# The Development Gap

1. By "Development Gap" we mean the differences between the economies of the United States, Japan, and Western Europe and the poorer economies of Africa, Asia, Latin America, and Eastern Europe. These can be measured in terms of income, life expectancy, health, education, and level of urbanization.

2. The development gap evolves over time. Currently, it is decreasing for some countries (e.g. recently, China and India) while increasing for others (e.g. Democratic Republic of the Congo).

3. Economic development is *not irreversible*. Even some rich economies have displayed protracted decline (Argentina).

4. Poorer economies tend to grow faster when they do grow, but experience shows that protracted declines occur more frequently than for rich countries.

5. Poorer economies are characterised by: Dominance of agriculture and petty services
Low level of capital accumulation; Rapid population growth; exports dominated by primary commodities; Curse of natural resources. Weak institutional structures

# The Development Gap

The Income Gap

Most common measure of income is the *gross domestic product (GDP) per capita.*

GDP is the value of output *produced* in a country. It is not an *income* measure because it does

not account for net foreign income, foreign aid, and remittances.

GDP per capita needs to be expressed in a *common currency* (usually the dollar) for comparison across countries.

A common way to compare income across countries is by using *purchasing power parity (PPP)* exchange rates.

PPP rates are defined so that the *same basket of goods in any two countries has the same dollar value.*

Unlike market exchange rates, PPP rates take into account *non-tradable* goods and services (e.g., haircuts). The price of non-tradables is tied to local wages, so they tend to be cheaper in developing nations.

On average, poor countries' per capita incomes at PPP are twice as high as measured by the official exchange rate

# GDP per capita, PPP  (international 2011 $)
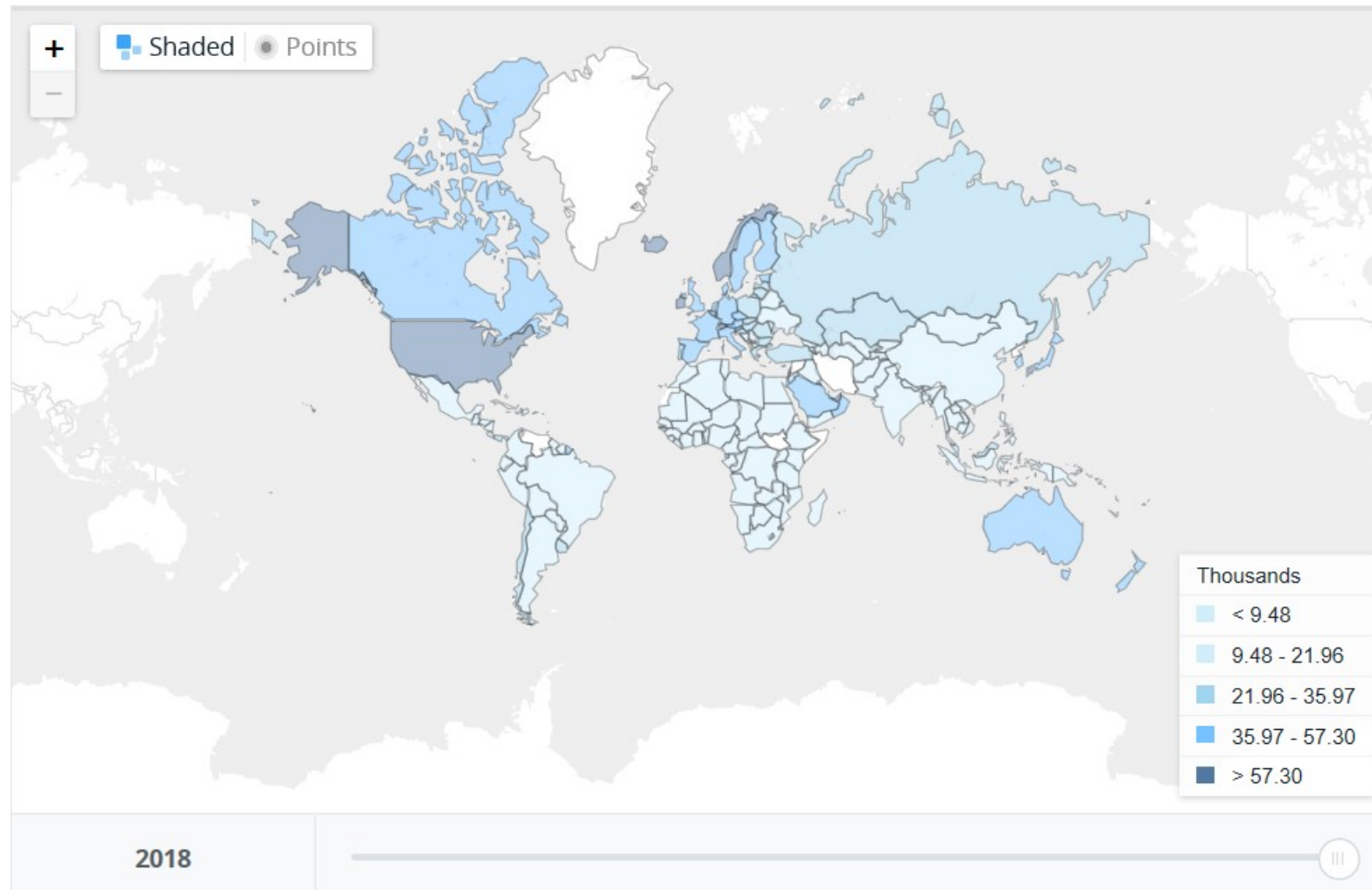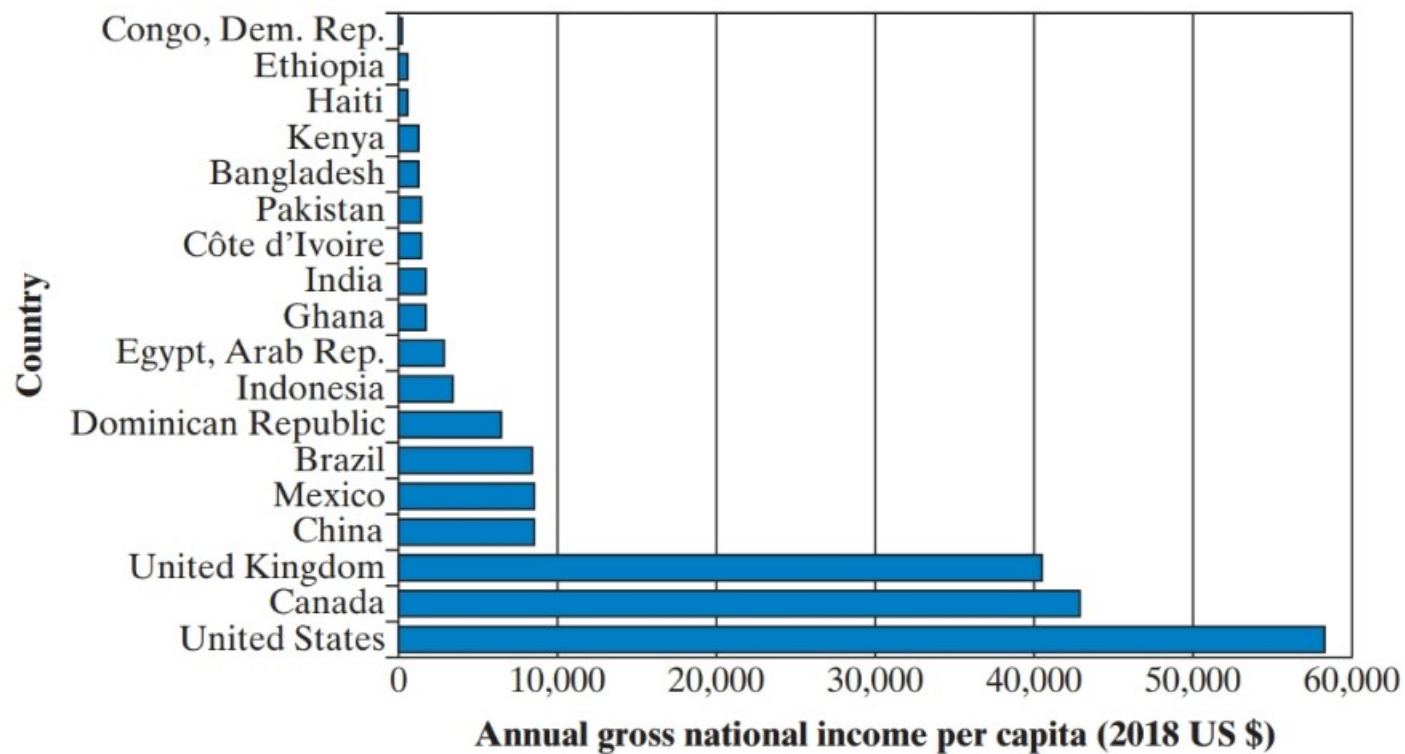https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?most_recent_year_desc=false&view=map



