Econ 352 - Introduction to Macro

(See Williamson Ch. 1)

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What is Macro?

- Macro is micro with Σ's
- How do collections of microeconomic agents interact?
  - Why are rich countries rich, and poor countries poor (and why does this persist?)
  - Why are we so much richer now than in the past?
  - Why does total production and employment fluctuate so much?
  - Why is there inflation?
  - What causes unemployment?
- It used to be (pre-1970) that Macro was conjecturing equations, estimating them, no microfoundations (nonsense!)
- Now, (good) modern macro is firmly built up from micro principles
- Distinction now is in *topic* not models

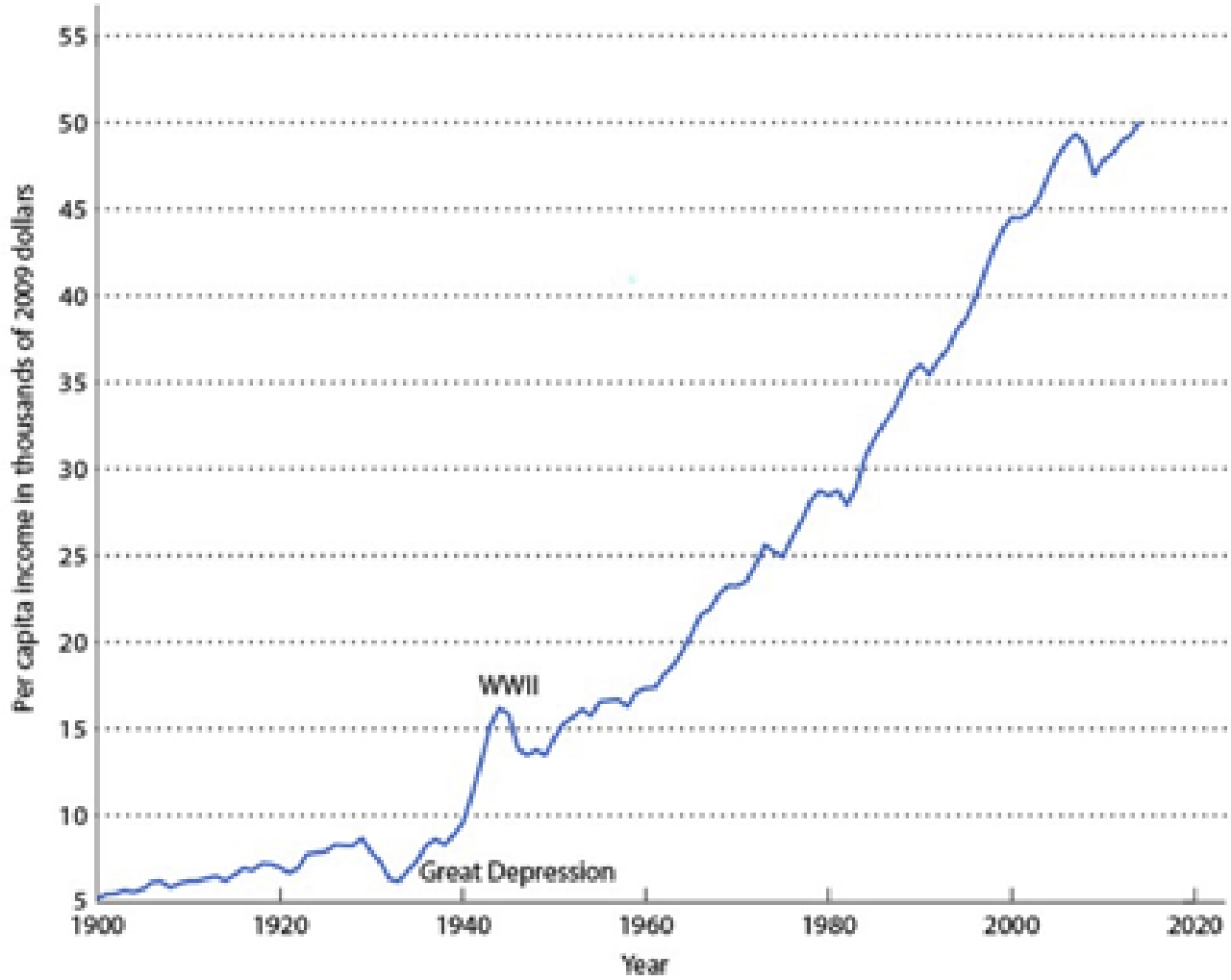
The rest of this lecture

- Give you a *preview* of the things macroeconomists think about, the data that raises many of our questions
- If a figure doesn't make sense to you, that's okay right now, we'll go in depth later

GDP

- GDP is the quantity of goods & services produced within a country's borders during some specified period of time (a flow!)
- Because all things produced are also paid for, it's also the quantity of income earned by those contributing to domestic output (preview: "income approach" vs. "expenditure")
- Let's take a look at U.S GDP over time

Real Per Capita GDP over Time



What do you notice?

GDP-Things to Notice

- Some comments:
  1. Great Depression was big!
  2. But growth dwarfs all recessions (an ordinary recession sends us back in time < 2 years)

- And some questions:
  1. What causes economic growth?
  2. Could economic growth continue indefinitely, or is there some limit?
  3. Is there anything that governments can or should do to alter the rate of economic growth?
  4. What causes business cycles?
  5. Could the dramatic increases and decreases in economic growth that occurred during the Great Depression and World War II be repeated?
  6. Should governments act to smooth business cycles?

Thinking more about GDP

- GDP appeared to display exponential growth
- Constant growth: $y_{t+1} = (1 + g)y_t$
- Taking natural logs of both sides

$$ln(y_{t+1}) = ln((1 + g)y_t)$$

- Log of product is sum of logs:

$$ln(y_{t+1}) = ln(y_t) + ln(1 + g)$$

- Difference of logs is ratio, add/subtract one:

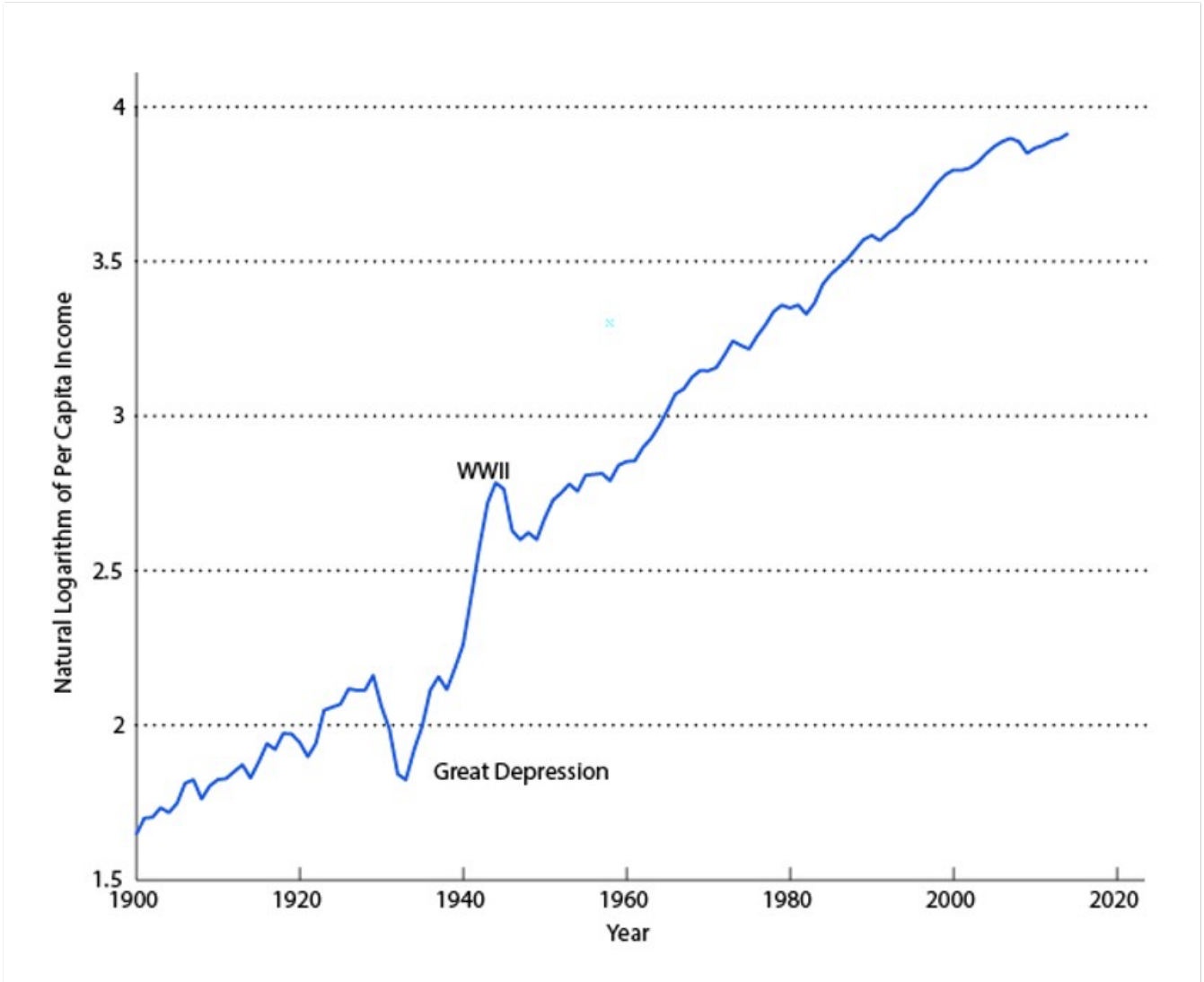
$$ln(y_{t+1}) - ln(y_t) = ln(1 + g)$$

- Use the fact that $\log(1 + \epsilon) \approx \epsilon$, for ϵ small:

$$ln(y_{t+1}) - ln(y_t) \approx= g$$

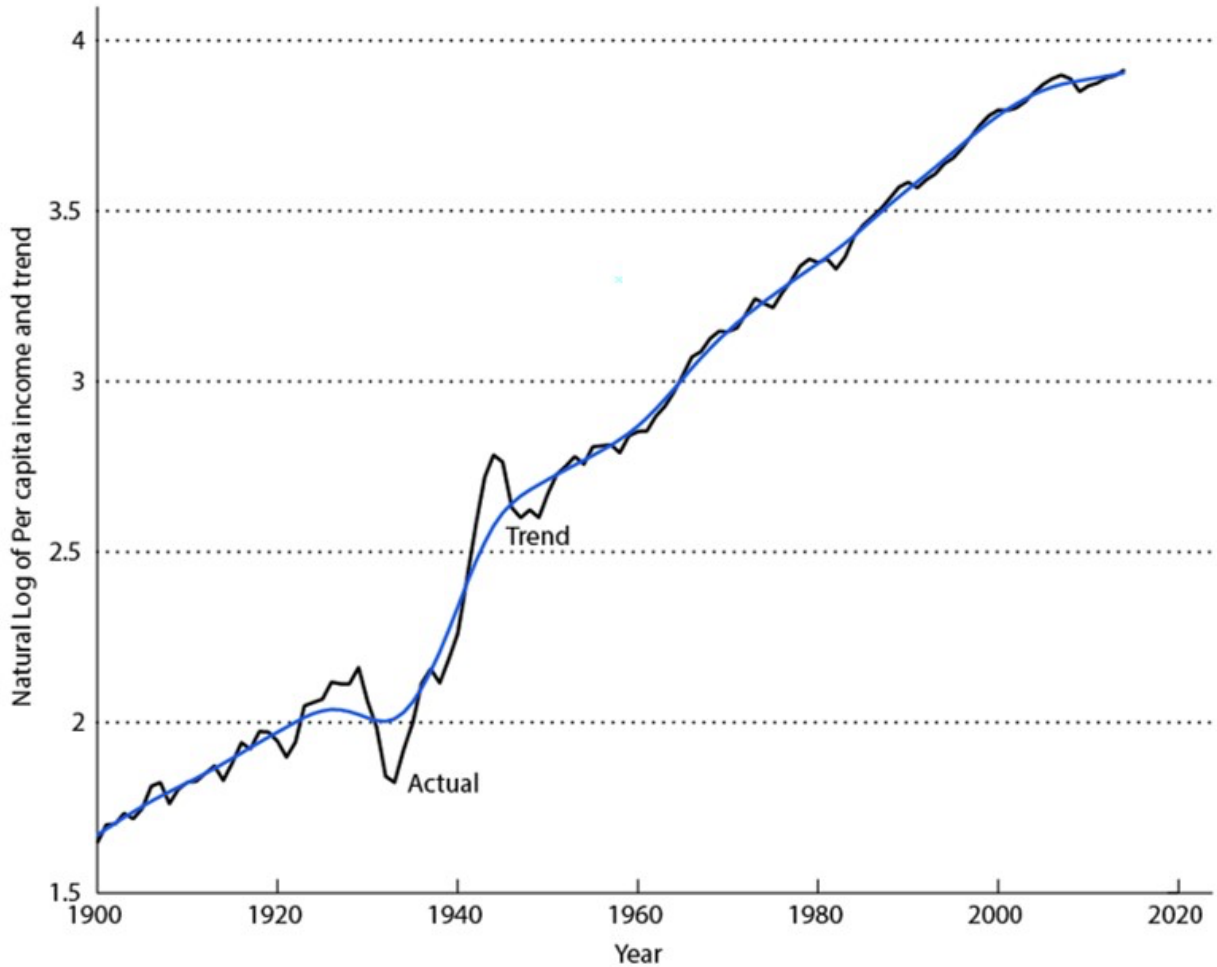
- Result Natural log of GDP over time is linear if constant exponential growth
- Let's graph it!

