

# Population dynamics

2022年11月29日 18:31

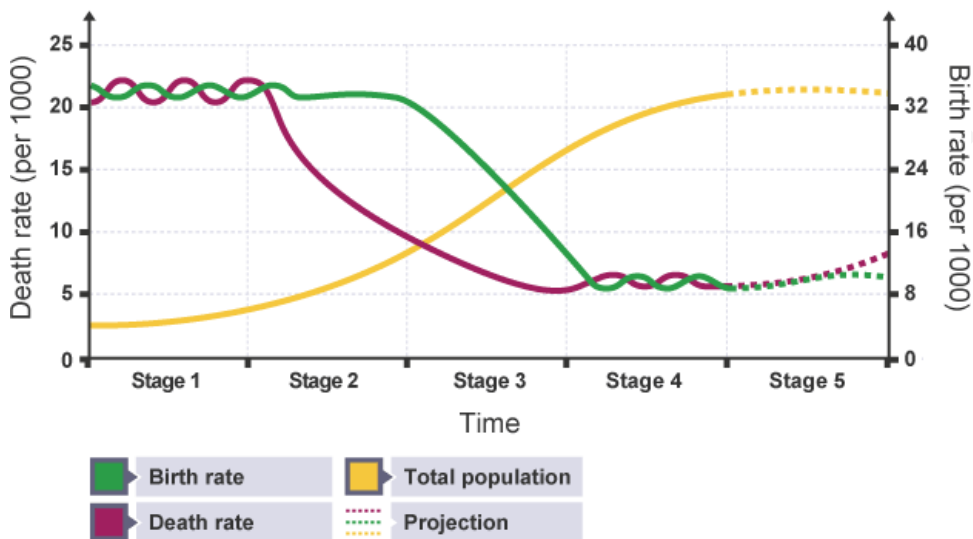
## Keywords

- <https://quizlet.com/cn/751161163/flash-cards/>

## Global population change overview

- Population reached 1 billion in 1804
- Rose slowly to reach 2B, by 1927
- It then rose rapidly, 7B in 2012 and 8B in 2022
- Still increasing but at a slower rate
- Predicted to level off at 10-11B

## Demographic transition model



- Stage 1
  - Tribes in the Amazon
  - High, fluctuating birth rate
  - High, fluctuating death rate
  - Low natural increase
- Stage 2
  - LEDCs in Sub-Saharan Africa
  - Birth rate stays high
  - Death rate falls
  - Increasing natural increase
- Stage 3
  - NICs
  - Birth rate decreasing rapidly
  - Death rate continues to fall but slower
  - Natural increase getting smaller
- Stage 4
  - MEDCs
  - Low birth rate
  - Low death rate
  - Low natural increase
- Stage 5
  - Germany, Japan
  - Decreasing birth rate
  - Death rate slightly increasing
  - Negative natural increase

- Birth rate takes longer to start decreasing because parents take some time to realise the changes

### **Global distribution of birth rates**

- Countries with high birth rates of more than 35/1000 are mostly in Sub-Saharan Africa e.g. DR Congo
- Afghanistan also has high birth rates but not in Africa so it is an exception
- Countries with low birth rates of less than 10/1000 are mostly in Central Europe + Eastern Europe e.g. Germany
- Japan + South Korea in Asia also have low birth rates

### **Reasons for high birth rate**

- Lack of education on family planning
- People do not use contraception as they may be too expensive
- Children are an economic asset so they can work on the farm or earn income
- High infant mortality so people have many children to ensure that some survive
- Children needed to look after parents in old age if there is no pension
- A son is needed to pass on the family name or inherit family business
- Region on culture encouraging giving birth
- Women uneducated leading to early marriage, weak emancipation of women

### **Global distribution of death rates**

- Countries with high death rates of more than 16/1000 are mostly in Sub-Saharan Africa
- Afghanistan also has high death rates but not in Africa so it is an exception
- Countries with low death rates are mostly in Americas, e.g. Brazil

### **Reasons for high death rate**

- Poor healthcare - few doctors nurses and hospitals per person
- No vaccination programme so people die from diseases e.g. polio or TB
- Unclean drinking water so people die from water borne diseases like cholera
- Poor hygiene in homes and lack of sanitation system
- Poor diets due to unreliable food supply so people die from malnutrition or starvation
- More wars or conflicts