Shaded | Points

Thousands
- < 9.48
- 9.48 - 21.96
- 21.96 - 35.97
- 35.97 - 57.30
- > 57.30

2018

## FIGURE 2.2 Income Comparisons for Selected Countries, 2017



Horizontal bar chart. X-axis: Annual gross national income per capita (2018 US $), ranging from 0 to 60,000. Y-axis: Country.

Countries listed from top to bottom: Congo, Dem. Rep.; Ethiopia; Haiti; Kenya; Bangladesh; Pakistan; Côte d'Ivoire; India; Ghana; Egypt, Arab Rep.; Indonesia; Dominican Republic; Brazil; Mexico; China; United Kingdom; Canada; United States.

# The Development Gap

The international dollar, also known as Geary–Khamis dollar, is a hypothetical unit of currency that has the same purchasing power parity that the U.S. dollar had in the United States at a given point in time.

Classifying countries in terms of GDP per capita (on a PPP basis) shows *great differences*. For example, in 2018:

Luxemburg is richest at $113,337.

Rich above $57,300 include the United States, Norway, and Switzerland as well as some oil producing countries like Qatar and the United Arab Emirates.

Western Europe: GDP per capita between 35,970 – 57,300

Middle income countries, with GDP per capita between $21,960 and $35,970 include Russia, Eastern European Countries, Chile, Uruguay etc.

Central African Republic and Democratic Republic of the Congo are the poorest.

**TABLE 2.2** Comparison of Per Capita GNI in Selected Developing Countries, Canada, the United Kingdom, and the United States, Using Official Exchange-Rate and Purchasing Power Parity Conversions, 2017

| | GNI Per Capita (US $) | |
|---|---|---|
| Country | Exchange Rate | Purchising Power Parity |
| Bangladesh | 1470 | 4040 |
| Bolivia | 3130 | 7340 |
| Botswana | 6730 | 16420 |
| Brazil | 8600 | 15200 |
| Cambodia | 1230 | 3750 |
| Canada | 42870 | 46070 |
| Chile | 13610 | 23570 |
| China | 8690 | 16760 |
| Colombia | 5890 | 14090 |
| Congo, Dem. Rep. | 460 | 870 |
| Costa Rica | 11120 | 16200 |
| Côte d'lvoire | 1580 | 3820 |
| Dominican Republic | 6630 | 15290 |
| Egypt, Arab Rep. | 3010 | 11360 |
| Ghana | 1880 | 4280 |
| Guatemala | 4060 | 8000 |
| Haiti | 760 | 1830 |
| India | 1800 | 6980 |
| Indonesia | 3540 | 11900 |
| Kenya | 1460 | 3250 |
| Korea, Rep. | 28380 | 38340 |
| Mexico | 8610 | 17840 |
| Niger | 360 | 990 |
| Nigeria | 2100 | 5700 |
| Pakistan | 1580 | 5830 |
| Peru | 5960 | 12880 |
| Philippines | 3660 | 10050 |
| Senegal | 1240 | 3360 |
| Thailand | 5950 | 17040 |
| Uganda | 600 | 1820 |
| United Kingdom | 40530 | 42560 |
| United States | 58270 | 60200 |
| Vietnam | 2160 | 6450 |
| | | |
| Low income | 775 | 2127 |
| Middle income | 4942 | 11993 |
| High income | 40142 | 47575 |

Source: World Bank World Development Indicators

# The Development Gap

Per Capita Income (PCY) as Measure of Development

Development means more than rise in PCY because it ignores distribution of income and human development. But PCY correlates with several characteristics of underdevelopment:

High proportion of labour force in low productivity agriculture

High proportion of expenditure on food and necessities

Low levels of savings and investment

Low level of technology, and poor  human capital

Exports dominated by primary commodities

PCY can be used as starting point for classifying **levels** of development, and identifies specific **needs** for development.

# The Development Gap

Measures of Inequality and Historical Trends

Absolute gap is difference in GDP pc ( or other variables) between the richest and poorest countries. This gap widens through time

Relative gap is ratio of richest country (or group of countries) to poorest country (or countries). This gap has widened through time. Ratio of per capita income in high income countries to low income countries now 60:1

Variance or standard deviation of per capita income measures dispersion around the mean. Necessary condition for dispersion to narrow is poor countries grow faster than rich countries (sigma convergence). No evidence of sigma convergence across all countries

# The Development Gap

The Poverty Gap

**Headcount Index** counts number of people living below poverty line defined by the World Bank in 2015 as $1.90 a day at PPP ( 2011 $), currently 800 million. Poverty rate is ratio of poor people to total population

**Poverty Gap** measures the proportionate gap between the average level of PCY below the poverty line and the poverty line itself  e.g. if poverty line is $1.90 a day and average income below poverty line is $1.50, then poverty gap is ($1.90-$1.50)/($1.90) = 21

 In 2015 one tenth  of the world's population lived in poverty.

https://data.worldbank.org/indicator/SI.POV.DDAY?locations=1W&start=1981&end=2015&view=chart

# THE DEVELOPMENT GAP

Absolute poverty and poverty rates, 1990 and 2012 (WB 2015)

