

Demographics

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December 2, 2015

Financial Fragility and the Macro Economy

Agenda

Topic Overview

Shifting Demographics

Developing Economies

U.S. and Other Developed Economies

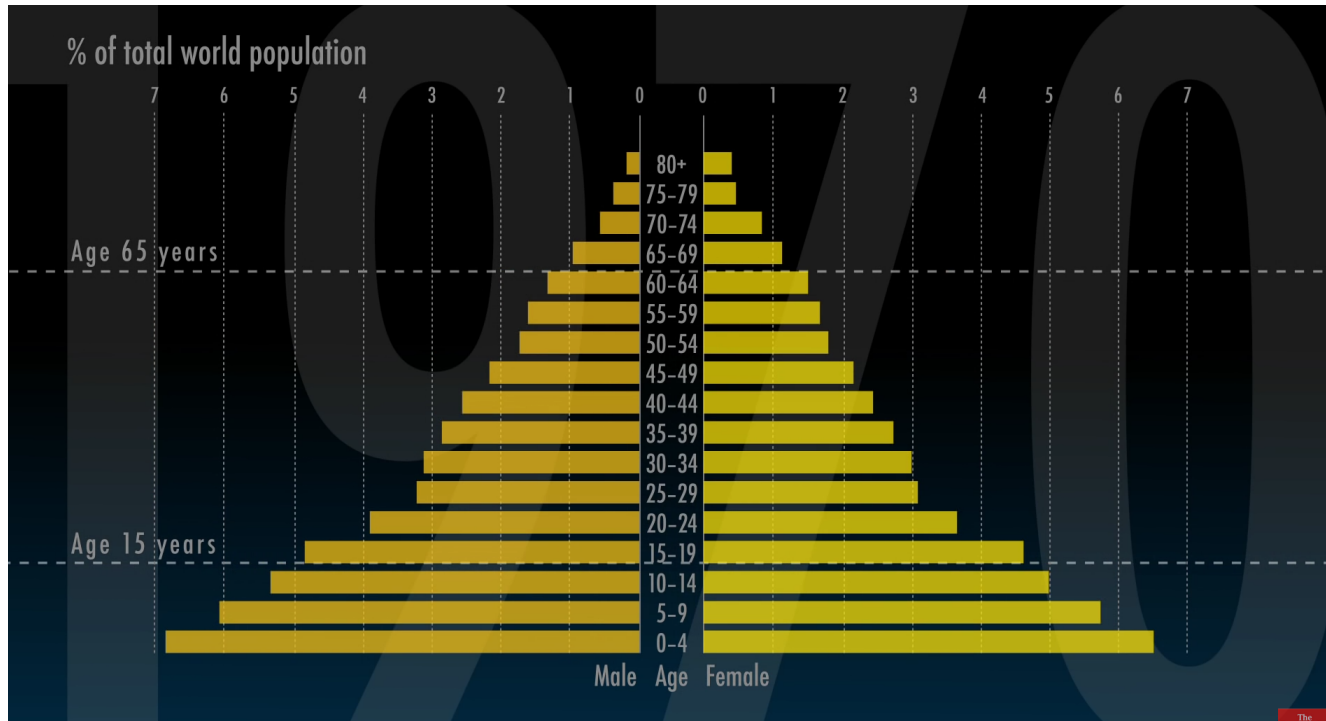
Economic Impact

Outlook and Projections

Topic Overview

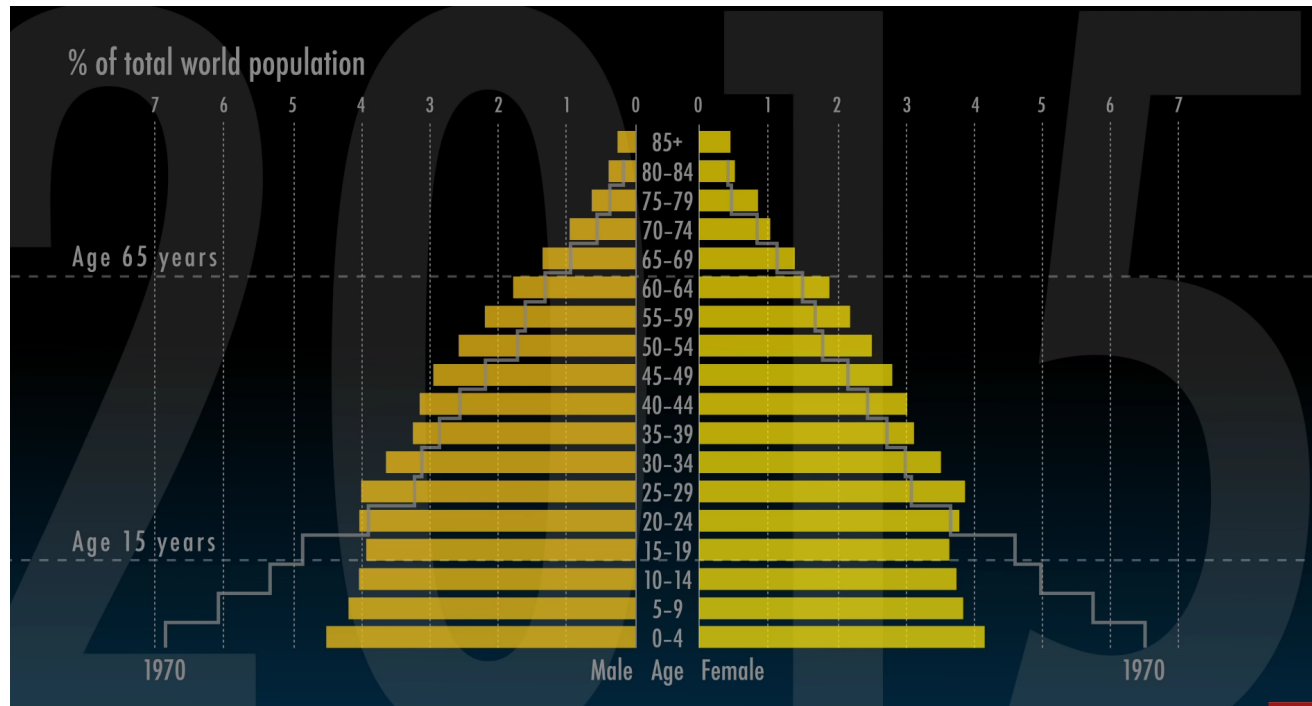
- Demography: the study of changes (such as the number of births, deaths, marriages, and illnesses) that occur over a period of time in human populations
- In 1798 Thomas Malthus famously declared that if the human population continued to grow, food production would be outstripped by increased demand
- More recently, there have been worries over depopulation in developed countries **coupled** with extended life expectancies leading to decreasing population growth with an increased percentage of older people

World Population by Age Group in 1970



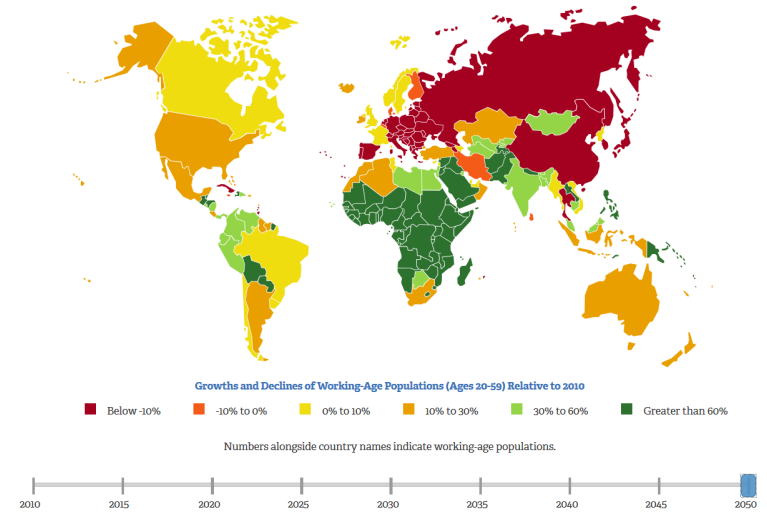
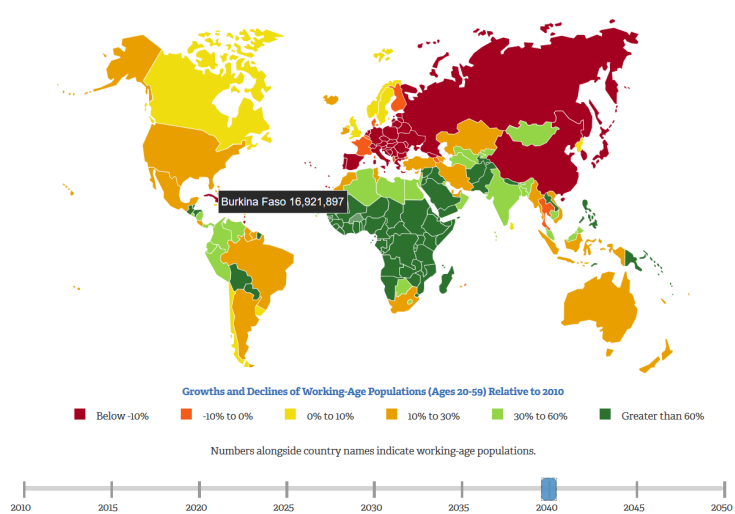
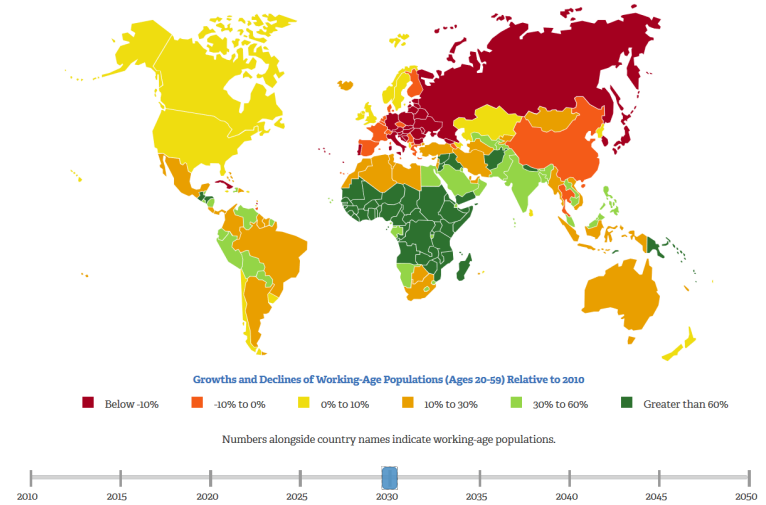
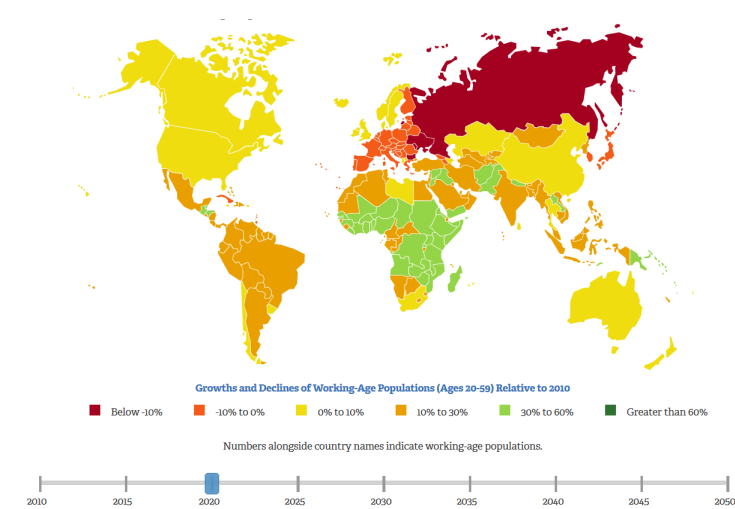
- Historically, distribution of human population globally has resulted in a pyramid structure, with young people representing the largest demographic

