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# The Global Economy

## *Introduction*

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# Roadmap

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- News this week
- Trends
- Trade
- Fluctuations
- Inflation and output
- Course information

# What is happening this week?

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- Try to touch on in each class
- *The Economist or FT*
  - Order now if you haven't already
- Interesting articles, anecdotes?

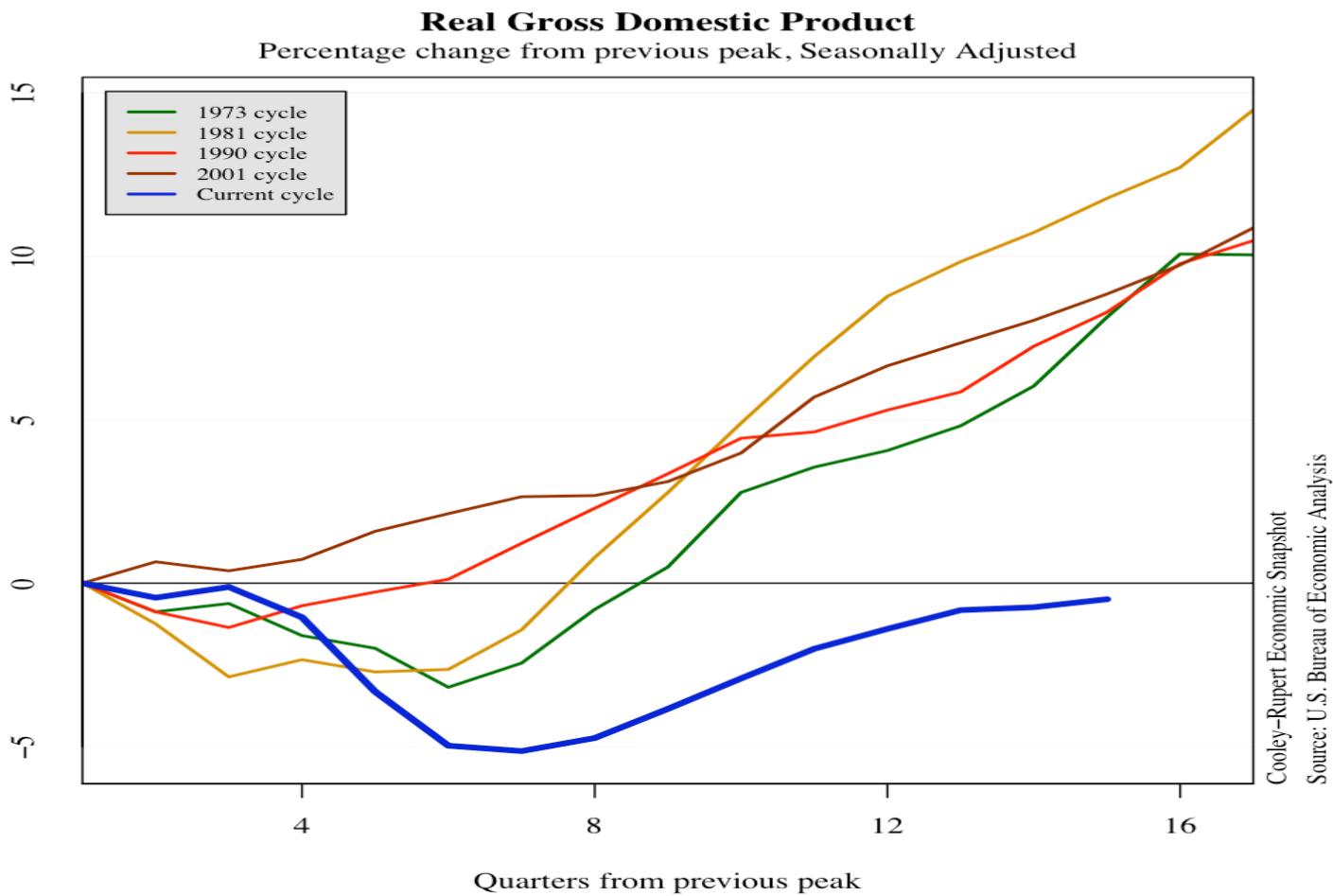
# What is happening?

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- Week of September 19
    - FOMC meeting
    - Existing Home Sales
    - Leading Indicators
  - Week of September 26
    - New Home Sales
    - S&P Case-Shiller House Prices
    - Consumer Confidence
    - Durable Goods Orders
    - 2Q Corporate Profits and Revised GDP
    - Personal Income and Consumption
    - Reuters/Michigan Sentiment
-

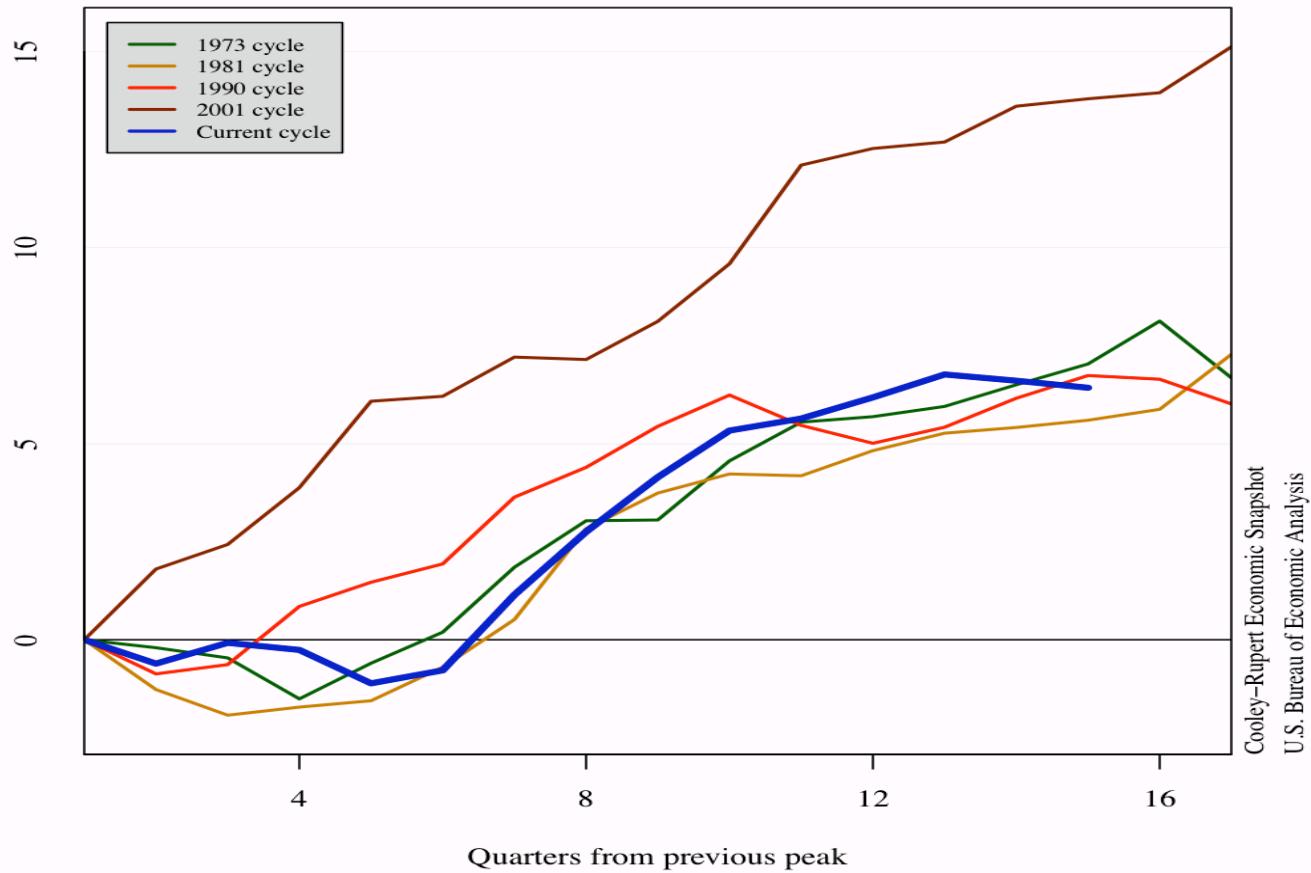
# Where Do We Stand?

## Output By Cycle



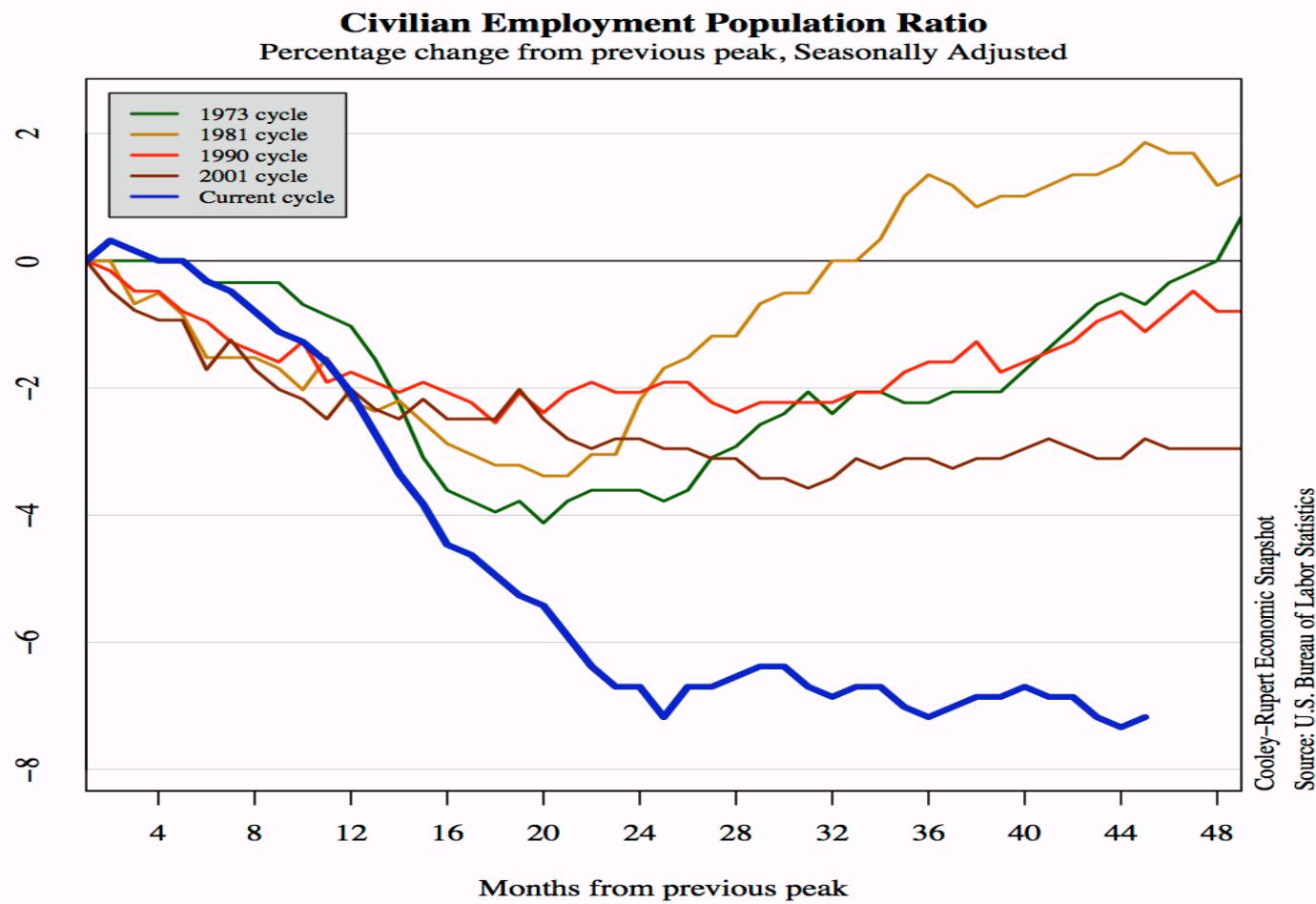
# Productivity by Cycle

**Output Per Hour of All Persons**  
Percentage change from previous peak, Seasonally Adjusted, Nonfarm Business



Cooley-Rupert Economic Snapshot  
U.S. Bureau of Economic Analysis

# Labor by Cycle



# FOMC Statement

## August 9, 2010

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“The Committee currently anticipates that economic conditions – including low rates of resource utilization and a subdued outlook for inflation over the medium run – are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013. [...] The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings as appropriate.”

# Class participation

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- Important part of class
  - I expect everyone to participate
  - Answer a question, make a comment, share an experience
  - Post to Bb discussion (see handout)
- Broad range of backgrounds
  - Expert: keep it short
  - Non-expert: don't panic

# Roadmap

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- News this week
  - Trends
  - Trade in goods and services
  - Fluctuations
  - Inflation and output
  - Course information
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# The big picture

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First half:

## Long-Run Performance

Production, Saving & Investment,  
Productivity, Institutions, Capital &  
Labor Markets, International Trade

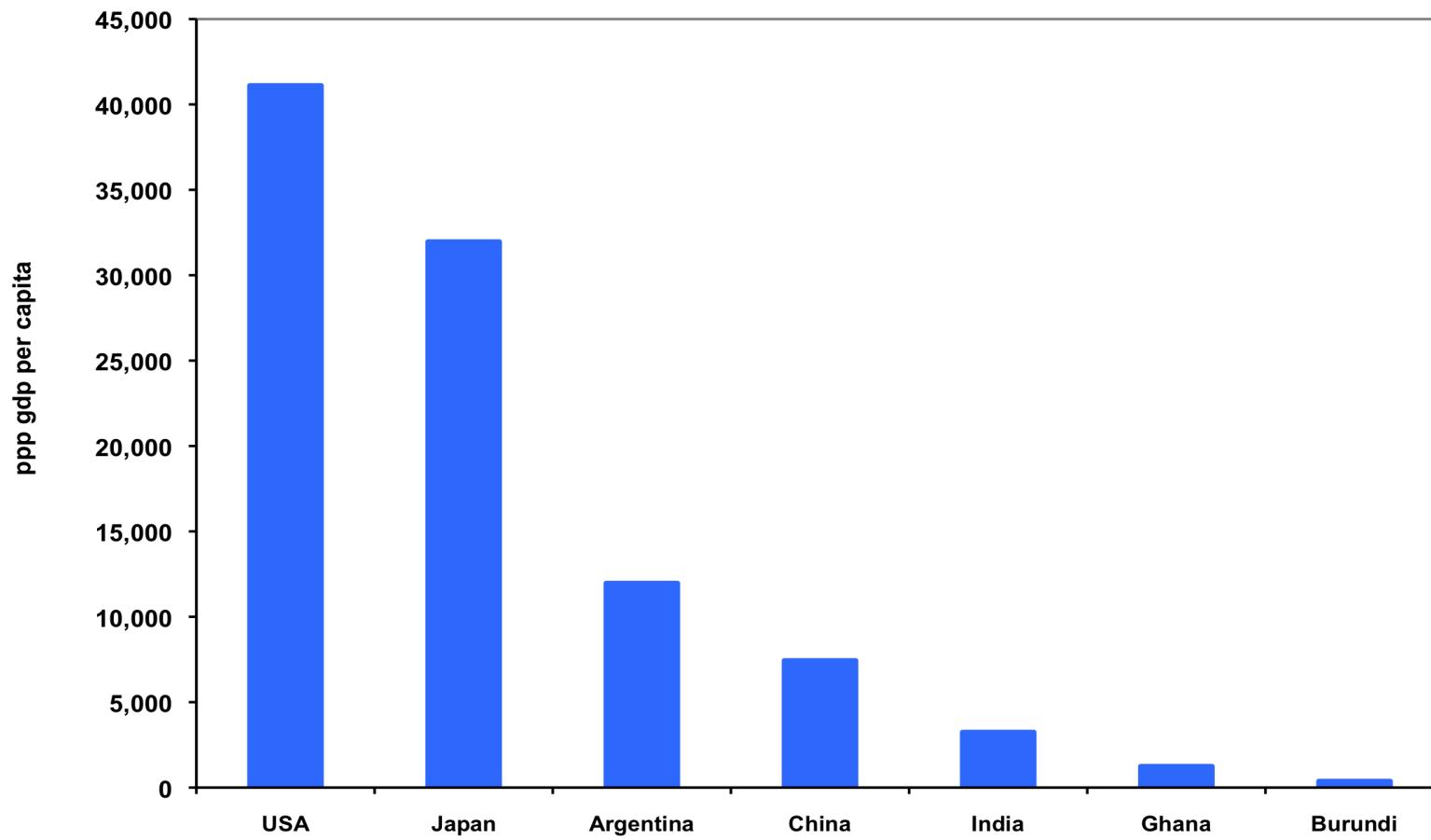
Second half:

## Short-Run Performance

Inflation, Economic Indicators,  
Aggregate Supply & Demand,  
Monetary Policy, Taxes & Deficits,  
Exchange Rates, Capital Flows,  
Emerging Market Crises

# Long run: GDP per capita

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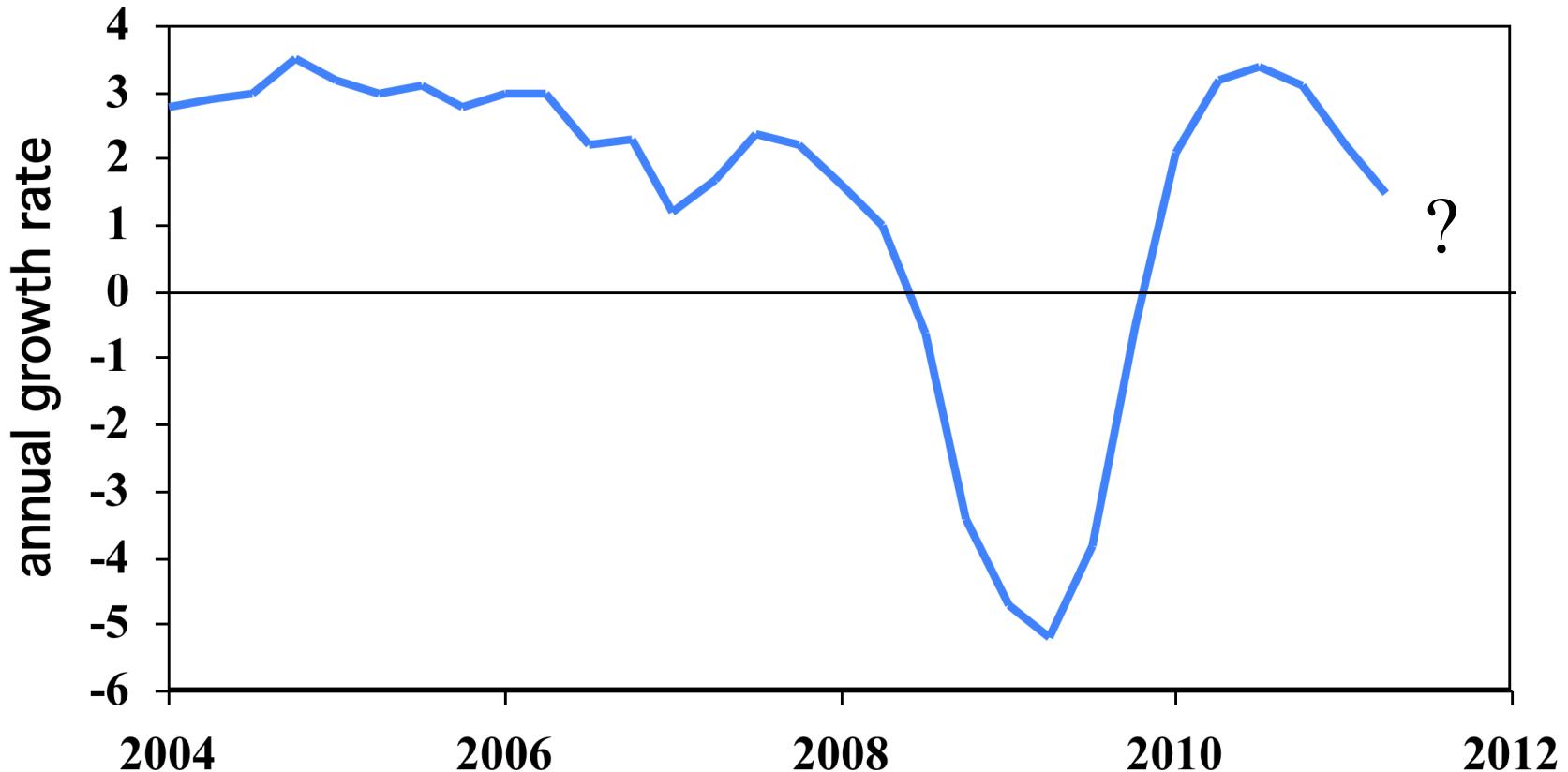


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Source: Penn World Tables 7.0.

# Short run: US real GDP growth

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# Trends

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# The wealth of nations

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- GDP per capita is more than 100 times larger in US than Burundi.
- What can explain such enormous differences?

# Long-run Economic Growth

GDP per capita in Year 2000 international dollars

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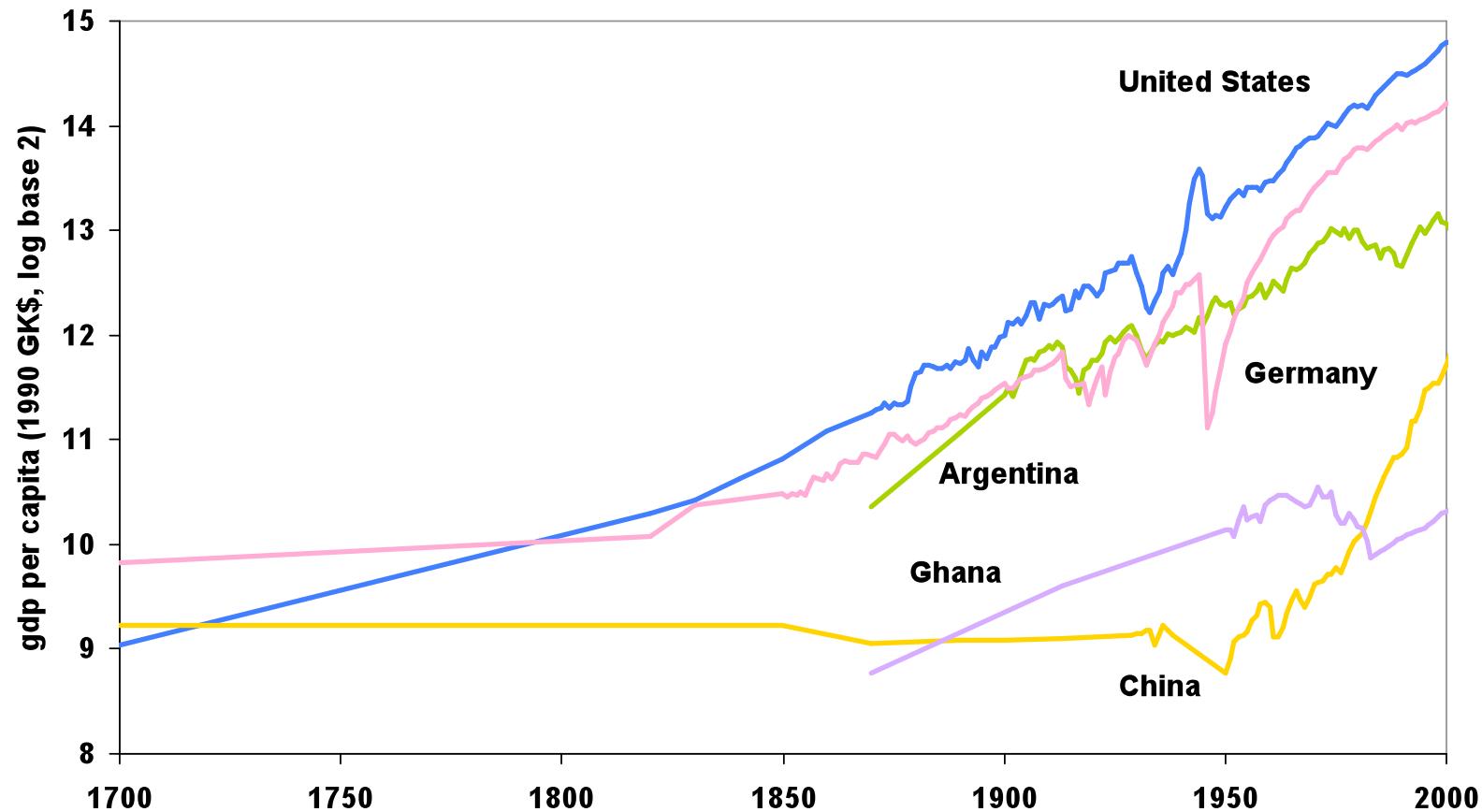
Year	Population (millions)	GDP per capita
-5000	5	\$130
-1000	50	160
1	170	135
1000	265	165
1500	425	175
1800	900	250
1900	1625	850
1950	2515	2030
1975	4080	4640
2000	6120	8175
2008	6860	10300

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Source: Maddison, 2001; 2008 estimate based on Maddison tables.

# Trends are important

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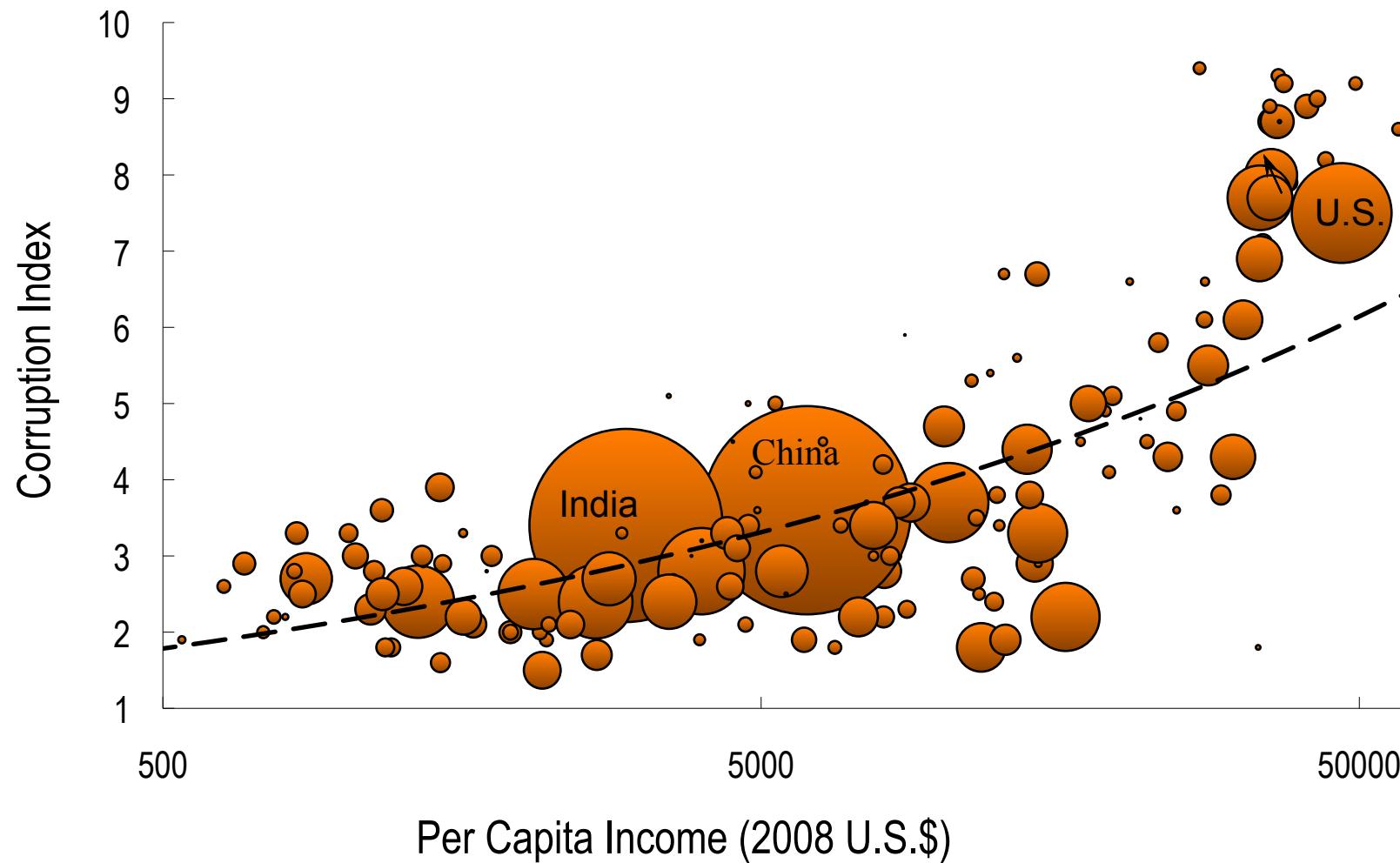


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Source: Maddison, "Historical Statistics for the World Economy"