Global and regional poverty at the poverty line of $1.90 per day (at 2011 PPP)

| Region | Number of Poor in Millions | | Poverty rate (percent of population) | |
|---|---|---|---|---|
| | 1990 | 2012 | 1990 | 2012 |
| East Asia and Pacific | 996 | 147 | 60.6 | 7.2 |
| Europe and Central Asia | 9 | 10 | 1.9 | 2.1 |
| Latin America and the Caribbean | 78 | 34 | 17.8 | 5.6 |
| Middle East and North Africa | 14 | | 6.0 | |
| South Asia | 575 | 309 | 50.6 | 18.8 |
| Sub-Saharan Africa | 288 | 389 | 56.8 | 42.7 |
| World | 1,959 | 897 | 37.1 | 12.7 |

# The Development Gap

Multidimensional Poverty Index (MPI)

Index developed by Oxford Poverty and Human Development Institute and published in UNDP's *Human Development Report*

Three main dimensions of poverty identified: education, health and standard of living. Each dimension has various indicators. Education measured by years of schooling and child attendance. Health Measured by child mortality and nutrition. Living standards measured by electricity, sanitation, drinking water, flooring, cooking fuel and asset ownership

Each indicator has weights

Person identified poor if deprived of at least one-third of weighted indexes

About 800 million people are multidimensionally poor.

# The Development Gap

The Health Gap

There are large differences in *life expectancy* and *infant mortality* between developed and developing countries.
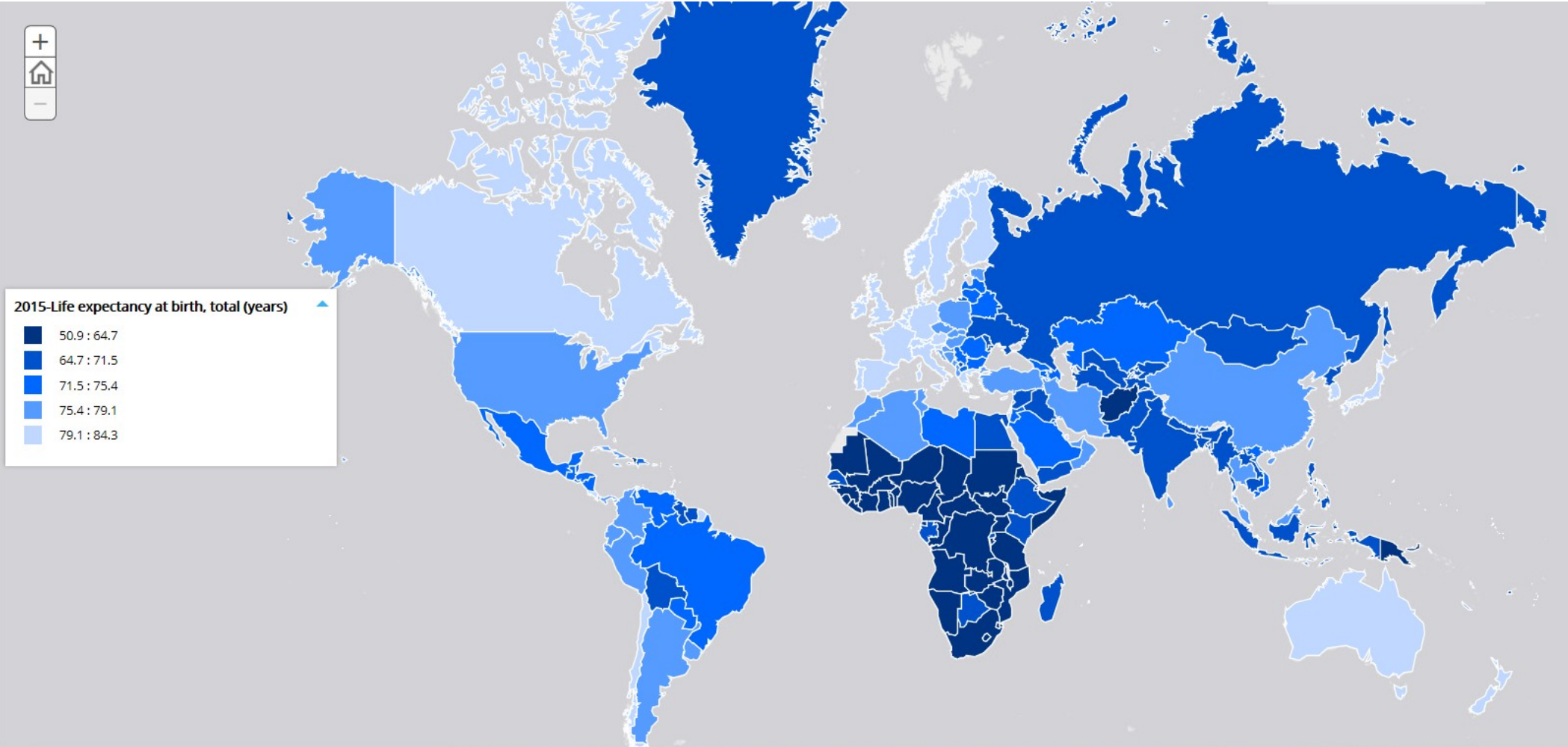
*Life expectancy* measures the number of years a newborn infant would live if health and living conditions at the time of its birth remained the same throughout its life.

*Reflects* the health conditions and quality of health care

A child born in a developed country is usually expected to live longer than a child born in a developing country.

In general, life expectancy is *highly positively correlated* with income.

There are some exceptions. Cuba (79) is an example of a poor country with high life expectancy.

2015-Life expectancy at birth, total (years)

- 50.9 : 64.7
- 64.7 : 71.5
- 71.5 : 75.4
- 75.4 : 79.1
- 79.1 : 84.3

# The Development Gap

The *infant mortality rate* measures the probability that a child will die before reaching the age of 1.

