

# ECON-RAGE



ISSUE 1 (Special Issue–July 11, 2023)  
Dedicated to the World Population Day

Department of Economics  
Barasat Government College

## FROM THE PRINCIPAL'S DESK

It is my immense pleasure to introduce the debut issue of the wall magazine (e-version) of the Department of Economics, Barasat Government College. This first issue of the magazine is dedicated to the **World Population Day** (July 11) and in that sense, is a special one. I wish the students of the Department all the success for this Special Issue which they have put together within a tight academic schedule.



# FROM THE STUDENTS OF ECONOMICS

## Meaning of "Rage":

- 1) Violent Uncontrollable Anger
- 2) A Vehement Desire or Passion

Hello everyone, we, the students of the Department of Economics, are happy to announce the arrival of our wall magazine — **"Econ-rage"**. In case anyone is wondering about the strange suffix, we will be more than happy to explain that the etymological root of the word (in classical Latin) means both madness and fury, but the modern form of the word (in English) additionally means an intense passion for something. Yes, we are intensely passionate about our discipline, and not a little furious looking at the state of the economy all over the world!

All in all, our discipline, which might come across as slightly dry sometimes, has a lot to give. It can be a source of great fun, and it is perpetually all the rage everywhere, meaning, always in fashion. (Haven't we done enough research on the word rage?)


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As we mentioned, this is our debut issue but this one is also a special issue dedicated to the World Population Day (July 11). As anyone can guess, demographic aspects greatly influence economic variables. One does not need to be a rocket scientist to know that this process, interestingly, often works the other way round too!

Our present issue tries to capture some of these interlinkages.

Happy reading to you all !

And thanks to everyone, especially to our professors. A special thanks to **Rajnarayan Sir** and **Rongili Madam** for helping us at every point and to **Kaushiki Madam** for her numerous inputs.

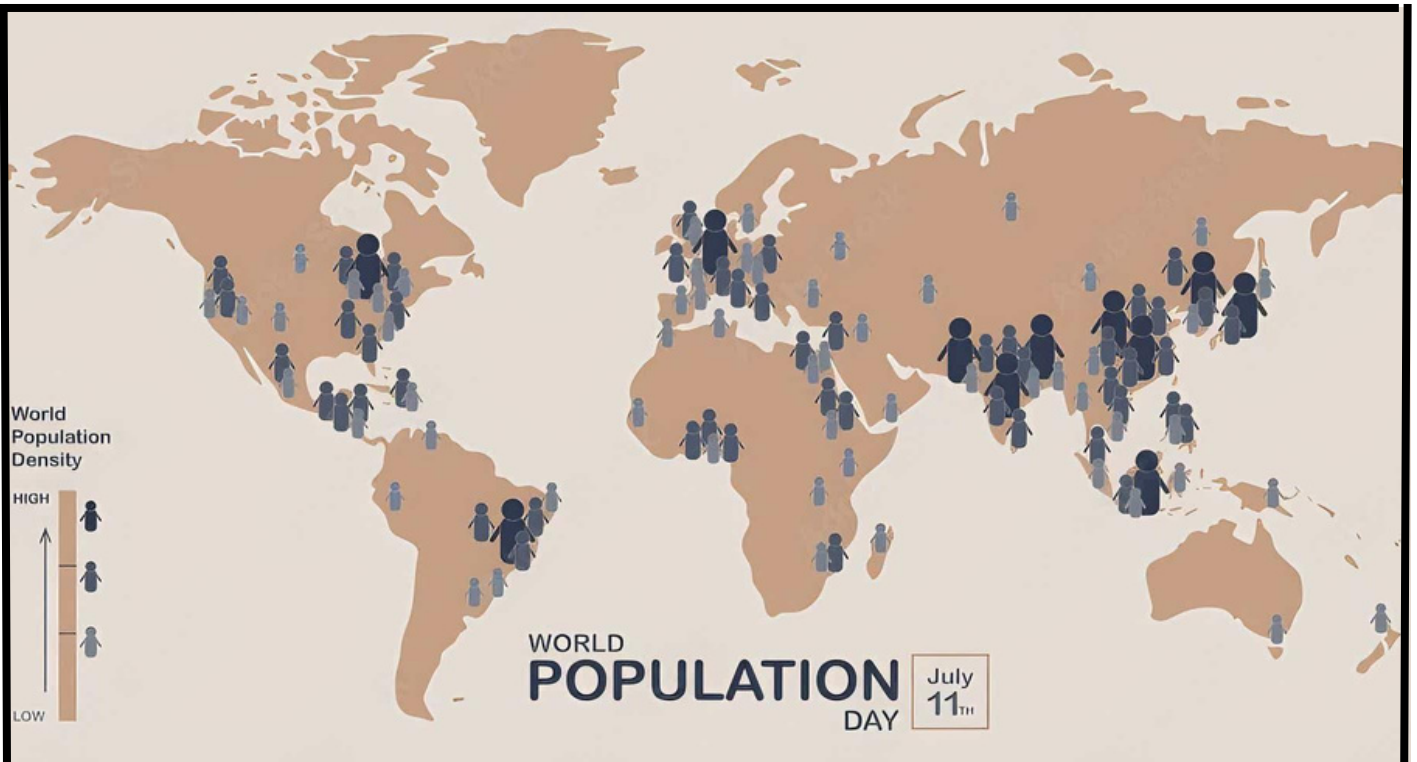


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## *World Population at a Glance*

***The Day of 8 Billion :***  
***Global Concern about Population***

**SHREYA GHOSH**

On 15 November 2022, the world's population reached 8 billion people, a milestone in human development. While it took the global population 12 years to grow from 7 to 8 billion, it will take approximately 15 years-until 2037-for it to reach 9 billion. The world population is projected to reach 8.5 billion in 2030, and to increase further to 9.7 billion in 2050 and 10.4 billion by 2100. Though the world population is growing at a faster pace but there is a heterogeneity in the world population. While some of the countries are facing population pressure, like the emerging economies India, Bangladesh, Pakistan, some other countries are facing stagnation in population growth like Japan and European continent.

### *The Case of Africa*

More than half of the global population growth is expected to occur with 2050 in Africa. It is projected to double in next 20 years. A rapid population increase in Africa is due to high birth rate and the chance of reduction in fertility in near future is grim despite measures to curb this. One reason is that the large number of young people currently on the continent who will reach adulthood in the coming years and have children of their own, indicates the size of the population will be increasing over the coming decades.



## ***Condensing Population in Europe***

In sharp contrast, the population of 61 countries or areas in the world are expected to decrease by 2050, of which 26 may see a reduction of at least 10 per cent. Several countries are expected to see their population decline by more than 15 per cent by 2050, including Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Japan, Latvia, Lithuania, Republic of Moldova, Romania, Serbia, and Ukraine. Fertility in all European countries is now below the level required for full replacement of the population in the long run (around 2.1 children per woman), and in the majority of cases, fertility has been below the replacement level for several decades.

## ***China and India: Most Populous Countries***

China and India remain the two most populous countries of the world, both with more than 1 billion people, each representing nearly 18 percent of the world's population, respectively. India has already overtaken China in 2023 and has become the world's most populous country. China's population is projected to decrease by 48 million, or around 2.7 per cent, between 2019 and 2050.