# Do Institutions Matter?

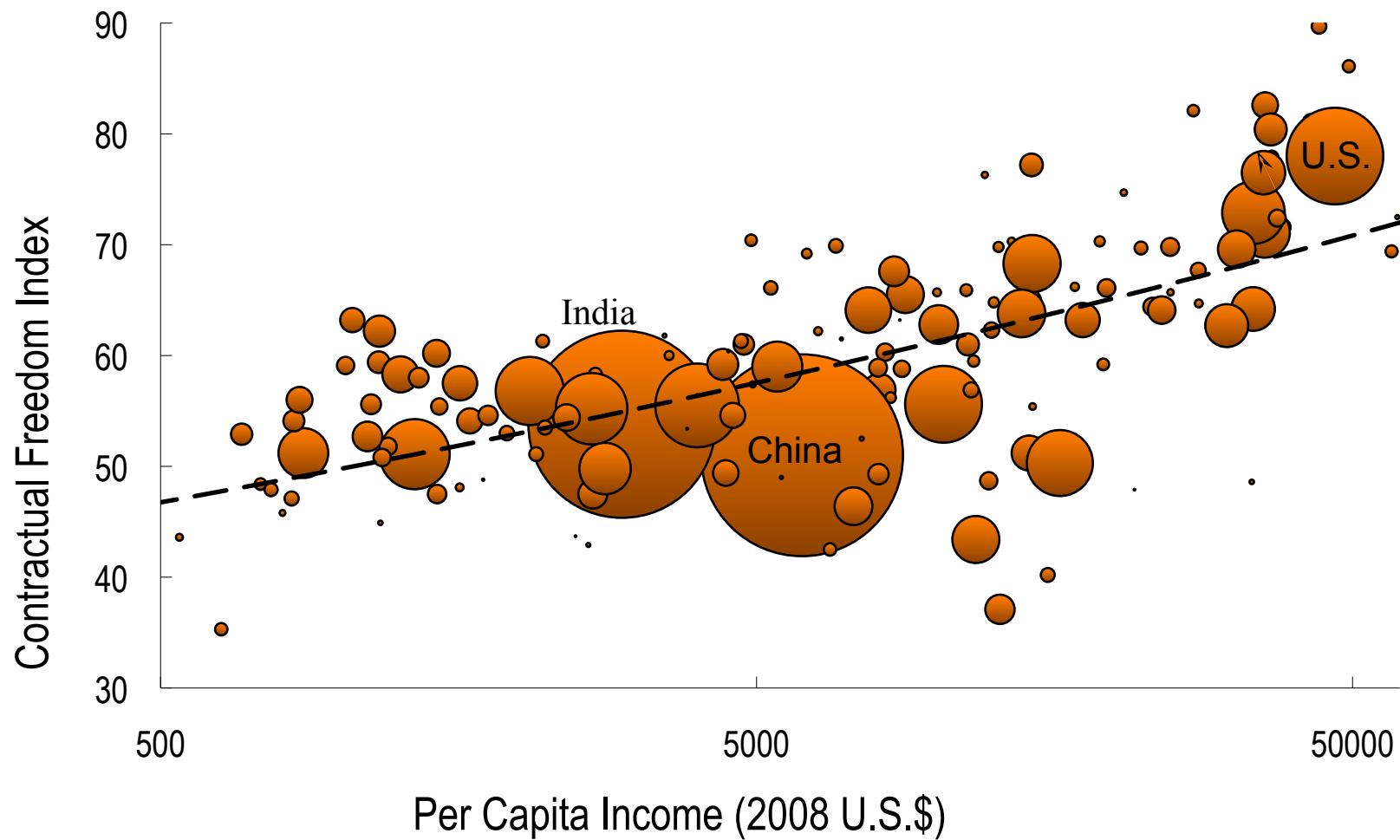
Control of Corruption



Note: Size of circle is proportional to population. Data sources: World Bank and Transparency International.

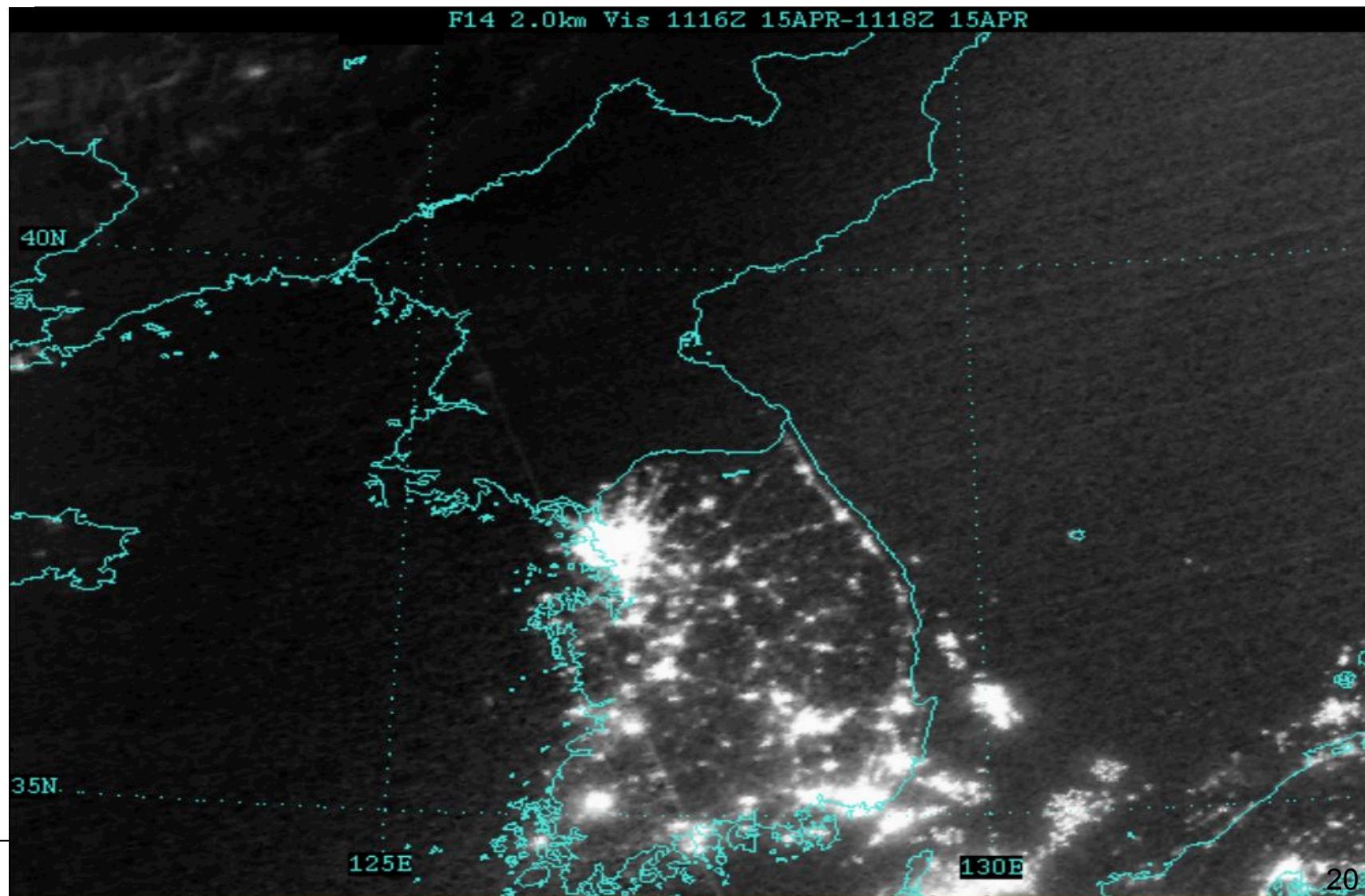
# Do Institutions Matter?

## Index of Contractual Freedom

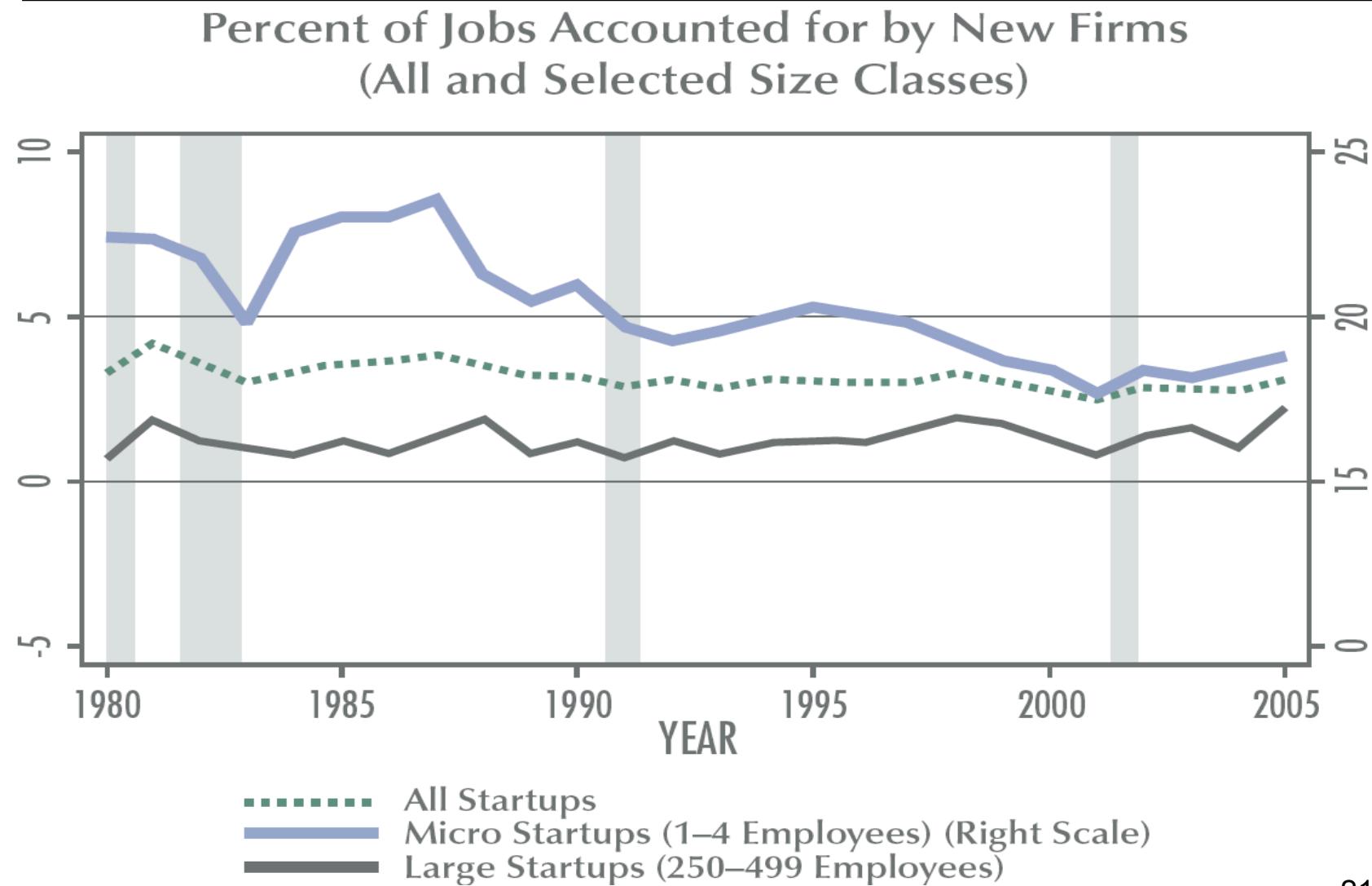


Note: Size of circle is proportional to population. Data sources: World Bank and Heritage Foundation. 19

# Common Culture, Different Institutions



# Do entrepreneurs matter?



Source: U.S. Census.

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# **Trade in Goods and Services**

## **Who trades what, and why?**

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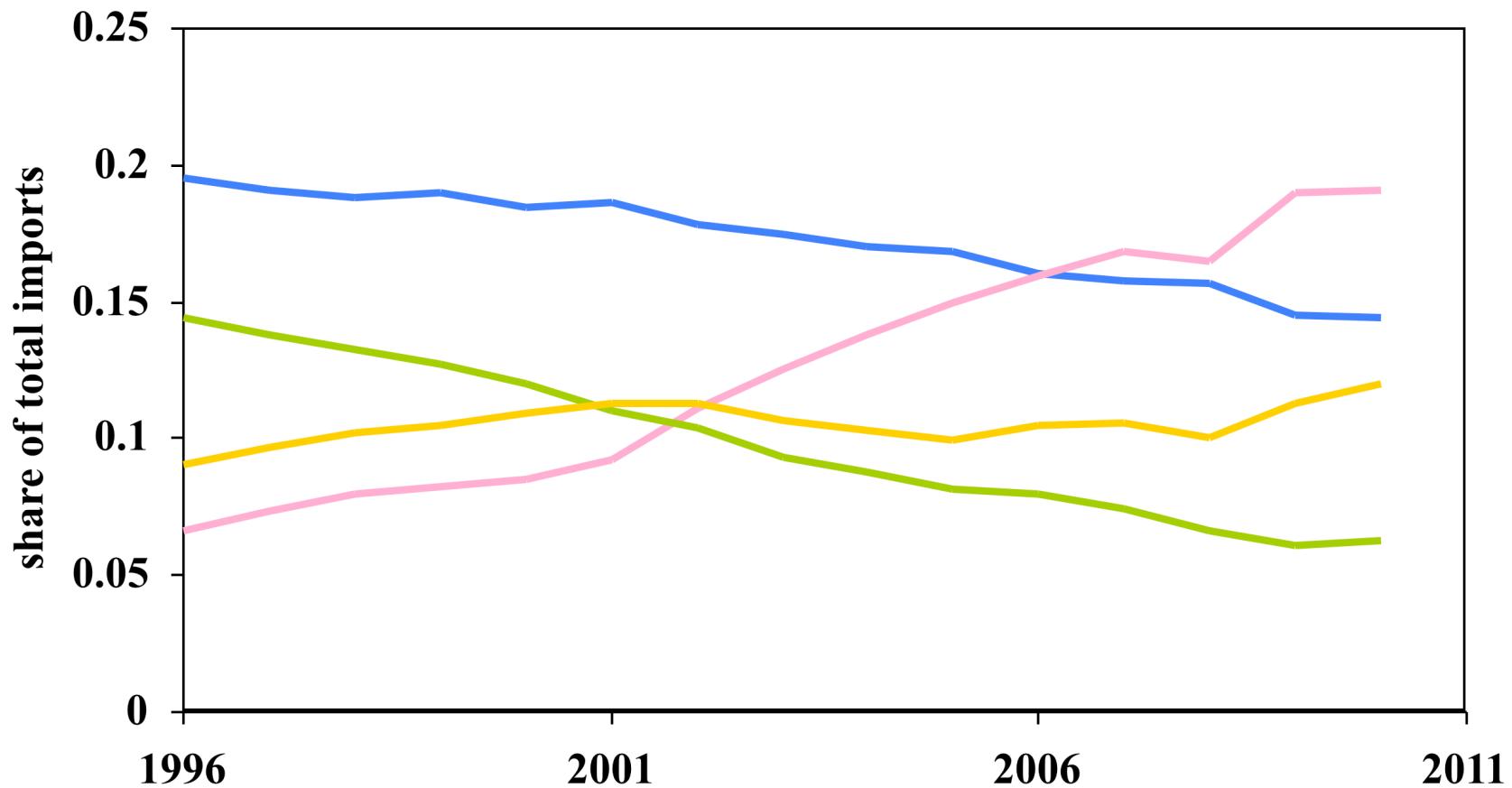
# How do trade patterns evolve?

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- Who are the U.S.'s largest trade partners?
- What good is most traded? (value-wise)
- How are trade patterns changing?
- Why are they changing?