# Population structure

2022年11月29日 18:31

## Keywords

- <https://quizlet.com/cn/751625622/flash-cards/>

## Demographic groups

- 0-14: Young dependents
  - School age
  - Depend on other for resources
- 15-64: Economically active
  - Potential working population
  - Pay taxes to support the dependents
  - The productive part of the population
- Over 65: elderly dependents
  - Do not usually work
  - Depend on others for resources

## Dependency ratio

- $$\frac{\% \text{ of young dependents} + \% \text{ of old dependents}}{\% \text{ economically active}} \times 100$$
- Dependency ratio of 100 means that for every person of working age there is 1 person who is dependent
- Dependency ratio over 100 means that for every person of working age there is more than 1 person who is dependent
- Lower dependency ratio is better
  - More economically active people take care of 1 dependent on average

## Population pyramid

- Australia (MEDC)
  - Beehive shape
  - Narrow base, few young dependents - birth rate is low
  - Wide apex - death rate is low
  - High % of people over 70 - life expectancy is high
  - More women elderly dependents than men - women have a higher life expectancy than men
  - Same number of children in 0-4 and 5-9 age group - birth rate is remaining low
- Bangladesh (LEDC)
  - Wide base with a large number of young dependents - birth rate is high
  - Narrowing base shows decreasing birth rate
  - Narrow top - death rate is high
  - Small % of people over 70 - life expectancy is low

## Ageing populations

- MEDCs usually have an ageing population with a high % of elderly dependents (above 65).

# Population distribution

2022年11月29日 18:35

## Describe distribution

- Unevenly distributed
- Areas of high population density
  - South Asia
  - East Asia
  - Western Europe
  - NE USA
- Areas of low population density
  - Polar regions north of 60° N
  - Central Asia
  - High mountain regions e.g. Himalayas
  - Arid deserts e.g. Sahara
  - Rainforests e.g. Amazon

## Physical factors

- Climate
  - Polar
    - Sparsely populated
    - Too cold for comfortable living, many months below 0°C
    - Difficult to construct buildings or transport networks on permafrost
    - Very short growing season (over 5°C to grow crops) so limited food production
    - e.g. Siberia, most of Canada
  - Tropical deserts
    - Sparsely populated
    - Low rainfall and infertile sandy soil so limited food production
    - Unstable sandy/rocky ground so difficult to construct buildings and transportation links
    - e.g. Sahara in North Africa
  - Temperate
    - Encourage dense populations
    - Average temperature and reliable rainfall so easier to grow food
      - Long growing season
    - e.g. Western Europe, Eastern USA, North East China
- Fertile soil
  - Contains many minerals and is well drained
  - Important in determining how much food can be grown
  - e.g. river floodplains and deltas
  - Support dense populations
- Natural resources (including energy sources like coal + minerals)
  - Area with natural resources available are usually densely populated
  - Settlements in areas with extreme climate to extract the resources
- Relief
  - High population densities in low altitude and flat land
    - More moderate climate
    - Easier to construct buildings for economic activities
    - e.g. coastlines and river valleys
  - Low population densities in places with steep gradient and high altitude
    - Cold climate with higher rainfall and snowfall
    - Thin and infertile soil
    - Difficult to use machinery
    - Thin air lacks oxygen
    - Difficult to build houses and roads so often inaccessible

### **Human factors**

- Economic
  - Job opportunities
    - Fast, reliable transport encourages industry to locate there, providing more job opportunities
  - Transport links
  - Income
- Social
  - People migrate to areas with better social services (housing, healthcare, education etc.)
- Political
  - The government have an important role in deciding where industry, transport, housing, public, services, etc. are located
  - This will affect where people choose to live
  - Encourages people to move out of overpopulated areas by building new settlements

### **Densely populated areas found in sparsely population regions**

- Oasis in the desert
- Near rivers in hot, dry regions
- Mining settlements in areas with extreme environment e.g. oil attraction in Alaska
- Tourist settlements in extreme environments e.g. Sharm El Sheikh in Egypt
- Dry areas which are surrounded by marsh land
- A sheltered valley surrounded by mountains