It is computed as the number of children dying before age 1 per 1,000 live births in the same year.
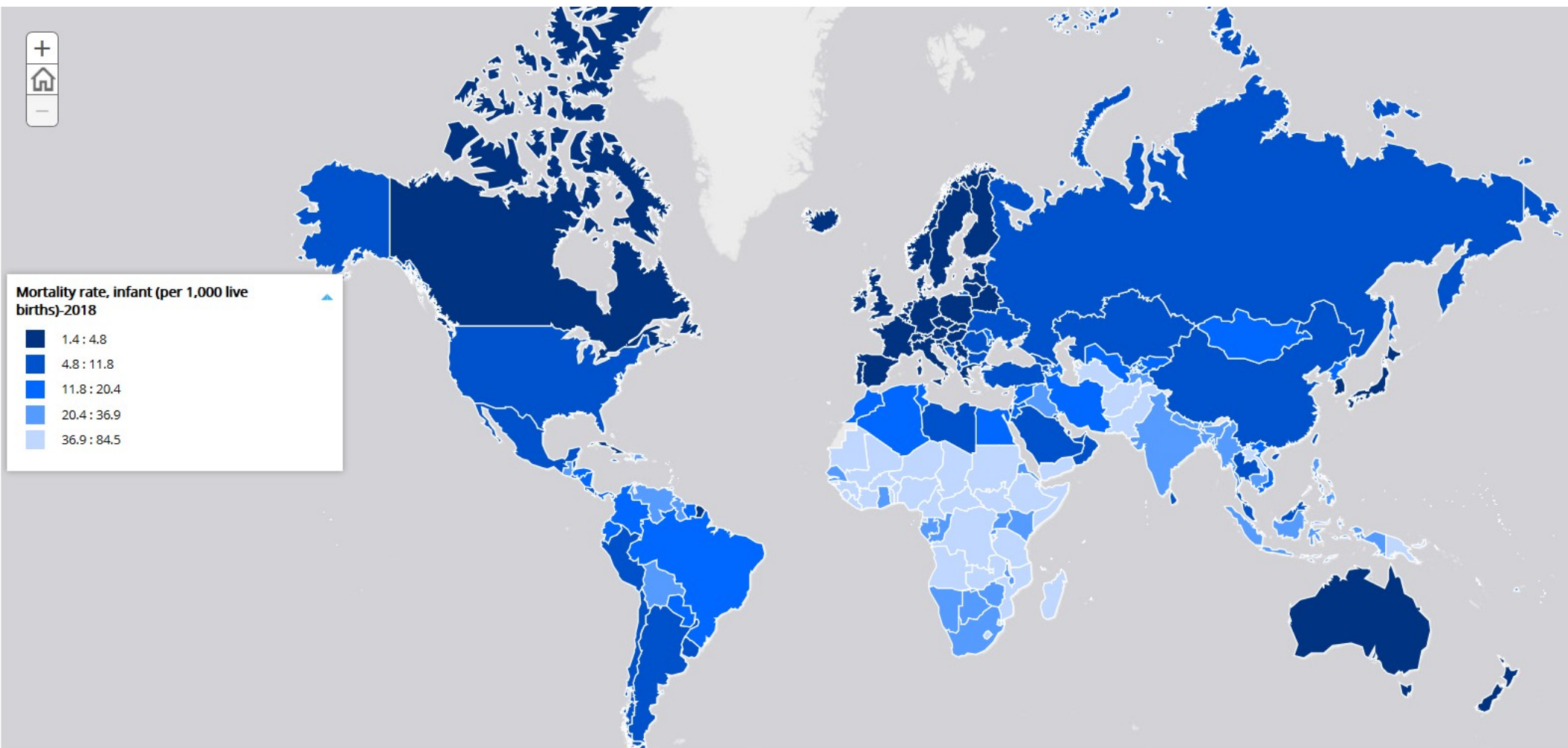
It is *negatively correlated with income.*

It is *highest in Sub-Saharan Africa and South Asia*.

The United States has an infant mortality rate of 6.5 per 1,000 live births.

Policy interventions can make a difference in lowering child mortality. For example, Cuba has an infant mortality rate of 4.6, which is lower than that of the United States.

# Infant Mortality Rates in 2018 (Per 1,000 Live Births)

https://databank.worldbank.org/source/health-nutrition-and-population-statistics



Mortality rate, infant (per 1,000 live births)-2018

- 1.4 : 4.8
- 4.8 : 11.8
- 11.8 : 20.4
- 20.4 : 36.9
- 36.9 : 84.5

# The Development Gap

The Education Gap

Countries that *invest in near-universal, quality education* can realize high productivity gains and economic growth.

But many poor countries *cannot afford* a good educational system.

There have been improvements in primary school enrollment in developing economies, but many lag behind developed nations in *secondary school enrollment.*

Secondary school enrollment is pupils enrolled in secondary education divided by the population in the age group. (Can be greater than 100%)

In 2018 the UK had a secondary school enrollment rate of 97%, while Niger's is only 9%.

*South Korea is a success story in terms of economic growth and educational attainment*. Around 97% of South Koreans between the ages of 25 and 34 have achieved secondary education.

# Human Development Index (HDI)

The most widely used measure of the comparative status of socioeconomic development is presented by the United Nations Development Programme (UNDP) in its annual series of Human Development Reports. HDI based on three variables:

1)Life expectancy at birth

2) Educational attainment measured as arithmetic mean of average and expected years of schooling

3) Per capita income at PPP

Minimum and maximum value is given to each variable and index is constructed as:

Index = (Actual value – Minimum value) / (Maximum value – Minimum value)

Each index ranges from zero to one. If actual value = minimum value, index = 0. If actual value = maximum value, index = 1

HDI is an average of the three indexes.

# Human Development Index (HDI)

- The "goalposts" for life expectancy took a minimum value of 20 years and a maximum value of 85 years. No country has had a life expectancy of less than 20, at least since before the 20th century; a life expectancy of 85 is close to the highest of any country at present (for example, life expectancy in Japan is 84).

- The education ("knowledge") component of the HDI is calculated with a combination of the average years of schooling for adults and expected years of schooling for a school-age child now entering school. The education indicators are normalised using a minimum value of 0, because societies "can subsist without formal education." The maximum value was set to 15 years for average schooling.. In considering expected future education for any country, the highest value(cap, or "goalpost") is given as 18 years (which we may think of as approxi-mately corresponding to attaining a master's degree in most countries).
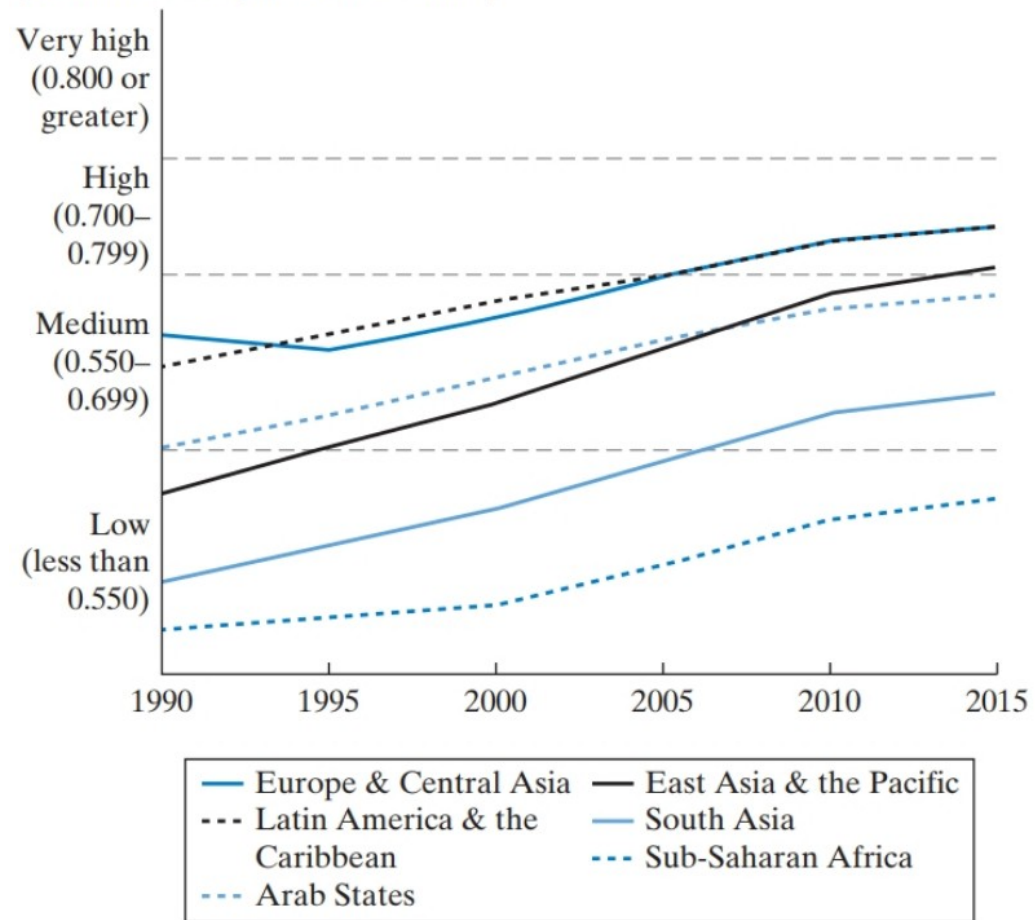
# Human Development Index (HDI)