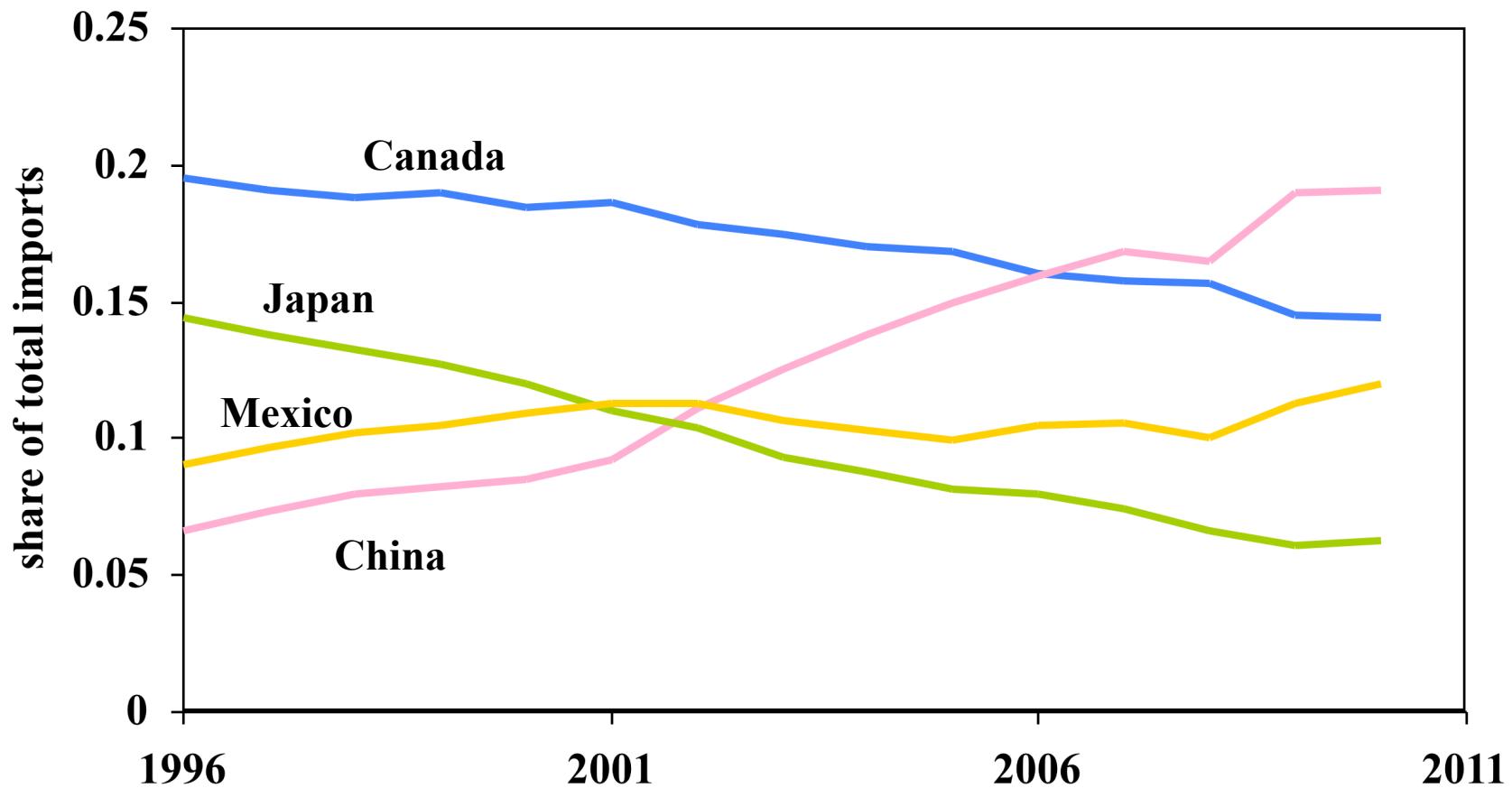
# US imports

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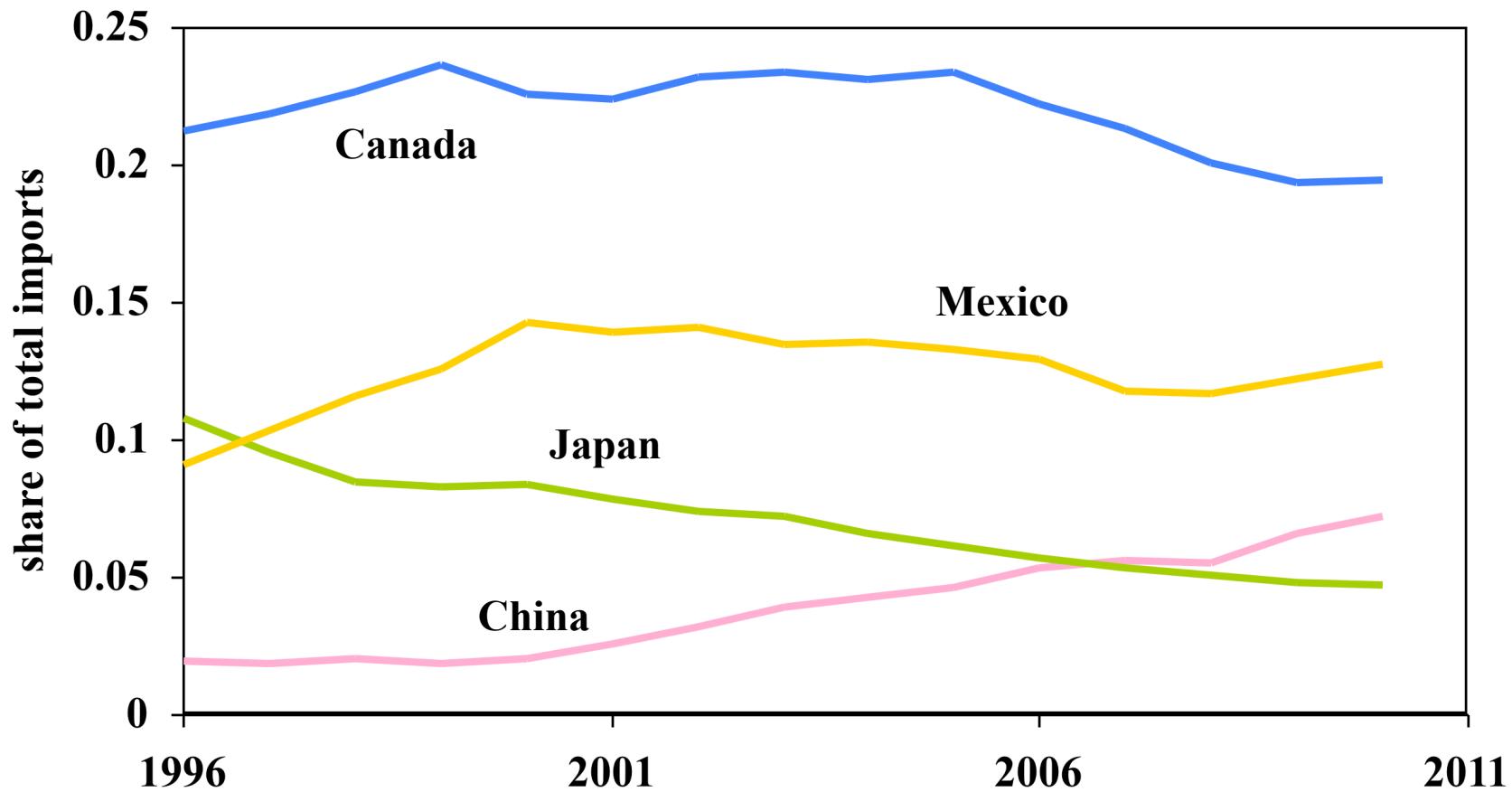
# US imports

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# US exports

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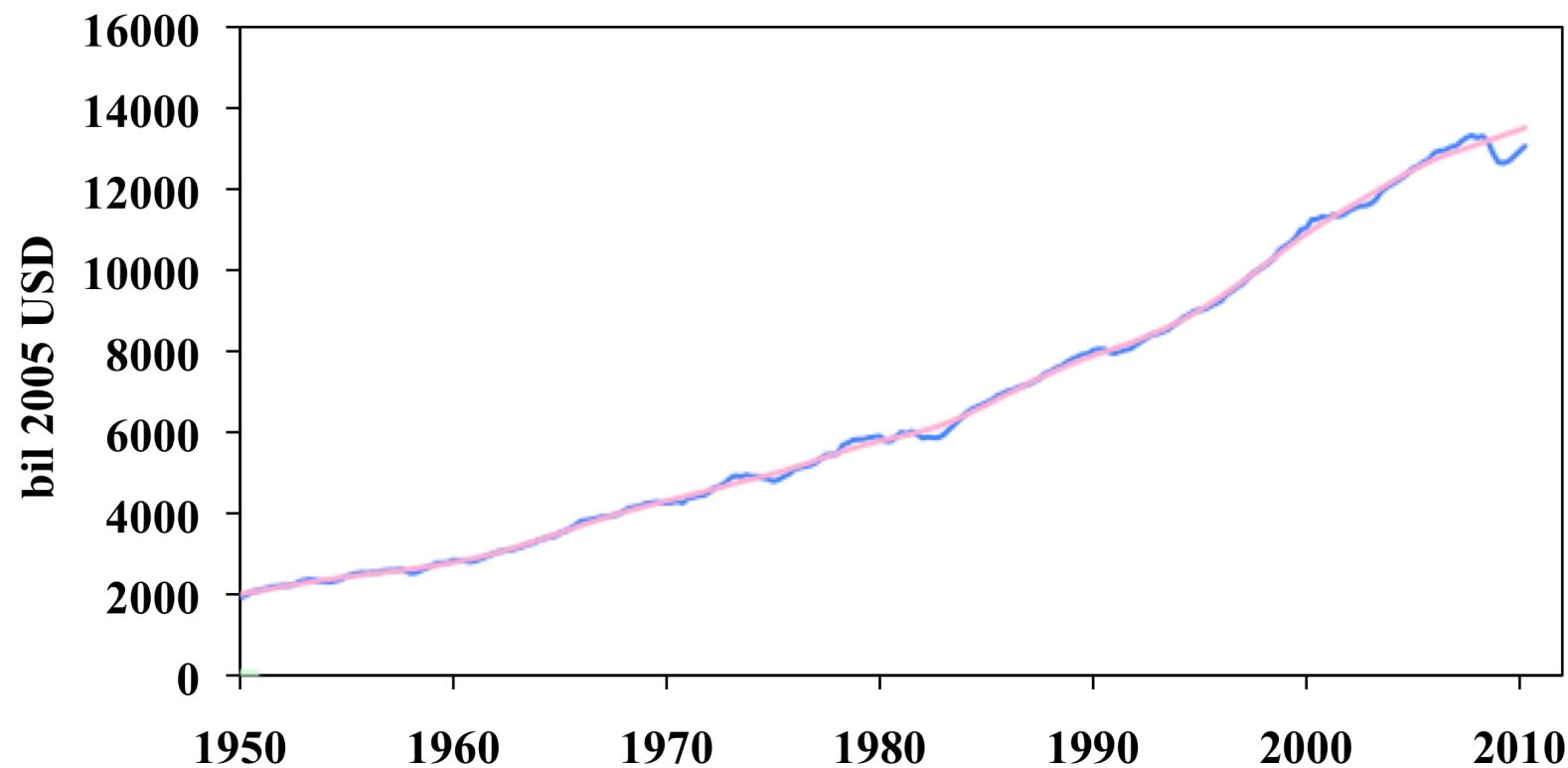
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# **Short-run Fluctuations: Business Cycles**

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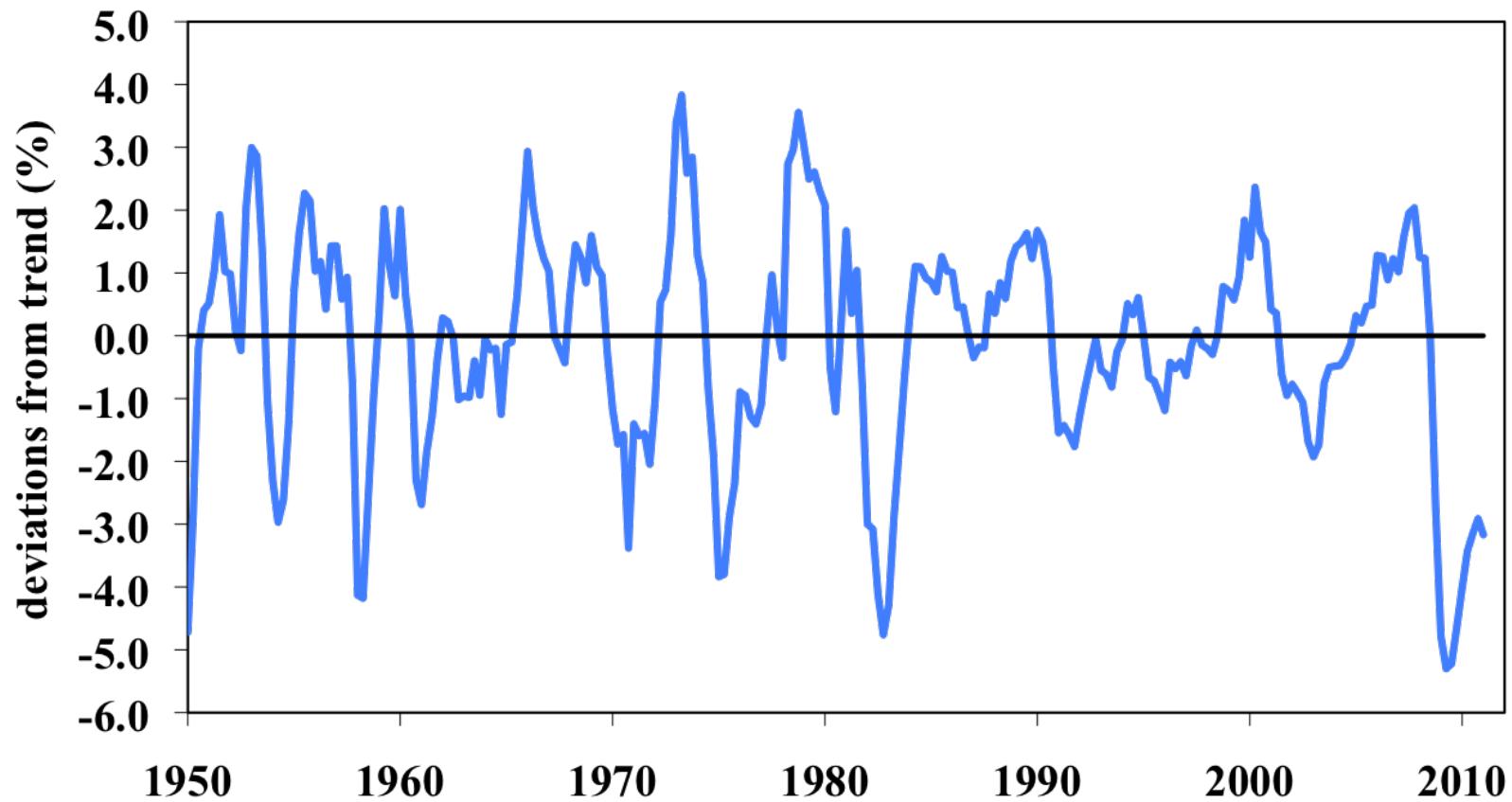
# Business cycles