# International migration

2022年11月29日 18:36

## Key words

- <https://quizlet.com/cn/891659197/flash-cards/>

## Push and pull factors

Push factors	Pull factors
<ul style="list-style-type: none"><li>• Natural disaster event e.g. volcanic eruption, earthquake or drought</li><li>• Unemployment</li><li>• War</li><li>• Poverty</li><li>• Political or religious intolerance</li><li>• Housing shortages</li><li>• High crime rates</li><li>• Food shortages</li></ul>	<ul style="list-style-type: none"><li>• Employment</li><li>• Higher wages</li><li>• Food available</li><li>• Better housing and education</li><li>• Higher standard of living</li><li>• Political and religious tolerance</li><li>• More attractive environment e.g. better climate</li><li>• 'bright lights' of a city (media portrayal)</li></ul>

## Barriers to migration

Human barriers	Physical barriers
<ul style="list-style-type: none"><li>• Border controls and police</li><li>• Language barrier</li><li>• High cost of journey</li><li>• Visa required</li></ul>	<ul style="list-style-type: none"><li>• Wall or fence at the border</li><li>• Extreme natural environment to cross</li><li>• Long distance between countries</li><li>• Sea or ocean between countries</li></ul>

## Challenges new immigrants might face

- Not being able to speak local language so difficulty communicating
- Not having enough money to afford housing or food
- Not finding it easy to find a job / not having the skills needed to get a job
- Not understanding the local culture or laws

# Underpopulation Australia

2022年11月29日 19:16

## **Basic information**

- Population total: 23 million in 2017
- Natural increase = 0.4% (4/1000)
- Resources available:
  - Mining
    - World leading producer of iron ore and the second largest producer of gold, lead and zinc
    - Major producer and exporter of coal.
  - Agricultural products
    - Wheat, sugar cane and cattle
  - Land
    - The country is sparsely populated (very low population density) with large areas of land unused

## **Reasons for low population growth**

- Birth rates are low at 12/1000 because:
  - High cost of raising children
  - High education standards for women
    - Many decide to have careers, marry later and have fewer children
  - High use of birth control methods: 95% of women of fertile age
- Death rates low 8/1000
- Life expectancy is long 82 years on average
- Decreasing birth rates and an increase in death rates as the population becomes older in recent years
- The birth rates are not significantly higher than the death rates

## **Problems caused by under-population**

- Shortage of workers
  - The resources are not fully exploited
  - Large reserves of iron ore in the western desert region and coal in the 'outback' in the east not exploited
- Not enough tax
  - The working population who pay tax is low
  - The government does not have enough financial resources to pay for all the public services
  - 43% of the labour force will retire in the next 20 years
  - This will reduce the tax collection even further
- Public services close
  - Schools and hospitals in the less populated regions may have to close because there are not enough demand to support them
  - This will leave some people without easy access to public services.
- Small market to sell goods and services
  - Less demand means businesses are not so successful and there is less production
- Difficult maintain military services
  - There are not enough people or finances to set up a defence force to defend the country

## **Problems with low population growth**

- Depopulation of some parts of the country
  - There is an increasing migration from the countryside to the cities
  - The 'outback' is experiencing depopulation
- Not enough people for the future workforce
  - A need to increase the number of immigrants into the country of working age.
  - This has led to disagreements as some Australians oppose increased immigration
- All the problems caused by under-population

# Ageing population Australia

2023年1月11日 23:09

## **Evidence of ageing population**

- Elderly population over 65 years is high at 13% of population
- % over 65 is increasing and it is predicted to reach 25% by 2050
- % of elderly is increasing because the death rates are low and life expectancy is high (82 years)
- Low % of young dependents (only 19%) as birth rate is low (12/1000)

## **Problems with ageing population**

- Not enough working population
  - There are few young economically active people, the birth rates are low.
  - There is a shortage of economically active people working in agriculture, manufacturing and armed forces
  - In the next 10 years, Australia's labour force is expected to decrease significantly
  - → there are less economically active people to pay taxes to pay for government services
- High government cost
  - The elderly have a greater need for medical services
    - More money will need to be invested in medical care
    - Longer waiting lists for hospital treatments
  - There is a high cost to pay for pensions for the elderly
- Taxes on the working population will increase

## **Government actions on ageing population**

- Increase immigration of young people
  - Relax immigration policy and attract highly skilled workers from abroad
- Increase the age of retirement
  - They can increase the number of working age group
  - Less pension paid and more tax income
  - Current 67 but will increase to 70 soon
- Raise taxes to pay for public services
- Introduce a pro-natal policy
  - Offering money to families who have more than two children
  - This might increase the birth rate and the percentage of young dependents.



