

# Democracy in the Anthropocene

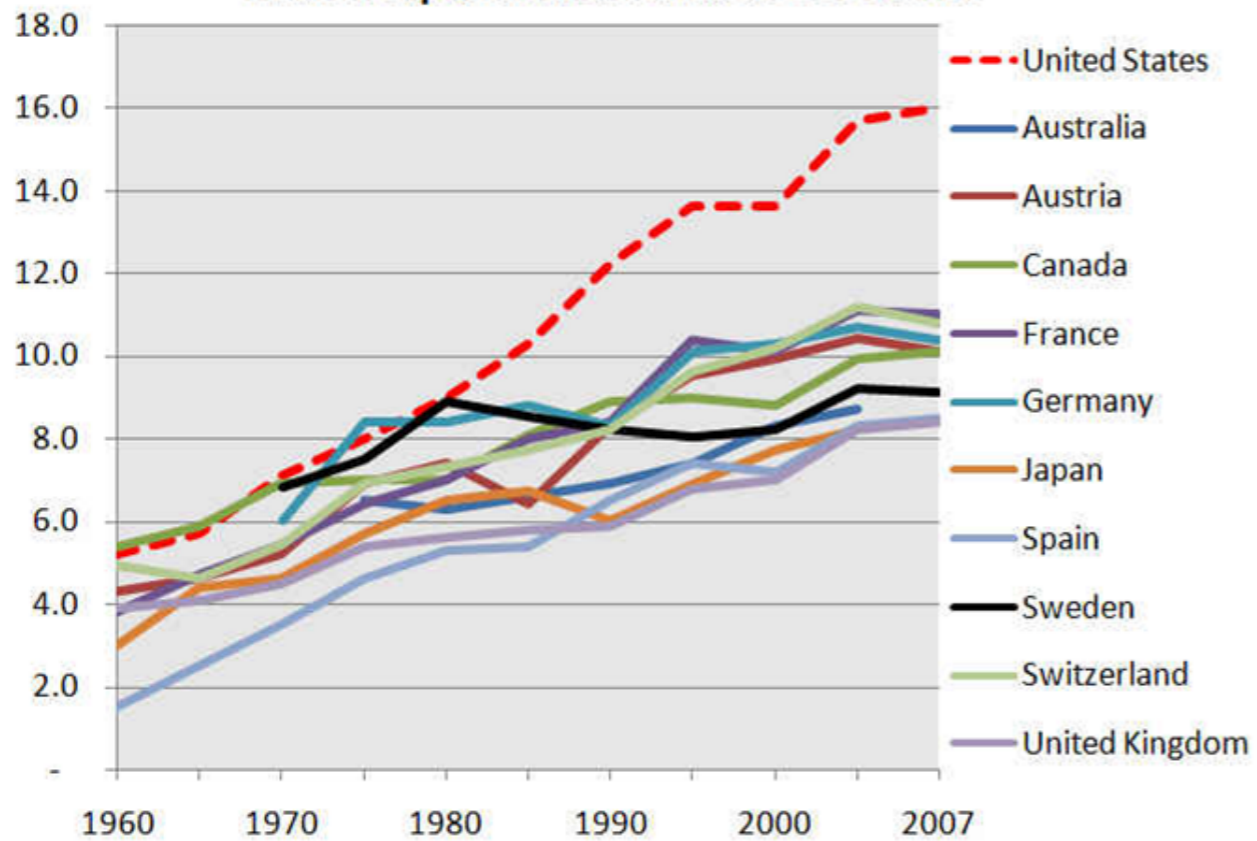
Ted Nordhaus  
Executive Director  
Breakthrough Institute  
October 2017