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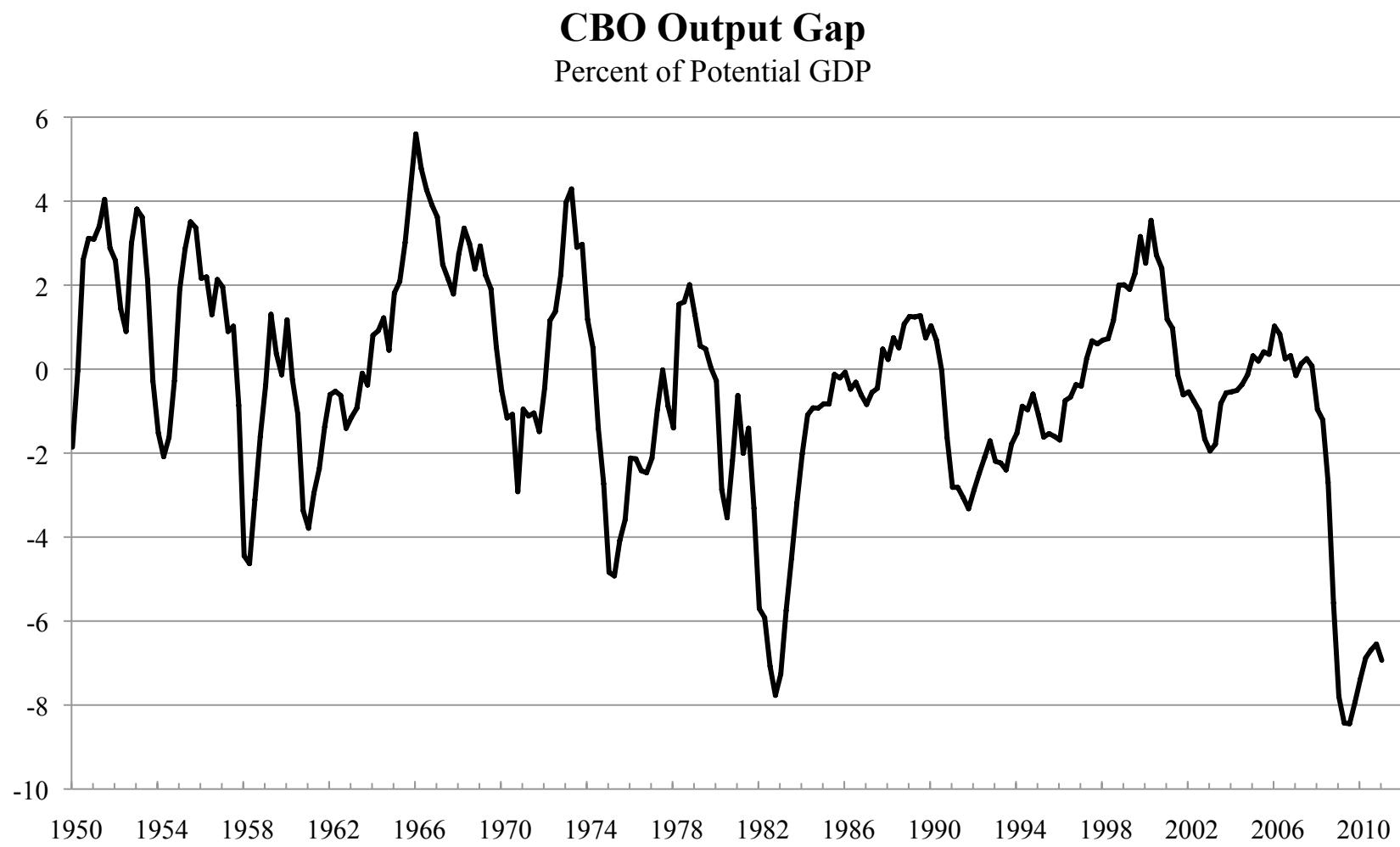
# Business cycles

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# Business cycles

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Source: Congressional Budget Office.

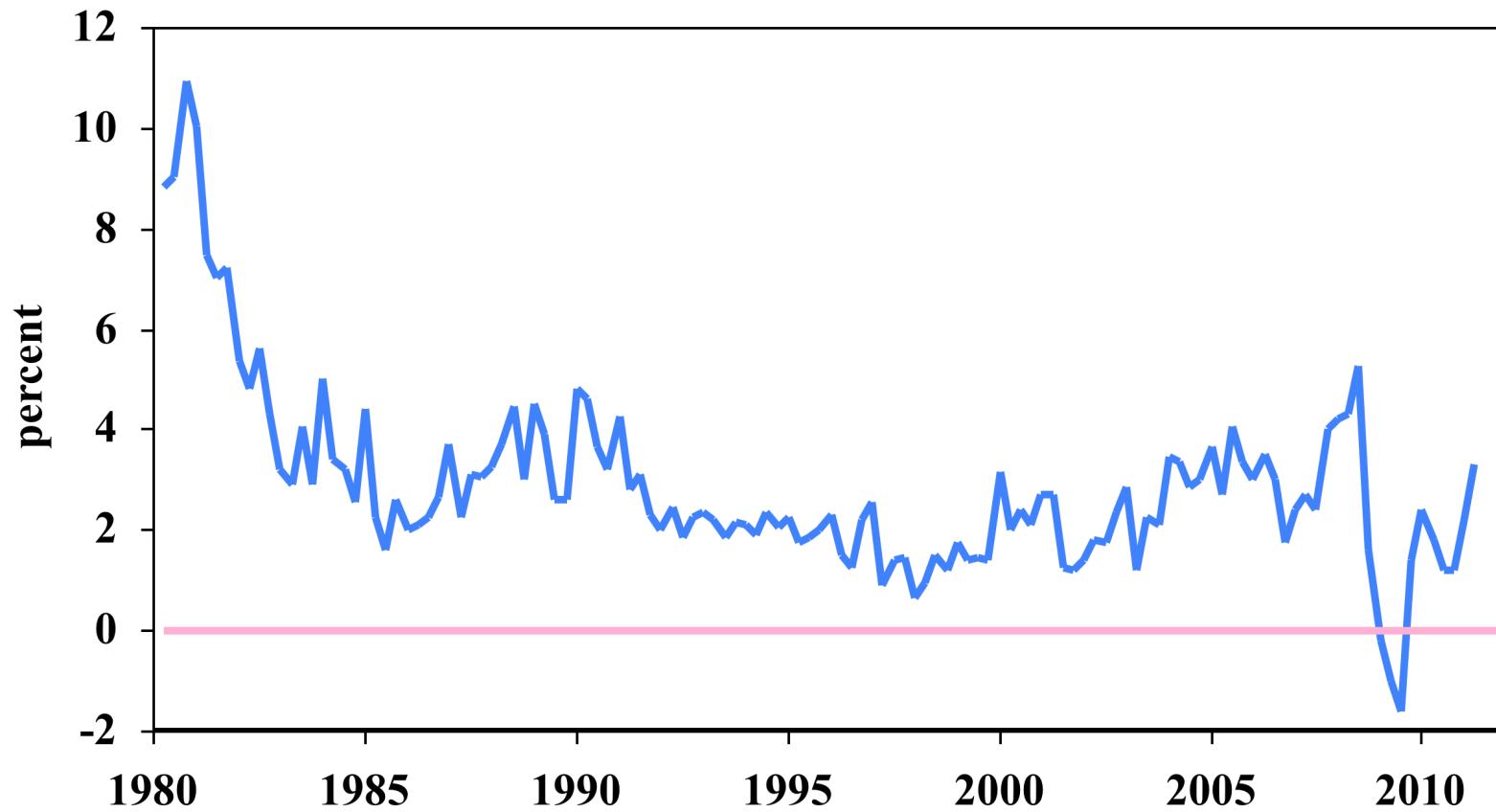
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# Inflation and Output

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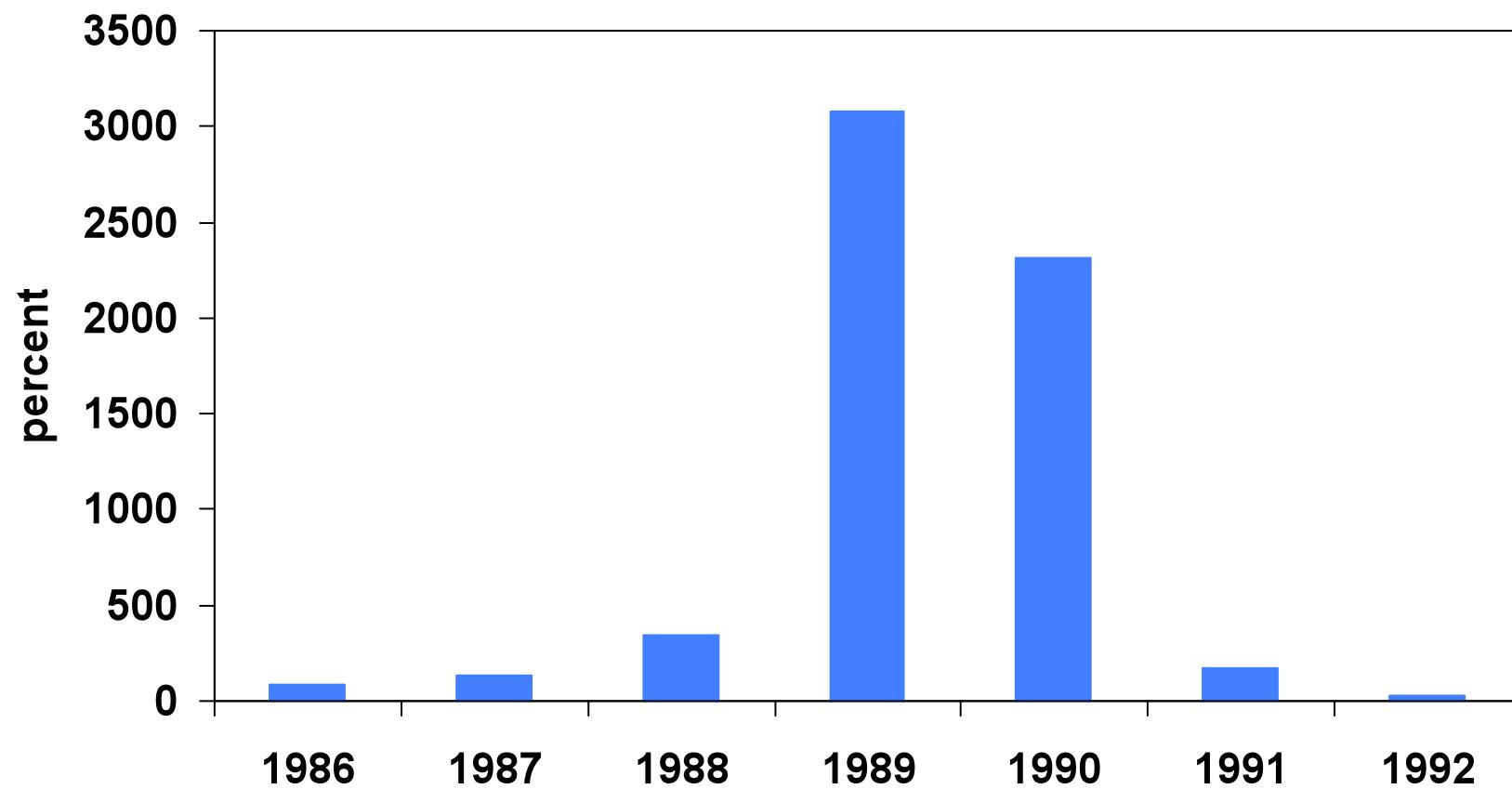
# US inflation (annual)

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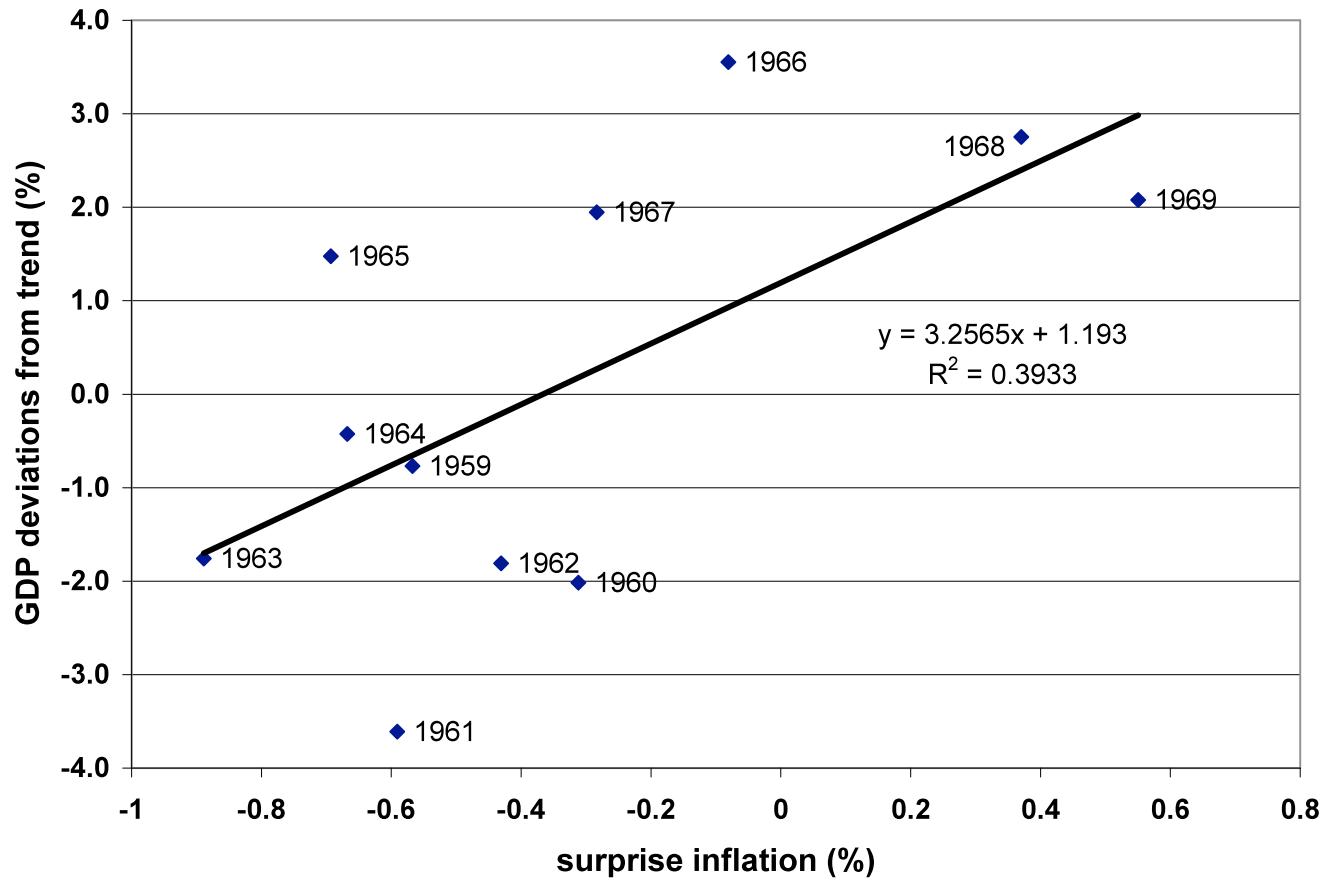
# Argentina inflation (annual)