World Population by Age Group in 2015

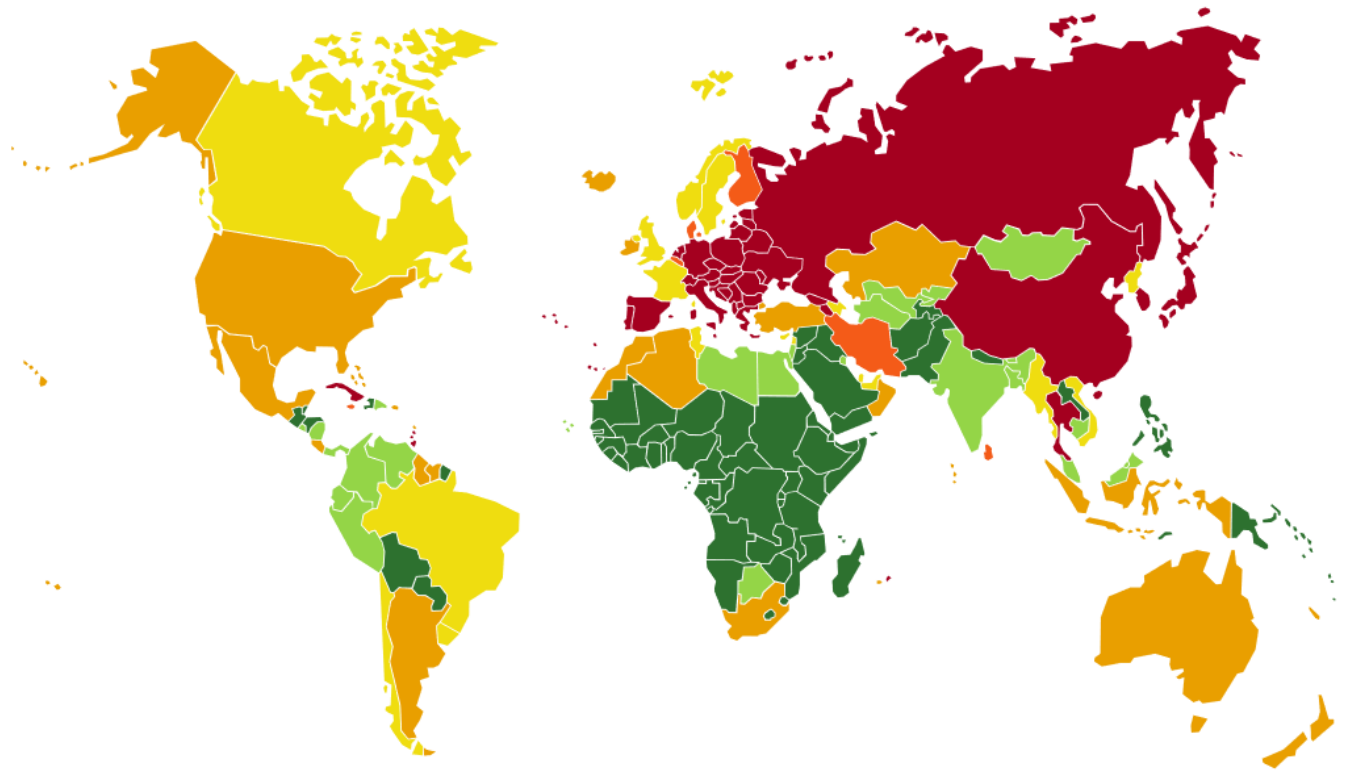


- Advances in hygiene, medicine and living conditions has dramatically reduced infant mortality and increased life expectancy
- Next year, working-age population growth in advanced economies will decline for the first time since 1950

The Fall and Rise of Working-Age Populations



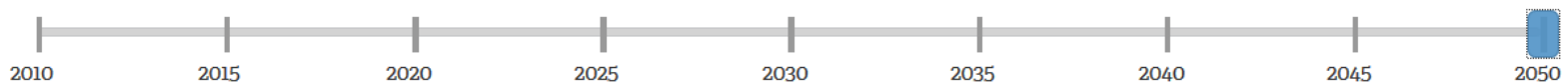
Working Age Population in 2050



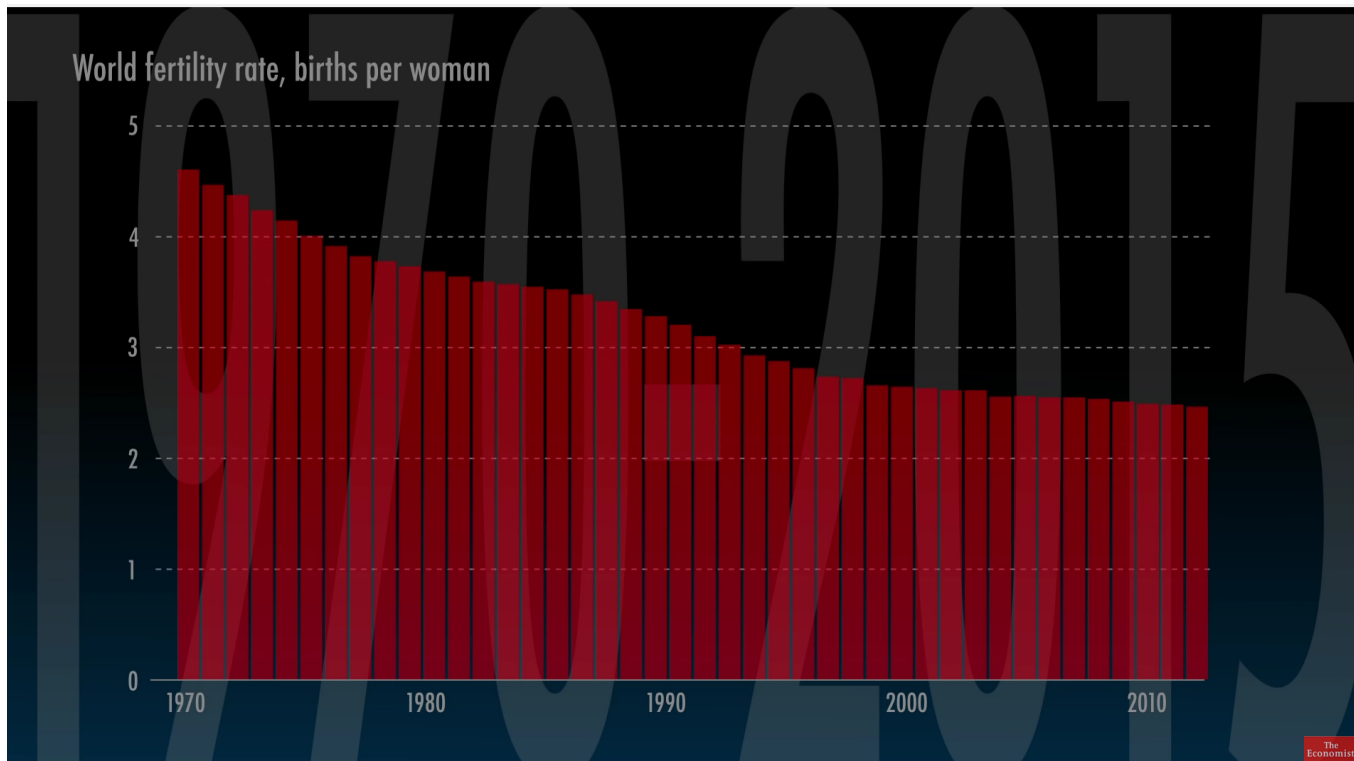
Growths and Declines of Working-Age Populations (Ages 20-59) Relative to 2010



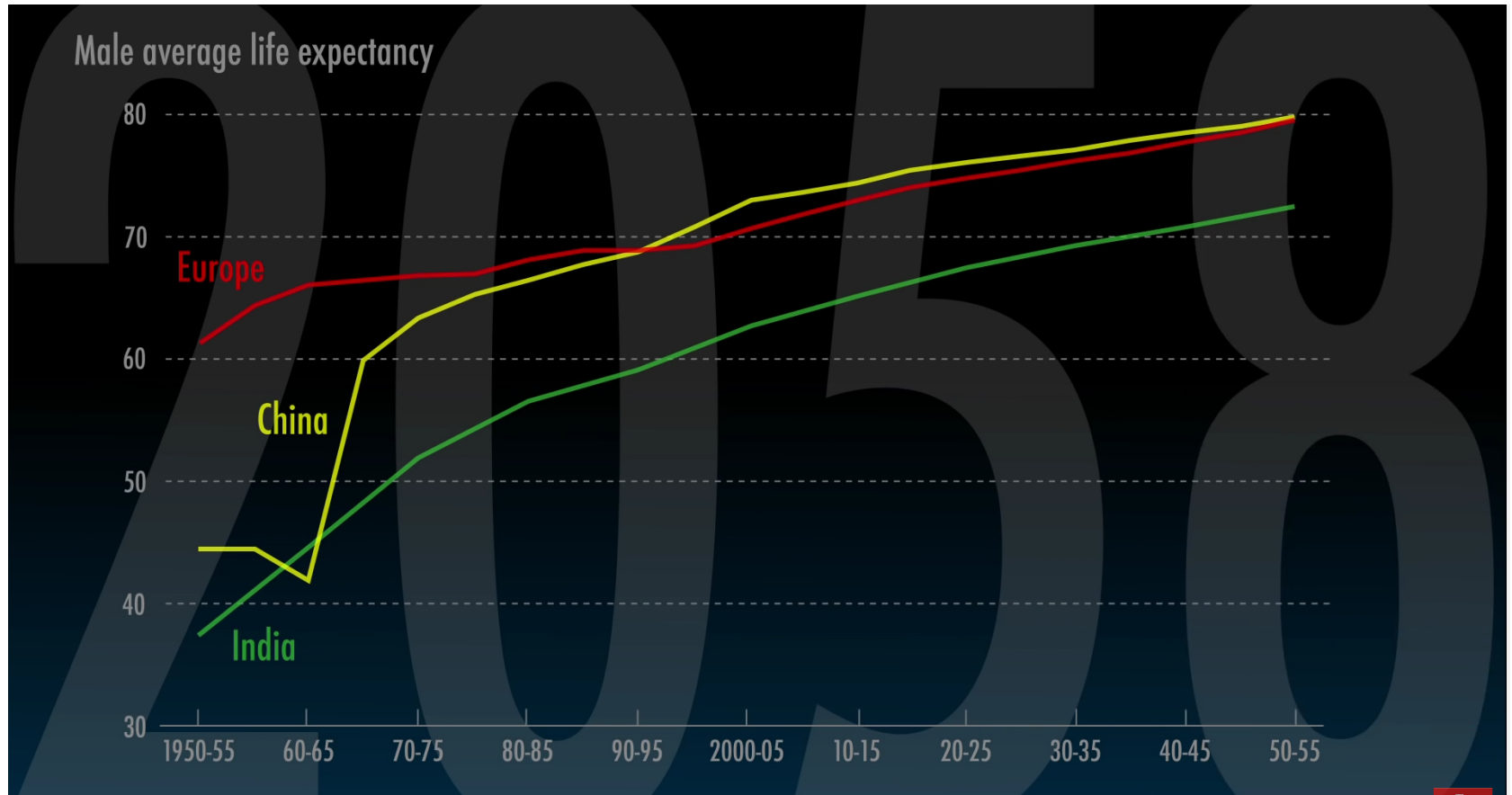
Numbers alongside country names indicate working-age populations.



