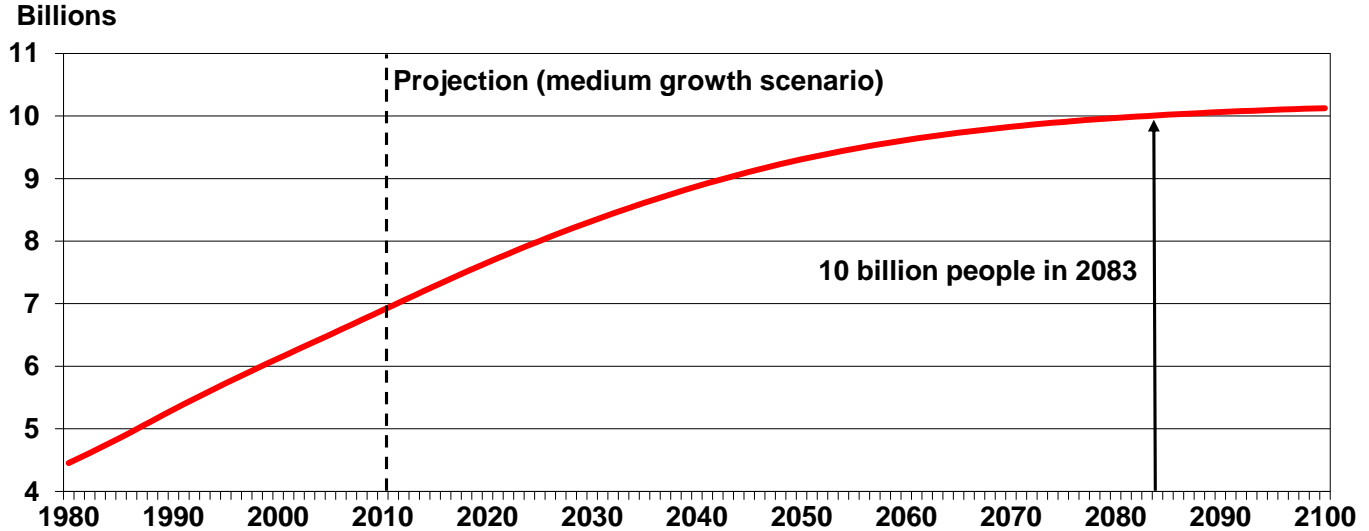


World population will reach 10 billion by 2083

Medium growth scenario projection



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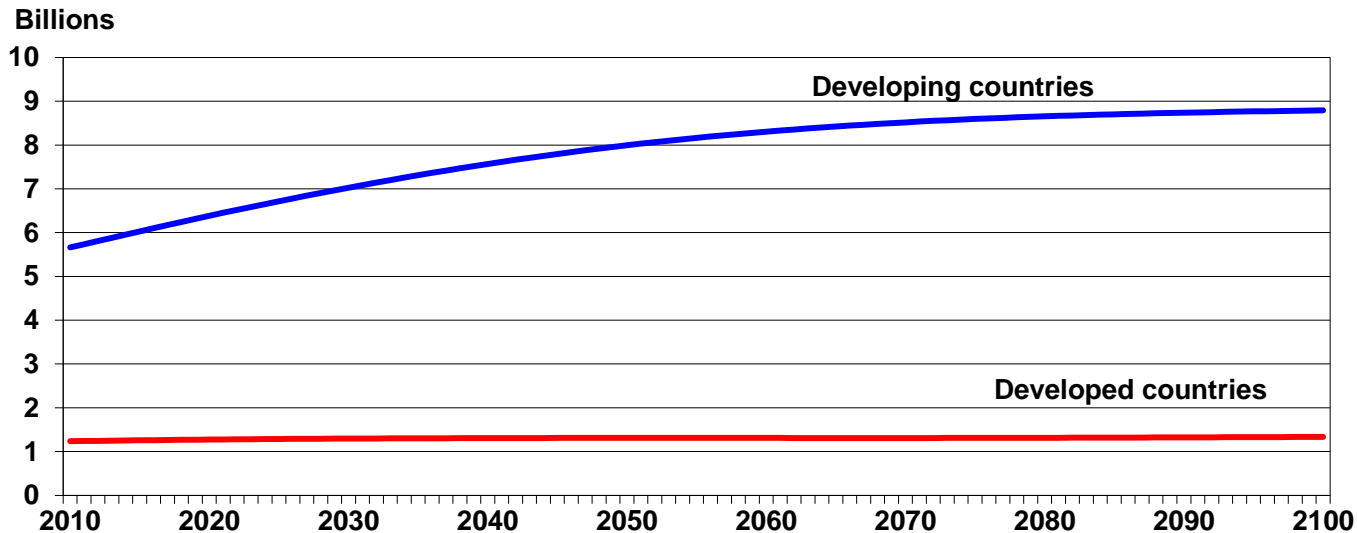