***Factors influencing population growth***

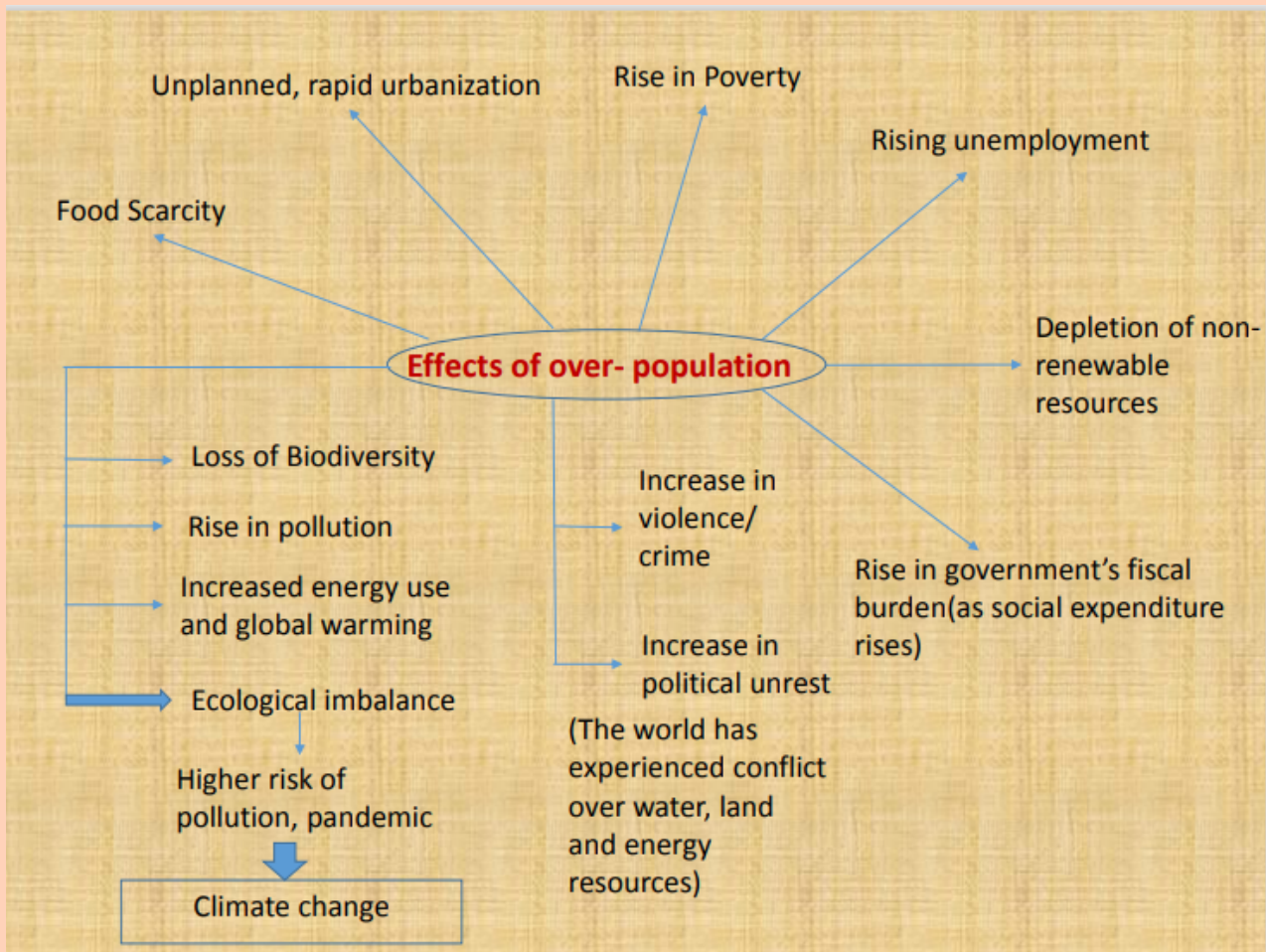
**Rise in Fertility rate, Lack of family planning**

**Increase in longevity**

**International Migration**

## HIGHLIGHTS

- 50.4 percent of the world's population is male and 49.6 percent is female.
- From 2017 to 2050, it is expected that half of the world's population growth will be concentrated in just nine countries: India, Nigeria, Democratic Republic of the Congo, Pakistan, Ethiopia, the United Republic of Tanzania, the United States of America, Uganda and Indonesia (ordered by their expected contribution to total growth).
- More than three-quarters of the world's population lives in Africa (17 percent) and Asia (60 percent).
- Indigenous people account for around 5 percent of the world's population but 15 percent of people living in poverty.
- Amongst the 10 most populous countries in the world, Nigeria's population, currently the seventh largest in the world, is growing most rapidly. The population of Nigeria is projected to surpass that of the United States shortly before 2050, at which point it would become the third largest country in the world.
- The world's population aged 60 or above is growing at a rate of 3 percent per year. • Global fertility is projected to fall from 2.5 children per woman in 2010-2015 to 2.0 in 2095-2100.
- Globally, life expectancy at birth is projected to rise from 71 years in 2010-2015 to 77 years in 2045-2050.
- Young people aged between 10–24, account for about 1.8 billion of the world's population. Ninety percent of them live in developing countries.
- Children under 15 years of age represent roughly one quarter of the world's inhabitants (26 per cent).