Declining Fertility

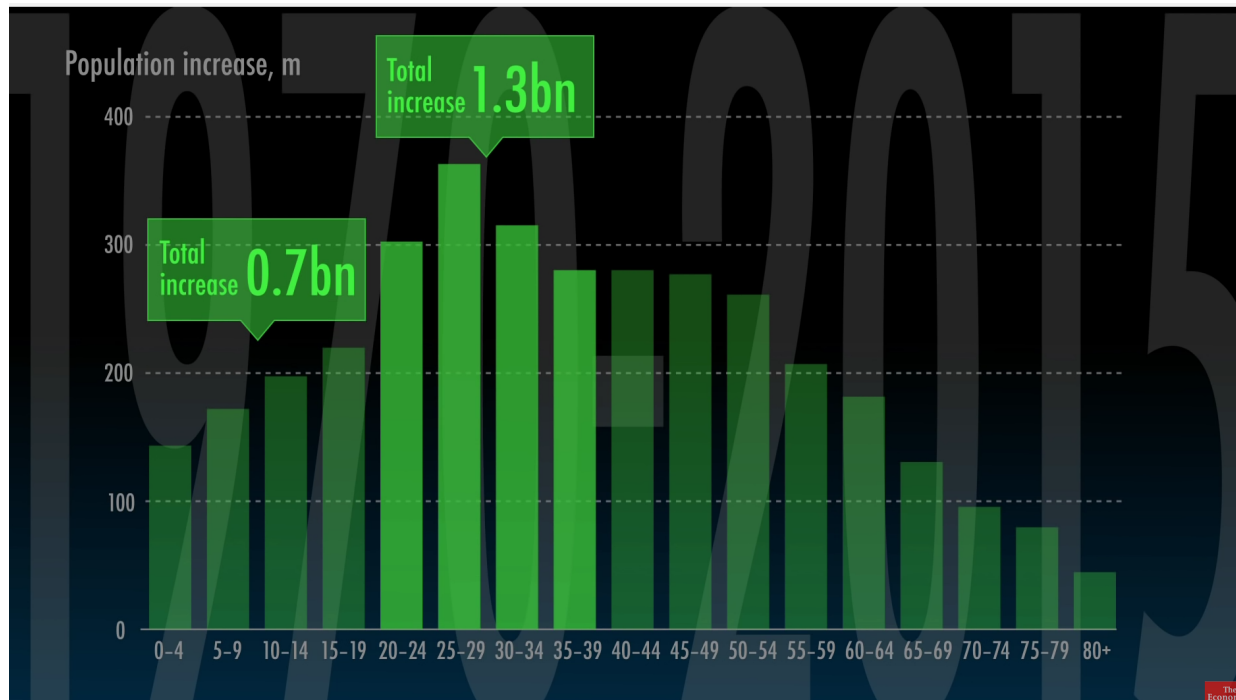


Lengthening Life Spans

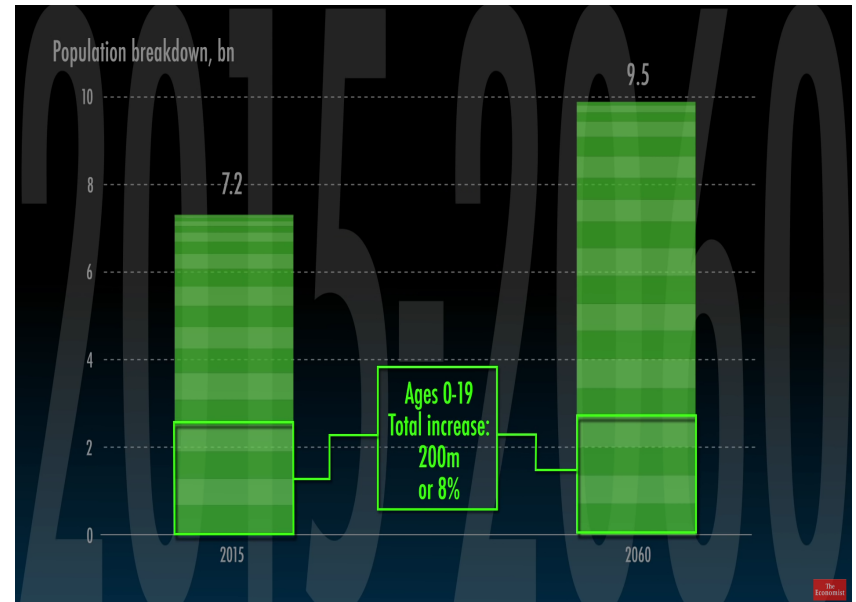
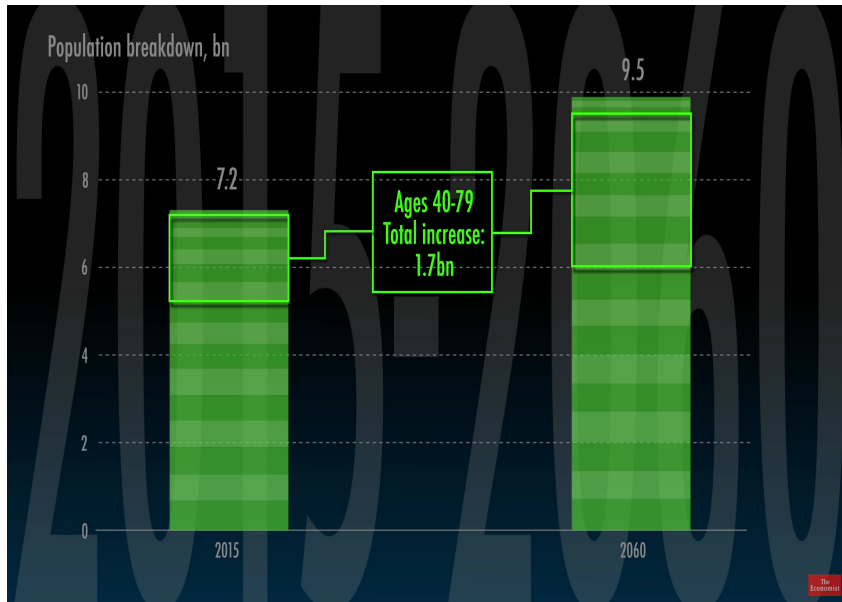


Population Increase by Age Group

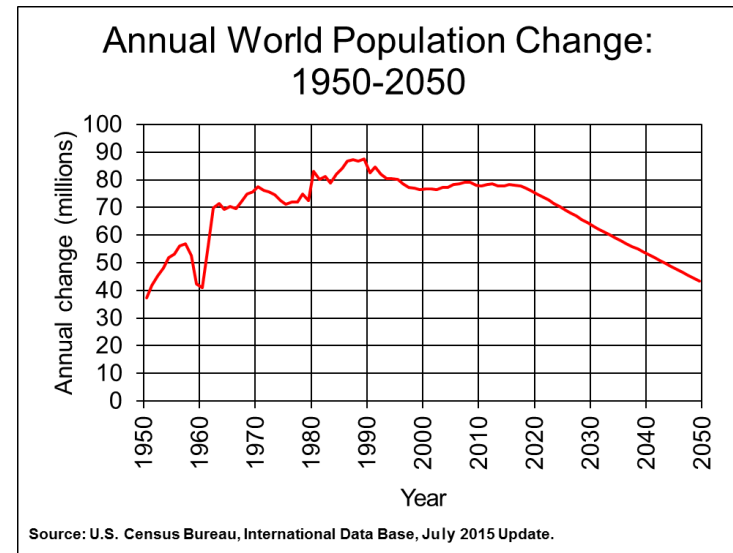
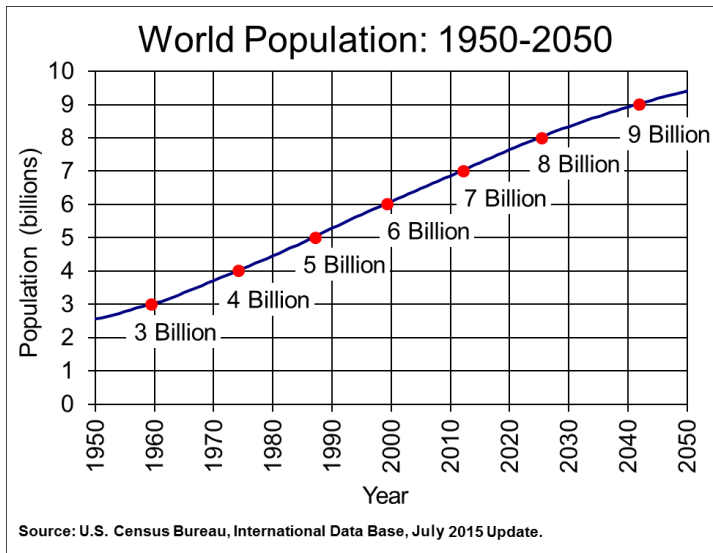
- Between 1970 and 2015, the population of 20 to 40 year olds grew more than other age demographics



