation system : IRCTC
- Passport Seva : Automated processing of issue of passports

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Macro & Micro-Economics (Review)

Macro Economics

- Deals with the economy, rather than individual markets or decision-making units.
- Focuses on aggregate economic variables, such as GDP, unemployment, and inflation.
- Analyzes how these variables are interrelated and how they are affected by government policies.

- Examples of macroeconomic topics include:
  - Economic growth
  - Unemployment
  - Inflation
  - Fiscal policy
  - Monetary policy

Micro-Economics

- Deals with individual markets and decision-making units, such as households and firms.
- Focuses on how prices are determined and how resources are allocated.
- Analyzes how changes in supply and demand affect prices and quantities.
- In short, It takes a bottom-up approach to analyzing the economy.

- Examples of microeconomic topics include:
  - Demand. Supply and Equilibrium
  - Production Theories
  - Cost of Production
  - Competition
  - Labour economics

Gross Domestic Product (GDP)

- Gross domestic product (GDP) refers to the monetary value of a nation's finished domestic goods and services during a specific time period (Quarter, Year)
- valuable measure of the **size and health** of the nation's economy.
- Can be used to track economic growth, compare the nation's economy to other economies, and assess the impact of government policies.
- two methods of calculating GDP in India: (1) the expenditure approach and (2) income approach.

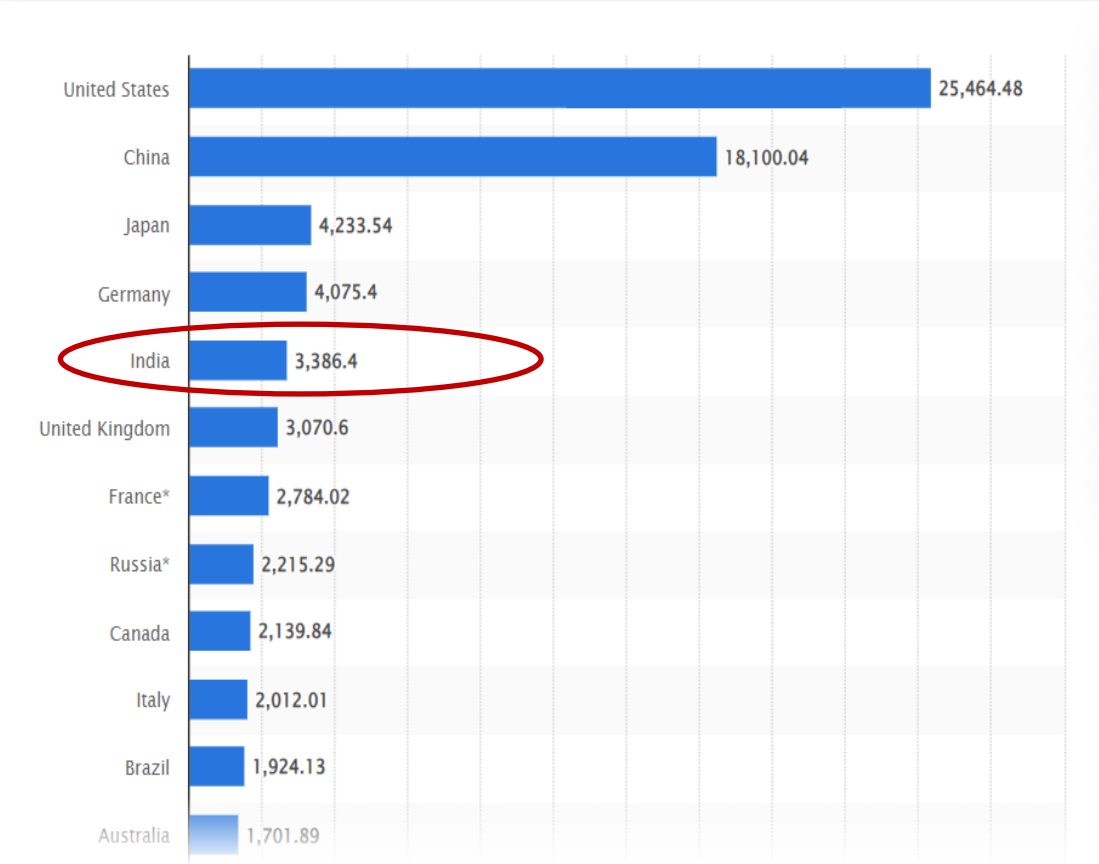
Expenditure approach

GDP = C + I + G + NX

- **C** represents consumption, which is the spending of households on goods and services.
- **I** represents investment, which is the spending of businesses on capital goods and inventories.
- **G** represents government spending, which is the spending of the government on goods and services.
- **NX** represents net exports, which is the difference between exports and imports.