The standard of living (income) component is calculated using purchasing power-adjusted per-capita GNI. The natural log of income is used to represent the idea of diminishing marginal utility of income; indeed the UNDP currently assumes an upper goalpost of $75,000 per capita, based on their interpretation of the evidence that "there is virtually no gain in human development and well-being from annual income beyond $75,000."

The UNDP then uses a geometric mean to construct the overall index, rather than an arithmetic mean (as had been done before 2010). The use of a geometric mean in computing the New HDI is very important.

When using an arithmetic mean (adding up the component indexes and dividing by 3) in the HDI, you assume perfect substitutability across income, health, and education. You can find data at:

http://hdr.undp.org/en/dashboard-human-development-anthropocene

Human development classification
(Human Development Index value)



| | |
|---|---|
| —— Europe & Central Asia | —— East Asia & the Pacific |
| - - - Latin America & the Caribbean | —— South Asia |
| - - - Arab States | - - - Sub-Saharan Africa |

# The Development Gap

The Urbanization Gap

*Urbanization rate:* proportion of population living in urban areas (>200,000 people) as opposed to rural areas.

*Development drives urbanization* as workers flow to industries and services located in cities.

Urbanization is *increasingly rapidly* across the world.  In 2010, the global rate exceeded 50% for the first time.

But sub-Saharan Africa and South and Southeast Asia remain majority rural.

But big dispersion: Ethiopia, and Rwanda urbanization rates are around 20% while Djibouti and Gabon have urbanization rates close to 90%.

In Asia, Nepal is the least urbanized at around 18%. South Korea, on the other hand, has an urbanization rate of more than 80%.

In Latin America,  Brazil, Argentina, and Venezuela have urbanization rates above 90%.

The recent acceleration of urbanization is *not necessarily due to attractive higher levels of income in urban areas*. Many people in large cities live in extreme poverty with little basic infrastructure (safe water, electricity, gas, transportation, sewage).

Most of the world's *largest cities are in the developing world*. These include: Mexico City (Mexico), Sao Paulo (Brazil), Mumbai (India), Shanghai (China), Djakarta (Indonesia), Kolkata (India) and Cairo (Egypt).

There is a *great need for public policy to address how to improve* housing, infrastructure, health and education in large cities of the developing world.

# The Development Gap

Exports Dominated by Primary Commodities and  Curse of Natural Resources

Three main disadvantages:

Long run deterioration in terms of trade because income elasticity of demand < 1 (Engel's Law), but income elasticity of manufactured imports > 1 causing balance of payments problems

Prices more volatile than manufactures: macro-instability

Countries dependent on primary products grow slower (curse of natural resources) because their exchange rate might be too high to sell manufactured good ( Dutch disease).

High mineral wealth is far from a guarantee of development success. Conflict over the profits from these resources has all too often led to a focus on the distribution of wealth rather than its creation and to social strife, undemocratic governance, high inequality, and even armed conflict, in what is called the "natural resource curse."

# The Development Gap

Fractionalization and Conflict

Low-income countries more often have ethnic, linguistic, religious, and other forms of social divisions, sometimes termed "fractionalisation." This is some-times associated with civil strife and even violent conflict,

 In most cases, one or more ethnic groups face serious problems of discrimination, social exclusion, or other systematic disadvantages.

 Over half of the world's developing countries have experienced some form of interethnic conflict.

Ethnic and religious conflicts leading to widespread death and destruction have taken place in Angola, Bosnia, Ethiopia, Gua-temala, Kyrgyzstan, Sierra Leone, Sri Lanka, Myanmar (Burma), Rwanda, Sudan, and Mozambique.

Conflict can derail what had otherwise been relatively positive development progress, as in Côte d'Ivoire from 2002 until 2013. Also recall Afghanistan, Congo, Liberia, Somalia, South Sudan, Syria and Yemen. Of course Eastern Europe has these problems too.

In  Latin America, indigenous populations have significantly lagged behind other groups on almost every measure of economic and social progress and sometimes been subjected to systematic land expropriation, violence, and genocide

 Moreover, descendants of African slaves continue to suffer discrimination in countries such as Brazil.

However this is not destiny: there have been numerous instances of successful economic and social integration of minority or indigenous ethnic populations in countries as diverse as Malaysia and Mauritius.

# The Development Gap

## The Industrialization Gap

Industrialisation is associated with high productivity and incomes and has been a hallmark of modernisation.

Most developing-country governments make industrialisation a high national priority, with a number of prominent success stories in Asia.

Many developing countries, particularly LMCs and UMCs, have dramatically increased their shares of manufacturing in national income. In many cases, however, manufacturing has remained concentrated in lower-skill (and lower-wage) activities.
Along with lower industrialisation, developing nations have tended to have a higher dependence on primary exports.

Generally, developing countries have a far higher share of employment and output in agriculture than developed countries. In some low-income countries, more than two-thirds of the population works in agriculture. In contrast, in Can-ada, the United States and United Kingdom, agriculture accounts for between 1% to 2% of both employment and income—with productivity not below the average for these economies as a whole.

# The Development Gap

The Institutional Gap

Imperfect markets and incomplete information are far more prevalent in developing countries.

In many developing countries, legal and political institutios are extremely weak.

Following Nobel Laurate Douglass North, economic institutions are "humanly devised" constraints that shape interactions (or "rules of the game") in an economy; both formal rules in constitutions, laws, contracts, and market regulations, and informal rules reflected in norms of behaviour and conduct, values, customs, and generally accepted ways of doing things. Enforcement of rules is as important as their formal existence.

A well functioning market economy needs:

(1) a legal system that enforces contracts and validates property rights; (2) a stable and trustworthy currency; (3) an infrastructure of roads and utilities that results in low transport and communication costs so as to facilitate interregional trade; (4) a well-developed system of banking and insurance, with formal credit markets that allocate funds efficiently.

# The Development Gap

Geography

Developing countries are primarily tropical or subtropical, so they suffer more from tropical pests and parasites, endemic diseases such as malaria, water resource constraints, and extremes of heat. Working is much harder in these conditions.