**10**

# **MOST POPULATED CITIES IN THE WORLD**



**Tokyo, Japan**



**Delhi, India**



**Shanghai, China**



**Dhaka, Bangladesh**



**São Paulo, Brazil**



**Mexico City, Mexico**



**Cairo, Egypt**



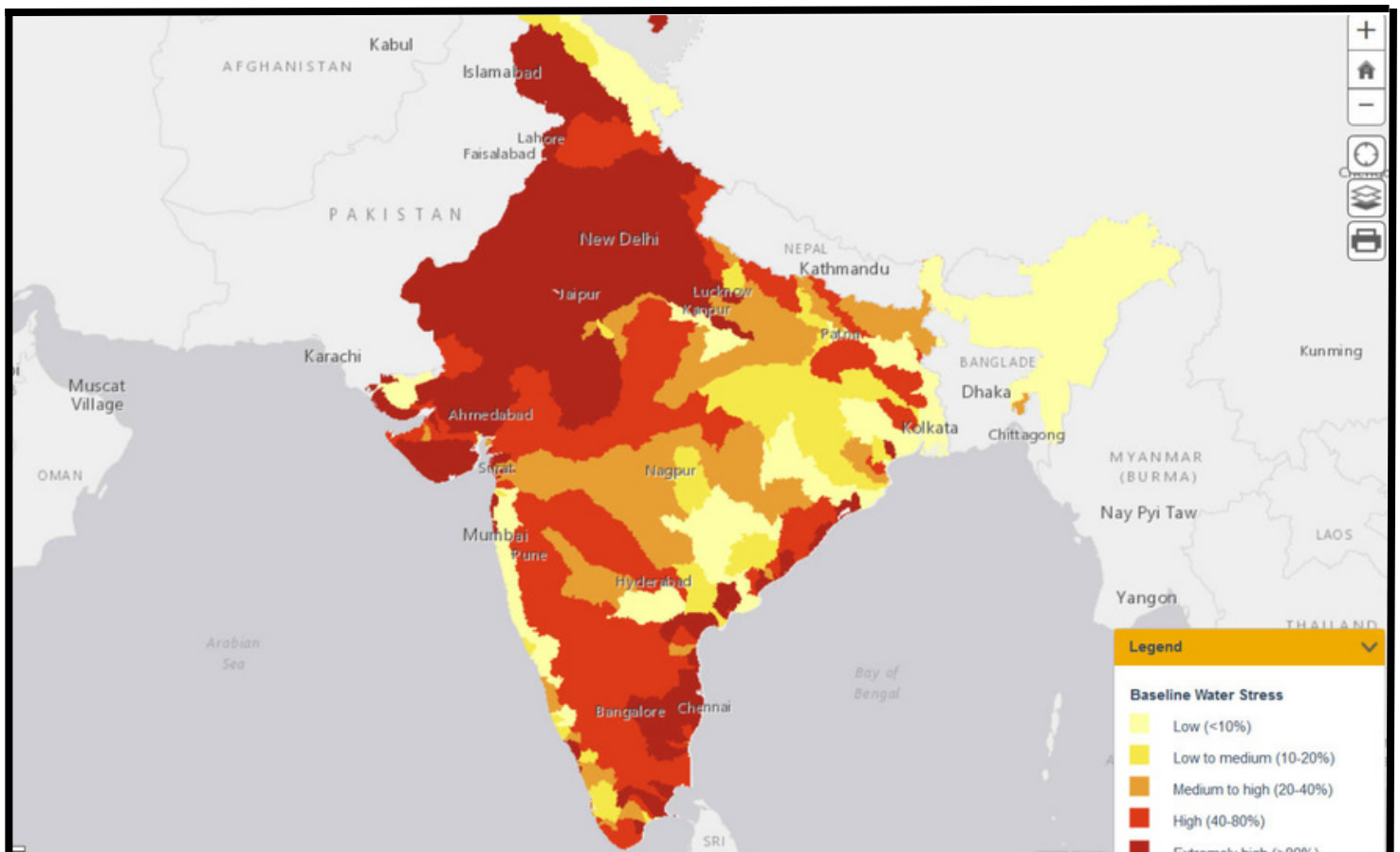
**Beijing, China**



**Mumbai, India**



**Osaka, Japan**



***Depletion of Groundwater Level Due to Over-exploitation- Another Curse of Overpopulation***



# **ECONOMIC GROWTH & POPULATION : INDIAN SCENARIO**

**Rhishika Ghosh**

## Indian population over time

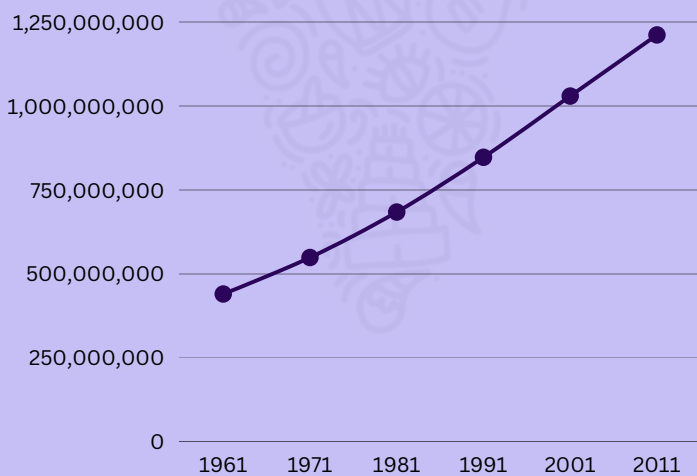
India is one of the most diverse countries in the world. The current population of India is 1,427,868,600 based on the projections of the latest data from the United Nations.



With population so massive, India contributes nearly 17% of the global population.



The Indian economy is set for real GDP growth of about 6% in 2023



Population of the past 6 years (census data)

At the beginning of the 18th century, India had just 137 million inhabitants. This number rose to about 255 million within 100 years and fluctuated upto 20 percent up and down during the 18th century.





Presently, more than 40% of the country's residents are younger than 25, and the estimated median age in 2023 is 28 – nearly a decade younger than China's—according to the UN data

The current population of India in 2023 is 1,428,627,663, a 0.81% increase from 2022

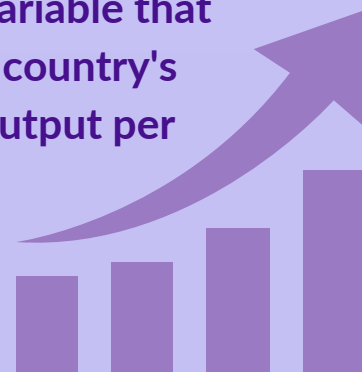
Future projection: According to the UN projections, India's population is expected peak at about 1.7 billion in 2064

## Economic Growth and Population: A cross section study

What is per capita GDP?

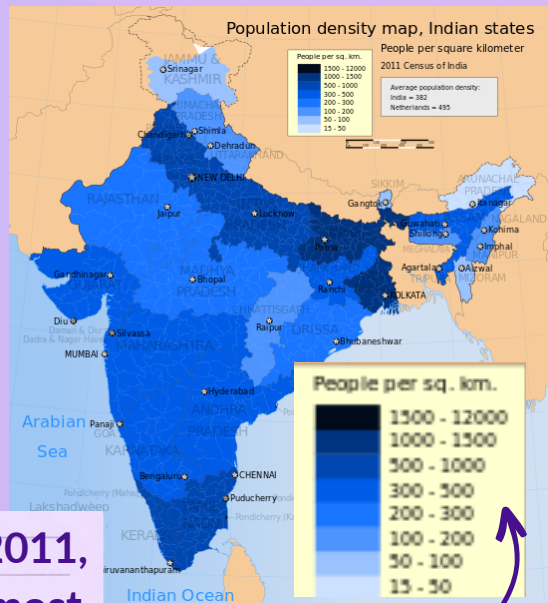
It determines how prosperous countries are based on their economic growth

Per capita GDP is an economic variable that measures a country's economic output per person.



# What is density of population

The number of individuals living within that specific location determines the population density

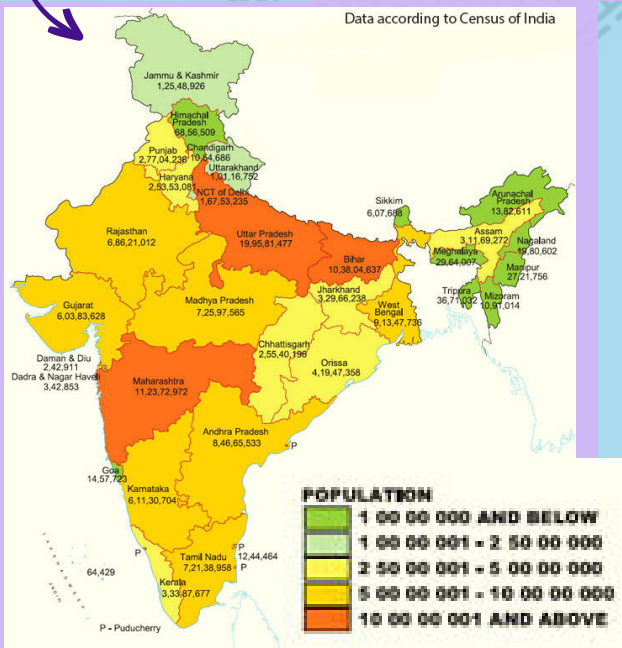


According to Census 2011, Bihar remains India's most densely inhabited state, whereas Delhi is the most densely populated Union Territory

Population density map of India

Population map of India

Higher population density can lead to increased economic activity due to economies of scale, improved infrastructure, larger labor force, and market potential, resulting in higher per capita GDP, particularly in urban areas.