Top 20 economies with largest GDP in 2022

(in billion U.S. dollars)

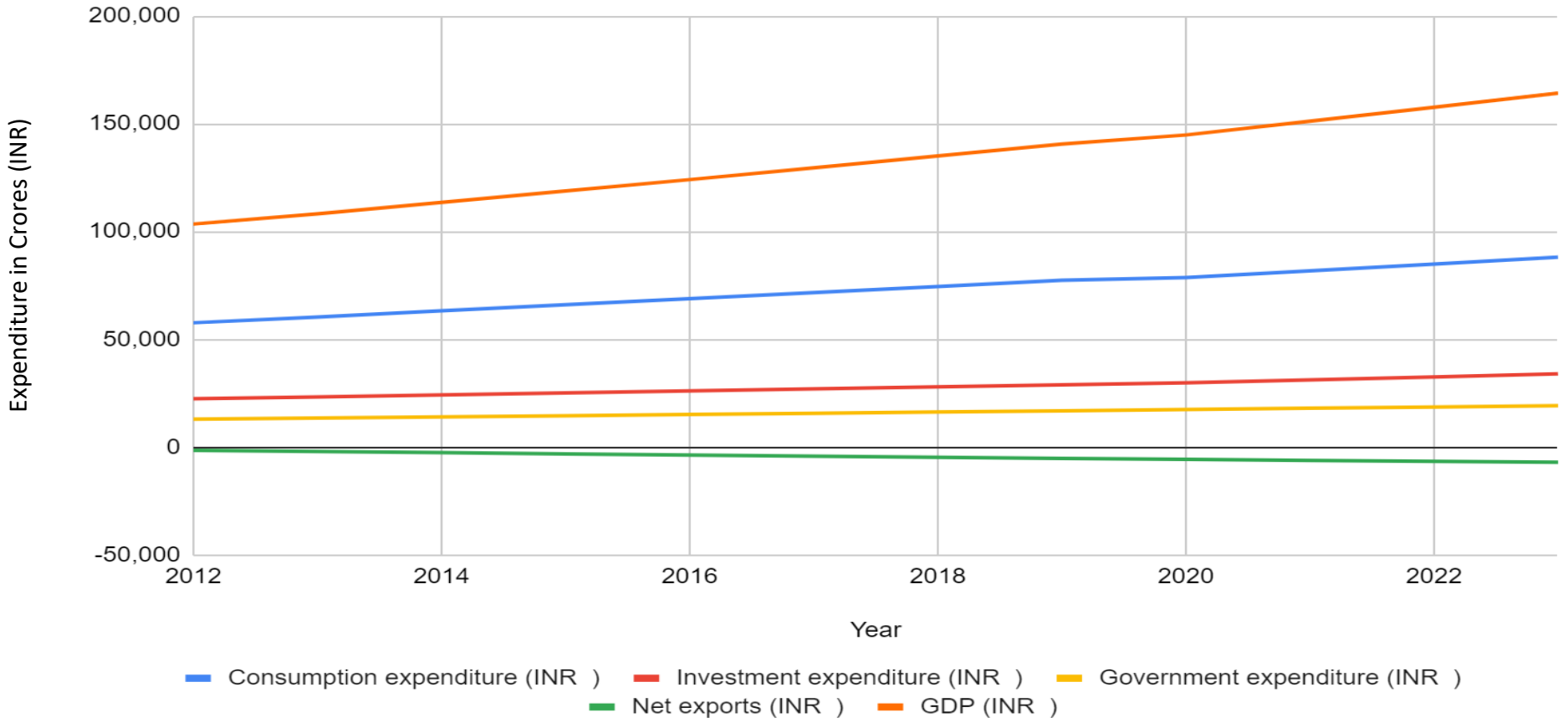


Latest World Economic Outlook Growth Projections

(real GDP, annual percent change)	2021	PROJECTIONS 2022	2023
World Output	6.1	3.2	2.9
Advanced Economies	5.2	2.5	1.4
United States	5.7	2.3	1.0
Euro Area	5.4	2.6	1.2
Germany	2.9	1.2	0.8
France	6.8	2.3	1.0
Italy	6.6	3.0	0.7
Spain	5.1	4.0	2.0
Japan	1.7	1.7	1.7
United Kingdom	7.4	3.2	0.5
Canada	4.5	3.4	1.8
Other Advanced Economies	5.1	2.9	2.7
Emerging Market and Developing Economies	6.8	3.6	3.9
Emerging and Developing Asia	7.3	4.6	5.0
China	8.1	3.3	4.6
India	8.7	7.4	6.1
ASEAN-5	3.4	5.3	5.1
Emerging and Developing Europe	6.7	-1.1	0.9
Russia	4.7	-6.0	-3.5
Latin America and the Caribbean	6.9	3.0	2.0
Brazil	4.6	1.7	1.1
Mexico	4.8	2.4	1.2
Middle East and Central Asia	5.8	4.8	3.5
Saudi Arabia	3.2	7.6	3.7
Sub-Saharan Africa	4.6	3.8	4.0
Nigeria	3.6	3.4	3.2
South Africa	4.9	2.3	1.4
Memorandum			
Emerging Market and Middle-Income Economies	7.0	3.5	3.8
Low-Income Developing Countries	4.5	5.0	5.2

https://www.statista.com/statistics/268173/countries-with-the-largest-gross-domestic-product-gdp/