Clearly, geography is not all; Singapore, among the highest-income countries in the world, lies almost directly on the equator, and parts of southern India have exhibited enormous economic dynamism in recent years.
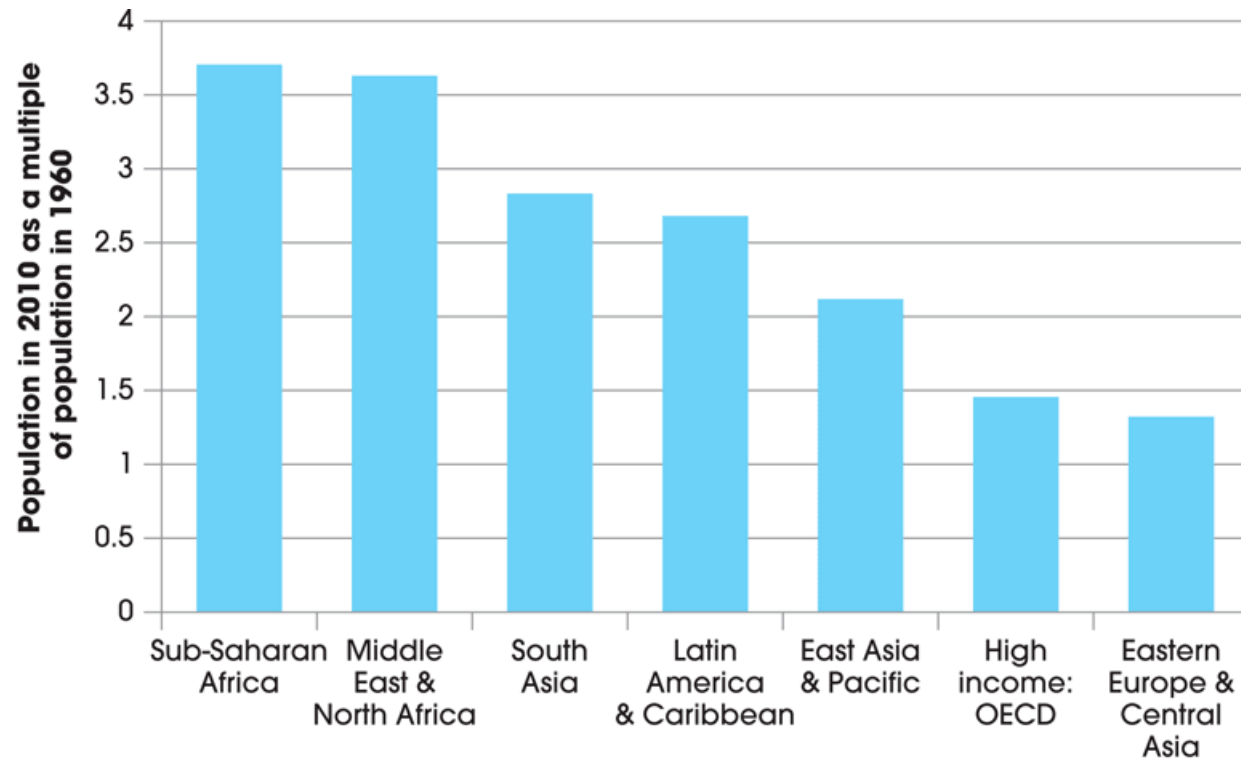
# The Development Gap

Demographic Gap

Population growth *contributes to GDP* growth because a larger population *increases the labor force* and thus should increase economic output.

●However, if *output growth is slower* than population growth, GDP per capita falls.

●Noticeably, the world's poorest region, Sub-Saharan Africa has had the *highest population growth*.

●Likewise population growth has been high in the Middle East and North Africa, South Asia, Latin America, and the Caribbean.

●If this trend continues, the proportion of the world's population *living in poverty will increase*.

# Population Growth



Population growth in the world is highest in the poorer regions.

*Source*: The World Bank, World Development Indicators, http://databank.worldbank.org.

# WHY THE DEVELOPMENT GAP?

The development gap, as measured by income, poverty, health, education and urbanization etc., is a *"stylized fact"* of the economics of development. It raises the important questions in the economics of development:

*Why did some countries develop earlier than others?*

To frame development issues, we need a *dynamic (over time)* view of economic development:
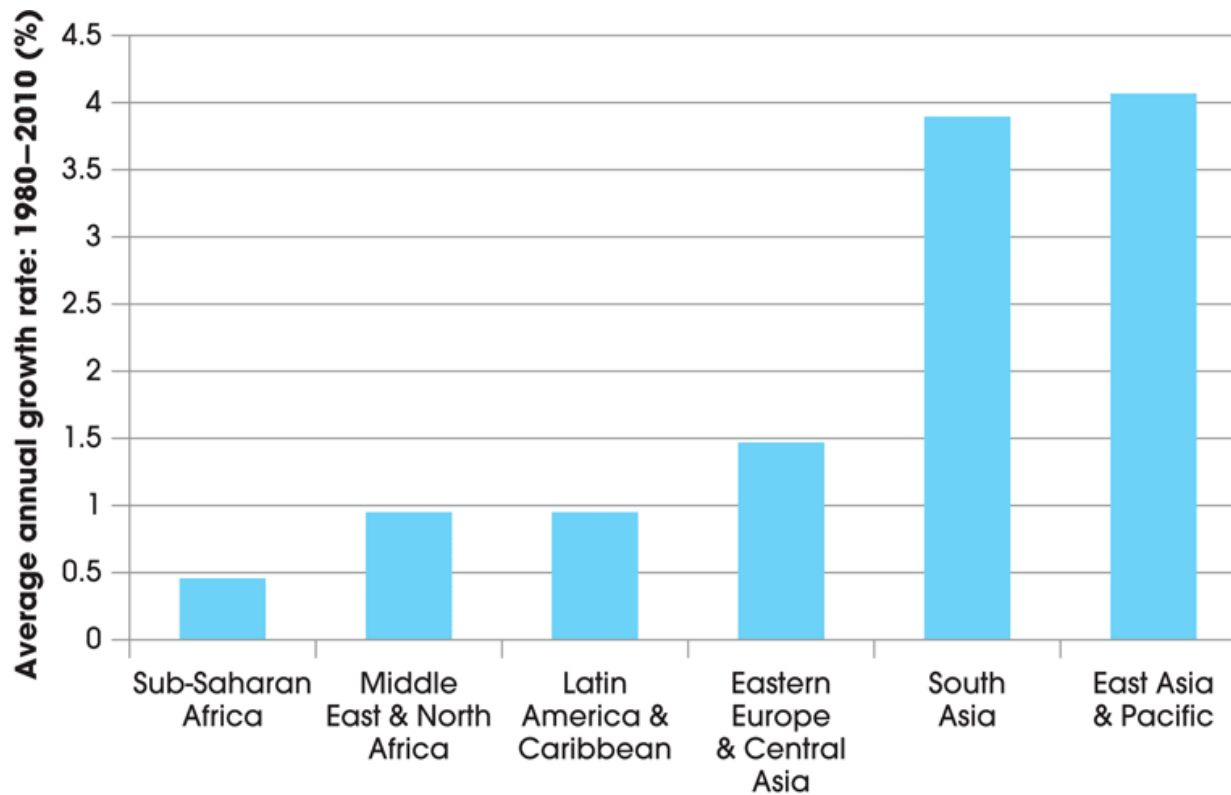
*How is the development gap evolving over time?*

Some countries have made great progress toward closing the gap, while for others the gap has widened.