# Pro-natal policy + immigration Australia

2023年1月11日 23:07

## Why is pro-natal policy needed

- Australia is under-populated
- Low population density of less than 3 people per km<sup>2</sup>
- Population is growing slowly
  - Birth rate is low at only 12/1000 and decreasing
- High education standards for women
  - Have careers
  - Marry later (average age for having first child is now 31 years old)
  - Have fewer children
- High use of birth control methods
  - 95% of women of fertile age
- Fertility rate is only 1.6 children per female

## Policies taken since 1996

- The government provided financial support for families to encourage them to have more children e.g. the Baby Bonus introduced in 2004: Cash incentive of \$5000 for any couple having children
- Government paid for child-care costs e.g. spent of \$3.2 billion per year to help with child-care costs, including paying parents maternity/paternity leave for 18 weeks at the national minimum wage.
- Tax-rebate for those with children (tax paid back to parents)
  - the size of the rebate is based on the parent's earnings (high rebate for those who earn less).
- Result
  - Fertility rate increased slightly to 1.8 per woman.
  - Most increase in the outback where government financial support was most needed.
  - Still not enough to increase the population
  - Australian population is ageing so the birth rate continues to decrease
- Problems
  - The scheme did not have a significant influence on the population growth
  - It was very expensive to the tax-payers
  - Scrapped in 2014

## Immigration policy

- Now 28% of Australia's population was born abroad, most immigration comes from China, India or the UK.
- \$53 billion income was paid in tax by foreign born workers in 2016
- Skilled migration means skill gaps are met in important industries such as accountants, doctors and engineers.
- Increasing the cultural diversity in the workplace makes Australia more attractive to global partners, ensuring future investment and economic growth.
- Migrants are mostly young adults who marry and have children. This may increase the birth rate in future

# Sparsely populated Australia

2023年1月11日 23:07

## **General distribution**

- Population density: 3 / km<sup>2</sup>
- Uneven distribution
- More densely populated in SE cities
  - e.g. Brisbane, Sydney, Gold Coast
- Also dense around Perth in SW
- Sparsely populated in centre and north, less than 1 / km<sup>2</sup> due to hot desert environment

## **Higher density in SE and SW corners**

- Temperate climate
  - Summer 25°C, winter around 10°C
  - Rainfall about 800mm
  - Suitable for agriculture
  - Enough water for domestic and industrial use
- First settled by Europeans in Sydney
  - Led to most of the significant economic developments along the east coast
- Several cities located close together
  - e.g. Sydney, Canberra, Melbourne
  - Close trading connections with each other

## **Low density in central Australia**

- Desert climate
- 45% of Australia is hot desert (Great Sandy + Victorian)
- Low rainfall with less than 250mm per year
  - Not enough water for domestic use, industries and agriculture
- Isolated area
  - Great distances between small communities

## **Low density in northern Australia**

- Tropical wet climate
- Extremely high rainfall, over 2000mm per year
- Distinct wet and dry season
- Difficult to build infrastructures because of flooding in wet seasons

## **Higher density in some sparsely populated areas**

- Raw materials
  - e.g. coal and iron in the 'outback'
  - Creates job opportunities
- Transport links
  - e.g. Port Hedland
  - e.g. highway 1 built along the west coast to link mining settlements with coastal ports

# Overpopulation + youthful population Bangladesh

2022年11月29日 19:16

## **Basic information**

- Population total: 160 million
  - It grew from 80 million in 1980 so doubled in 50 years
- Land size: almost 144,000 km<sup>2</sup>
- Predicted growth: to 200 million by 2050
- Natural increase: 1.2%