Breakup of GDP by Expenditure Components (2022)

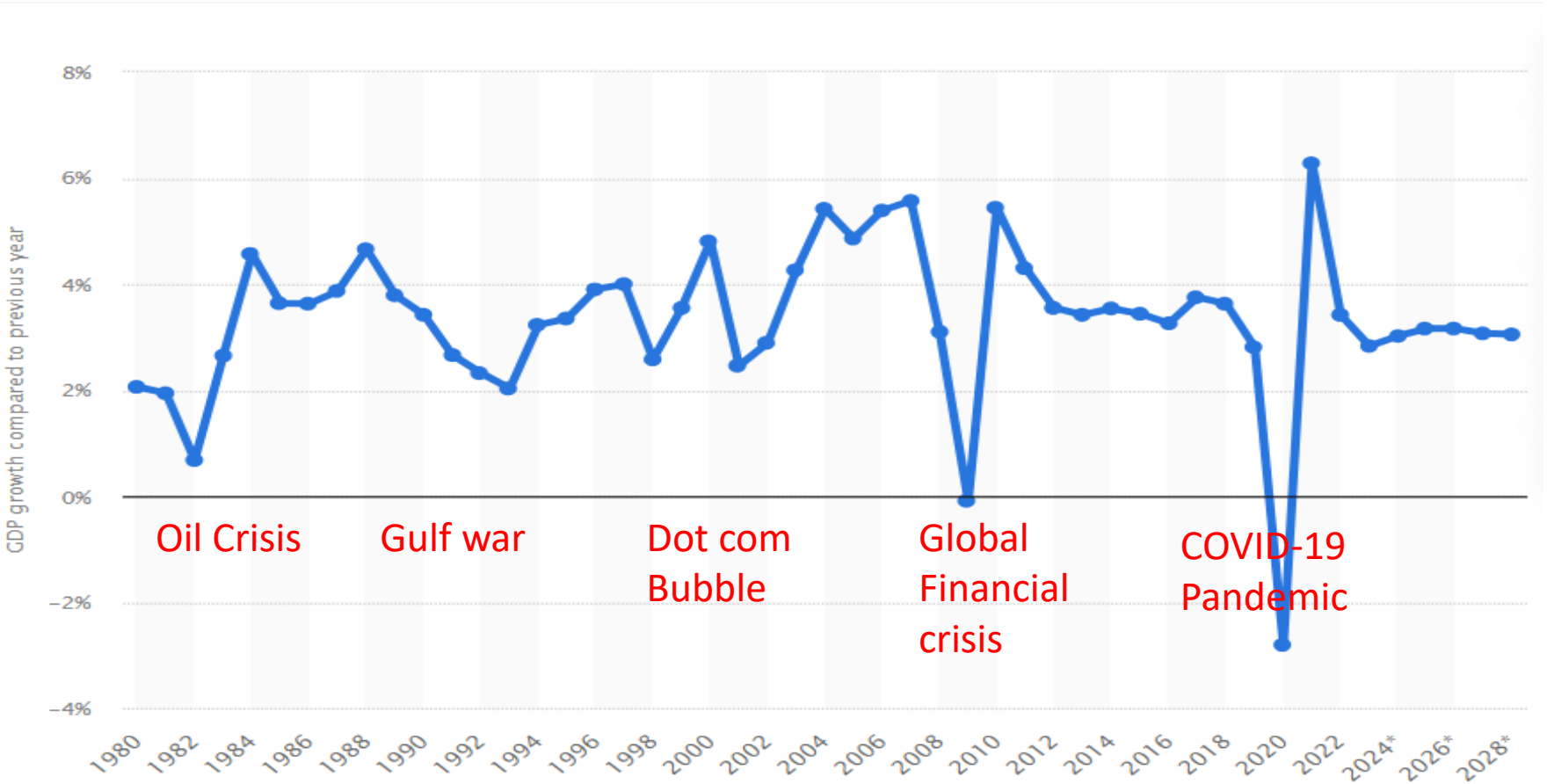


Data Table enclosed in the Appendix

Breakup of GDP by Expenditure Components (2022)