# The Evolving Development Gap

Differences in Economic Growth

●Notably, the *highest growth rates* in GDP per capita in the last 3 decades have been in *East Asia, the Pacific and South Asia*.

●By contrast, the *lowest growth rates* in GDP per capita in the last 3 decades have been in *Sub-Saharan Africa, the Middle East, North Africa, Latin America, and the Caribbean*.

●There has been *wide variation* between countries. Between 1980 and 2010, China grew on average at over 8% a year, it was still 6% in 2019.

●On the other hand, Liberia, Saudi Arabia, Cote D'Ivoire, Georgia, Niger, Moldova, Togo, Gabon, Burundi, Venezuela, and Nicaragua experience economic contraction during the period.

# Average Annual Growth Rate (1980-2010) of GDP Per Capita (PPP) in Constant 2005 Prices.



Growth rates of GDP per capita in the last 3 decades have been high in East Asia and the Pacific and South Asia, and low in sub-Saharan Africa, the Middle East and North Africa, and Latin America and the Caribbean.

*Source*: The World Bank, World Development Indicators, http://databank.worldbank.org.

# The Evolving Development Gap

Western countries started to grow faster with the "*Industrial Revolution*":

The British economy began to expand in the late 18th century.

The American economy and much of continental Europe started in the 19th century.

Germany and Japan started late, but caught up very rapidly.

*Fortune Reversals*. Examples of rich countries that subsequently declined include China, Argentina, and the Ottoman Empire (Turkey).

# The Evolving Development Gap

The Historical Catch-Up of Japan

At end of the Tokugawa (Shogun) period, Japan was a feudal society and remained closed to the outside world.

In 1867, the *Meiji emperor* implemented a program of social and political reforms inspired by the *"institutions"* of industrialized countries.
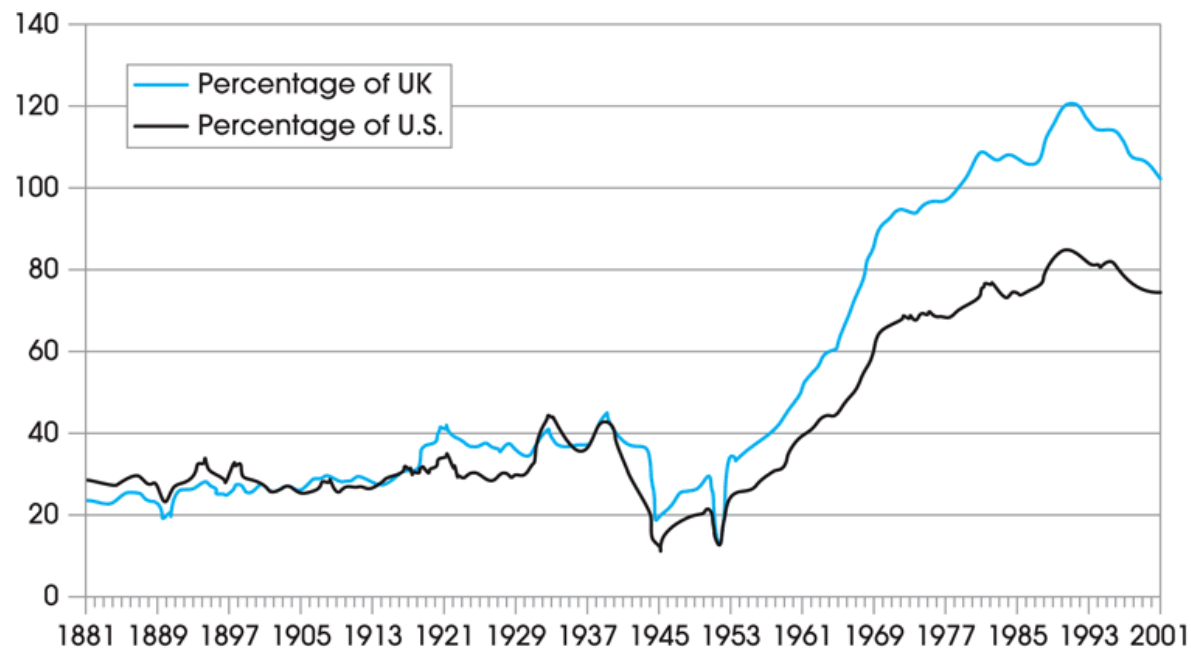
The Japanese government made *large infrastructure investments and promoted industrialization*. Business conglomerates emerged and transformed the economy.

At the beginning of the *"Meiji Restoration,"* Japanese income per capita was estimated at less than 30% that of the U.S. and UK.  By 1940 the ratio was over 40%.

*Growth after WWII was even more striking*. Japan saw rapid and consistent growth based on high-quality, low-cost manufacturing.

By the 1980s, the Japanese economy overtook the UK, and reached 80% of the U.S. per capita income.

# Japan's Per Capita Income as a Percentage of Levels in the UK and the US.



Until World War II, income per capita in Japan was below 40% of the levels in the United Kingdom and the United States. Between 1945 and 1990, Japan caught up with the United Kingdom and reached 80% of the U.S. level.

Source: Maddison, A., "The World Economy: A Millennial Perspective," Organisation for Economic Co-operation and Development, 2007.

# German Catch-Up

Germany was established as a *unified country* only after 1871.