Log Real Per Capita GDP over Time



Takeaways: pretty linear, plus some vibrations! Let's try a trend

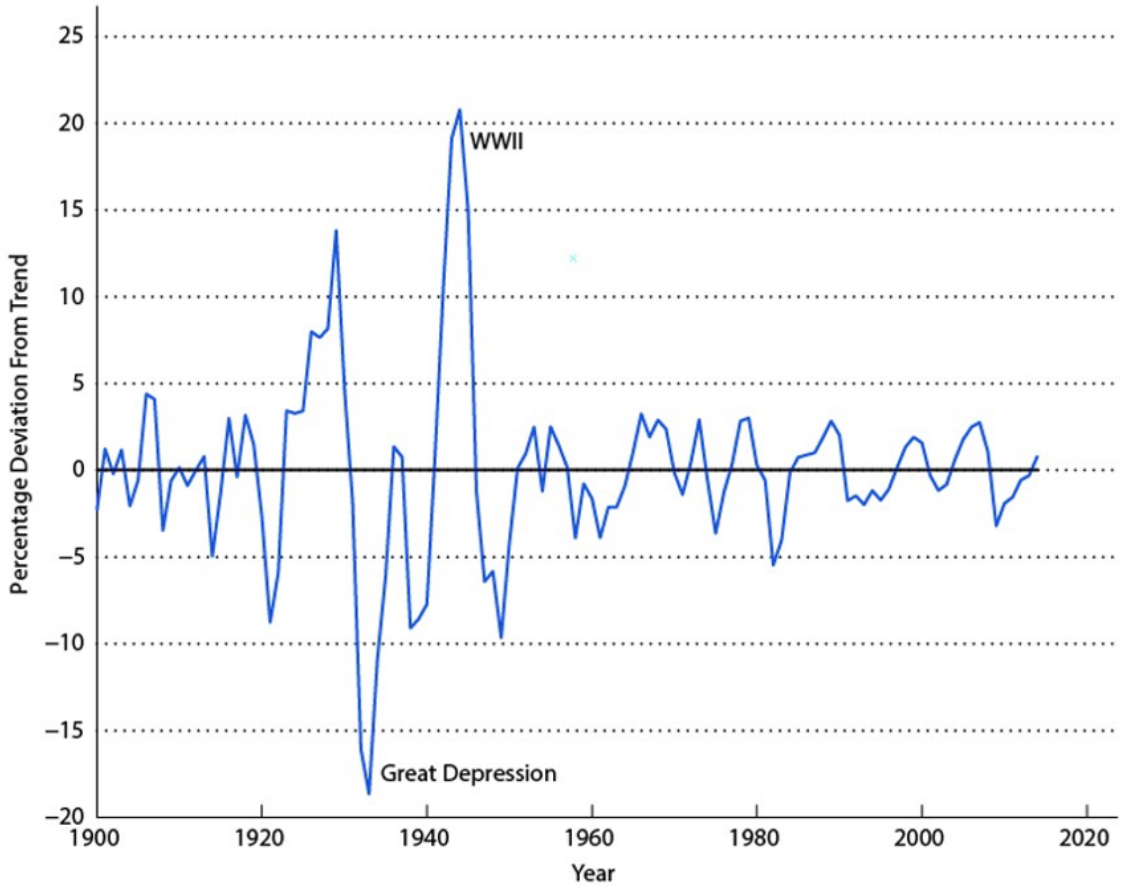
Log Real Per Capita GDP over Time + trend