Age Demographics as a Percentage of Total Population Growth from 2015 to 2060

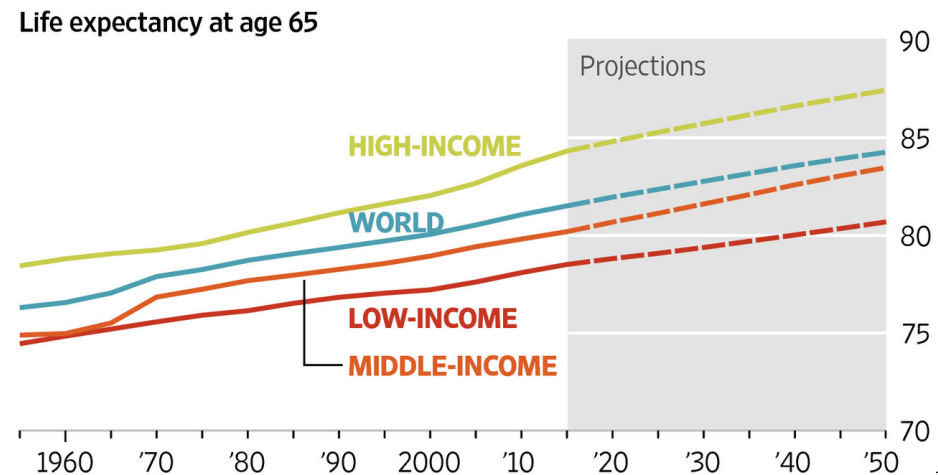
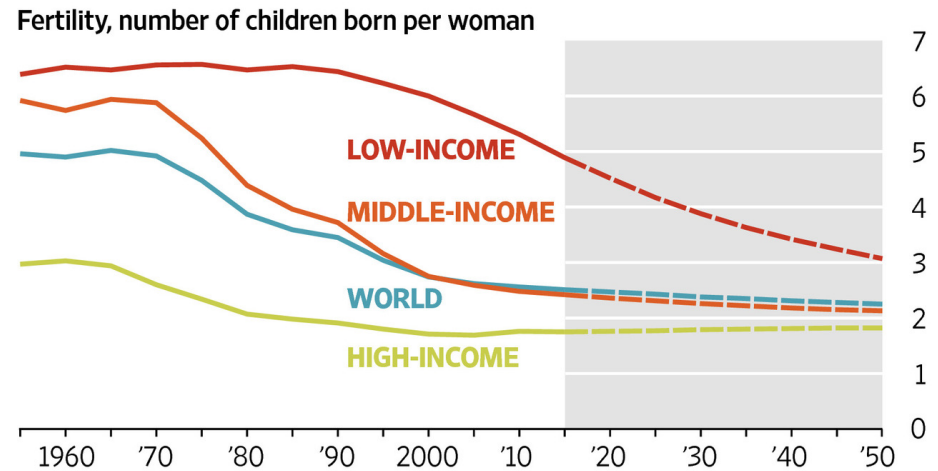


Population Projections



Population Projections

- High income women tend to have fewer children, but wealthier people have better life expectancy



Less Labor, Less Growth in the U.S.

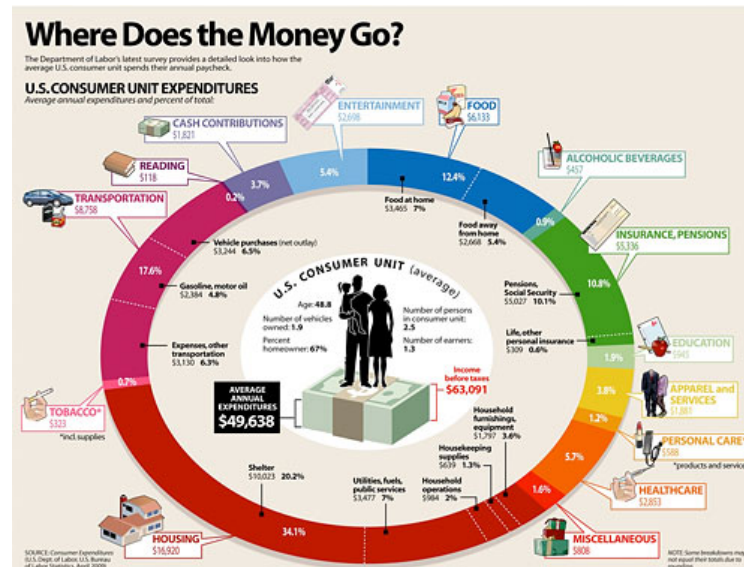
- Long-term potential growth depends on the number of workers and how productive they are
 - Productivity has continued to increase, but growth in number of workers is beginning to decline
 - aging baby boomers will start retiring; the number of working women will level off; young adults stay in school longer; and some unskilled workers bow out
 - The labor force has grown by only 0.2 percent a year since 2008 (compared with 1.2% in the prior decade)
 - Labor force participation at 62.4% is a 40 year low
 - Providing for the retired is also a burden on society
 - In 2008, the first baby boomers qualified for Social Security, and since then, the number of beneficiaries has increased dramatically from 41 million to 49 million
 - In European countries, mounting pensions have caused serious issues for countries already struggling with high levels of debt

Saving Rates

- As people age in developed economies, their saving habits change
 - In their 20s and 30s, they borrow and spend
 - In their 30s and 40s their obligations recede, incomes rise, and they may invest in children
 - In their 50s and 60s they save with minimal spending in most cases
 - In retirement, they live off of savings and government support
- How much a country saves as a whole depends on age demographics
- The saving rate in the U.S., Eurozone, Japan, China, and other major economies has increased from the early 1980s to the present
- Higher savings rates have resulted in lower interest rates globally along with decreased inflation

Consumption Habits

- As demographics change, there are clear winners and losers in different industries
- Younger households spend more on homes, cars and their children's education
- In the U.S., for those between 35 and 44, 8% of total consumption goes toward mortgage interest, compared with just 3.6% for someone over 65
- The typical over-65-year-old devotes 13% of total spending to health care, compared with 6% for a 35- to 44-year-old



Consumption Habits and the Federal Reserve

- President of the New York Federal Reserve, William Dudley, has said that the aging of baby boomers has made the economy less responsive to monetary policy
 - The elderly are less impacted by lower interest rates as they have less future consumption to “pull forward”
- The movement of more people into the saving stage of their lives has produced a bulge of savings which makes it difficult for central bankers to encourage economic growth using traditional tools

Methods to Increase Population Growth

- Government Policy
 - China ended its One Child Policy
 - Singapore, Australia, and a Canadian province (Quebec) have all offered generous grants intended to encourage families to have more children
 - Fertility rates don't respond quickly to government encouragement
- Immigration
 - Africa and Asia make up a large share of the world's growing working-age population
 - Developed countries may enlarge their labor forces through acceptance of migrants
- Later Retirement
 - The typical 65 year old today is about as healthy as a 58 year old 40 years ago
 - Encouraging later retirement through delayed pensions and government support, people will remain in the work force longer
 - Several studies have even found that older workers are more productive than their younger counterparts

Case Study: Baby Boom in Africa

- Lokoja, Nigeria: fastest growing city in the world
 - Population set to rise 78% in the next 10 years (473,000)
- An estimated 2.5B people will be African by 2050
 - As per the UN
- Implications of a boom:
 - Lift the poorest continent by providing more employee / talent sources
 - Key factor is determining how to capitalize on the population growth

African Demographic Composition

- Lokoja is one of the 43 cities that will cross the 1 million person mark in the next 15 years
 - A century ago, only Cairo had more than 1 million people
- This outer growth in cities will lead to an inner shrink in families
 - Families will have fewer children, on average
- Birth control not part of the African culture
 - Explains high levels of children per family
 - Might see changes as the continent develops

Prospective Future for Africans

- Most logical destination seems to be Europe
 - Destination and language
 - Issues: terrorist fears
- Currently, Africa is struggling to find use for youth
 - Only 9% of adults are employed full time
- Where the sources of jobs will come from is unclear

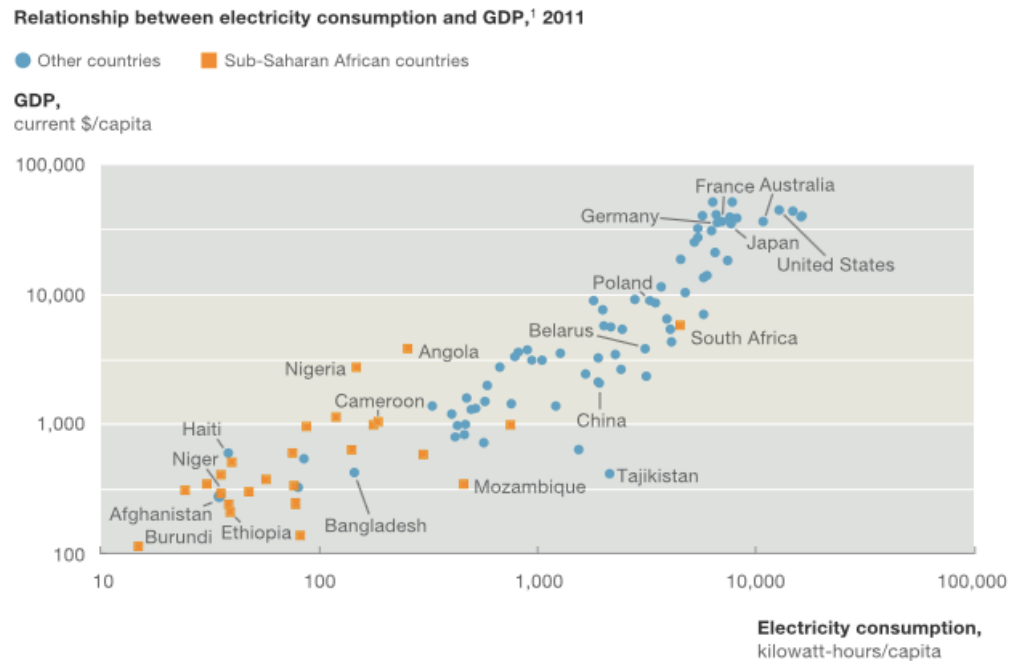
“In the meantime, this continent is losing one of the great races of the century. Africa’s population has been growing faster than governments can lay down the basics of a modern economy: power plants, roads and schools.”

Economic Status of Nigeria

- Banks rarely lend
 - Only 20,000 mortgages for a country of 182 million
 - Ports, a main driver for economy, are congested and not sufficient
- Locals tend to “fist-fight” over job opportunities on a daily basis
 - High increase in employment in sectors like Lagos, but most of the employees in larger firms consist of foreigners
 - Goes back to the education (or lack thereof)

Capitalizing on Growth through Energy

- There is a direct correlation between economic growth and electric supply
 - Energy access in Nigeria is highly limited and shuts down on a consistent basis



¹Base 10 logarithmic scale.

Source: IHS Economics; International Energy Statistics, US Energy Information Administration, 2013, eia.gov

Capitalizing on Growth through Energy

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Although sub-Saharan Africa consumes less electricity than Brazil, by 2040 its demand will reach a level equal to 2010 consumption in Latin America and India combined.