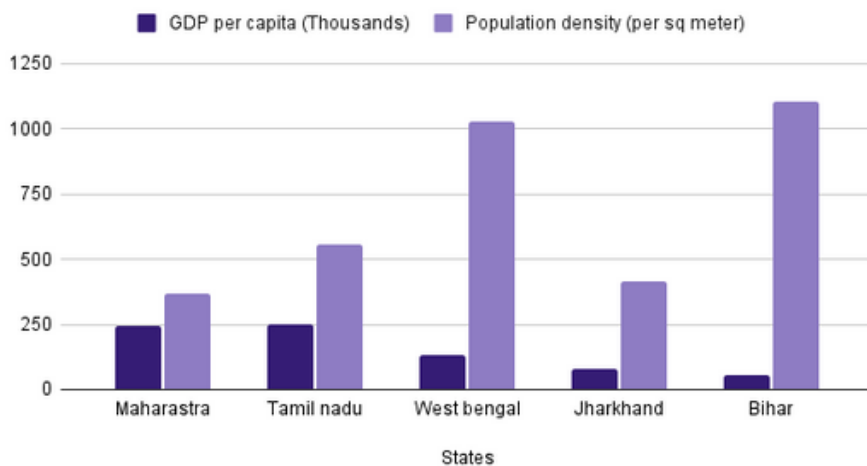


Mumbai is the most populated city in India



Most populated state- Uttar Pradesh  
 least populated state- Sikkim

### GDP per capita and Population density of states



From this above diagram we can see that Tamil Nadu has the highest GDP per capita, followed by Maharashtra, even though their population densities are relatively lower than the other states.

On the other hand, Bihar has the highest population density, while its GDP per capita is the lowest. West Bengal has a similar profile as well.

So from these observations we can see that, there is no direct relation between GDP per capita and population density in India.

People tend to migrate more in the richer and more populous states or regions for better job opportunities and infrastructure

Although there are some barriers like language.

Higher population density in Indian states has a complex relationship with per capita GDP. A comprehensive understanding of these dynamics is crucial for formulating effective policies and strategies that promote balanced development and improve the overall well-being of the population.

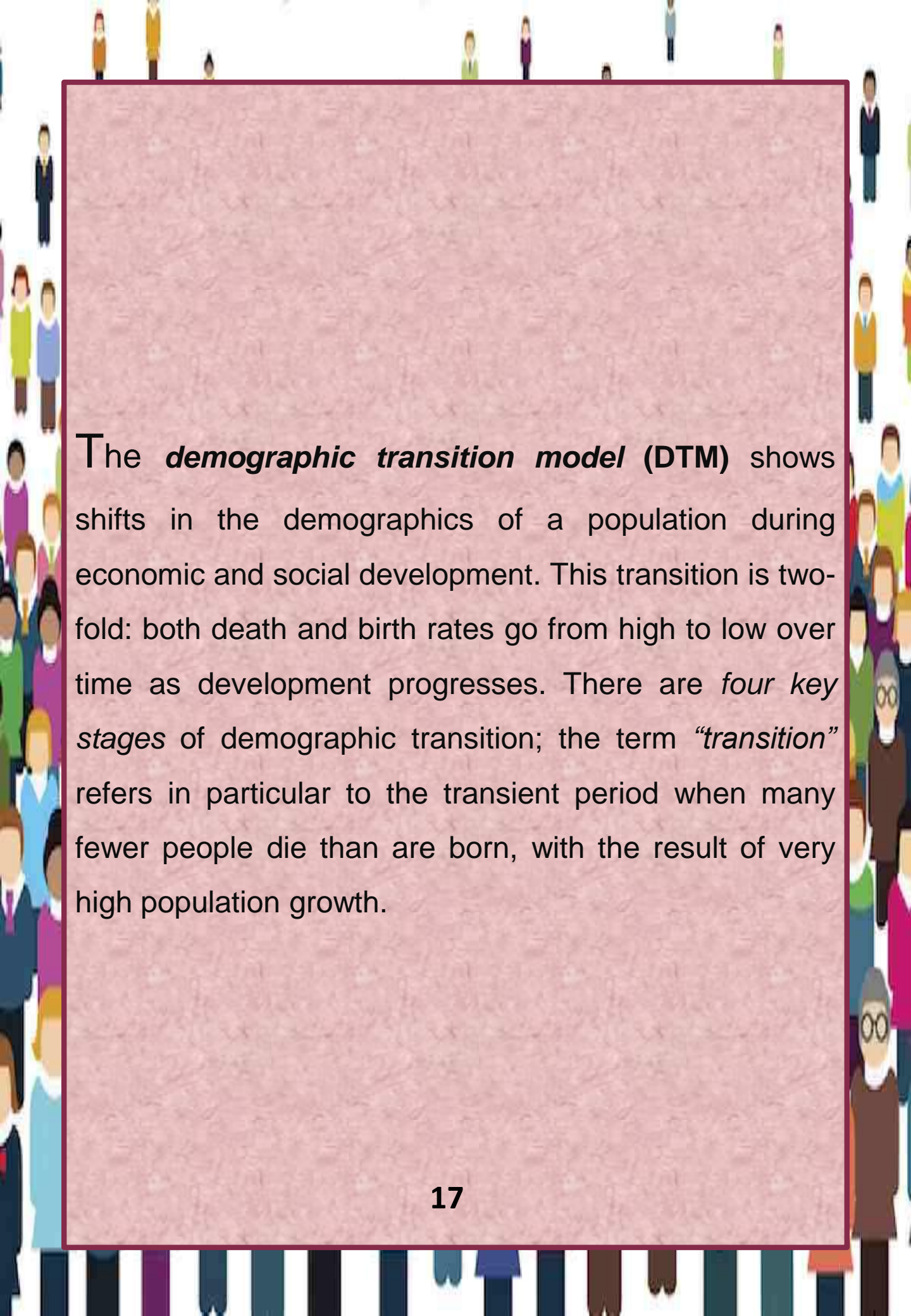


***Nigeria - the most populated country in Africa also has the second highest burden of child malnutrition in the world.***



# The Demographic Transition Model

**Anwasha Das**



The ***demographic transition model (DTM)*** shows shifts in the demographics of a population during economic and social development. This transition is two-fold: both death and birth rates go from high to low over time as development progresses. There are *four key stages* of demographic transition; the term “*transition*” refers in particular to the transient period when many fewer people die than are born, with the result of very high population growth.

## BASIS OF THE DEMOGRAPHIC TRANSITION MODEL

- ◉ Having originated in the *middle of the 20th century*, the demographic transition model is now over half a century old. It is the product of observations regarding population growth and development across numerous countries throughout the world.
- ◉ The demographic transition model operates on the assumption that there is a strong association between birth and death rates, and industrialization and economic development on the other. It has been found to be true by many historical instances of industrialization and development since the 19th century.

# DEMOGRAPHIC TRANSITION MODEL STAGES

The demographic transition model consists of *four key* stages. There is also a fifth stage that is a bit less established; we will explain why that is the case. Finally, the sixth stage is a much newer development in this field and demonstrates the degree to which the demographic transition model remains evolving.



# STAGE 1: HIGH POPULATION GROWTH POTENTIAL

This is generally a pre-industrial society in which both birth and death rates are quite **high** and these are effectively in balance. The lack of food availability as well as adequate medical care or effective sanitation and hygiene means the population does not grow very much due to disease and starvation.