@TedNordhaus

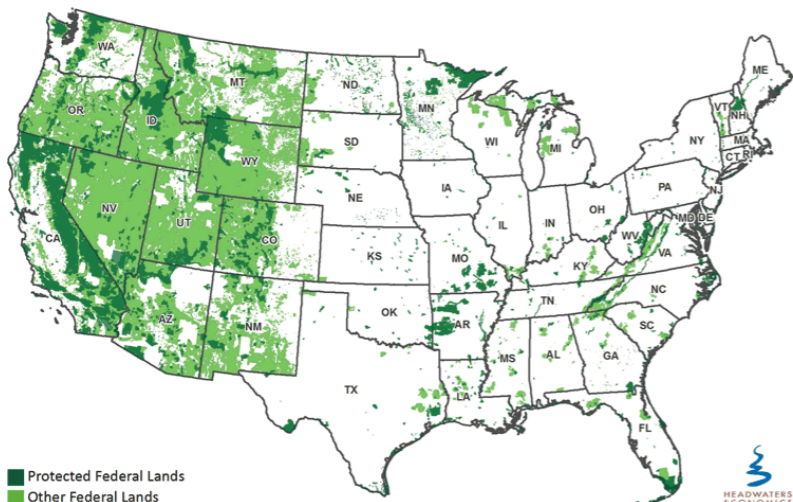
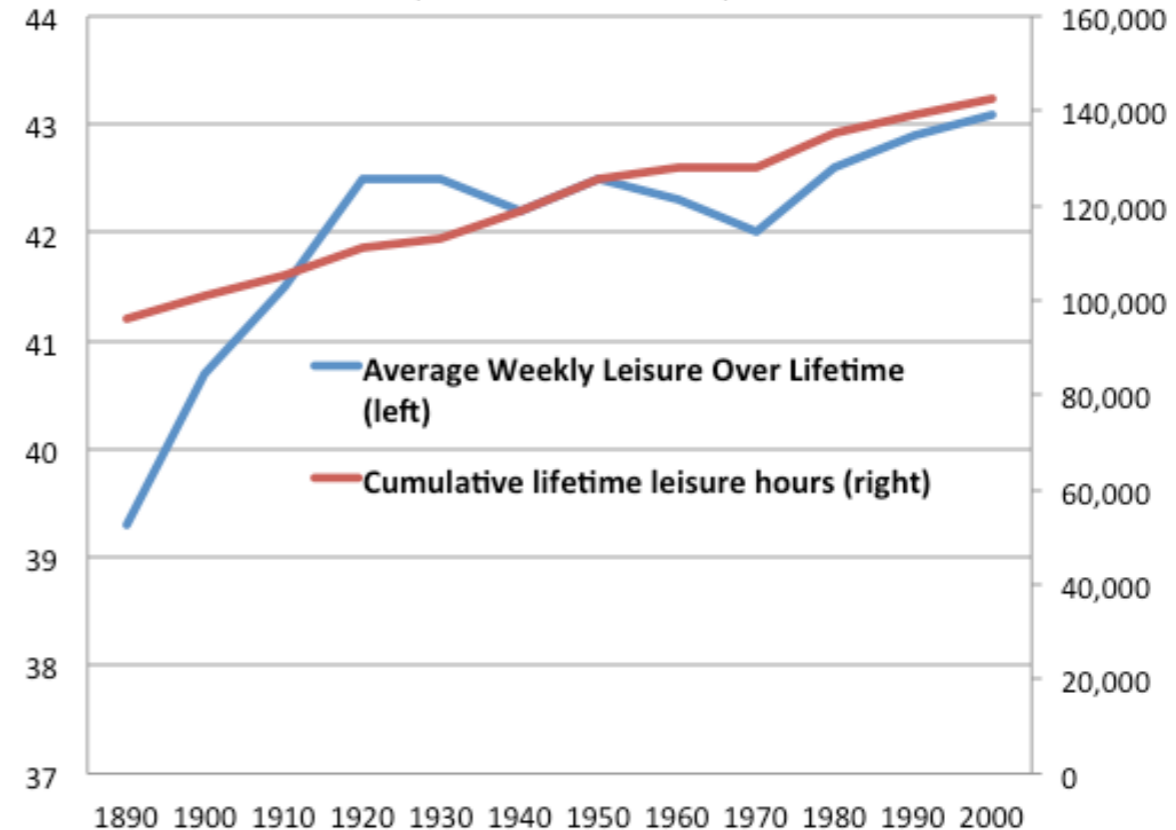
### Health expenditure trends as a % of GDP



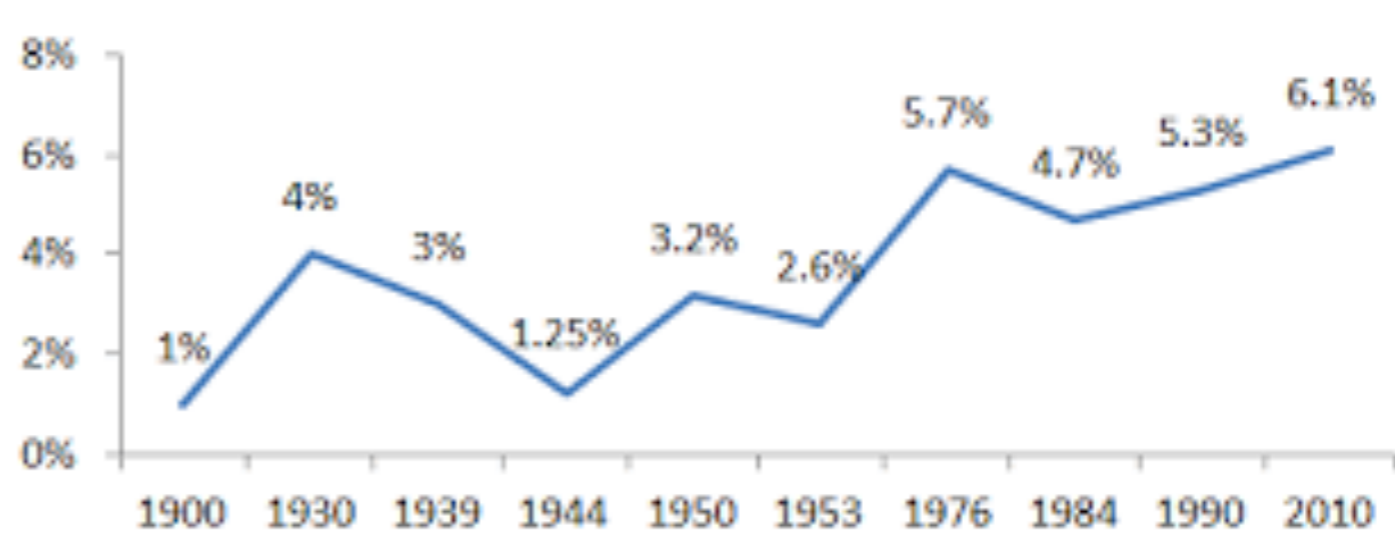
Source: OECDHealthData\_FrequentlyRequestedData.xls

### The Growth of American Leisure

(all measured in hours)