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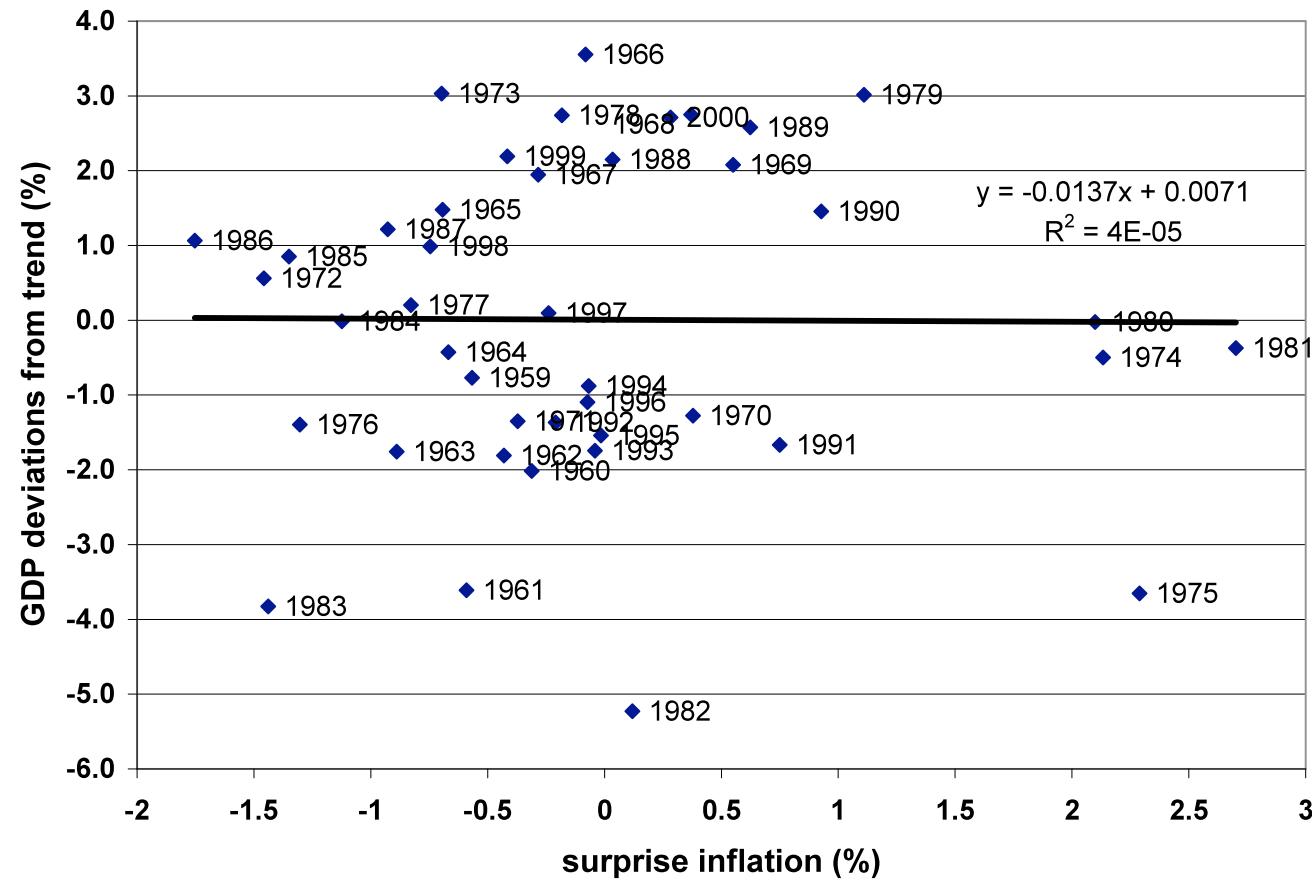
# Inflation and output: evidence

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# Inflation and output: evidence

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# About the course

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- Main data sources
  - Blackboard
  - Syllabus: on Bb
  - Announcements: on Bb
  - Course by session: on Bb

# About class notes

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- No textbook!
- Theoretical background to class discussion
- Executive summaries: more concise than a textbook
- Custom designed for this course
- Read them before class

# About your grade

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Participation	Outliers (+/-) and Tiebreakers
Assignments	33%
Exam 1	30%
Exam 2	37%

# About Graded Assignments

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- Four graded problem sets
  - Individual submission of work
    - Your own words
    - Your own calculations
    - List anyone in class with whom you worked  
(groups of up to four persons permitted)
  - Submit via BB homework dropbox
-

# Discussion Board

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- A way to
    - Participate
    - Keep up on current issues
  - Once during the semester, you will post a “lead” comment
    - Details in handout
-

# About help!

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- Email me ([kschoenh@stern.nyu.edu](mailto:kschoenh@stern.nyu.edu))
- Or contact the teaching assistant
  - Samantha Azzarello ([sa1777@nyu.edu](mailto:sa1777@nyu.edu))

# About helping me

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- Course works best if communication goes both ways
- If you have ideas, comments, questions, whatever:
  - Send an email
  - Speak to the teaching assistant
  - Post on the discussion board

# What have we learned today?

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As Haiku:

read notes before class

if you need help ask for it

Blackboard is knowledge

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# The Global Economy

## *Measurement*

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# Roadmap

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- Headline Data
  - Gross Domestic Product (GDP)
  - Inflation
- How are they measured?
- What are the basic facts?
- Why care about GDP?

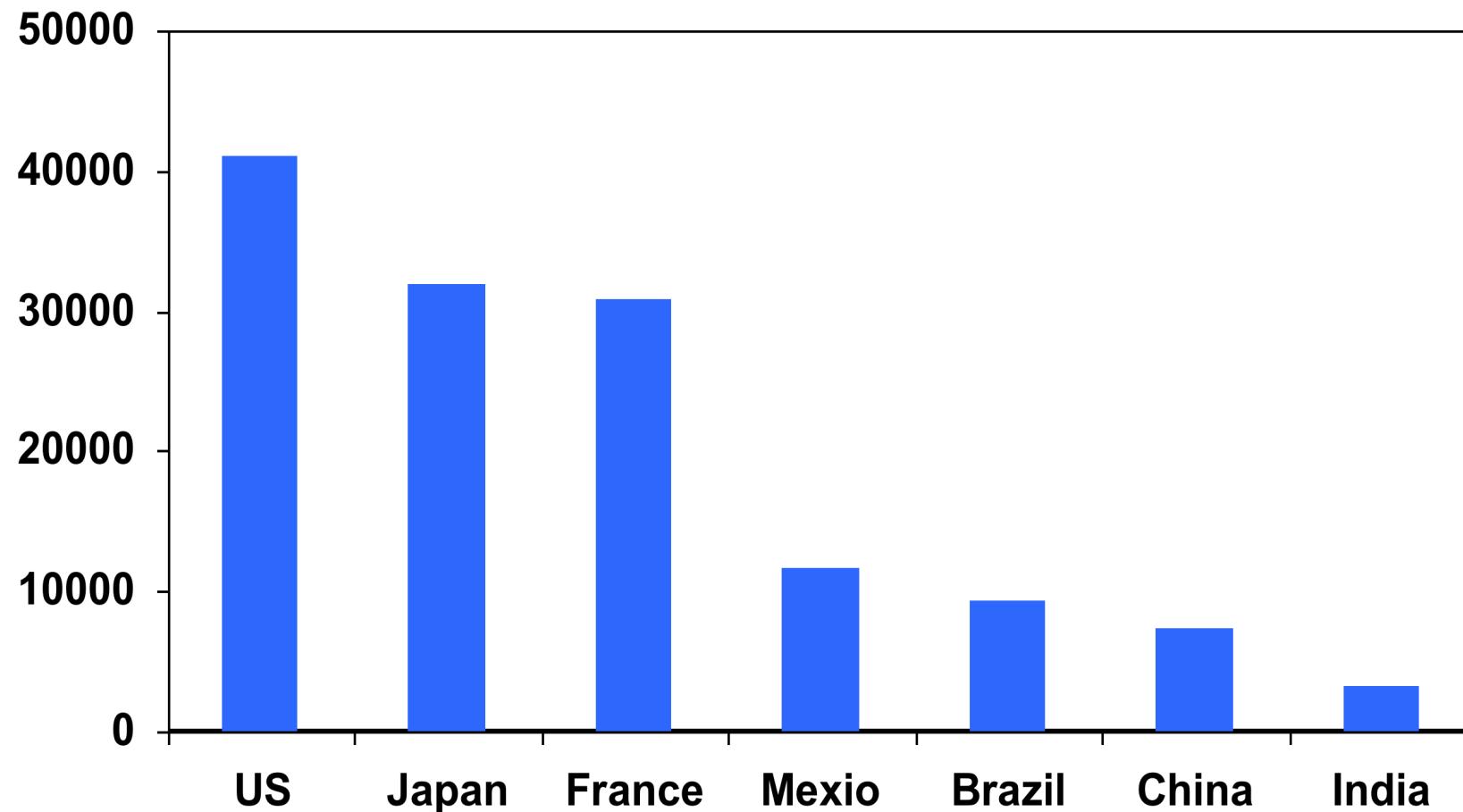
# Why worry about measurement?

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- Need a common vocabulary
- Small changes in definition make big differences
- Accurate forecasting requires consistent measurements

# GDP per capita (PPP adj, 2005 USD)

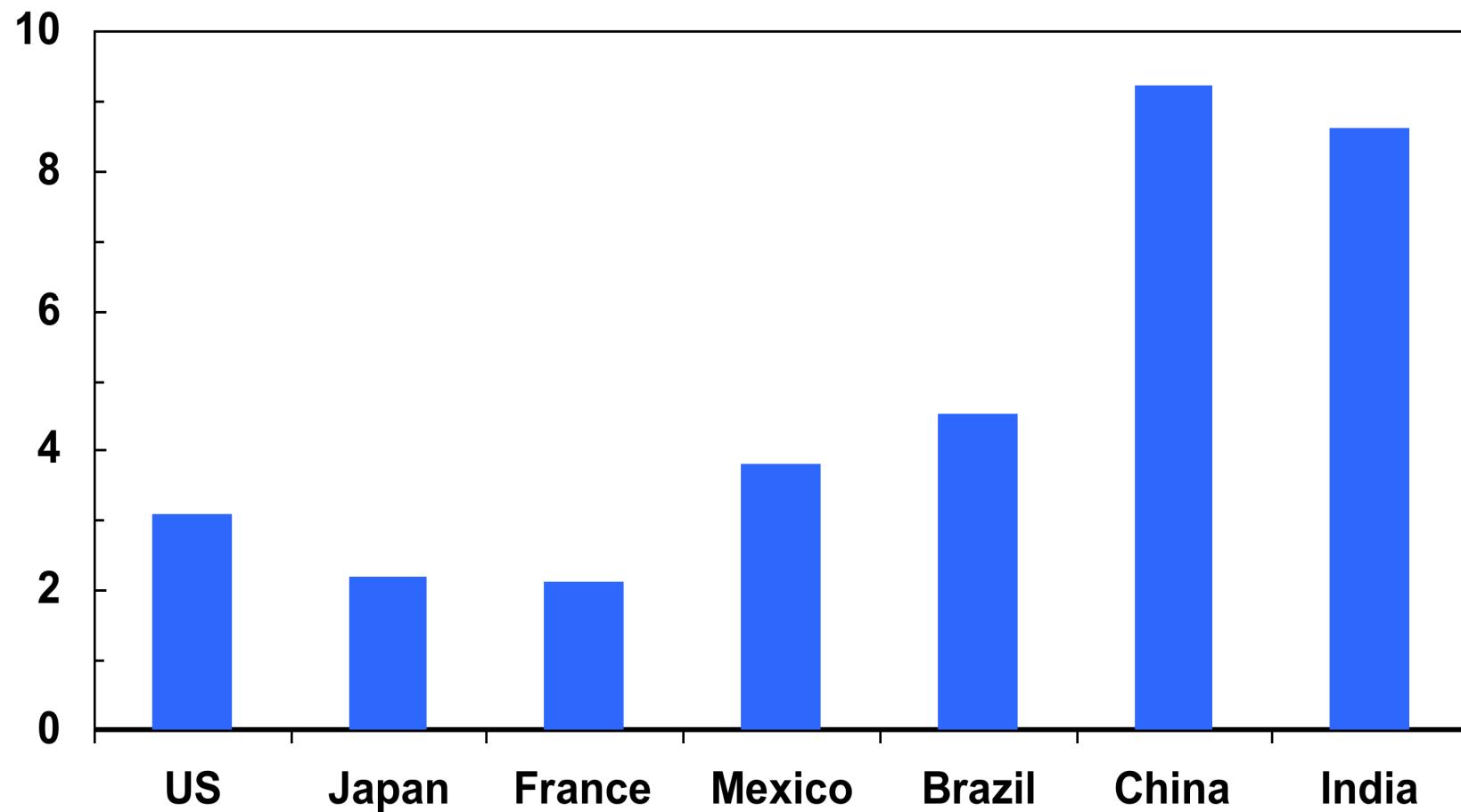
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# Growth of GDP

(forecast for 2012, in 2011)

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Source: OECD Economic Outlook, September 2011.

# GDP

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- GDP = Gross Domestic Product
- Total value of production in an economy
  - Sum of value-added by production units
- Equals:
  - payments to labor and capital (owners)
  - sales of final goods
  - (almost) income

# GDP identities

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## **Farmer**

Sales = \$10

Farm Rent = \$3

Net Income = \$7

Value Added =??

## **Brewer**

Sales = \$110

Factory Rent = \$30

Wages = \$70

Barley = \$10

Value Added =??

Landlord's income + wages + profits = ??

Value added farming + value added brewing = ??

Final production farming + final production brewing = ??

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# GDP identities

## Farmer

Sales = \$10

Farm Rent = \$3

Net Income = \$7

Value Added =??

## Brewer

Sales = \$110

Factory Rent = \$30

Wages = \$70

Barley = \$10

Value Added =??