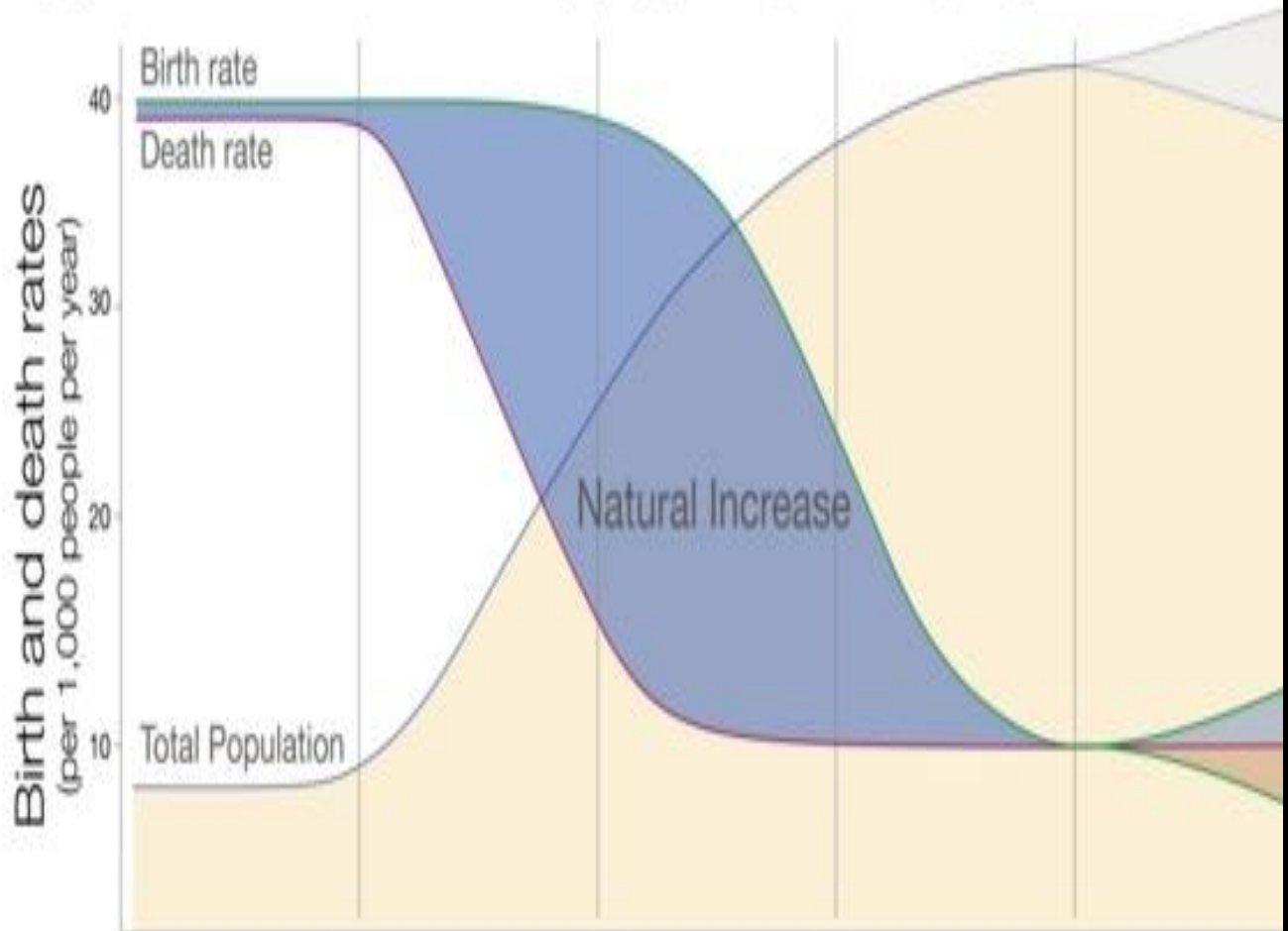
The majority of people are concentrated in rural regions, primarily focusing on agriculture. This agricultural focus means that having more children is an economic benefit as well as a status symbol, further contributing to high birth rates and efforts to have large families. The poor experience the highest mortality rates of any demographic, but life expectancies are short overall.

## STAGE 2: POPULATION EXPLOSION

This is the phase at which the country begins to experience *social and economic development*. With more productive agriculture (and thus more food supply), better medical care, and more effective sanitation and hygiene, **death rates fall quickly and lifespans are longer**. The **birth rate**, however, **does not fall** at the same time (it does not increase, but rather remains high). *Birth rates far outpace death rates with the result that the population grows rapidly.*

# 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

## Stage 3: Population Growth Starts to Level Off

At this stage, birth rates decline.

This can be attributed due to :

- Contraception access
- Higher wages
- Fewer families participating in agriculture
- Improvement in education and social status of women

The result of this decline in birth rates, as the death rate continues to decline with further improvements in health and sanitation, is that population growth starts to decline as compared to the second stage.

As an example, Mexico began to arrive at this stage at the beginning of the 21st century.

## China's One-Child Policy

A Chinese government policy to control population growth that was phased out in 2015.

## Stage 4: Stationary Population

Both birth and death rates are now low at this stage. As a result, the population may remain the same or even decrease as birth rates come to be lower than “*replacement level*”—that is, families are having an average of fewer than two children each.

At this time, the generation born during the second stage of demographic transition is aging.

Japan, for instance, is currently dealing with this socio-economic challenge; some consider Japan to be at the fifth stage of the demographic transition model.

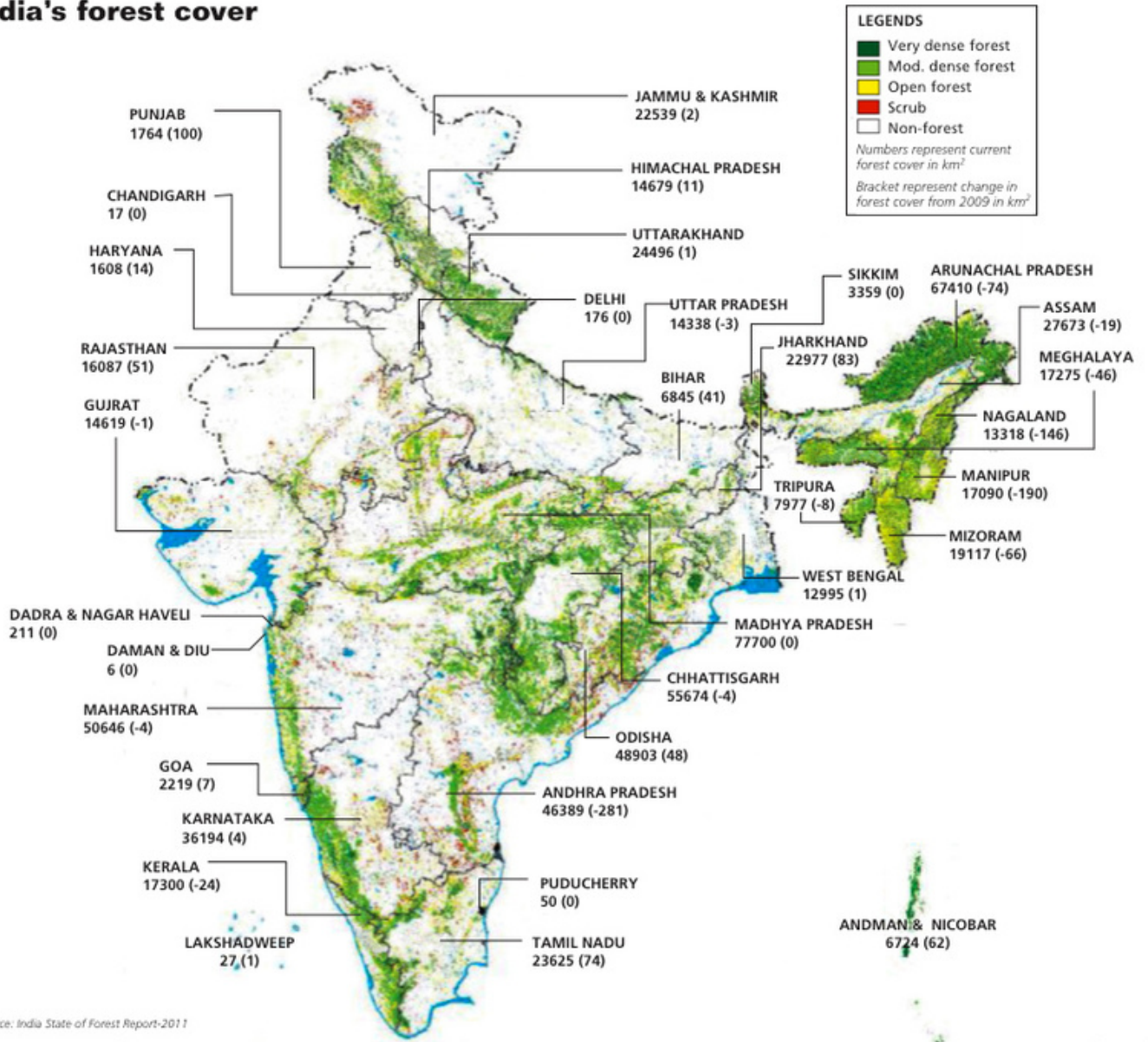
## Stage 5: Further Changes in Birth Rates