### U.S. Education Spending as Percentage of GDP



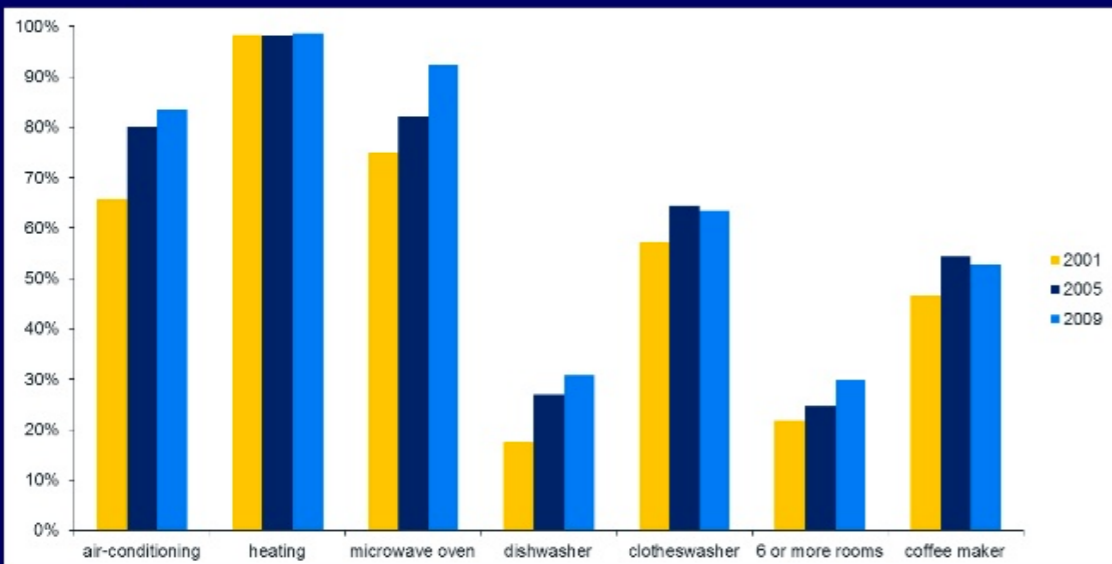


© James Lucas Estate / All rights reserved.

@TedNordhaus

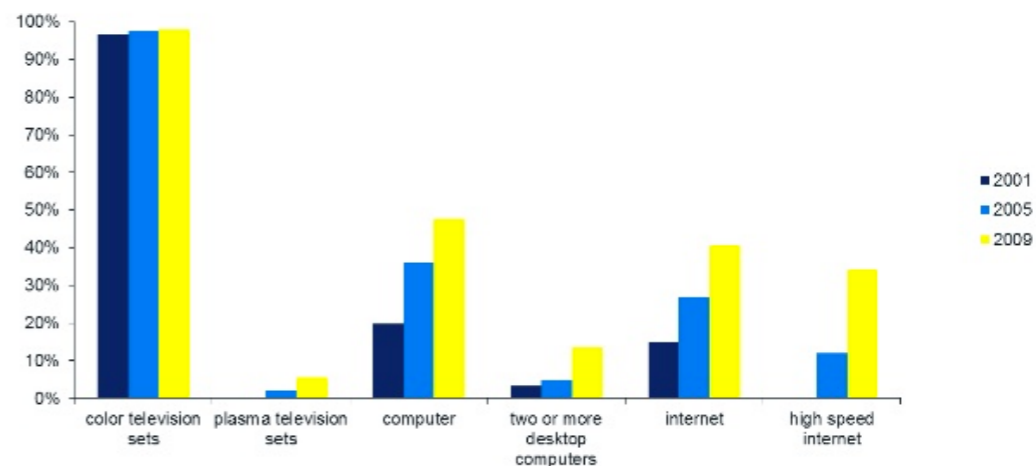
**BREAKTHROUGH**  
INSTITUTE

## Amenities Owned and Used by Low-Income Households



SOURCE: U.S. EIA Residential Energy Consumption Survey

## Technology Owned and Used by Low-Income Households

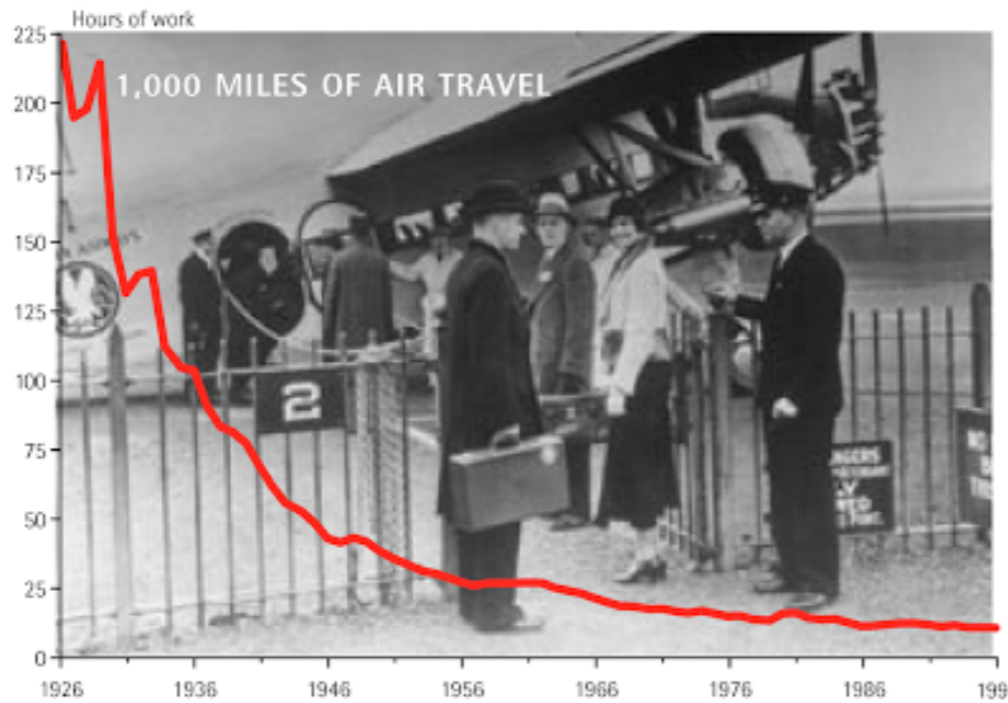
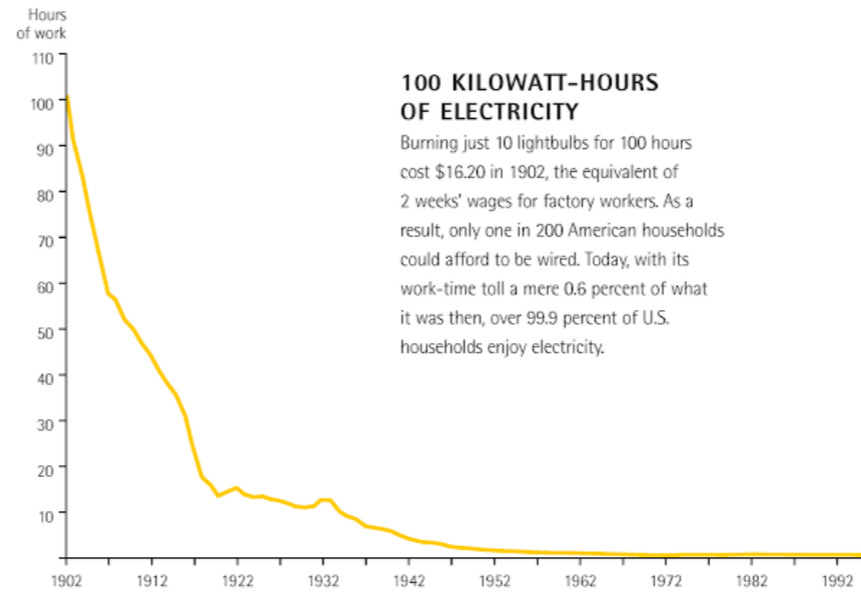