Developing countries will lead population growth

Medium growth scenario projection



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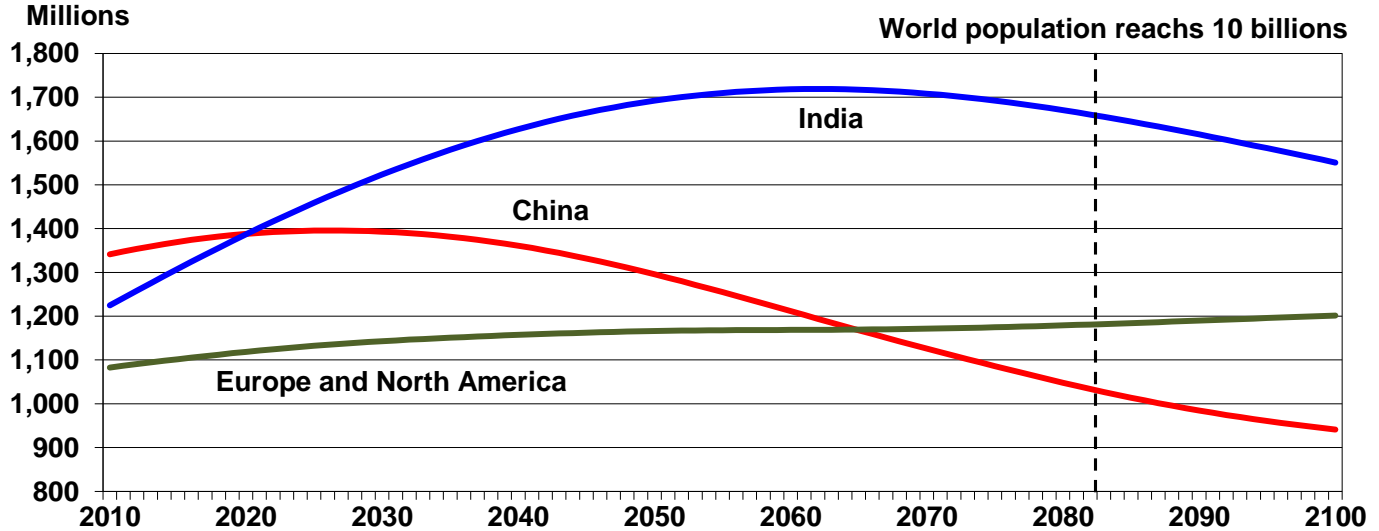