This stage is a bit more uncertain. At this stage, some demographers say that fertility rates will experience shifts to either above or below replacement levels.

While some experts argue that fertility levels will increase, others state the opposite.

This depends on the society too: while populations in **China and Australia are expected to fall** due to lower birth rates, those in the **U.S., India, and Mexico are expected to increase**.

## India's forest cover



Source: India State of Forest Report-2011

**Population Pressure Leading to Decline in Forest Cover, India**

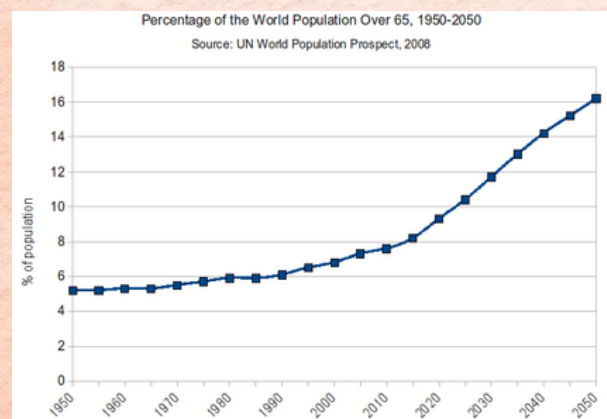
# **Threat of Population Ageing : The Tale of Advanced Economies**

**Ankit Mitra**

# Introduction

The social and economic implications of an ageing population are becoming increasingly apparent in many industrialized nations around the globe. With populations in places such as North America, Western Europe, and Japan aging more rapidly than ever before, policymakers are confronted with several interrelated issues, including a decline in the working-age population, increased health care costs, unsustainable pension commitments, and changing demand drivers within the economy. These issues could significantly undermine the high living standard enjoyed in many advanced economies. In other terms, population ageing is an increase in median age in a population because of declining fertility rates and rising life expectancy.

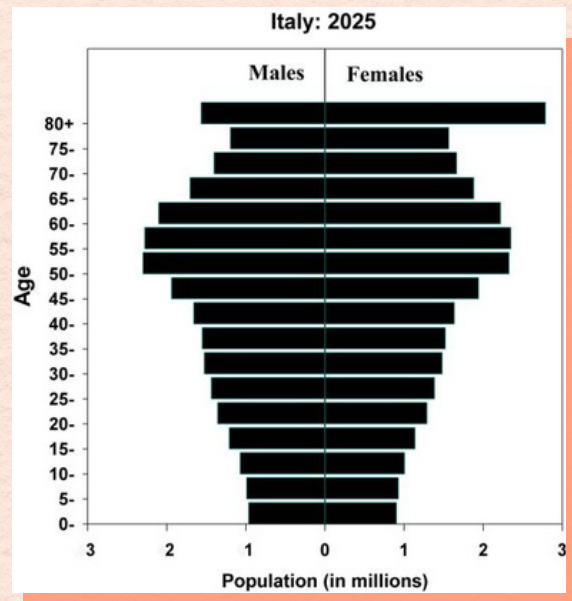
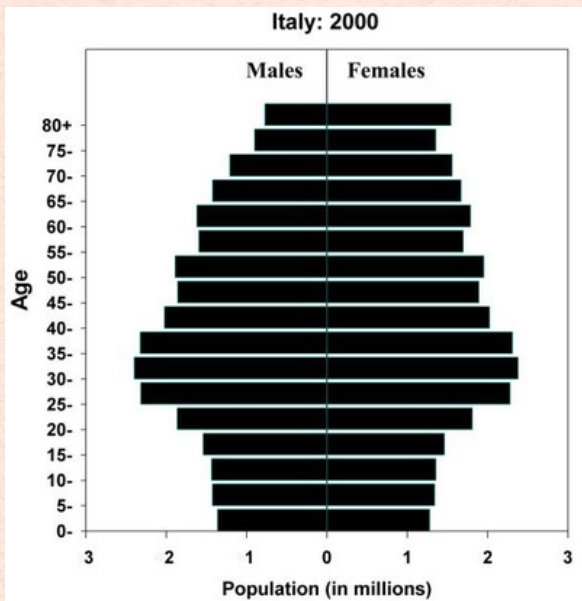
Most countries have rising life expectancy and an ageing population, trends that emerged first in developed countries but it is assumed that slowly this trend will become prominent in emerging economies in the



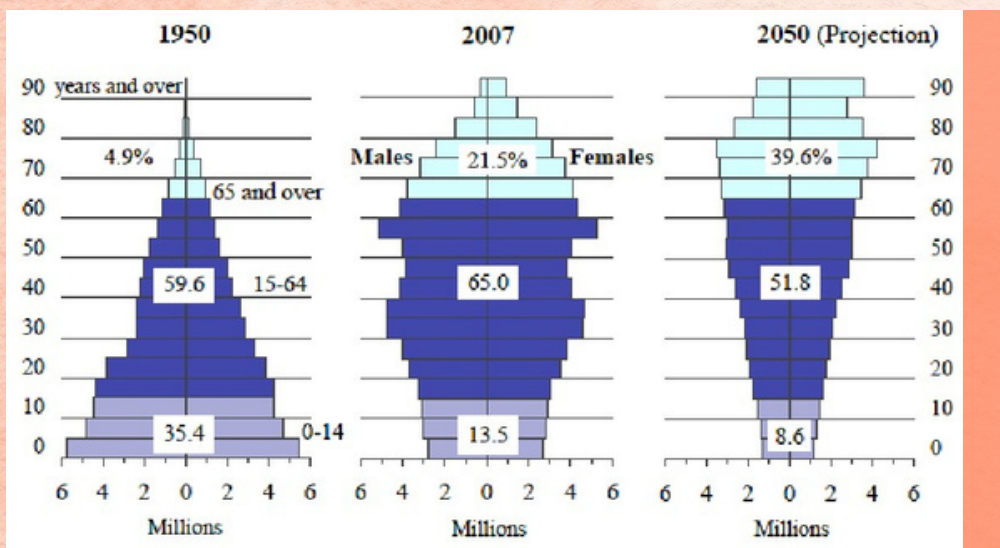
Rising elder population percentage

upcoming decades. The aged population is rising at an exponential rate which humankind has never seen in the past. The United Nations (UN) predicts the rate of population ageing in the 21st century will exceed that of the previous century and in 2020 there were 727 million people aged 65 or older, which is expected to be more than double by 2050.