Year	Consumption expenditure (INR)	Investment expenditure (INR)	Government expenditure (INR)	Net exports (INR)	GDP (INR)
2012	57,689	22,427	12,986	-1,479	103,491
2013	60,337	23,308	13,479	-2,017	108,252
2014	63,255	24,216	14,038	-2,577	113,510
2015	66,068	25,139	14,591	-3,116	118,816
2016	68,848	26,047	15,139	-3,655	124,100
2017	71,659	26,994	15,718	-4,175	129,556
2018	74,506	27,949	16,287	-4,698	135,051
2019	77,379	28,927	16,869	-5,202	140,589
2020	78,655	29,828	17,440	-5,687	144,820
2021	81,797	31,206	18,028	-6,139	151,180
2022	84,952	32,586	18,618	-6,574	157,646
2023	88,136	33,986	19,217	-7,013	164,239

Growth of Global GDP from 1980 to 2022



https://www.statista.com/statistics/273951/growth-of-the-global-gross-domestic-product-gdp/

Real and Nominal GDP

- Nominal GDP is the total value of all goods and services produced in a country each year, measured in **current prices.**
- Real GDP is the total value of all goods and services produced in a country in a given year, measured in constant prices.
- Real gross domestic product (GDP) is a more accurate reflection of the output of an economy than nominal GDP.
- Real GDP eliminates the distortion caused by inflation or deflation or by fluctuations in currency rates and gives economists a clearer idea of how the total national output of a country is growing or contracting from year to year.
- Nominal GDP is used when comparing GDP to any other economic indicator that is not adjusted for inflation.

Question

Classify the reasons listed for fall in Growth rate into Macro or Micro economic Failures/setbacks

GDP Per Capita

- **GDP per capita** is a measure of a country's economic output divided by its population. It is a commonly used measure of a country's standard of living.

Two main ways to calculate GDP per capita:

  - Nominal GDP per capita: This is calculated by dividing a country's nominal GDP by its population. Nominal GDP is the value of GDP in the prices of the current year.

  - PPP GDP per capita: This is calculated by dividing a country's PPP GDP by its population. PPP GDP is the value of GDP in terms of purchasing power parity. Purchasing power parity is a measure of the relative prices of goods and services in different countries.

- PPP GDP per capita is often considered to be a more accurate measure of a country's standard of living than nominal GDP per capita. This is because PPP GDP takes into account the cost of living in different countries.

GDP Per Capita : India vs China, USA

India is ranked 144th out of 194 countries in terms of GDP per capita (PPP) in 2023. This means that India has a lower GDP per capita than most other countries in the world.

Country	GDP Per capita (USD)**
China	85500
USA	11188
India	2379

*** GDP estimates based on PPP (Purchasing Power Parity) Method*

Will increase of GDP to the levels of China's value possible for India?. What would be the consequences?