## **Reasons for population growth**

- Death rates have fallen to 6/1000 because:
  - Improvements in health care
    - More trained doctors and nurses
    - More health clinics
  - Infant mortality has decreased to 30/1000 per year
    - Babies are vaccinated
  - Water supply is cleaner so less water borne diseases e.g. cholera
    - Only 13% of population now do not have access to clean water.
  - Food supply has improved particularly the production of rice
- Birth rates remain high (18/1000) because:
  - High % of population are women in child-bearing age
  - Limited use of birth control methods - only 62%
  - Young age of marriage - 1/3 girls married by 18 years old
  - Bangladesh has a youthful population
    - When they reach adulthood they will have children themselves

## **Problems with rapid population growth / youthful population**

- Poor health care and education services
  - Government does not have enough money to invest in public services for everyone
  - Most people do not have access to these services
  - 0.5 doctors per 1000 people.
- Not enough clean water for everyone - 13% do not have access to clean water which is around 20 million people
- Periodic food shortages
  - The amount of resources e.g. land, water and food have to be shared between a higher number of people
  - The amount available per person decreases
  - 33% of children under 5 are underweight
- Rapid rural urban migration
  - Many young people living in rural areas are forced to move to urban areas because there is not enough farmland available
  - This causes rapid urbanisation in the cities
  - 1000 people migrate to Dhaka each day from rural areas
- Poor sanitation facilities in urban areas - 42% of people living in Dhaka do not have a sanitation system
- Youth unemployment is high
  - The growth in population is faster than the growth of job opportunities

## **Causes of over-population**

- High fertility rates due to the lack of availability and knowledge regarding contraception
- The majority of the population work as subsistence farmers
  - Children are regarded as an economic asset
  - People have lots of children to help them work on the farms

- There is no state pension system in Bangladesh
  - People also have lots of children to take care of them when they get old
- Bangladesh is a poor country with 25% population living below poverty line of £1.25 per day
  - Government lacks suitable medical facilities and vaccinations.
  - Infant Mortality Rate is high at 30/1000 per year
  - People have lots of children to replace those that die at a young age.
- Females are not fully emancipated

#### **Problems caused by over-population**

- Bangladesh lacks sufficient resources to meet the needs of its Population, which leads to a lowering of standards of living
  - Many people (25%) are below poverty line of \$1.25 per day
  - Government does not have enough money to pay for the public services
- Rapid growth of urban areas
  - People forced to live in poor quality housing in slums
  - Urban areas have severe traffic jam
  - Air pollution from traffic and water pollution from waste thrown into the rivers
- Overcrowded living conditions and insufficient medical services increases the spread of diseases
  - Life expectancy is only 52 years
- Insufficient clean water supply for everyone
  - An increase in water borne diseases
- Over cultivation of the land to grow rice for growing population
  - Taking too many nutrients from the soil - reducing soil fertility
  - This has caused food insecurity and malnutrition for many people
- Deforestation
  - 50% of forests have been cut down for fuel wood
- Vulnerable to climatic hazards
  - Bangladesh suffers from the tropical cyclones from the Indian Ocean, which brings flooding to where dense populations live on the fertile floodplains of the Ganges Delta

# Anti-natal policy Bangladesh

2023年1月11日 23:07

## **Reasons for anti-natal policy**

- High population density of over 1000 per km<sup>2</sup>
- Over-populated
- Population is growing rapidly because death rate reduced to 6/1000 when birth rate still high at 18/1000
  - Large % of population women at child-bearing age which is keeping birth rate high
- Population doubled between 1970 and 2000

## **Government action**

- National Policy on population started in 1975
- Educated people on the problems caused by rapid population growth
- Encouraged small family size through an advertising campaign on TV and posters
- Increased people's access to birth control and made it affordable
- Minimum age of marriage was increased to 18 years for women and 21 for men.