SOURCE: U.S. EIA Residential Energy Consumption Survey

### THE SHARE FOR FOOD, CLOTHING AND SHELTER

	1901	1995
Food	46.4%	14.0%
Clothing	14.7%	5.3%
Shelter	15.1%	18.4%
Total	76.2%	37.7%

Even working a shorter week than at the turn of the century, Americans today don't have to spend as much of their income on the basics. With the gains in what our work time buys, expenditures for food, clothing and shelter consume only 38 percent of a typical household's budget, not the 76 percent they once did.



### COAST-TO-COAST FLIGHT

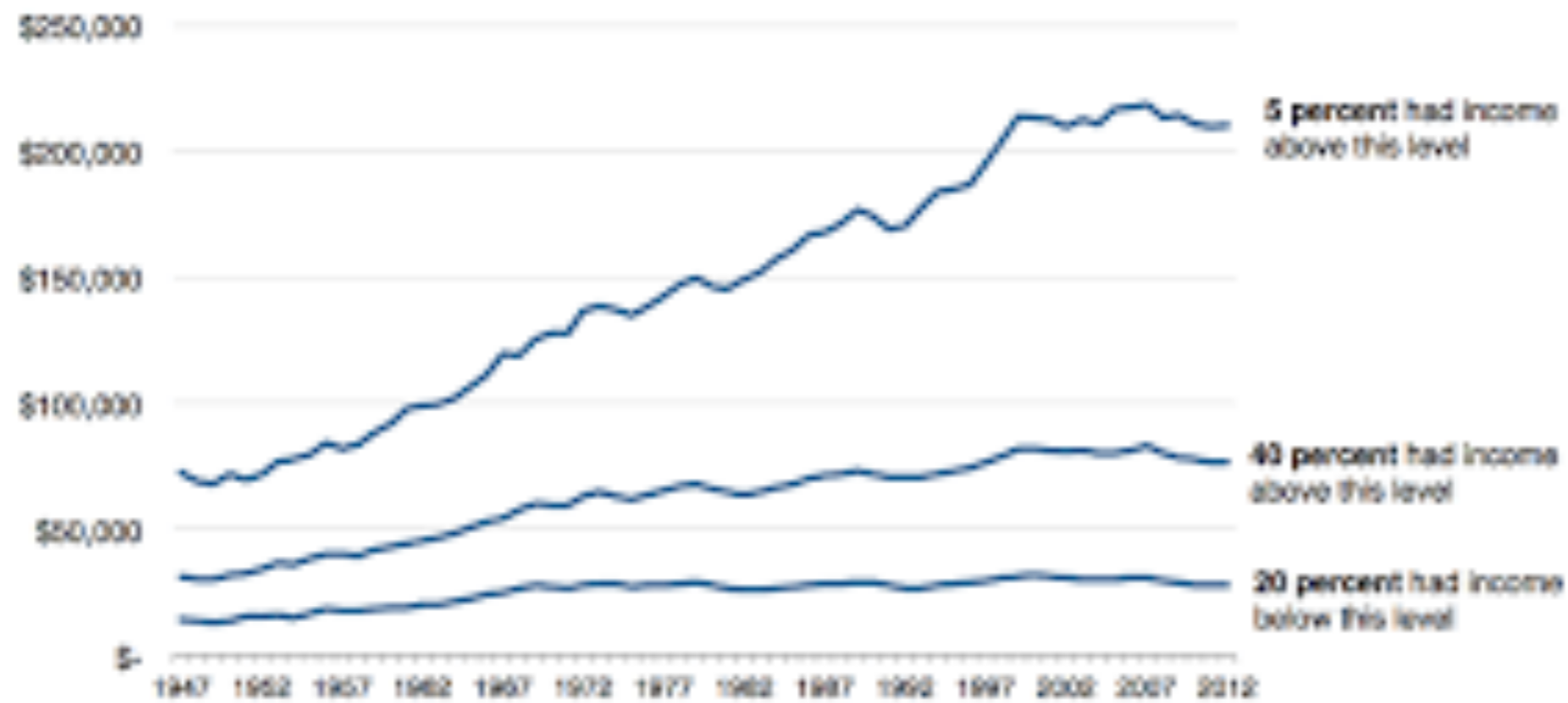
1930	1951	1997
\$200	\$110	\$209
366 hr.	71 hr.	16 hr.