Change in age structure of the population is evident from the diagram. In Italy and Japan, both high income countries, the young population has fallen significantly over the years, whereas the old population is increasing at a high rate. Hence the shape of the pyramid is changing gradually into a box.



Japan over the years

## *Situation with population ageing right now*

Many industrialized nations are realizing the effects of an ageing population, such as a decline in working age population and a surge in health care costs

Over 20% of the population of 17 countries consists of persons who are 65 years or older

It is projected that the combined senior and geriatric population will reach 2.1 billion by 2050

The decline in the working-age population results in a supply shortage of qualified workers.

Nations with a large senior population depend on a smaller group of people to pay for higher health costs, pension benefits, and other publicly funded programs

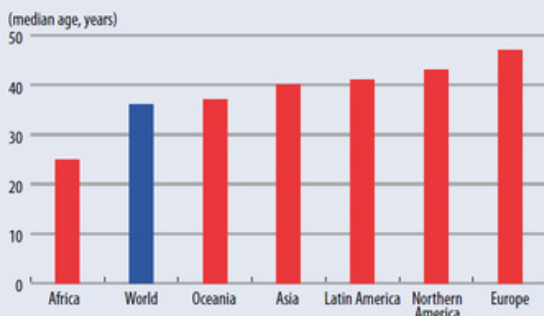
# Causes of ageing population

Ageing of a population has become common in advanced economies. Also females have greater labour force participation that causes delayed marriage and childbearing. Hence fertility rate has declined to a great extent. On the other hand, people are having larger life spans due to remarkable improvement in medical care facilities. Thus reduction in child population in previous decades is transformed into lower working-age population now and rising old-age population.

As the world grows older and birth rates continue to fall...

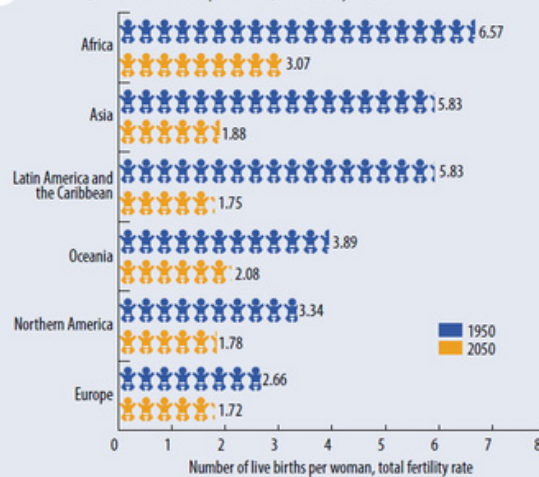
## Youngest and oldest

The world's median age is projected to be 36 years by 2050. Europe is expected to be the oldest region (47 years) while Africa is the youngest (25 years).



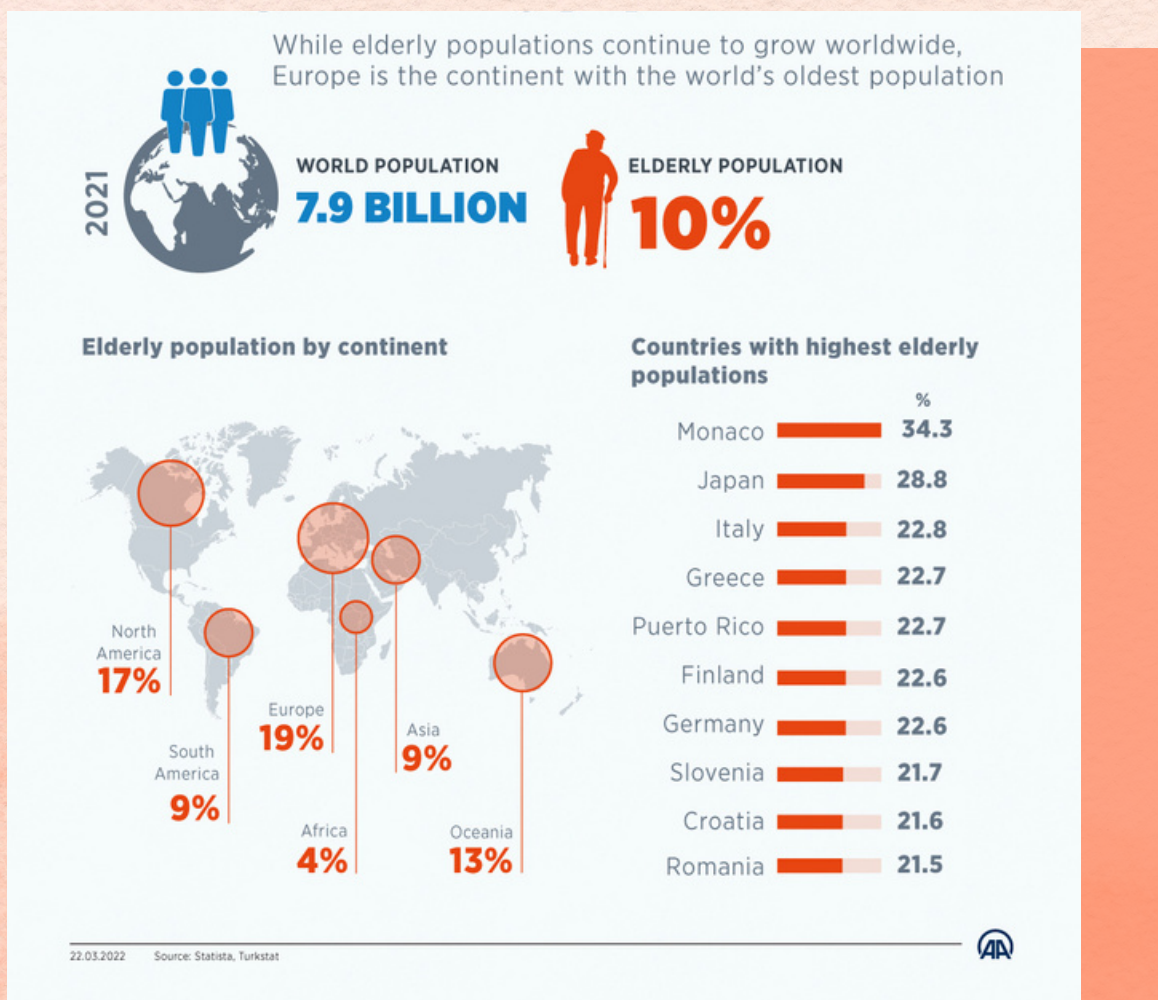
## Oh baby

Global fertility rates are expected to drop in 2050.  
(number of live births per woman, total fertility rate)