Inflation

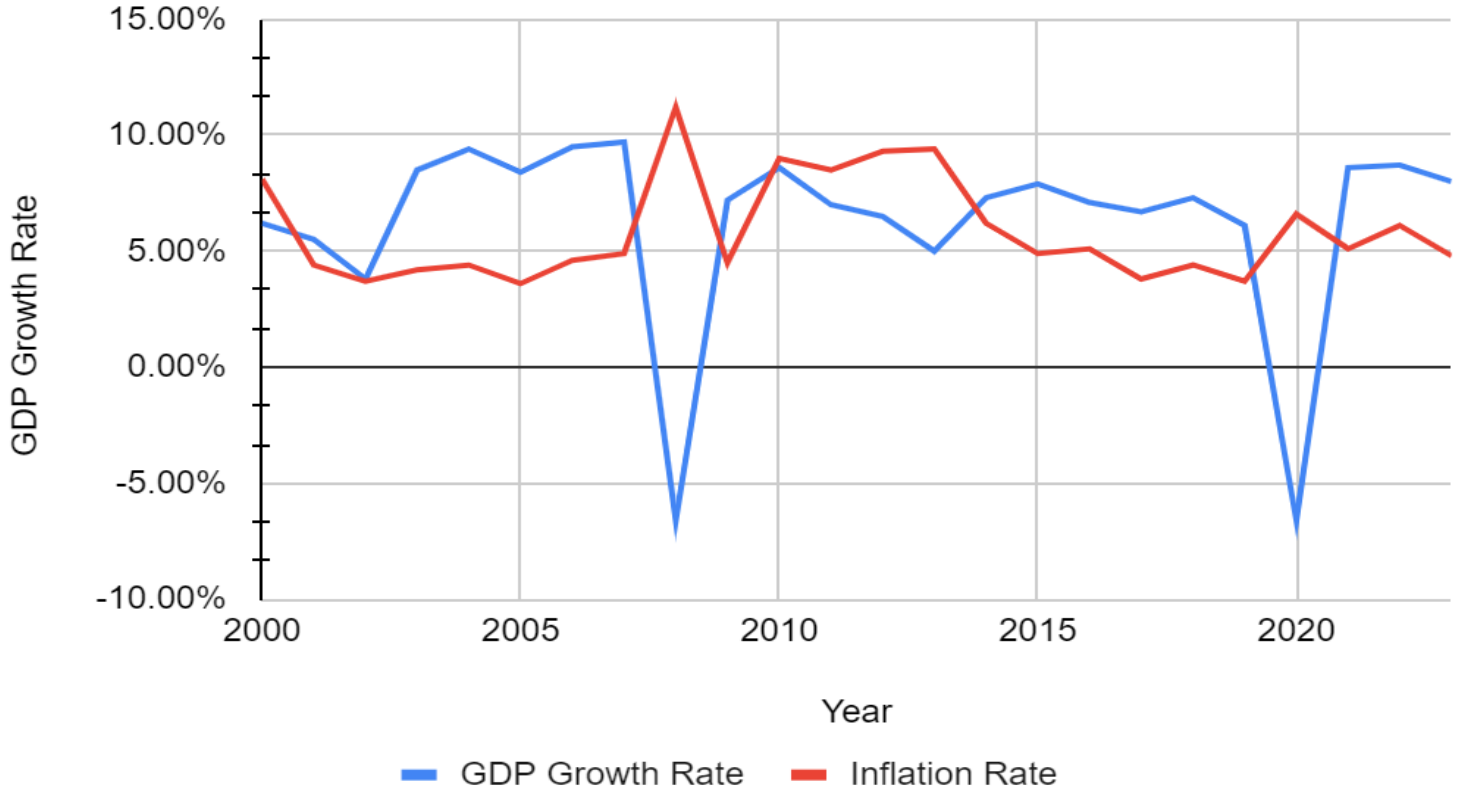
General increase in prices and fall in the purchasing value of money.
When the general price level rises, each unit of currency buys fewer goods and services.
Consequently, inflation corresponds to a reduction in the purchasing power of money.

Causes

- **Increased demand:** If the demand for goods and services increases, but the supply does not increase at the same rate, prices will rise.
- **Increased supply of money**: If the government prints more money, the value of money will decrease, which will lead to inflation.
- **Decreased productivity**: If the productivity of workers decreases, businesses will have to raise prices to cover their costs.
- **Supply shocks:** Supply shocks, such as a natural disaster or a war, can disrupt the supply of goods and services, leading to inflation *(Monsoon Rains causing shortage of Tomatoes, Chip shortage since Pandemic)*

- Inflation is measured by the Consumer Price Index (CPI). The CPI is a basket of goods and services that is used to track the prices of goods and services over time.
- Expressed as a percentage
- The CPI is calculated by the Central Statistics Office (CSO) in India