American Airways' Ford Tri-Motor had a top speed of 120 mph, carried 12 passengers and bumped along 2,000 feet up for the first coast-to-coast plane trip in 1930. The trip included 10 stops, one of them overnight. Passengers carried all their luggage on board, plugged their ears with cotton wool and were warned not to throw anything out the plane's windows. Cabins were not heated, air-conditioned or pressurized. The 36-hour trip cost \$200—nearly 2 months' work for the typical factory hand—so passenger rosters read like the invitation list to a royal ball. The tab for today's 5-hour trip runs about 2 days' wages, just 4 percent of 1930's work price and less than a fourth of 1951's toll. Americans of virtually all income classes travel, racking up a per capita average of more than 1,000 air miles annually.

## Growth in US Income Inequality 1947-2012

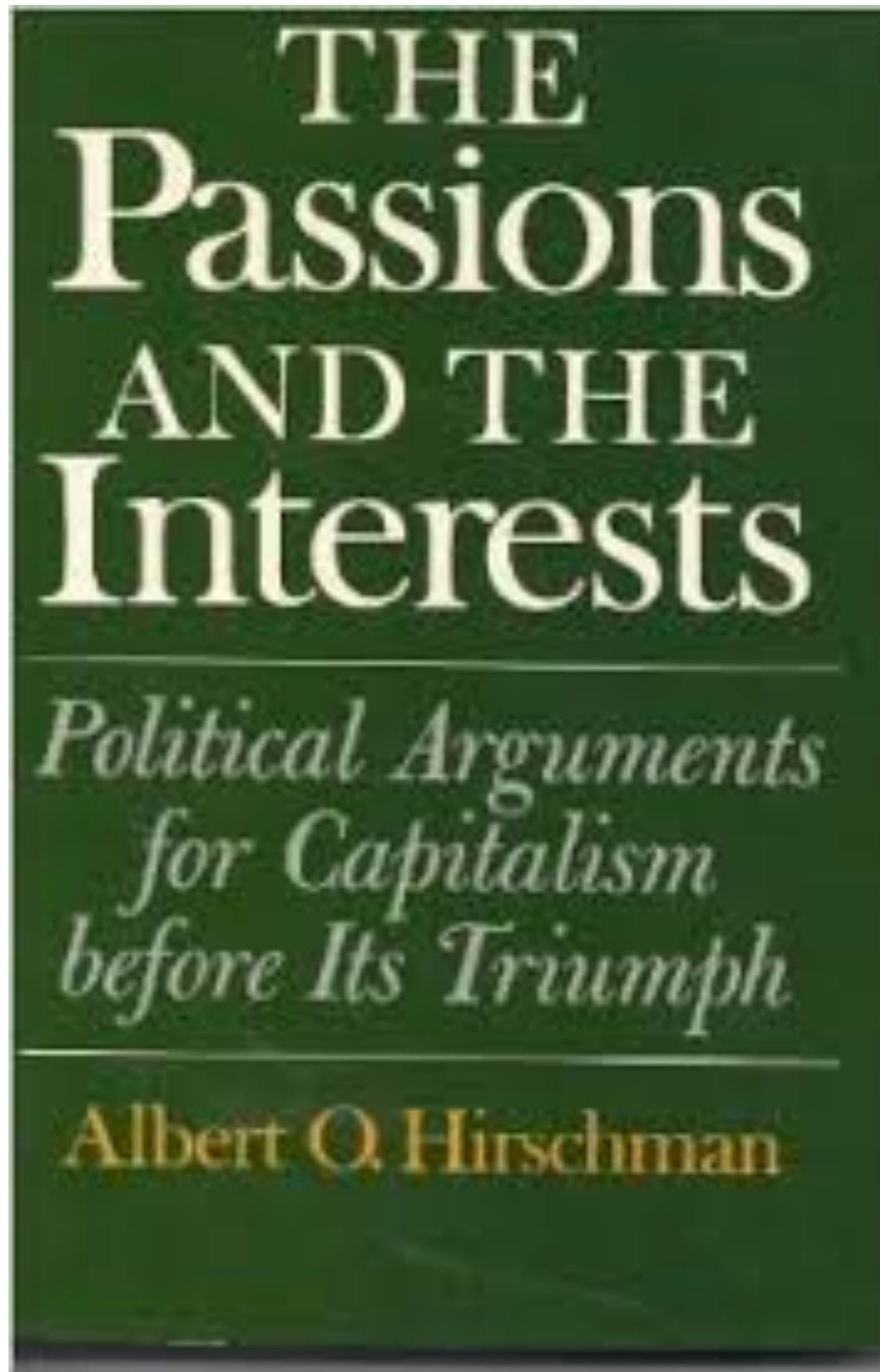


2012 US Dollars



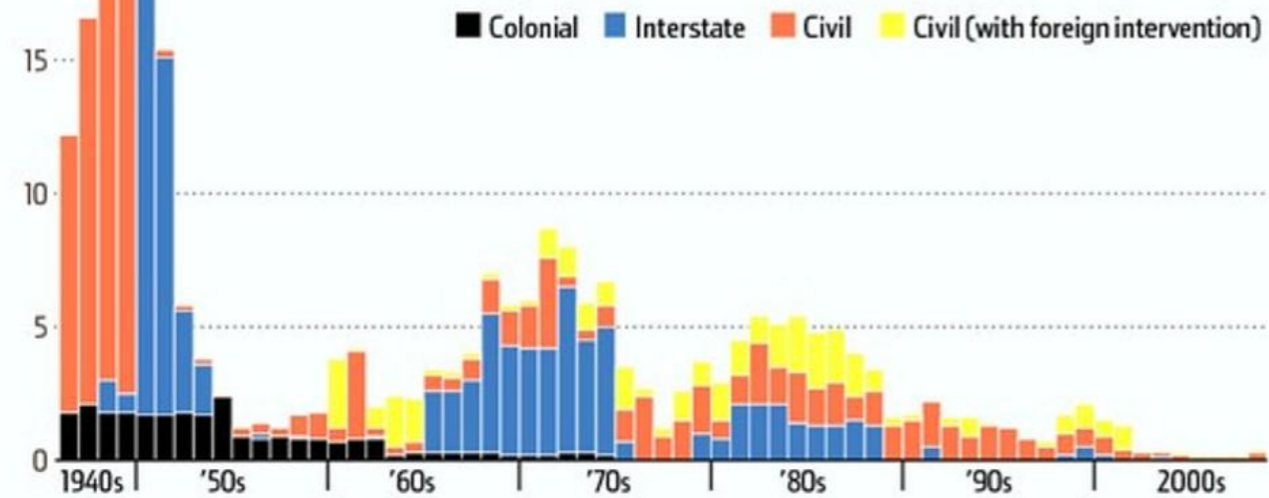
Source: Table F-1 from Census Historical Tables