India will become the most populated country

Medium growth scenario projection

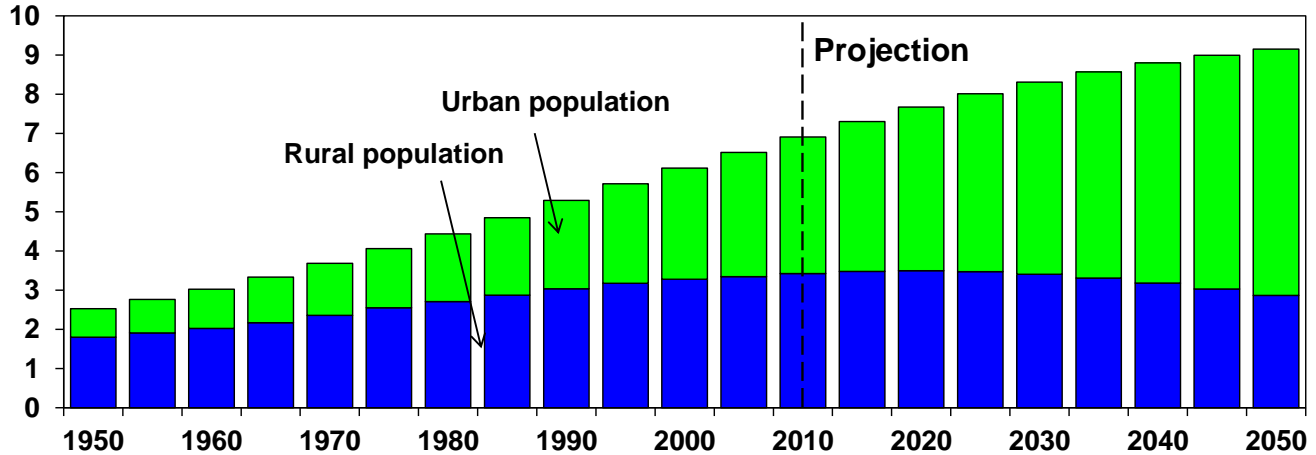


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World becoming more urbanized

Billions

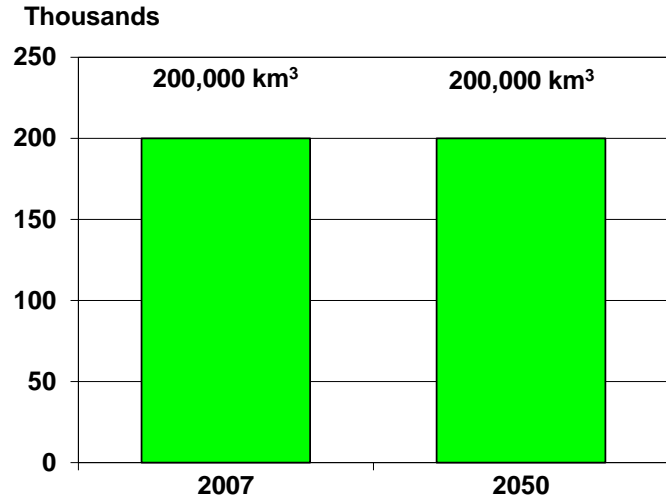
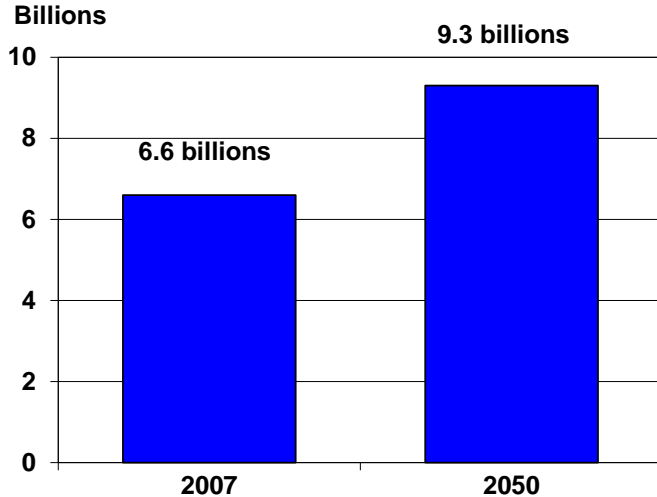