	Electricity consumption 2010, terawatt-hours p.a.	Consumption/capita, kilowatt-hours
United States	3,962	13,395
China	3,557	2,944
European Union	3,035	6,264
Sub-Saharan Africa 2040	1,570	989
Japan	996	8,394
Latin America	841	1,961
India	760	626
Canada	522	15,137
Brazil	426	2,381
Sub-Saharan Africa	423	514

Source: Key World Energy Statistics, Organisation for Economic Co-operation and Development and the International Energy Agency, 2013, iea.org; World Development Indicators, World Bank Group, worldbank.org

Outlook for Energy Movement

- Sub-Saharan Africa faces many challenges
- High priority and initial momentum placed on the movement
 - UN Program for a Sustainable Energy
 - High investment from foreign companies to develop nation and augur business opportunities in Nigeria

Outlook and Projections

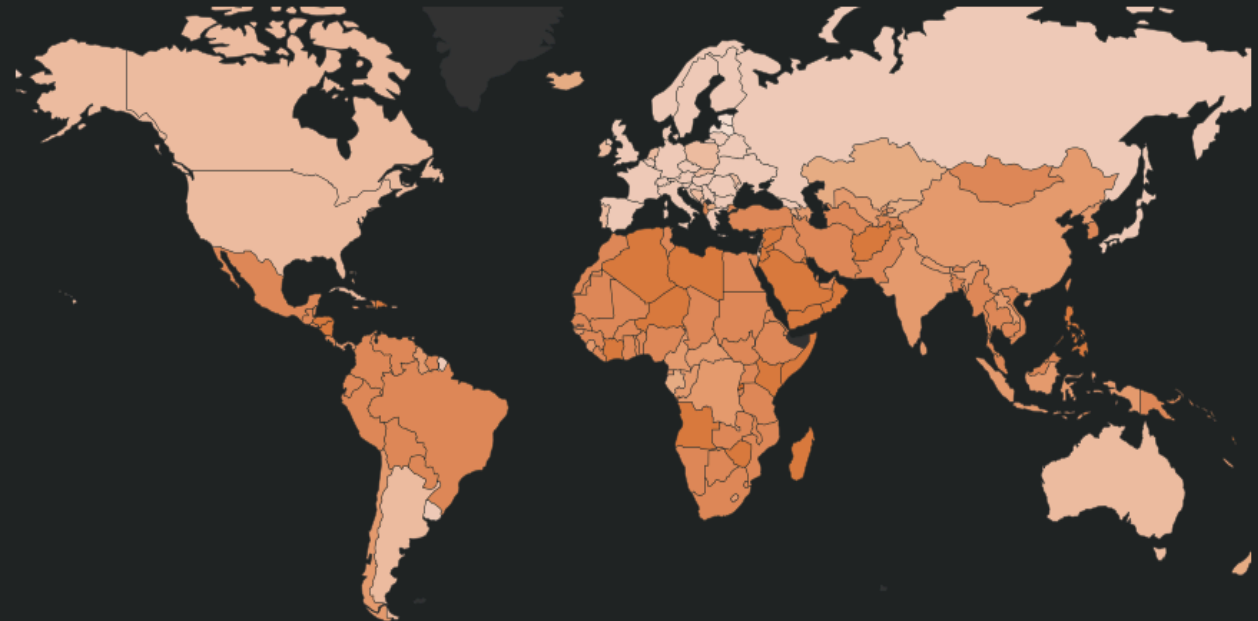
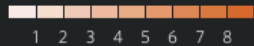
Last Bastion of Babies

The fertility rate, or number of children a woman has over her lifetime, is falling dramatically world-wide, leaving Africa as a youthful outlier by 2050.

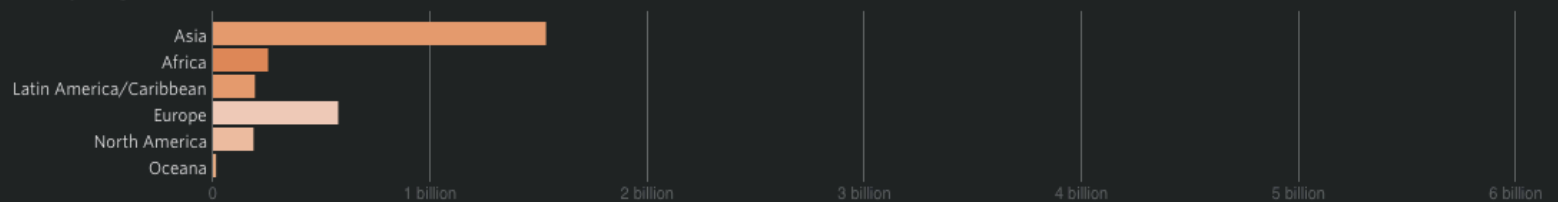
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1955-1960

Average number of children



Population by Region



Outlook and Projections

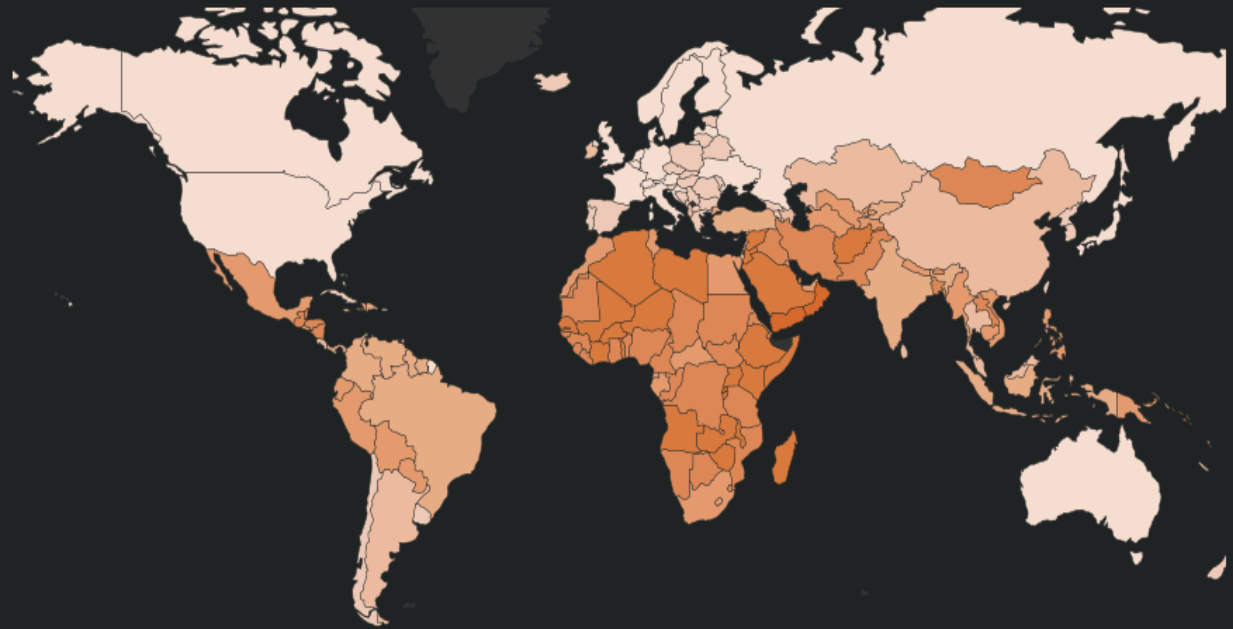
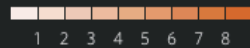
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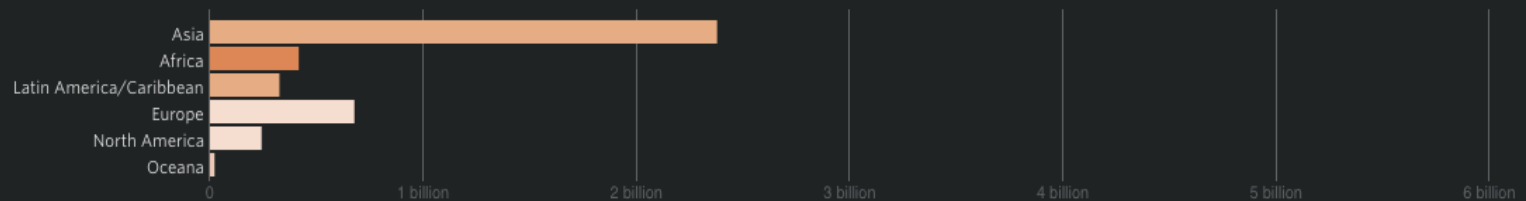
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1975-1980

Average number of children



Population by Region



Outlook and Projections

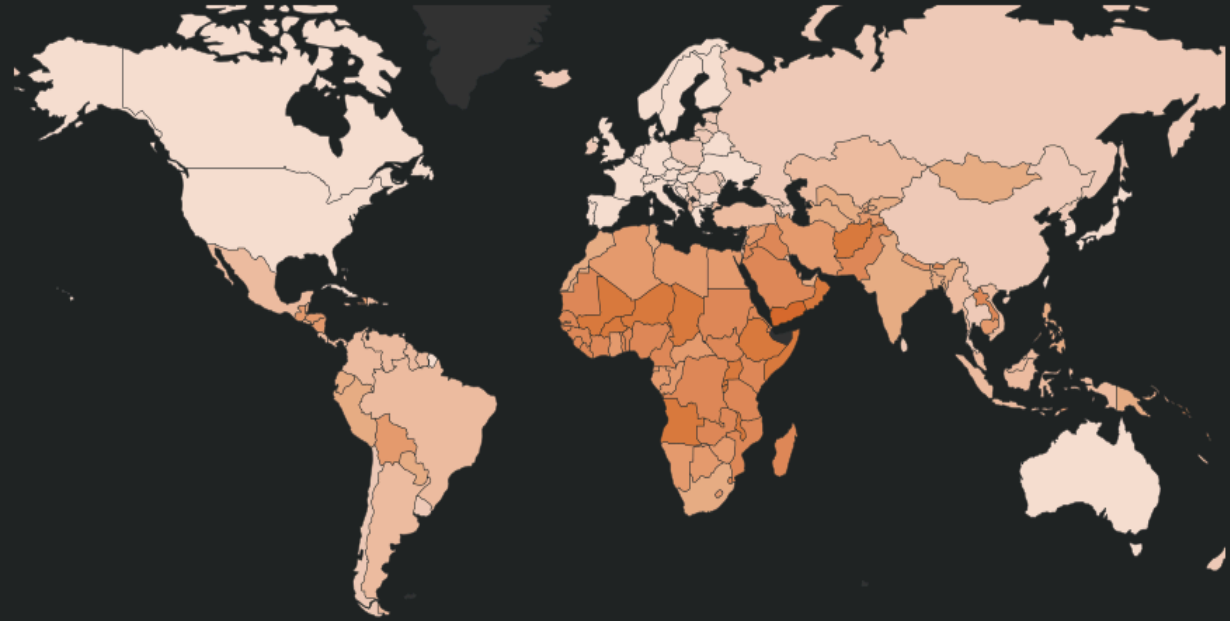
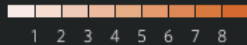
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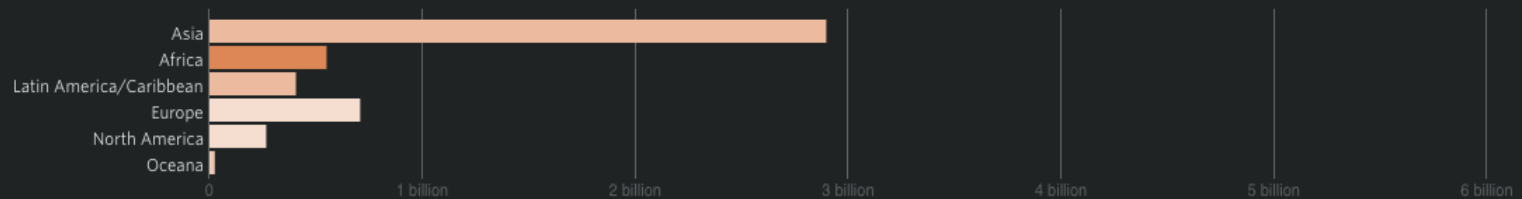
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1985-1990