## The Waning of War

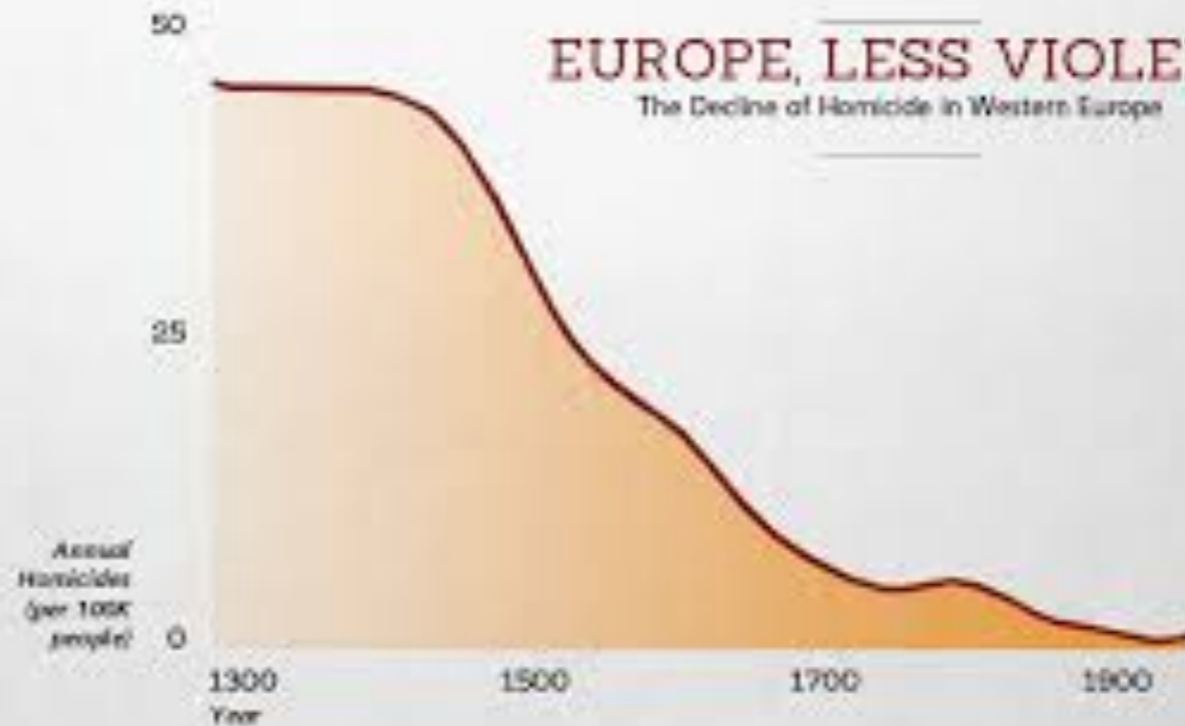
World-wide battle deaths per 100,000 people



Source: Human Security Report Project, the Uppsala Conflict Data Project, and the Peace Research Institute of Oslo