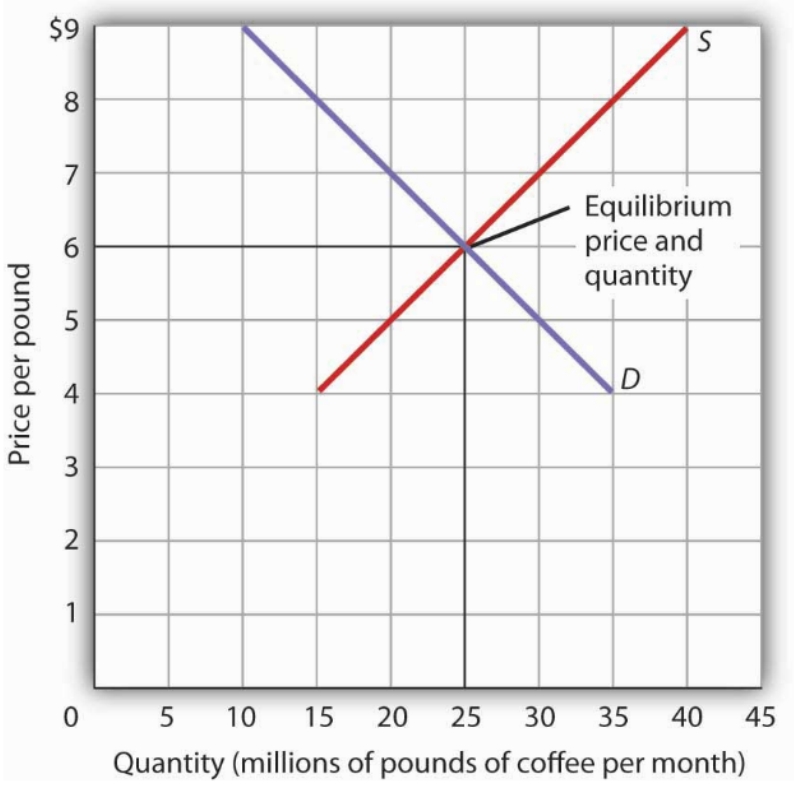
Growth Rate and Inflation : India



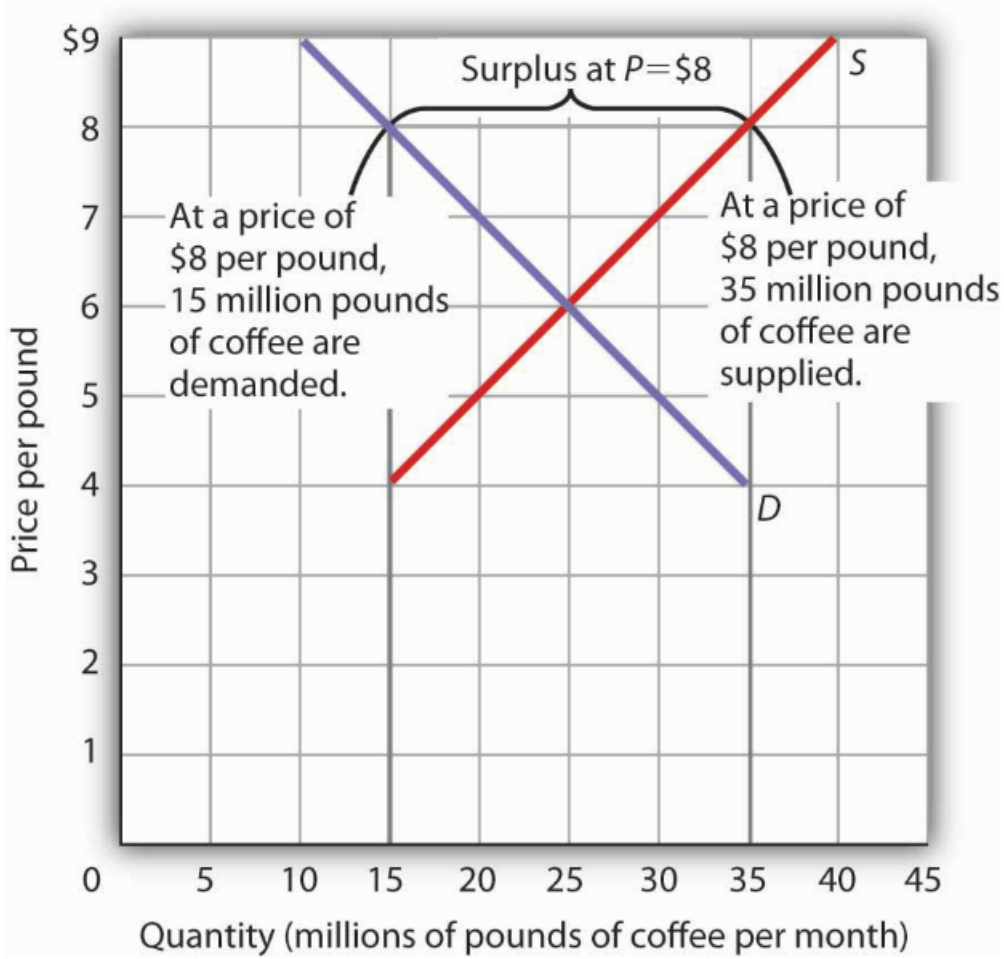
While the Growth rate vs Inflation relationship is complex , Generally, it follows an Inverse relationship