Average number of children



Population by Region



Outlook and Projections

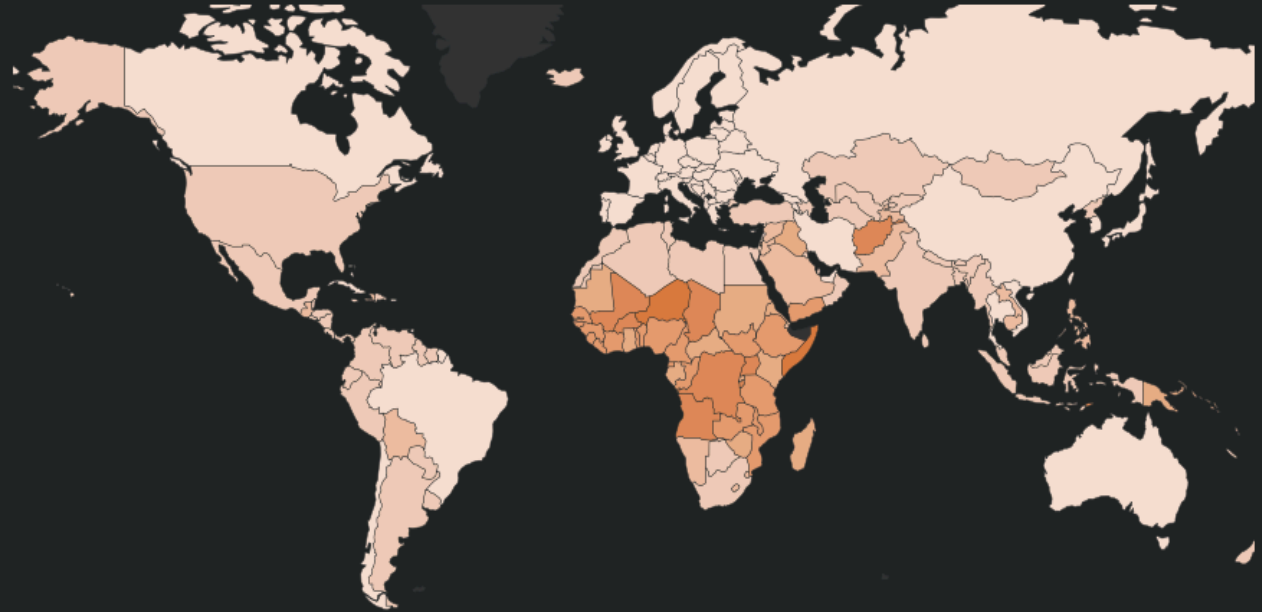
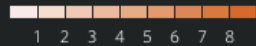
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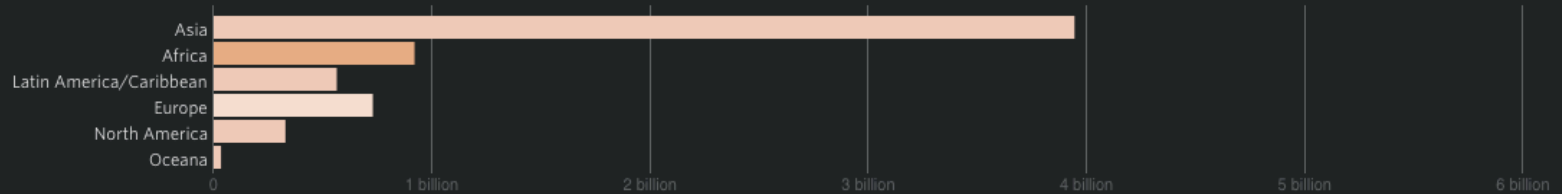
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2005-2010

Average number of children



Population by Region



Outlook and Projections

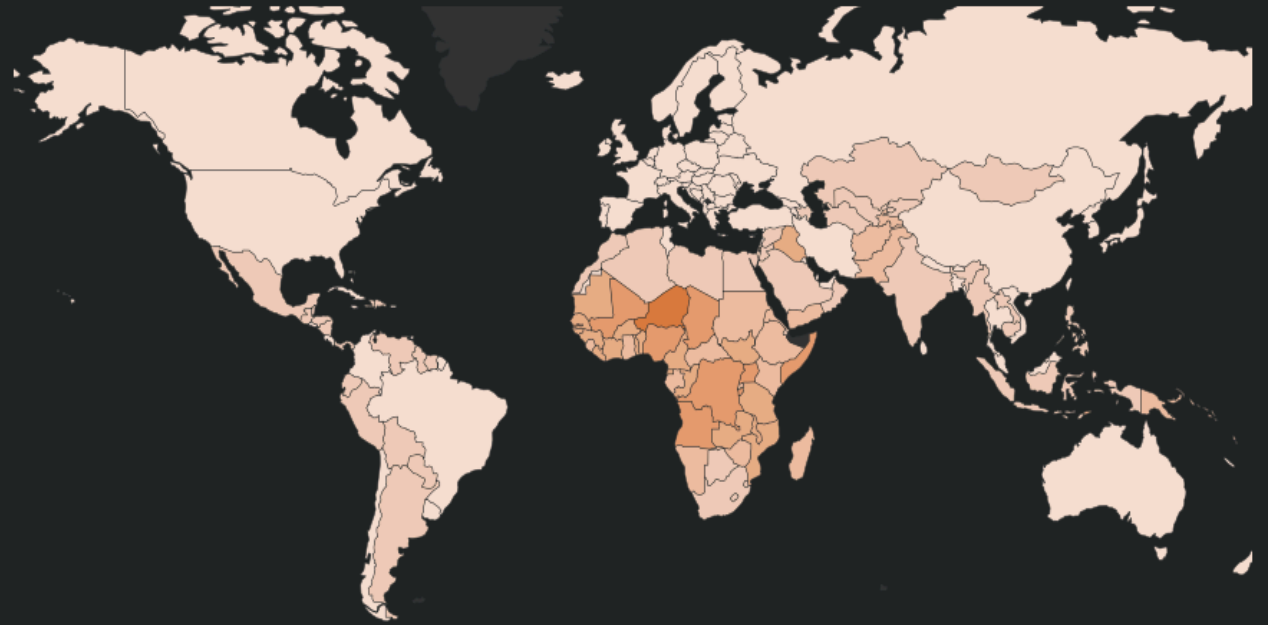
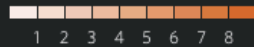
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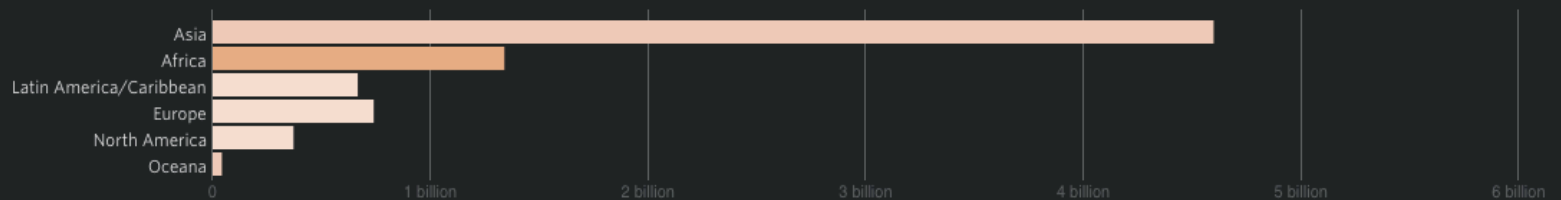
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2020-2025