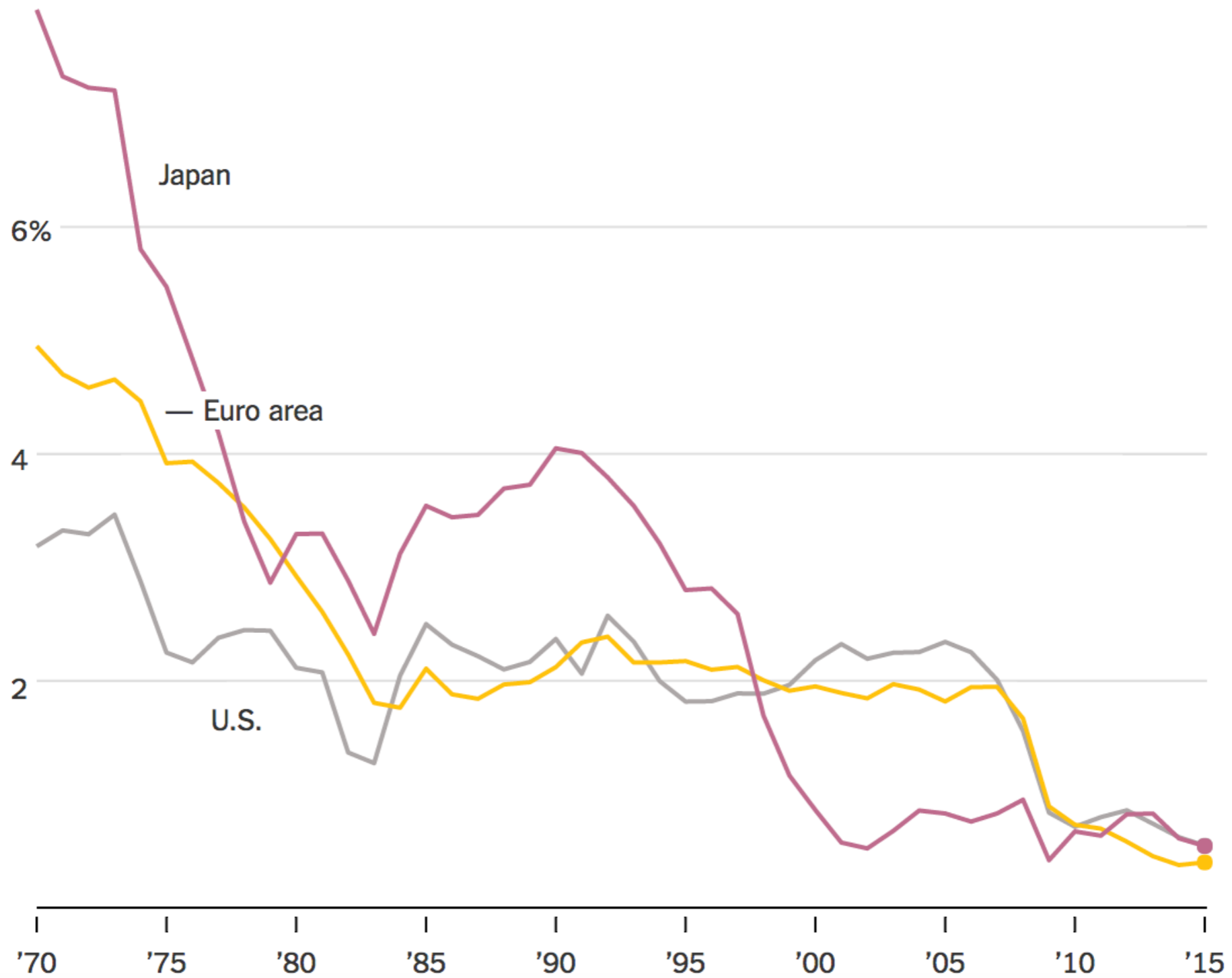
## EUROPE, LESS VIOLENT

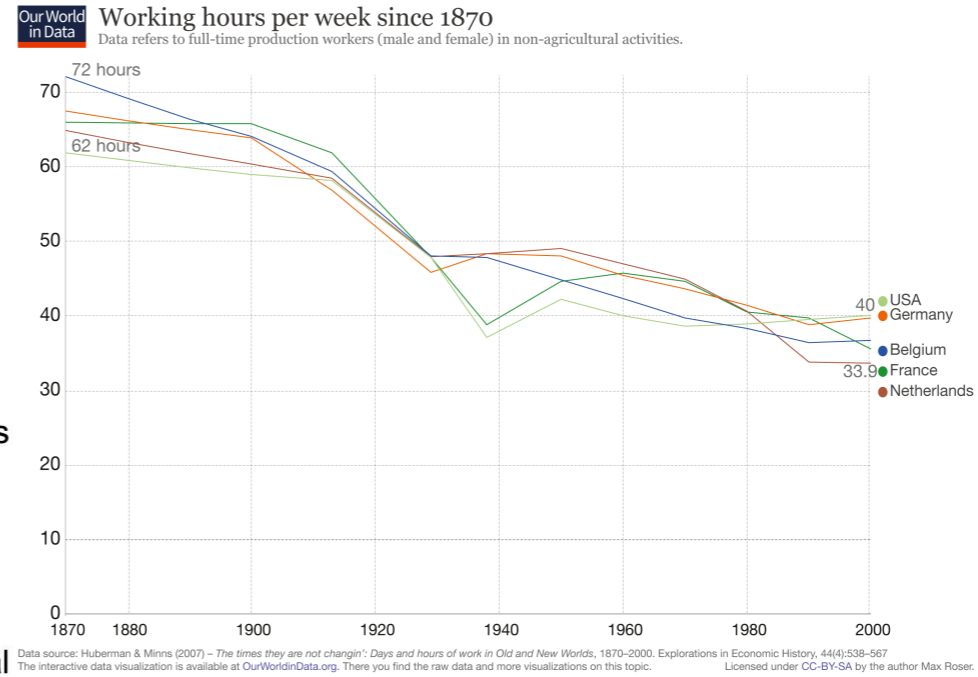
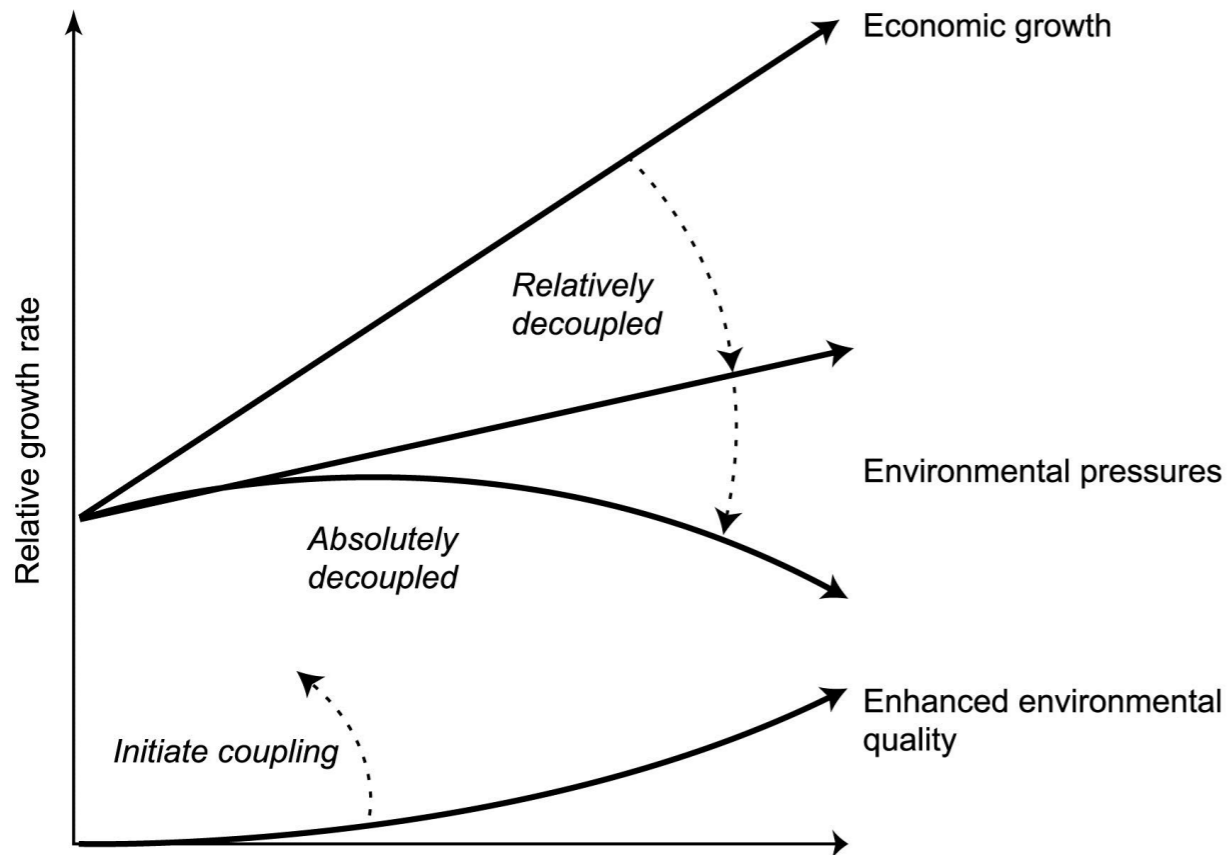
The Decline of Homicide in Western Europe