Landlord's income +wages + profits = ??

$$(3+30) + (70) + (7) = \mathbf{110}$$

Value added farming + value added brewing = ??

$$(10) + (100) = \mathbf{110}$$

Final production of barley + final production of beer = ??

$$(0) + (110) = \mathbf{110}$$

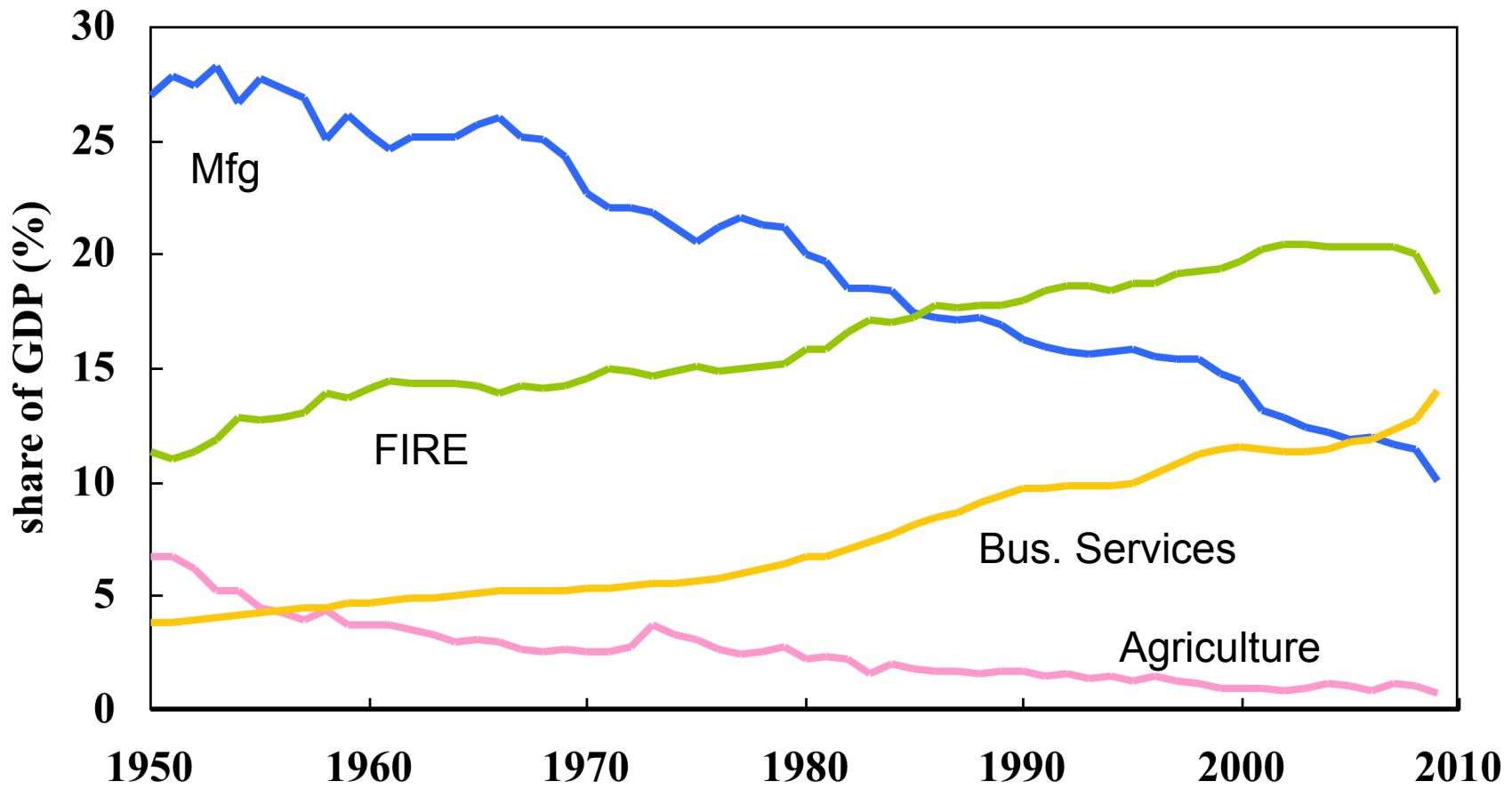
# GDP identities

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- Now try the extended example
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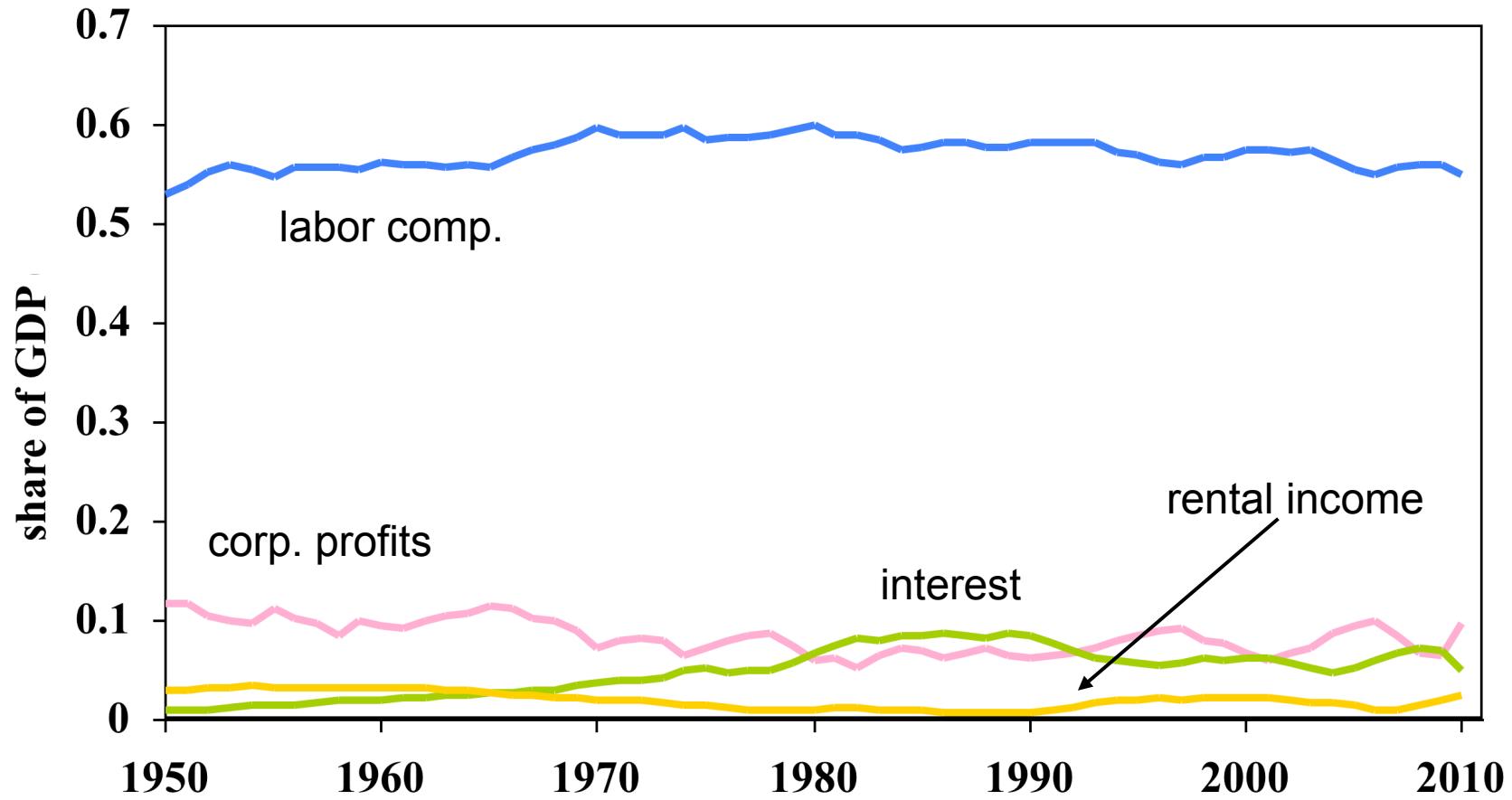
# GDP by industry

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# GDP by income type

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# Expenditure flows

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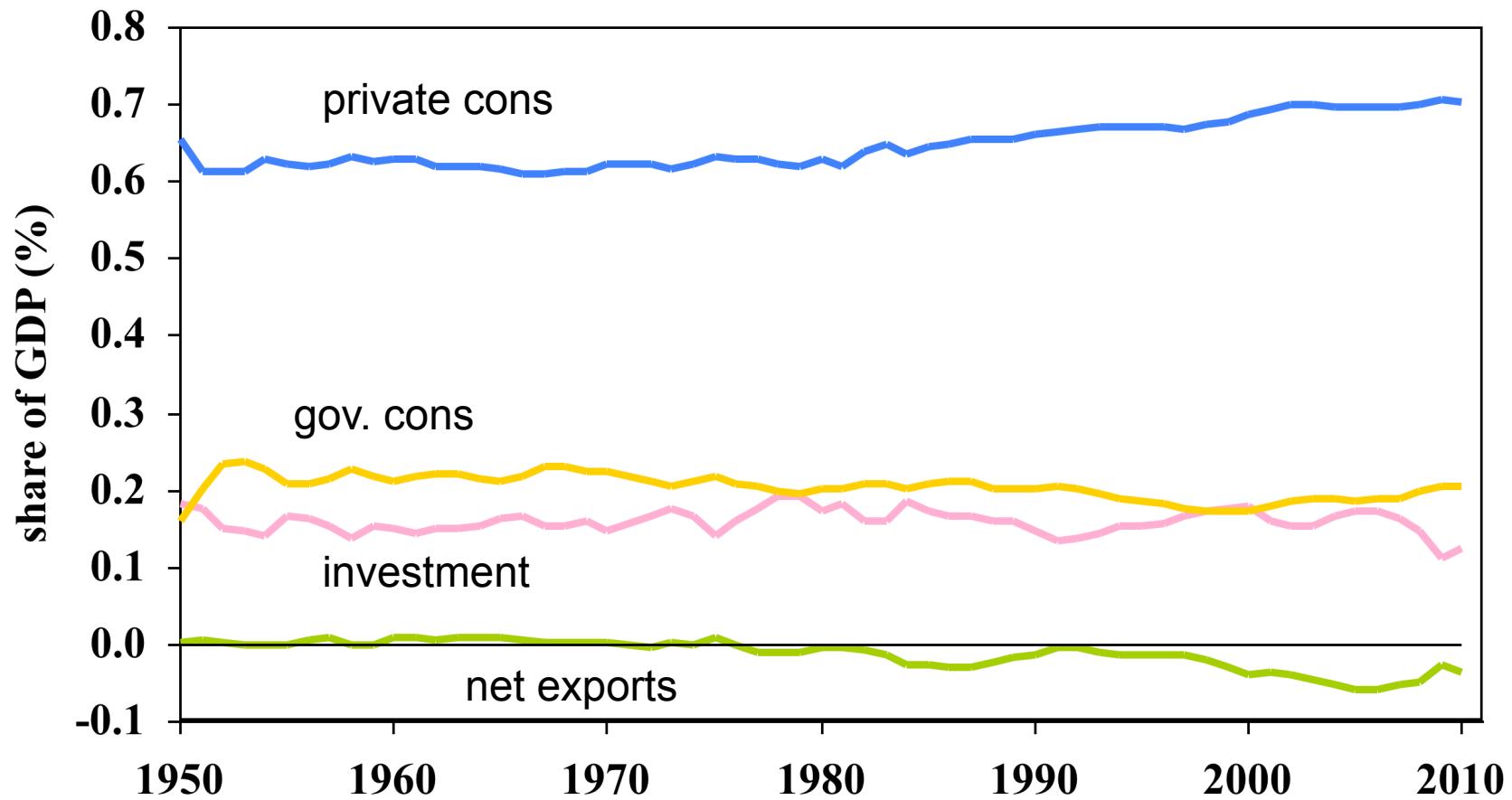
- Allocate GDP among purchasers of final goods:

$$Y = C + I + G + NX$$

- $Y = GDP$
- $C =$  sales to households
- $I =$  sales of capital goods to firms
- $G =$  purchases of goods and services by government
- $NX =$  net exports (net sales to other countries)

# GDP by expenditure

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# Savings flows I

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Allocate flows of assets:

$$Y - C - G = I + NX$$

$$S = I + NX$$

- $S$  = (gross) national saving (purchases of assets)
- $NX$  = net purchases of foreign assets

# Savings flows II

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- Allocate flows of assets:

$$(Y - C - T) + (T - G) = I + NX$$

$$S_p + S_g = I + NX$$

–  $T$  = taxes net of transfers paid by households to govt

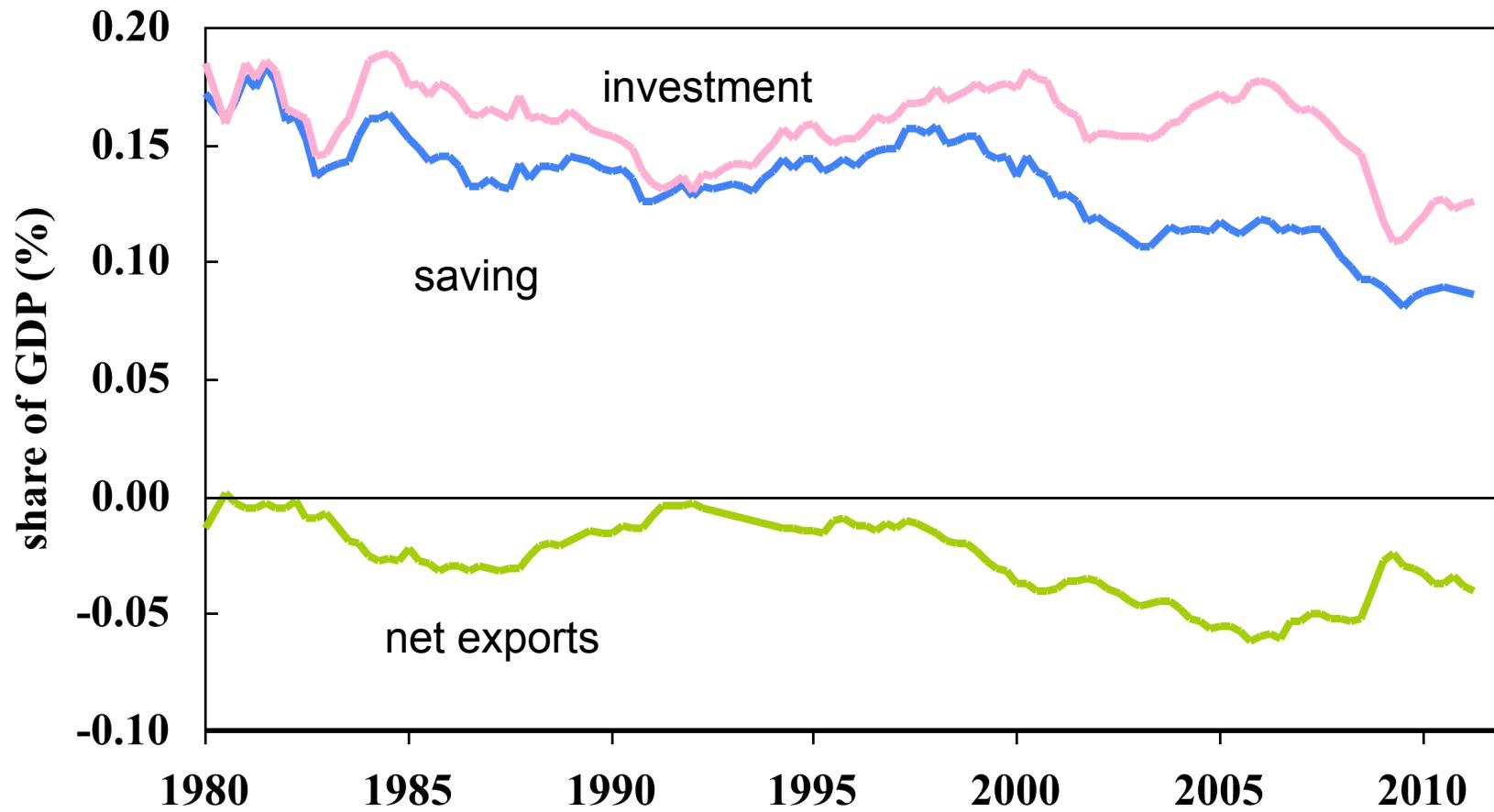
- Beware: many measures of saving

- Later in the course

– We'll include income and transfers with foreign countries and replace  $NX$  with the "current account"