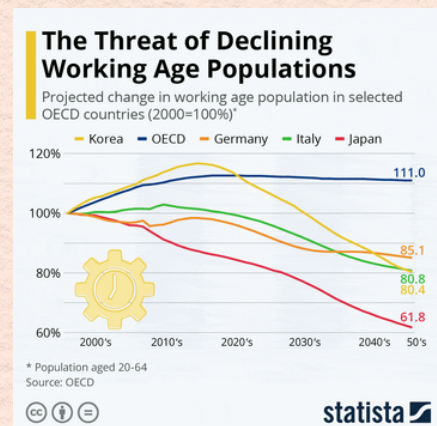
## Declining birth rates

## Ageing worldwide population : Europe has the largest elderly population



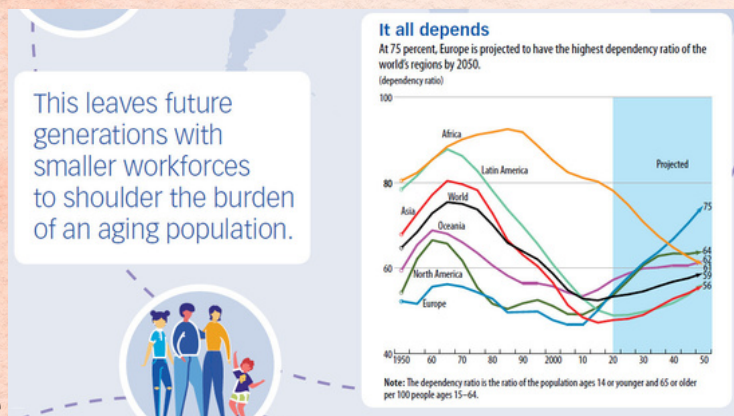
# Effects of population ageing on Economy

1. A rapidly ageing population means there are fewer working-age people in the economy which implies that there will be an excess demand for labour in almost every sector of the economy. There will be adverse consequences in the economy in terms of declining firm productivity, higher labor costs, delayed business expansion, and reduced international competitiveness. In some instances, a supply shortage may push up wages, thereby causing wage inflation and creating a vicious cycle of price-wage spiral. Due lack of young working age population the retirement age of the elders will be delayed and also there will a fall in workers' productivity as the aged population cannot be more efficient compared to their younger counterpart.



## Decline in labour force

Since the aged cohorts will be living longer due to gain in their life expectancy. Hence provision for retirement benefit has to be borne by the government. This,



## Rise in dependency ratio

obviously, will further increase the fiscal burden of the government further.

So ageing of population affects economic growth in a negative manner.

# Effects of population ageing on Economy

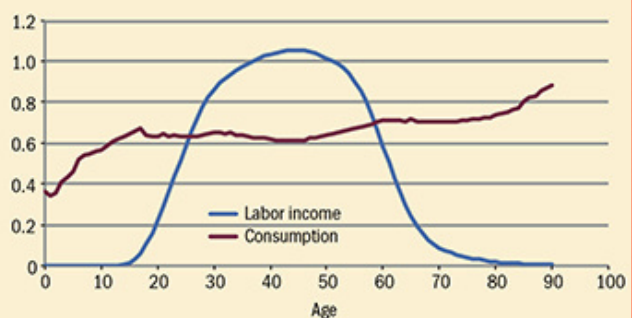
2. Given that demand for healthcare rises with age, countries with rapidly ageing population must allocate more money and resources to cover their healthcare cost which reduces resource allocation in other sectors of the economy, like education and infrastructure. Healthcare spending as a share of gross domestic product (GDP) is already high in most advanced economies; and it becomes higher with a high percentage of ageing population.

Additionally, the healthcare sector in many advanced economies faces similar issues, including labor and skill shortages and increased demand for at-home care. All of these cost escalators can make it more difficult for existing systems to handle the increased prevalence of chronic diseases, while addressing the needs of a large and growing senior population.

## Earning and eating

Prime-age adults, ages 25 to 59, earn more than they consume, while the young and elderly do the opposite.

(average per capita value, index, 1 = average labor income of ages 30-49)



Source: Mason, Lee, and others, forthcoming.

Note: The data cover the 24 countries classified as high income by the World Bank. Labor income includes earnings, benefits, labor income of the self-employed, and an estimate of the value of labor supplied by unpaid family workers. Consumption is based on household expenditures imputed to individuals plus in-kind public transfers received by people at each age.

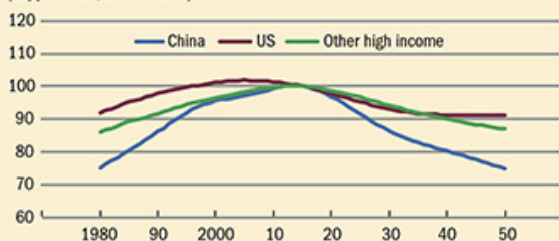
## Consumption by elderly

Chart 2

## Burden sharing

The number of workers supporting consumers (young, prime age, and elderly) will decline between now and 2050.

(support ratio, 2015 = 100)



Source: Mason, Lee, and others, forthcoming.

Note: Other high income = the 24 countries classified as high income by the World Bank, excluding the United States. The support ratio is the number of workers divided by the total number of consumers (that is, everyone).

## Burden share of older people

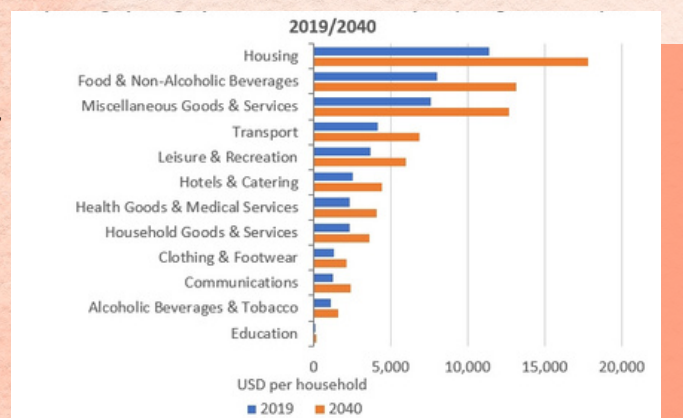
## Effects of population ageing on Economy

3. Countries with large elderly populations depend on smaller pools of workers in which to collect taxes to pay for higher health costs, pension benefits, and other publicly funded programs. This is becoming more common in advanced economies where retirees live on fixed incomes thereby belonging to a lower tax bracket than the workers. This reduces tax collection of the government and thus continuing higher spending commitments on healthcare, pension and other benefits poses challenges to the government of these nations. So the combination of lower tax revenue and higher spending commitments on health care, pension and other benefits are a major concern for advanced industrialized nations.

4. An economy with a significant share of seniors and retirees has different demand drivers than

an economy with a higher birth rate and a larger working-age population. A rise in old dependency burden there will bring about a surge in old-age homes and there will be an increasing demand for elderly

health care. Since women are perceived to be the primary caregivers of the elderly, this will prevent women from entering into contractual and paid market activities. Although economies may face challenges transitioning to market that are increasingly driven by goods and services linked to older people, the overall economic effect may not be negative in the long run.



Consumption by older people in USA

The prediction is that : the developing countries will face this problem in a big way by the end of this century. High female education rates, lower incidents of child marriage, increasing awareness regarding contraceptives, have started pushing down birth rates in these countries. China, in order to reduce the rapid population growth, had adopted "One-Child Policy" in 1979. As a result of which, birth rates have fallen steadily over the past decades and there is a tendency towards ageing. In the upcoming decades this will come across as a serious challenge for the policymakers of the developing economics.

As advanced economies are already growing old, they will become even older in the coming decades, thus the shortage of productive indigenous workers will be even more acute. Advanced economies like the USA, Germany, Japan, Italy, the UK etc are trying to fight this issue by allowing/inviting workers and students from developing economies. But these nations need to revise their stringent immigration laws to completely eradicate this issue.

To conclude, it remains to be seen whether immigration will take care of this problem or whether the developed economies will have to adjust to changing demographics.





***Natural Disaster has become rampant as overpopulation is creating enormous pressure on environment. From January 1 to September 30, 2022, India has faced natural calamities almost everyday and the number of victim of these calamities has risen to 2755.***



***Migration leads to demographic changes and demographic transition also governs migration patterns.***