Supply and Demand : Impact on Economy

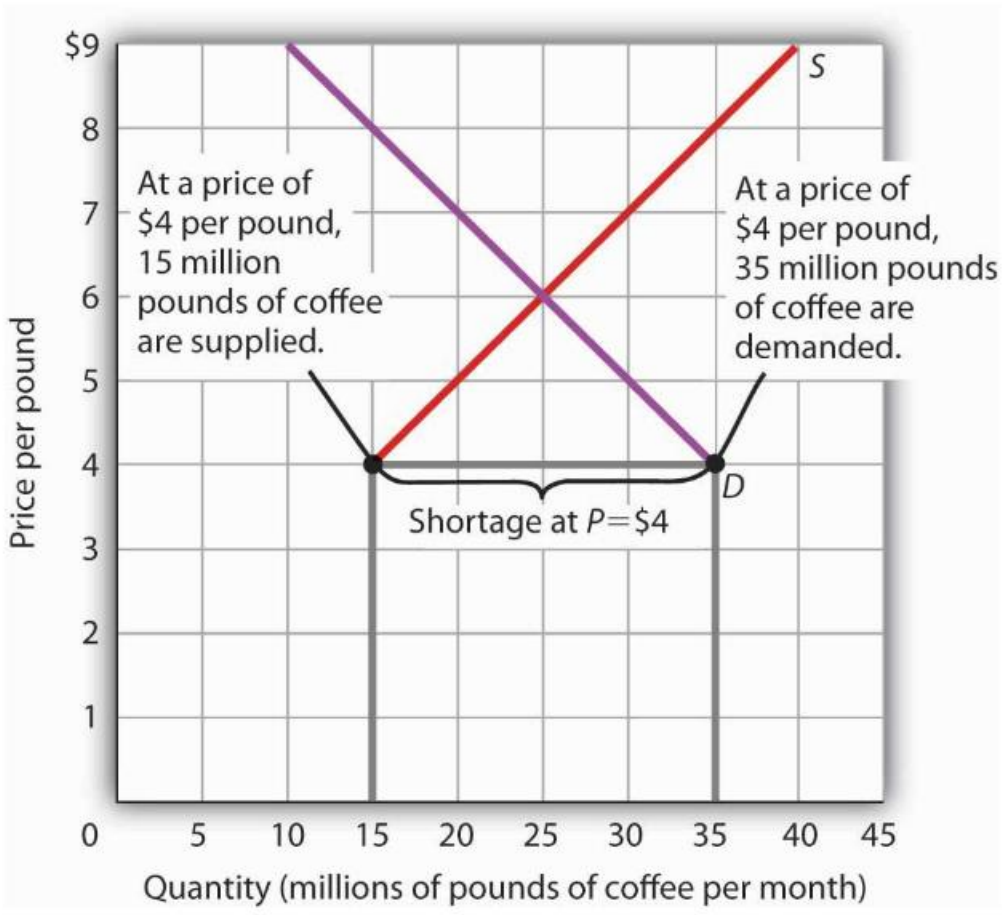
- Most basic and important concept in economics
- Price of a good or service is determined by the interaction of supply and demand.
- Supply refers to the amount of a good or service that is available in the market.
- Demand refers to the amount of a good or service that people are willing and able to buy.
- When supply and demand are in equilibrium, the price of a good or service is stable. However, when there is a change in either supply or demand, it can lead to a change in price.
- If there is an increase in demand for a particular good or service, the price of that good or service will go up. This is because consumers are now willing to pay more for the good or service.
- Conversely, if there is a decrease in demand for a particular good or service, the price of that good or service will go down. This is because consumers are now willing to pay less for the good or service.



When we combine the demand and supply curves for a good in a single graph, the point at which they intersect identifies the equilibrium price and equilibrium quantity. Here, the equilibrium price is $6 per pound. Consumers demand, and suppliers supply, 25 million pounds of coffee per month at this price.



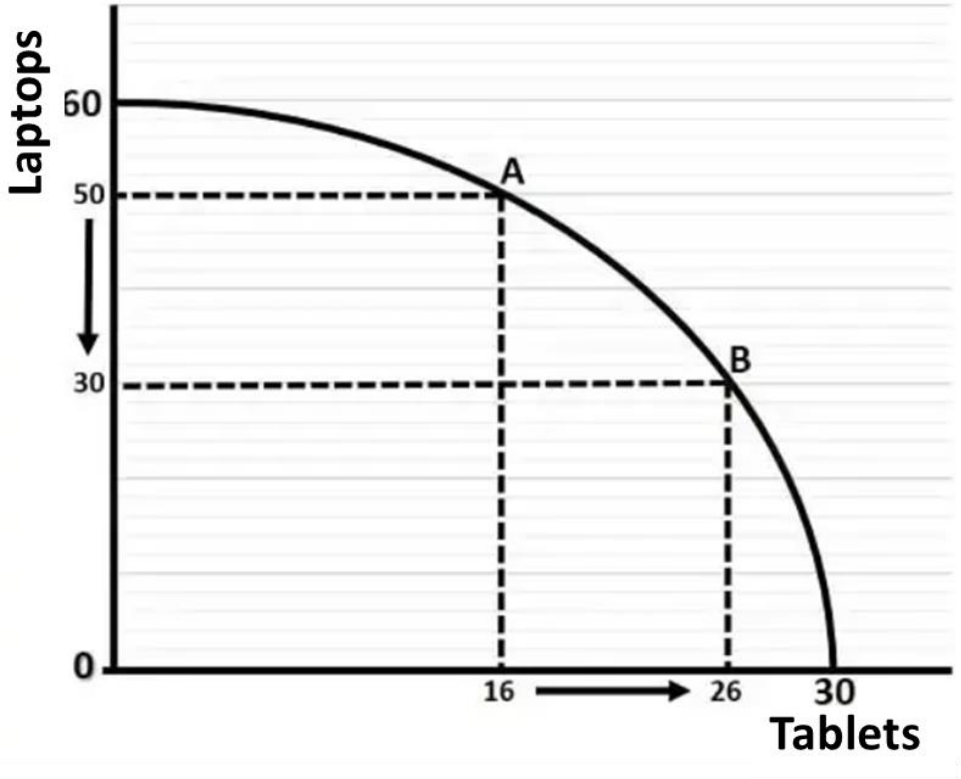
At a price of $8, the quantity supplied is 35 million pounds of coffee per month and the quantity demanded is 15 million pounds per month; there is a surplus of 20 million pounds of coffee per month. Given a surplus, the price will fall quickly toward the equilibrium level of $6.