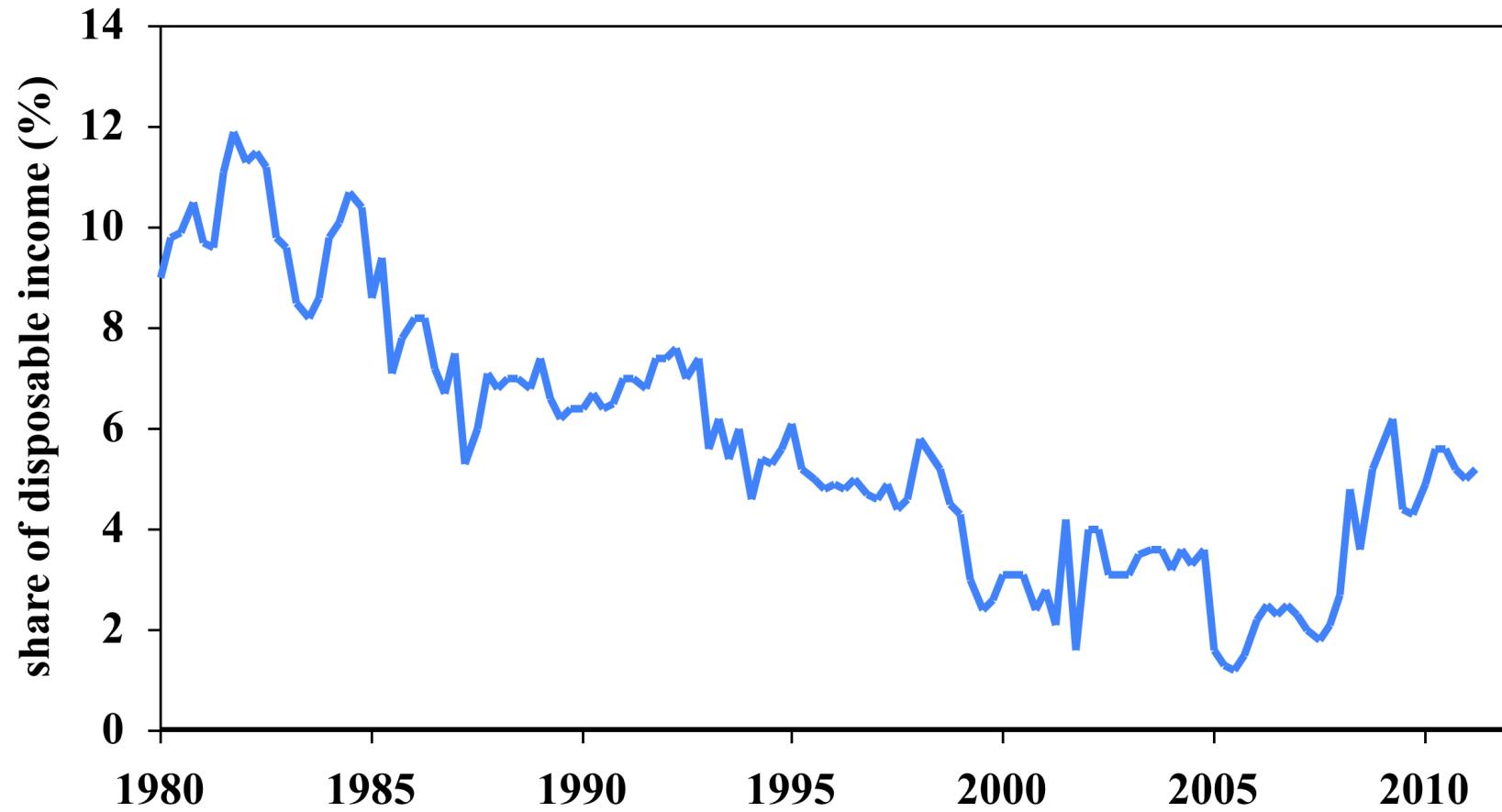
# Saving

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# Personal Saving

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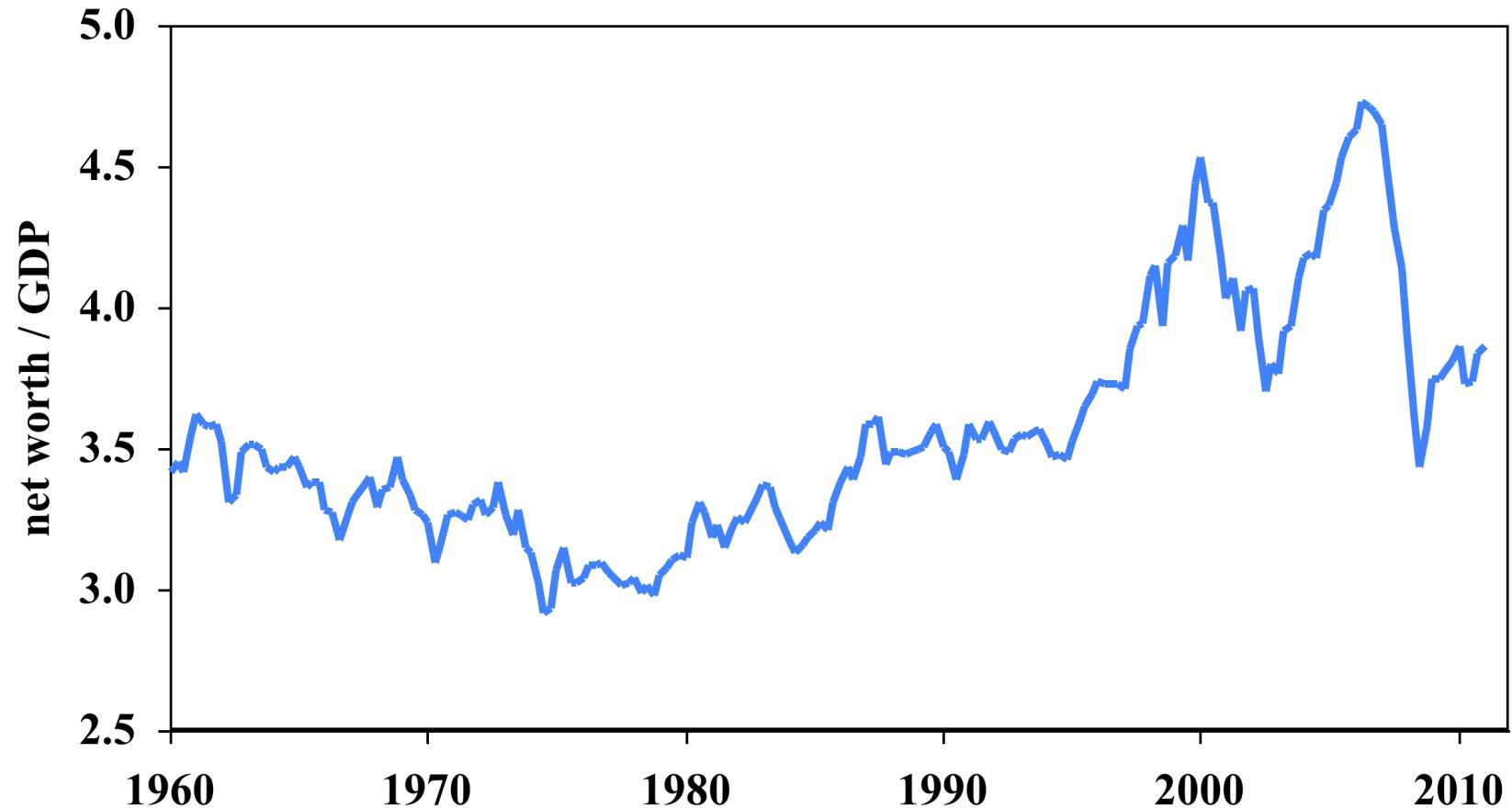


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Saving = personal income *minus* taxes *minus* personal consumption *plus* net transfers

# Household net worth

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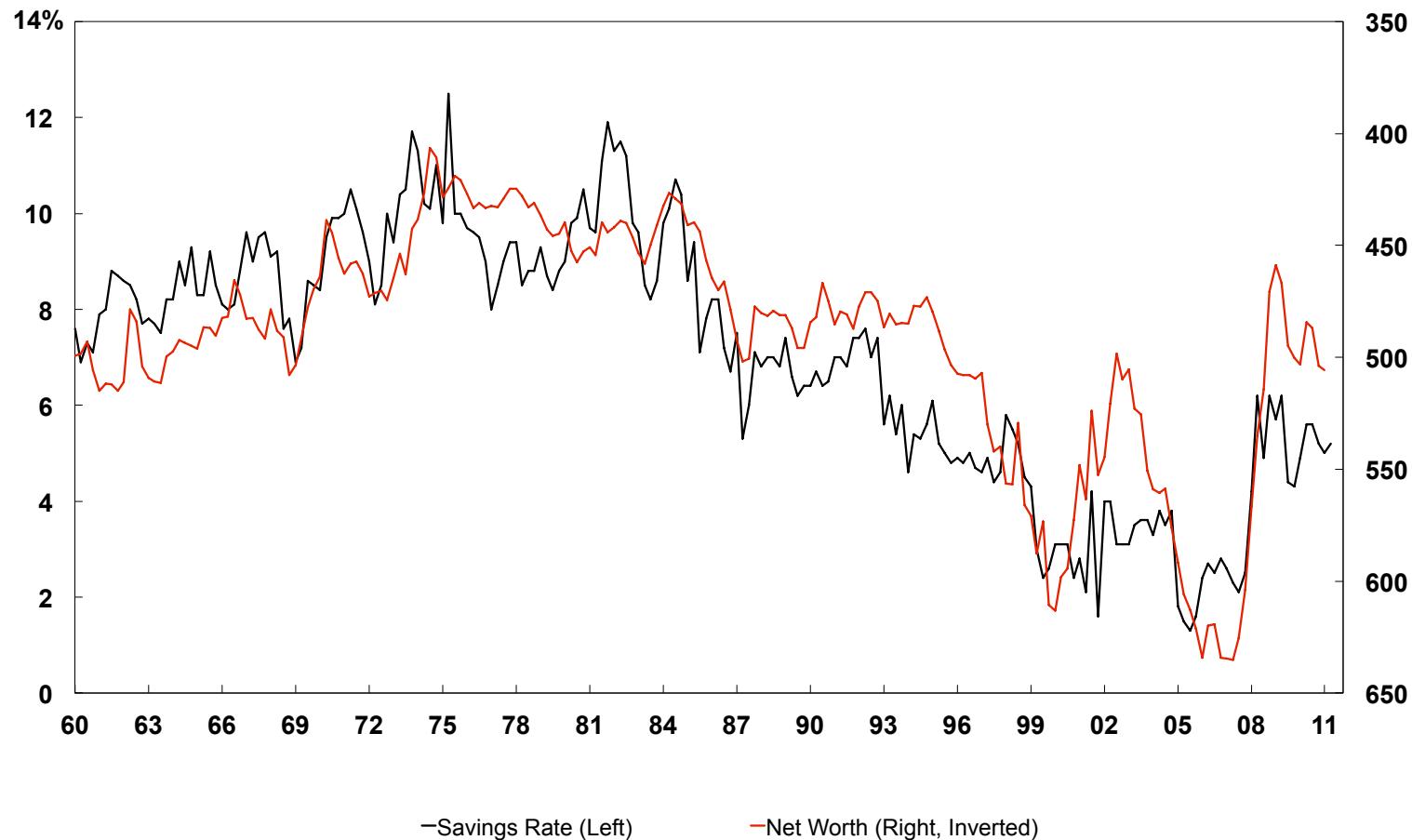


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Source: flow of funds

# Wealth and Savings

*Personal Savings Rate (Percent) and Household Net Worth as a Percent of Disposable Income, 1960-2Q 11*



Source: Bureau of Economic Analysis.

# What about prices?

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Nominal GDP (at current prices):

$$Y = P_{ipod} \times Q_{ipod} + P_{pizza} \times Q_{pizza} + P_{espresso} \times Q_{espresso} + \dots$$

What happens when prices change?

# Prices and quantities

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- GDP measures output at market prices
  - What if prices change?
    - If GDP rises, how much is higher quantity, how much higher prices?
  - Two measures
    - GDP at current prices
    - GDP at constant prices (e.g. 2005 prices)
  - Problem: many ways to do this
-

# Two ways to measure inflation

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- Approach 1 (“fixed weight/price”) (“Paasche”)
    - Compute GDP at current prices (“nominal GDP”)
    - Compute GDP at constant prices (eg, 2005) (“real GDP”)
    - Compute price deflator = ratio of first to second
    - Inflation is rate of change of deflator
  - Approach 2 (“fixed basket/quantity”) (“Laspeyres”)
    - Compute GDP at current prices (“nominal GDP”)
    - Compute price index as cost of a fixed “basket” of products
    - Compute real quantity as ratio of nominal quantity to index
    - Inflation is rate of change of index
-

# Example

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	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

What is the inflation rate?

What is real output growth?

# Fixed price method (GDP deflator)

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	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

Date	Nominal GDP	Real GDP	Price Deflator
2010			
2011			
Growth rate			

# Fixed price method (GDP deflator)

---

	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

Date	Nominal GDP	Real GDP	Price Deflator
2010	7.50	7.50	1.000
2011	13.00	8.00	1.625
Growth rate	73.3%	6.7%	62.5%

# Fixed price method (GDP deflator)

---

	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

Date	Nominal GDP	Real GDP	Price Deflator
2010			
2011			
Growth rate			

# Fixed price method (GDP deflator)

---

	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

Date	Nominal GDP	Real GDP	Price Deflator
2010	7.50	12.50	0.600
2011	13.00	13.00	1.000
Growth rate	73.3%	4.0%	66.7%

# How important was IT in the 1990s?

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- Features:
  - Output grew rapidly (60%/year)
  - Prices fell
  - Output quality improved
- Result: when base year was updated, real growth fell
  - Why?
- Approaches:
  - Chain weighting
  - Adjust prices for quality change (easier said than done)

# Fixed quantity method (CPI)

---

	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

Date	Price Index (2010 Basket)	Price Index (2011 Basket)
2010		
2011		
Growth rate		

# Fixed quantity method (CPI)

---

	Fish		Chips	
Date	Price	Quantity	Price	Quantity
2010	0.50	10	0.25	10
2011	0.75	12	0.50	8

Date	Price Index (2010 Basket)	Price Index (2011 Basket)
2010	$7.50/7.50*100=100.0$	$8.00/8.00*100=100.0$
2011	$12.50/7.50*100=166.7$	$13.00/8.00*100=162.5$
Growth rate	66.7%	62.5%

# Details, details

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- Not in GDP
  - Capital gains, (houses, equity, land, used cars)
  - Interest on government debt
- Government services are valued at cost
- Home production not counted
- Black market transactions not counted
- $GNP = GDP + \text{net foreign factor income}$ 
  - Difference a fraction of a percent in US
  - Larger for countries with substantial foreign investment

# Why worry about GDP?

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- The obvious
  - GDP is income
  - GDP is correlated with employment, investment,...
- The less obvious
  - GDP is highly correlated with human development
  - GDP is (inversely) correlated with poverty rates

# GDP and quality of life

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Per capita GDP: \$41,000  
Avg weekly hours: 35



Per capita GDP: \$31,000  
Avg weekly hours: 29

# What have we learned today?

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- GDP is: output, income, and expenditure
- Measuring real GDP is tricky
  - Fixed weight index
  - Fixed price index
  - Neither is perfect

# What have we learned today?

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- Composition by industry
    - Manufacturing shrinking
    - Services growing
  - Payments to factors
    - Labor share near 2/3, rest payments to capital
    - Shares constant
  - Expenditure
    - Private consumption: 60% to 70% of GDP
    - Private investment: Usually 15% to 20% of GDP
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# Something for the ride home

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- What *will* the FOMC do next week?
  - What is the big picture?
  - What are the issues?
- What *should* the FOMC do next week?