Water will be more scarce

World population vs. water resources, 2007-2050



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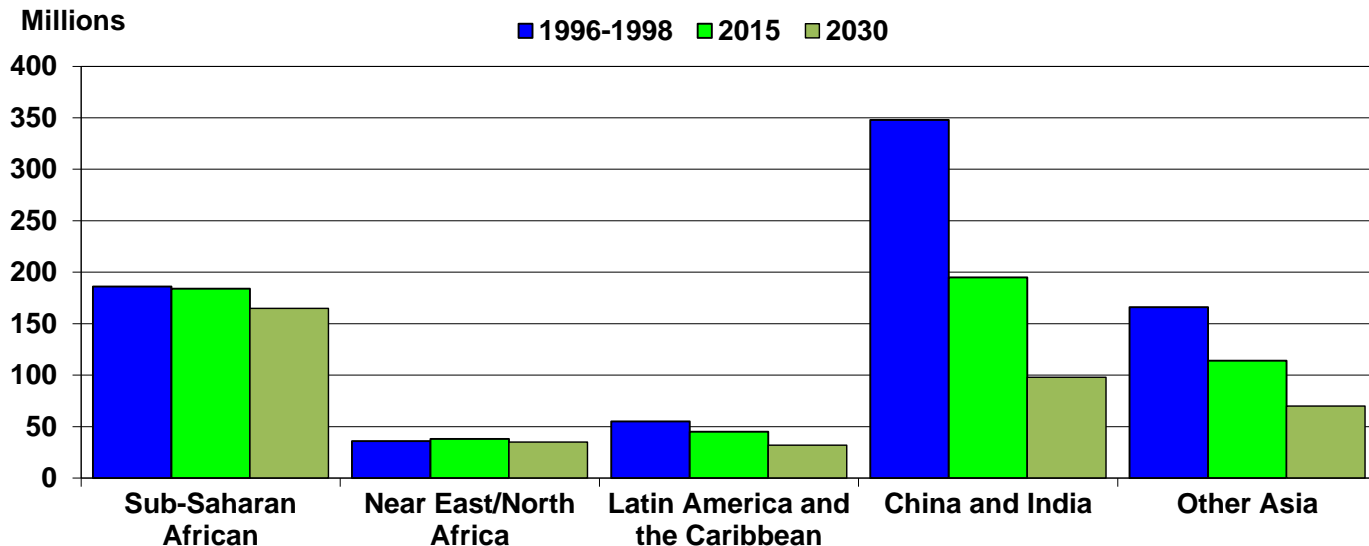