## **Evidence of success**

- Increase in % population using contraception from 18% in 1980 to 60% in 2015
- Average number of children per family decreased from 6 to 2.
- Population growth rate decreased to 1.2%

## **Problems of anti-natal policy**

- Went against the religious belief of rural people, especially Muslims
- Some said that the campaign was very aggressive
- Rural people prefer larger families because they need children to work on their farms
- Difficult to enforce the law in rural areas
  - 65% of girl married by 18 and most had a child by 19 in traditional societies

# Densely populated Bangladesh

2023年1月11日 23:08

## **General distribution**

- Average population density about 1000 people / km<sup>2</sup>
- Uneven distribution
  - 75% in rural areas
  - 25% in cities
- Highest population density in Dhaka 50000/km<sup>2</sup>, highest in the world
- High population density on Ganges river delta 500/km<sup>2</sup>
- Lowest population density in SE Chittagong hills and south coast, less than 250/km<sup>2</sup>

## **High density in Dhaka**

- 17m live in Dhaka
- Over 1000 people migrate from rural areas to Dhaka each day
  - Attracted by potential for job opportunities and better services
- Forced to leave rural areas on south coast that are becoming flooded due to climate change

## **High population on Ganges river delta**

- Flat land
  - Easy to build on
  - Most accessible land with road / rail networks and airports built
- Easier to grow crops
  - Fertile soil due to annual flooding and deposit of alluvium
  - Monsoon climate with high temperatures and high rainfall (over 2000mm) during wet season for intensive rice farming
- River is used to trade
  - Import raw material
  - Export manufactured goods
  - Develop industry
- Links Dhaka with Chittagong (second largest city)

## **Lower population density in SE border with Myanmar**

- Steep sided hills rising to 900m altitude
  - Difficult to construct transport routes, less accessible
  - Thin and infertile soil, difficult for intensive agriculture
- Border with Myanmar is not secure
  - Over 0.5m Rohingya Muslim refugees have crossed the border into Bangladesh and live in refugee camps in east Bangladesh

## **Lower population density in south coast region**

- Extremely low lying land, altitude < 10m
  - Dangerous sea water floods almost every year due to cyclones
- Natural vegetation is thick
  - Mangrove forests are unsuitable land for agriculture
- Sea level rise due to climate change
  - Even higher risk of flooding
  - Encourage people to migrate to the cities

# USA Mexico immigration

2024年3月9日 15:16

## **Data**

- According to the U.S. Department of Homeland Security, Mexico is the country of origin for the largest numbers of illegal immigrants in the USA
- 6,570,000 migrants (57% of all illegal migrants)
- More than half of the 11 million Mexican living in the US are there illegally, according to a report by the Mexican government

## **Push factors from Mexico**

- High crime rate (10-14 homicide per 100,100)
- High unemployment and poverty rate (47%)
- Water shortage
- Drug gangs
- Low minimum wage

## **Pull factors from USA**

- Much higher quality of life
- Existing migrant communities to seek help from
- Better education (86% literacy rate in Mexico vs. 99% in USA)
- Diverse economy for both high and low skilled jobs
- Informal jobs available

## **Impact on Mexico (source country)**

- Positive
  - About \$13 billion sent back to Mexico as remittances per year
    - One of Mexico's most important sources of income
    - Second only to oil, surpassing the traditional tourism industry
  - When migrants return back to Mexico they are more skilled and have greater work experience which could help to develop the Mexican economy
- Negative
  - Mexican countryside has a shortage of workers
    - Certain villages have lost 2/3 of its inhabitants
  - Many men emigrate leaving a majority of women who have trouble finding marriage partners
  - Fathers and husbands are absent for years on end, women are left alone to raise the children
  - The community is growing increasingly dependent on money made elsewhere
  - Young adults tend to migrate, leaving ageing communities behind. With fewer children these communities will gradually die out
  - Hundreds of illegal immigrants who cross into the US from Mexico have died in the scorching heat of the Arizona desert

## **Impact on USA (destination country)**

- Positive
  - Mexican migrants benefit the US economy by working for low wages
  - Mexican culture has enriched the US border states with food, language and music
  - The Mexicans supply the need for cheap labour working in low paid jobs
- Negative
  - Illegal migration costs the USA millions of dollars for border patrols and prisons
  - Tensions have risen between Mexican immigrants and Americans
    - Increasing concerns over the availability of working-class jobs
    - Mexicans are seen as a drain on the USA economy.
  - Migrant workers keep wages low which affects the wages of American citizens
  - They can cause problems in cities due cultural and racial issues
  - The incidents of tuberculosis has been increasing greatly due to the increased migration
  - Money sent back to Mexico by the immigrants (remittances) is money that is lost from the American Economy