At a price of $4 per pound, the quantity of coffee demanded is 35 million pounds per month and the quantity supplied is 15 million pounds per month. The result is a shortage of 20 million pounds of coffee per month.

Products Possibilities Curve : Scarcity

- Graphical model that shows the different combinations of goods and services that an economy can produce, given its limited resources.
  .
- The assumption is that production of one commodity decreases if that of the other one increases.
- Production points inside the curve show that an economy is not producing at its comparative advantage, and production outside the curve is not possible.
- The production possibilities curve displays the right proportional mix of goods to be produced.
- useful tool for understanding the concept of scarcity



Other examples : SUV vs Sedan, small car

PPC and GDP

- The PPC can be used to measure economic growth. Economic growth is the increase in the output of an economy over time. This can be measured by the change in the PPC. If the PPC shifts outward, this means that there has been economic growth. Conversely, if the PPC shifts inward, this means that there has been economic decline.
- If an economy experiences technological innovation, this can lead to an outward shift of the PPC. This is because technological innovation can make it possible to produce more goods and services with the same number of resources. This will lead to an increase in GDP.
- If an economy experiences a natural disaster, this can lead to an inward shift of the PPC. This is because natural disasters can destroy resources and infrastructure, making it more difficult to produce goods and services. This will lead to a decrease in GDP.

Division of Labour and Value Creation

Division of labor is a powerful tool that can be used to increase productivity and drive efficiency

- A car factory is divided into different departments, each of which is responsible for a different part of the car. For example, one department might be responsible for assembling the engine, while another department might be responsible for assembling the body.
- A clothing factory is divided into different departments, each of which is responsible for a different step in the production process. For example, one department might be responsible for cutting the fabric, while another department might be responsible for sewing the pieces together.
- A service company, such as a law firm or an accounting firm, is divided into different departments, each of which is responsible for a different type of service. For example, one department might be responsible for tax preparation, while another department might be responsible for estate planning.

Activity #1: Validation of concept/Idea

27-Jul-2023

- List down the concept/ idea you have finalised as a team
- Clearly articulate (bullet points) what customer problem /opportunity your team is attempting to address with the concept

4-Aug-2023

- Validate your concept with other teams (preferably two teams
- Record their feedback

Activity # 2

Currently India GDP is around 3.7trillion USD , ranked fifth globally.

What are the levers that you would explore to enhance the GDP growth based on the lecture discussions?.

You may make reasonable assumptions regarding macroeconomic indicators like Inflation, interest rates employment data

Data sources: CSO website, RBI website. World Bank, IMF websites

Back up

GDP Income Approach

GDP = Wages + Profits + Rent + Interest

- Provides a measure of the total income generated in an economy. This is important because it can be used to track the level of economic activity and to assess the distribution of income in an economy.
- can be used to calculate other important economic indicators, such as the national savings rate and the wage share of national income. These indicators can be used to track the health of an economy and to make policy decisions.
- can be used to estimate the size of the informal economy. The informal economy is the part of the economy that is not officially recorded. This can be difficult to measure, but the income approach can provide a rough estimate.

it can be difficult to measure the income of all economic actors. For example, it can be difficult to measure the income of self-employed workers and of people who work in the informal economy.
it can be affected by changes in the tax system.

GDP growth and Inflation Rate

Year	GDP Growth Rate	Inflation Rate
2000	6.20%	8.10%
2001	5.50%	4.40%
2002	3.80%	3.70%
2003	8.50%	4.20%
2004	9.40%	4.40%
2005	8.40%	3.60%
2006	9.50%	4.60%
2007	9.70%	4.90%
2008	-6.60%	11.20%
2009	7.20%	4.50%
2010	8.60%	9.00%
2011	7.00%	8.50%
2012	6.50%	9.30%
2013	5.00%	9.40%
2014	7.30%	6.20%
2015	7.90%	4.90%
2016	7.10%	5.10%
2017	6.70%	3.80%
2018	7.30%	4.40%
2019	6.10%	3.70%
2020	-6.60%	6.60%
2021	8.60%	5.10%
2022	8.70%	6.10%
2023	8.00%	4.80%

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