Undernourishment will improve unevenly

Undernourished population projection

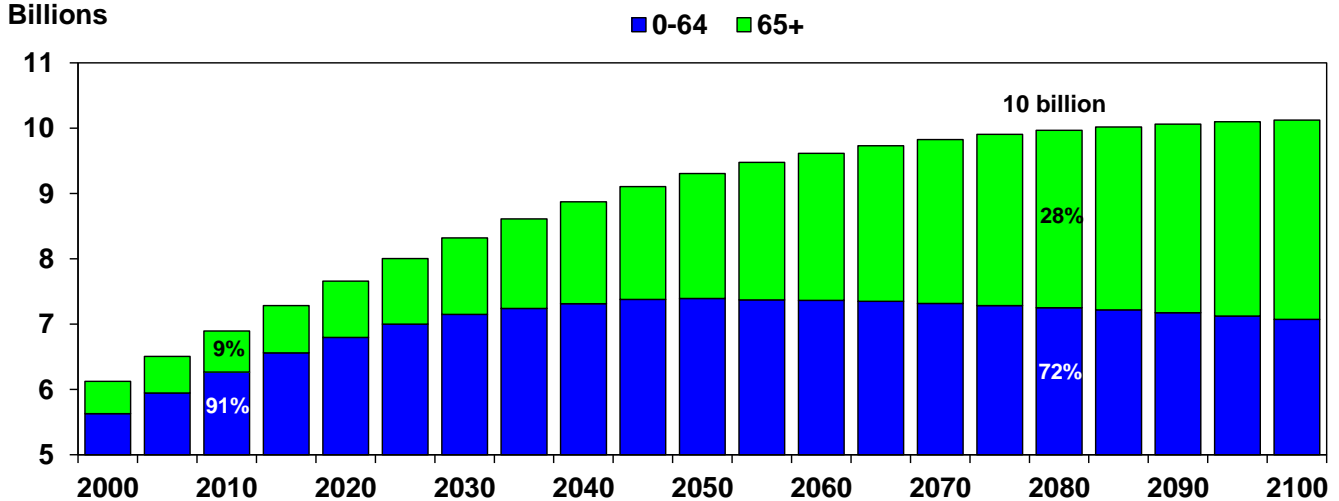


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World population is aging

Medium growth scenario projection



Energy consumption will soar

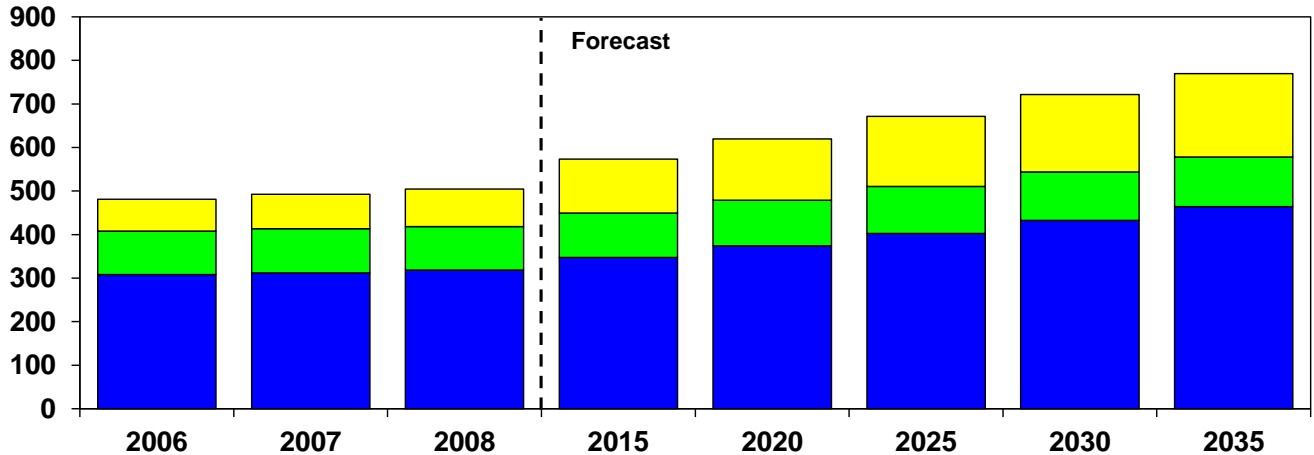
World annual primary energy consumption



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Quadrillion Btu

■ The rest world ■ United States ■ China



Environmental issues that are caused by human activities



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- Climate change
- Intensive farming
- Land degradation
- Resource depletion
- Ozone depletion
- Energy
- Nuclear issues
- Pollution
- Toxins
- Waste