Average number of children



Population by Region



Outlook and Projections

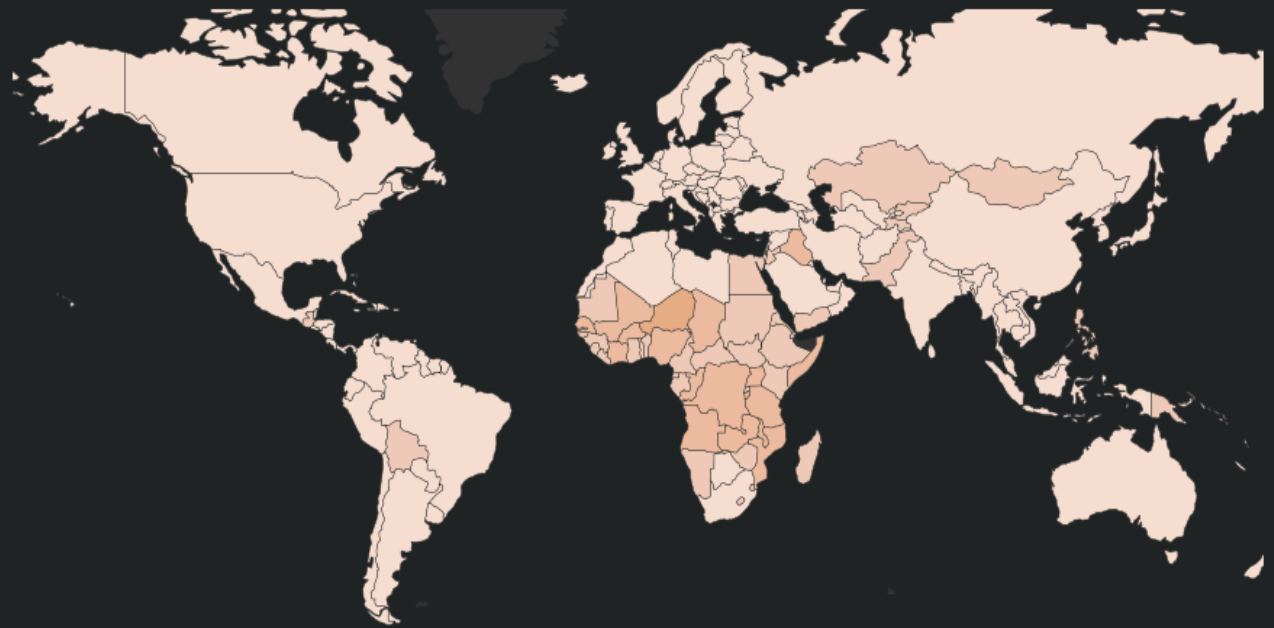
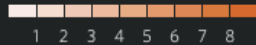
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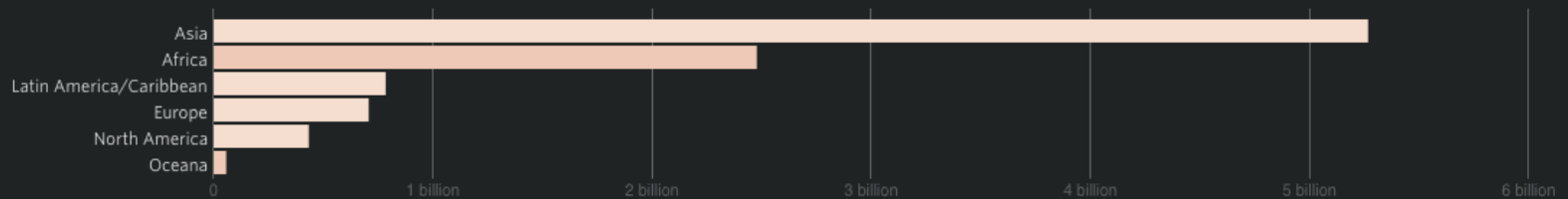
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2050-2055

Average number of children

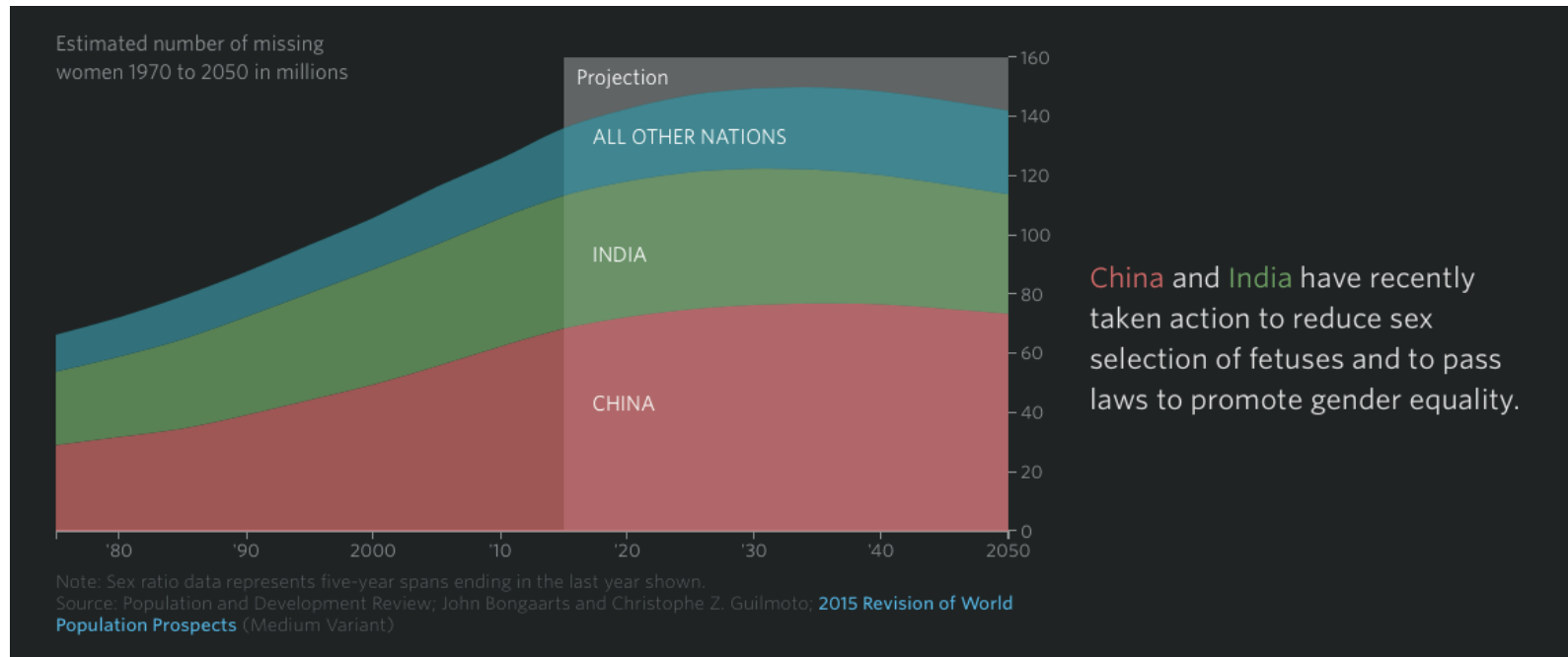


Population by Region



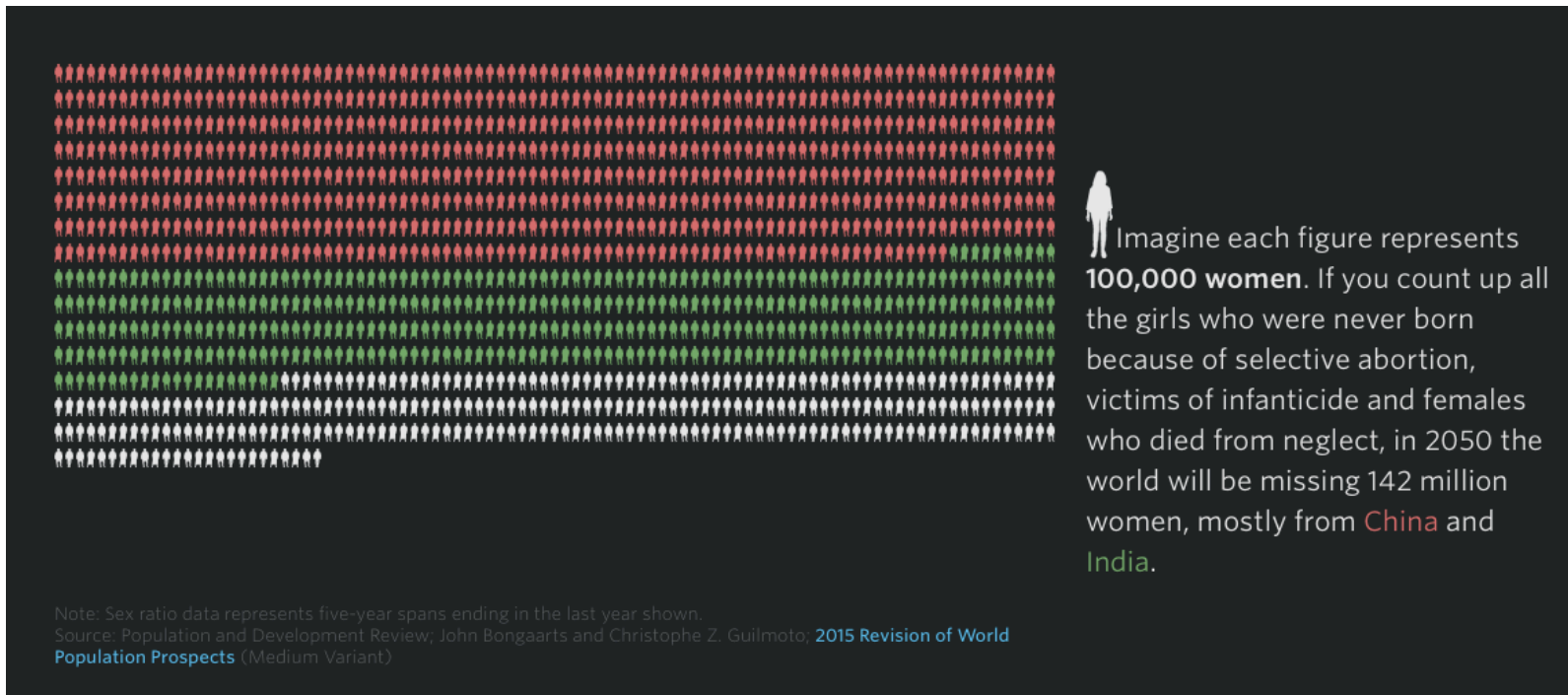
Case Study: Developing Economies Lean Towards Gender Equality

- A study by Lena Edlund shows that a more male-drive sex ratio leads to higher crime rates
 - China saw a dramatic increase in crime between 1992-2004
 - As per the study, ~1/3 of this crime rise was due to sex-ratio imbalances



Debate over Imbalance of Gender

- In 1990, Amartya Sen noted that 100 million women were missing because of discrimination around the globe
- Since then, demographers have sought to develop more accurate metrics for determining the status of women around the world



Outlook and Projections

- A paper written by John Bongaarts and Dr. Guilmoto projects an increase to 150 million missing by 2035 and 142 million in 2050
- In 2005, 10% Korean marriages were because of foreign women
 - Main issue is the projected intensification of problem
- For other nations, like India, locals have had to travel outside their country to find a suitable wife
- In addition, common practices for educated women consist of “flight from marriage”
 - They remain single and have no children, which leads to a vicious cycle

Laws and Regulation Changes

- China and India are among the countries in most dire need of change
- India strengthened laws against sex detection of fetuses
 - Prevents sex-based abortion
- China developed the “Girls for Care” campaign in 2000
 - Financial incentives for couples with daughters and reduced sex detection
 - As of recently, China announced to abandon its “One Child” policy
- The legal change is part of the first steps, the next is a cultural change