After unification, the government under Bismark launched an *industrialization* program.
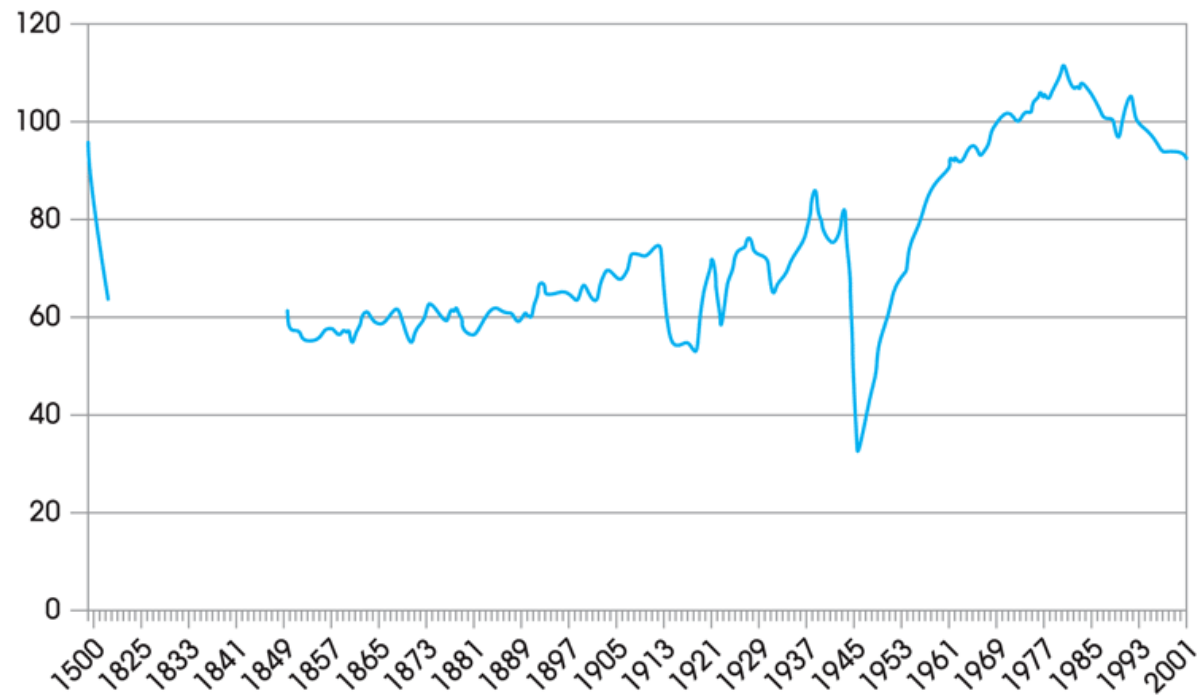
Unification helped development of larger markets, as *tariffs* between German states were abolished.

A new innovation, the *universal bank* lent money to firms and, also, held equity in industrial enterprises.  Allowed the financing of large investments that produced economies of scale (steel, rail, chemicals, etc.)  helping the German economy grow rapidly.

By the beginning of WWI, German income was around 80% of the UK level.

After WW II the (West) German economy also *recovered rapidly*, surpassing UK income per capita by the 1960s. Today german GDP pc PPP is approx 90%  of the US one. Also hours worked per worker much lower, less inequality.

# German Per Capita Income as a Percentage of Levels in the United Kingdom.



After German unification in 1871, Germany began to catch up economically with the United Kingdom and overtook it during the 1960s.

*Source*: Maddison, "The World Economy," 2007.

# STORIES OF CATCH-UP AND DECLINE

Alexander Gerschenkron stressed *"the advantages of (economic) backwardness"*. Latecomers can achieve a faster process of industrialization, by

adapting existing *technologies* used in richer countries

State policy should encourage *private capital formation*, building *infrastructure*, assuring *competition* in domestic markets, and shielding *"infant industries"* from foreign competition.

The data on catch-up shows that the advantage does not always apply.

Gerschenkron, Alexander (1962), Economic backwardness in historical perspective, a book of essays, Cambridge, Massachusetts: Belknap Press of Harvard University Press

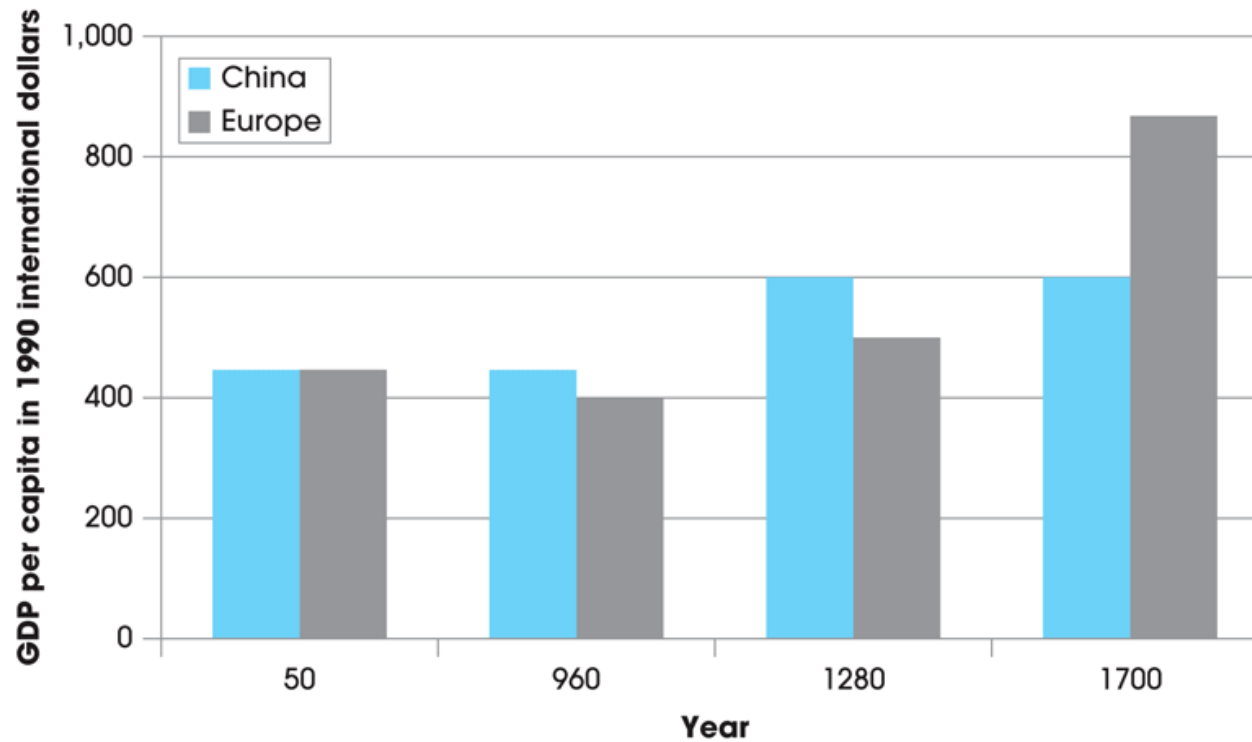# STORIES OF CATCH-UP AND DECLINE

Economic Decline

Some of the currently poor countries and regions of the world *were once the richest*.

*China was once the richest country in the world* with higher living standards than Europe until around the 15th century and higher than Japan until about the 19th century. During the 19th and 20th century Chinese growth continually lagged and did not start growing again until recently (1980s).

After 1453, Eastern Europe was dominated by the *Ottoman Empire*. But the Empire declined throughout the 19th century and eventually collapsed during WWI.

*Argentina* was one of the richest countries in early 20th century, mainly due to high agricultural productivity. In 1900s Argentina income levels were 80% of the U.S. By 2000, income levels declined to about 30% of U.S ( current level).

# Estimates of GDP Per Capita in China and Europe in 1990 International Dollars.



China was richer than Europe until the 17th century.

*Source*: Maddison, "The World Economy," 2007.

# STORIES OF CATCH-UP AND DECLINE

There are many *other examples* of former world powers that have declined and become poor countries and/or regions of the world today.

To date, there are no examples of prolonged economic decline in industrialized countries. However, the period of industrialization is still short (about 250 years).

An important question is then, *why do some wealthy countries begin to decline and ultimately become poor?*

Undoubtedly, this question will become more important as the fear that competition of developing countries, such as China and India, increases over time.