Four Pillars of the Problem

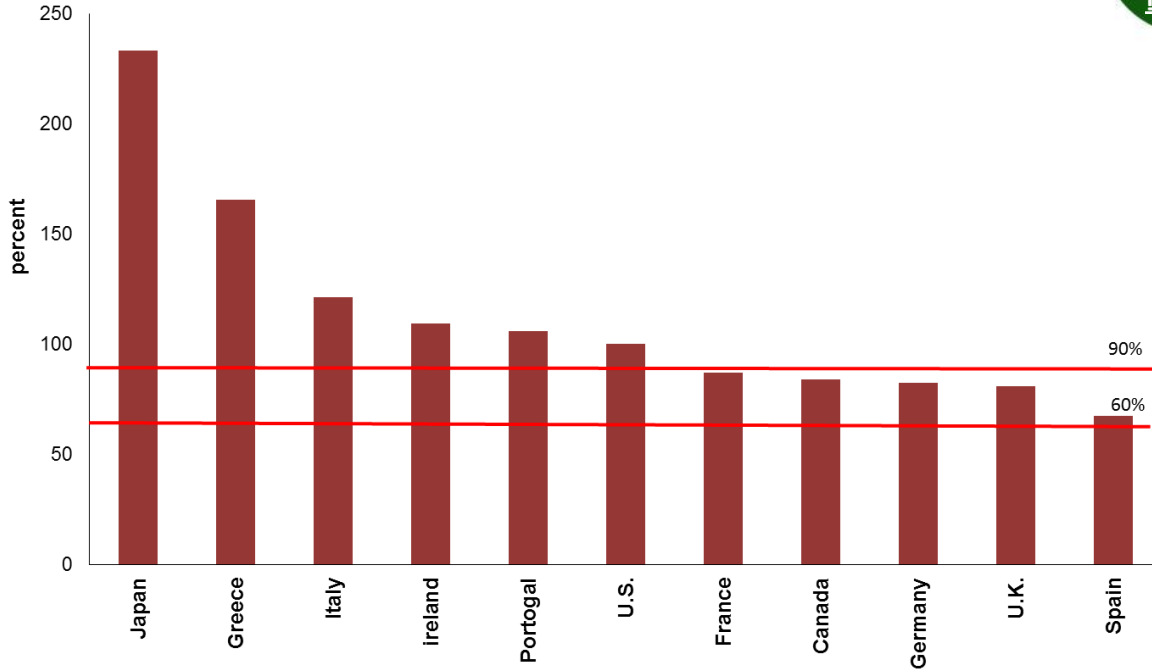


- **Demographics – Great opportunities to add value**
 - Growth of populations mostly into poverty. Within 10 years, 30% of the population of 8 billion population will live on less than \$2 a day.
 - **Aging population** in the west with low pension benefits either because of wealth loss (debt levels, human capital, etc.) or fear that governments will not be able to provide for retirement.
 - **The health of populations** and the cost of providing health care; how done
 - **Movements of populations** will be vast (e.g. China 60% of population on farms – low productivity growth of a middle class.)
 - Education of population (including reeducation). Where are the jobs?
- **Technological Change:**
 - Information technology
 - Biology
 - Nanotechnology
 - Neuroscience
 - Robotics and artificial intelligence
- **Scarcity:**
 - Water, energy, renewable energy, ecology interacting with both Demographics and Technological Change.
- **Government Policies:** Finance and commerce are global and change continuously to meet individual wants. **Governments are local and impede or foster growth or solutions.**
- **All are interrelated.**

General Government Gross Debt as Percentage of GDP (projected year end 2011)