Empowering Women Movement in Nations

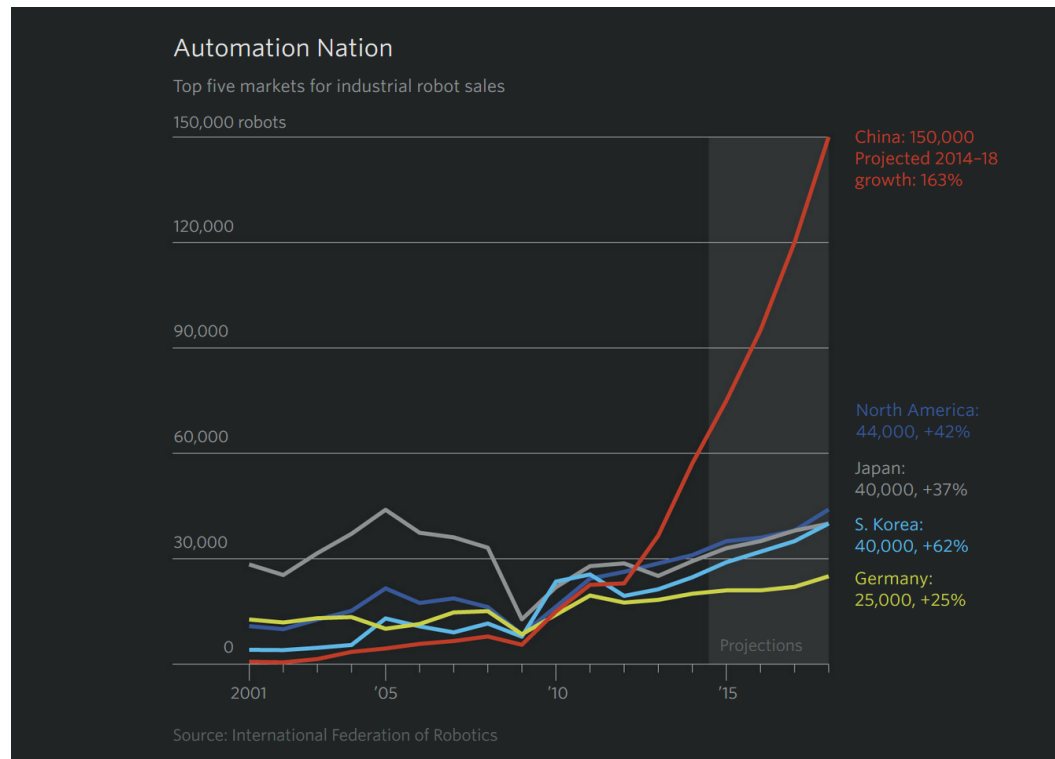
- Modern societies value empowering women
 - Clashes, at times, with increasing population goals
- Higher education for women = drop in fertility rates
- Although empowering women is good, drops in population leads to slow economic growth
 - From this, reversing the trend has often proven difficult to do

Countries Take Action to Address Growing Populations

- Chilean government provides a “baby bonus” for families with three children
 - Follows the lead of France, Australia, etc.
- Estonia offered women 15 months of their salaries if they have babies
- South Korea, creating a family-friendly environment by subsidizing child care at home
- The nation with most success has been France given their consistent subsidization

Automation in Response to Shrinking Labor Force

- As wages rise and working-age populations decline in developed economies, companies look to alternative methods of production
 - Levi Strauss and other global brands are turning to automation
- Xi Jinping is pushing for rapid automation to maintain China's relevance in global supply chains

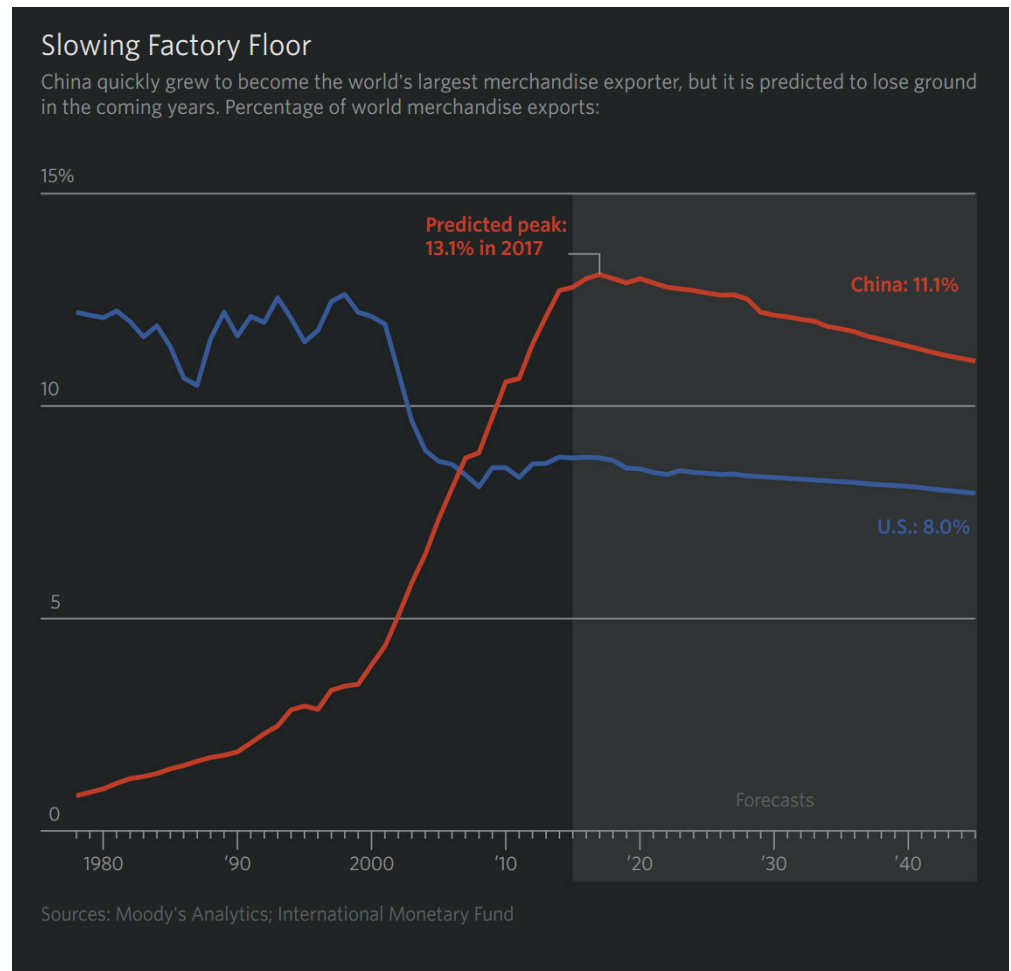


Automation

- Inflation
 - Will automated labor be as effective in holding down inflation as cheap manufacturing labor?
- Innovation
 - Many predict increased choice, faster delivery, and possibly less environmental damage
 - Customers increasingly demand customized products delivered quickly
 - Leads to more geographically dispersed production and smaller factories
 - McKinsey identified “mass customization” to be the next major manufacturing development
 - 3D printing
- Shortage of Demand for Unskilled Labor
 - Will robots replace all opportunities for the less educated to find employment?

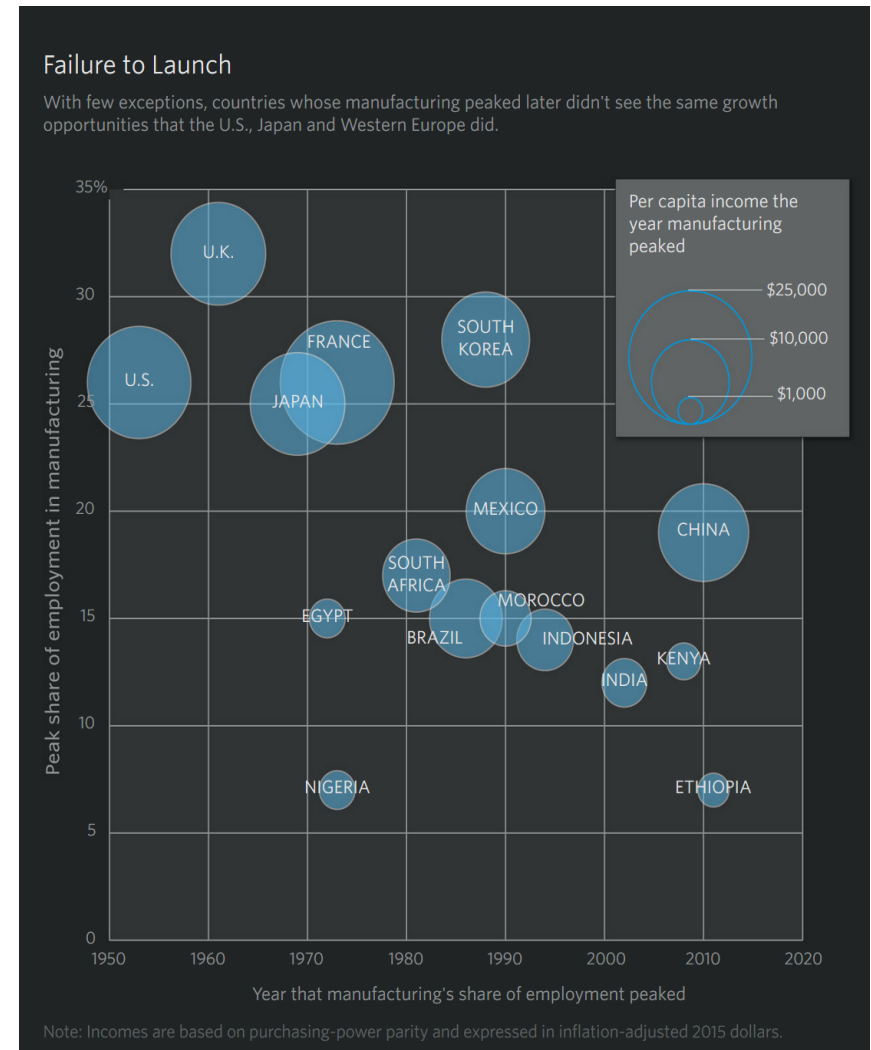
China's Growth to Second Largest Economy

- China's working-age population expanded by 380 million between 1980 and 2015
- Hundreds of millions of Chinese migrated from rural areas to cities for manufacturing jobs in one of the world's largest migrations
 - As late as 2002, laborers were paid 60 cents per hour
- Wages and benefits have been rising in double-digit percentages for the past decade



Developing Economies Struggling to Develop Thriving Manufacturing Sectors

- The U.S., Europe, and East Asia (more recently) raised GDP per capita and living standards by developing thriving manufacturing sectors and then shifting into service businesses as incomes rose
- Latin America, South Asia, and Africa are failing to create active manufacturing business despite low wages
 - Manufacturing employment and output are peaking prior to declining at much lower levels than in the West
 - Economists are no longer confident that the factory-led advancement model is a viable option for the world's poorest nations



Premature Deindustrialization

- “Premature Deindustrialization” is a term coined by Harvard economist Dani Rodrik
 - Refers to a decline in the manufacturing sector as a share of total economic output before the country industrialized sufficiently
 - India
 - Manufacturing share peaked at 19% in the 1990s and has since fallen 17%
 - South Africa
 - Manufacturing share peaked at 25% in 1981 and fell to 18% by 2011
 - Tanzania
 - Manufacturing share peaked at 13% in 1976 and then dropped to 10%
- Reasons for industrialization struggles:
 - poor infrastructure
 - burdensome regulatory processes and corruption
 - Competition against China, an industrialized giant that is already the linchpin of many global supply chains
 - World exports and imports have been expanding more slowly than world economic growth for the first time in decades

THANK YOU