**Average annual per-capita G.D.P. growth over the preceding 10 years**



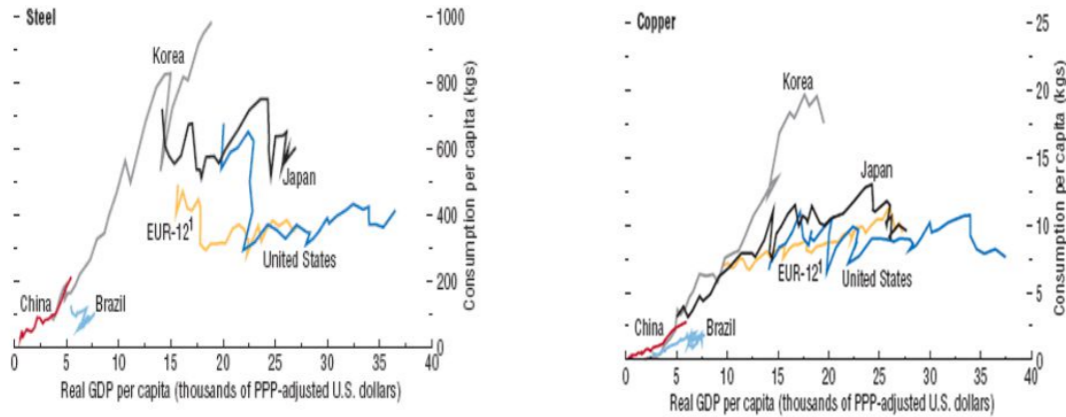


Goldman Sachs  
JBWere

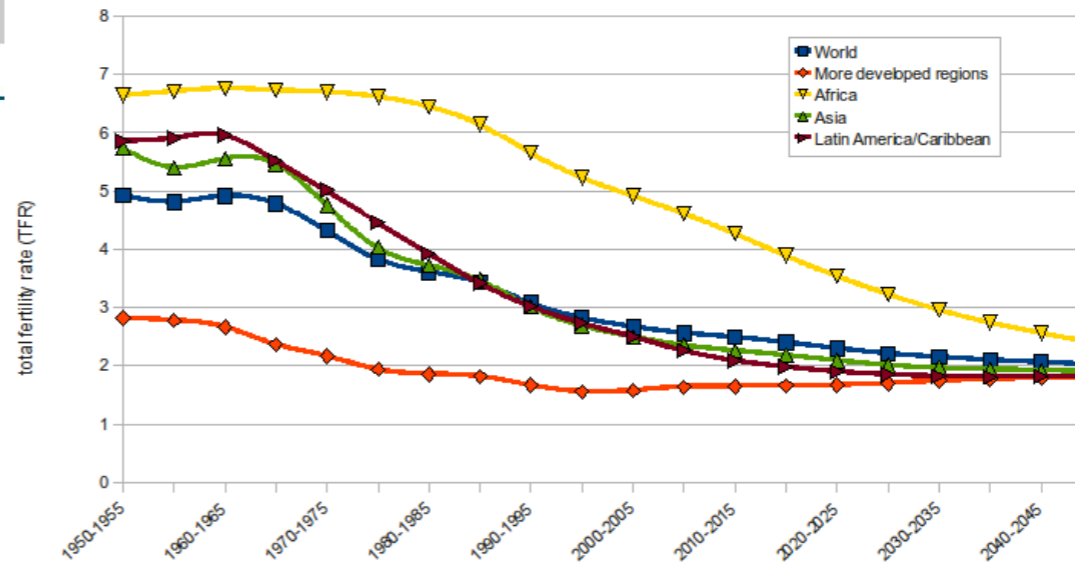
### How long can it last?

"saturation point" is typically \$15,000 - \$20,000 real GDP/capita (PPP adjusted) - China is still < \$7,000!

Per capita consumption of steel and copper  
Source: IMF World Economic Outlook



### Trends in Total Fertility Rate by Region, 1950-2050.



## Key Implications for Anthropocene

1. Limits to human well-being are social, not biophysical
2. Top-down, centralized planning increasingly difficult to reconcile with democratic governance in advanced developed economies
3. Science is not the answer

# Key Opportunities in Anthropocene

1. Oblique strategies
2. Technological change drives political change
3. Top-down, state-led deployment of environmental technology still possible when co-benefit of modernization programs in developing world.

# Thank You

Ted Nordhaus  
[ted@thebreakthrough.org](mailto:ted@thebreakthrough.org)  
@tednordhaus