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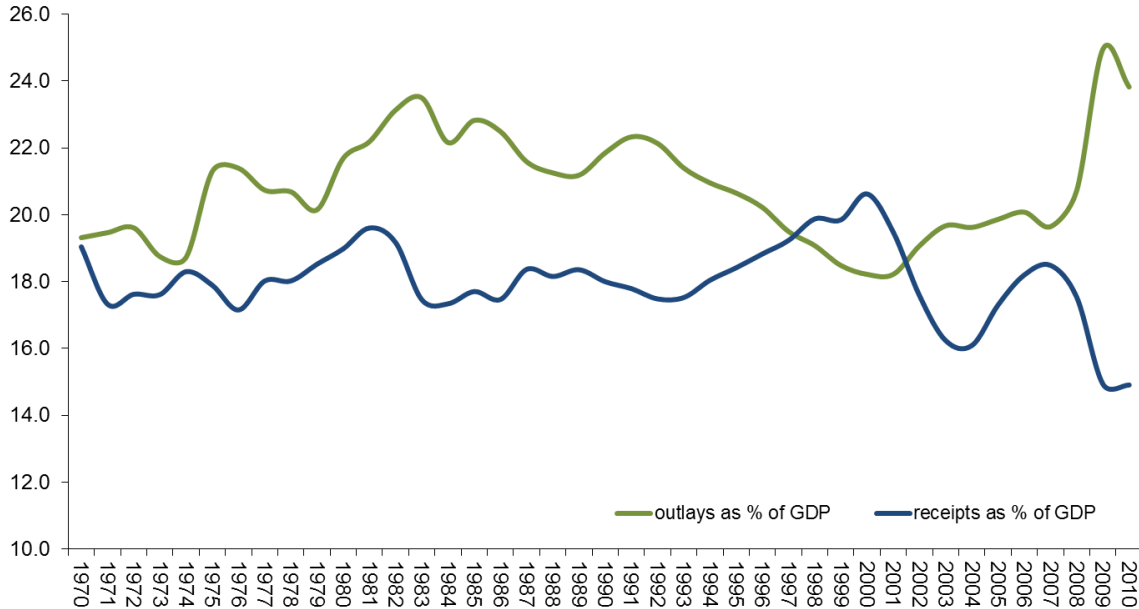


source: IMF

Federal Government Receipts and Outlays as % of GDP



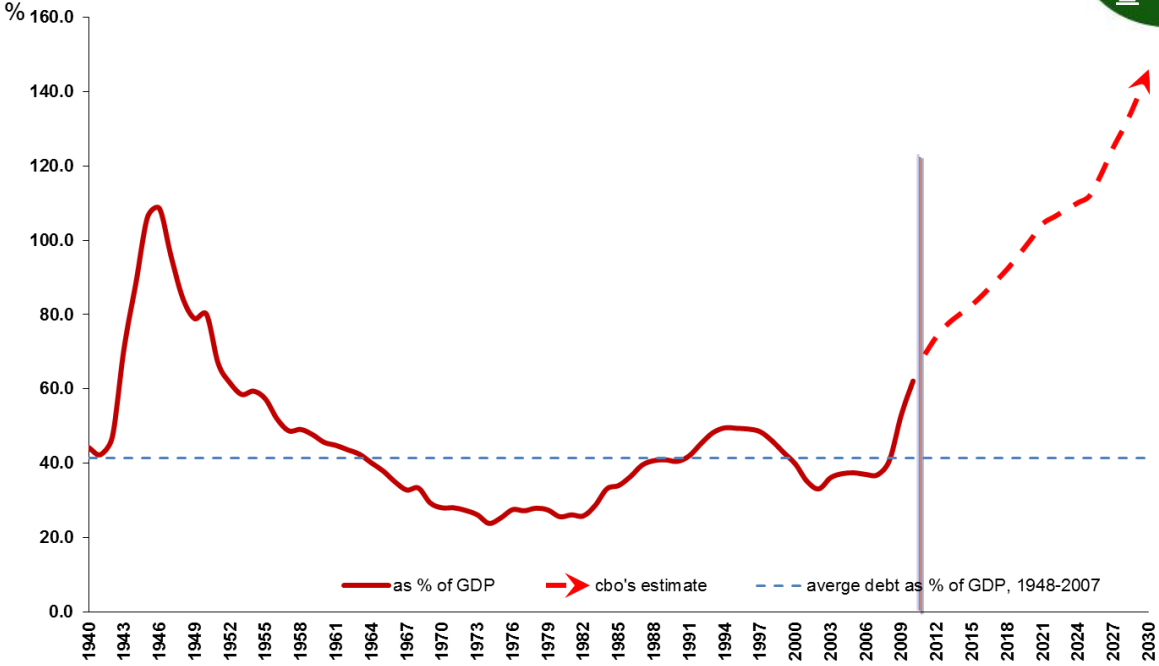
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National Debt as Percentage of GDP



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Unfunded Liabilities