We can decompose deviation into

$$deviation = Data - Trend$$

Deviations in Log Real Per Capita GDP over Time from Trend



Post WWII fluctuations fairly muted

How do we organize our thinking?

- We want to do science to it (e.g. testable hypotheses)
  - But not the modern science where you deliberately lie to people and stuff
- But can't run experiments nooooo wat do
- Astronomy, meteorology have a method: model it
- Build up model, find testable implications (both micro and macro)
- Start from simple idea, build up

Macro Model Building

- We need:
  - Consumers & firms interacting in economy
  - Set of goods consumers wish to consume
  - Consumer's preferences over goods
  - Technology available to firms for producing goods
  - Resources available
- With these pieces, we start putting things togeher. Assume for instance
  - Consumers and firms optimize: they don't randomly consume or produce
  - Implies economy is in a "competitive equilibrium"
- Competitive equilbrium: goods are bought and sold on markets in which consumers and firms are price takers: they don't act as though their actions have an affect on market prices (though they may)
- Once we build the model, we can ask it questions: can it explain the data?
- Once it can explain the data: can it forecast the data? What would the world look like if we changed policy?

Microeconomic Principles

- Building up from micro principles very important in macro!
- But why?
- Akin to building up engineering from molecules: is that really necessary?
- Yes! In this world, when government changes rules, molecules change their behavior
- Fundamental idea in Macro is the "Lucas Critique:" macroeconomic policy analysis can only be done sensibly if microeconomic behavior is taken into account

Disagreement in Macroeconomics

- Most of what we learn in macro is not contested (you only hear about the contested parts!)
- Solow Growth model and endogenous growth models is a way of showing what matters and what doesn't in growth, and aren't very controversial
- However, business cycle modeling is!
  - Old Keynesian: wages and prices are sticky in short run, and government intervention can correct inefficiencies (but non-micro)
  - Modern real business cycle theory: real fluctuations can be (may be) optimal or responses to real events and government intervention is inefficient or even harmful
  - New Keynesian: try to integrate the two!

Twelve Key Concepts in Williamson

1. What is produced and consumed in the economy is determined jointly by the economy's productive capacity and the preferences of consumers
2. In free market economies, there are strong forces that tend to produce socially efficient economic outcomes
3. Unemployment is painful for individuals, but is a necessary evil in modern economies
4. Improvements in a country's standard of living are brought about in the long run by technological progress
5. A tax cut is not a free lunch
6. Credit markets and banks play key roles in the macroeconomy

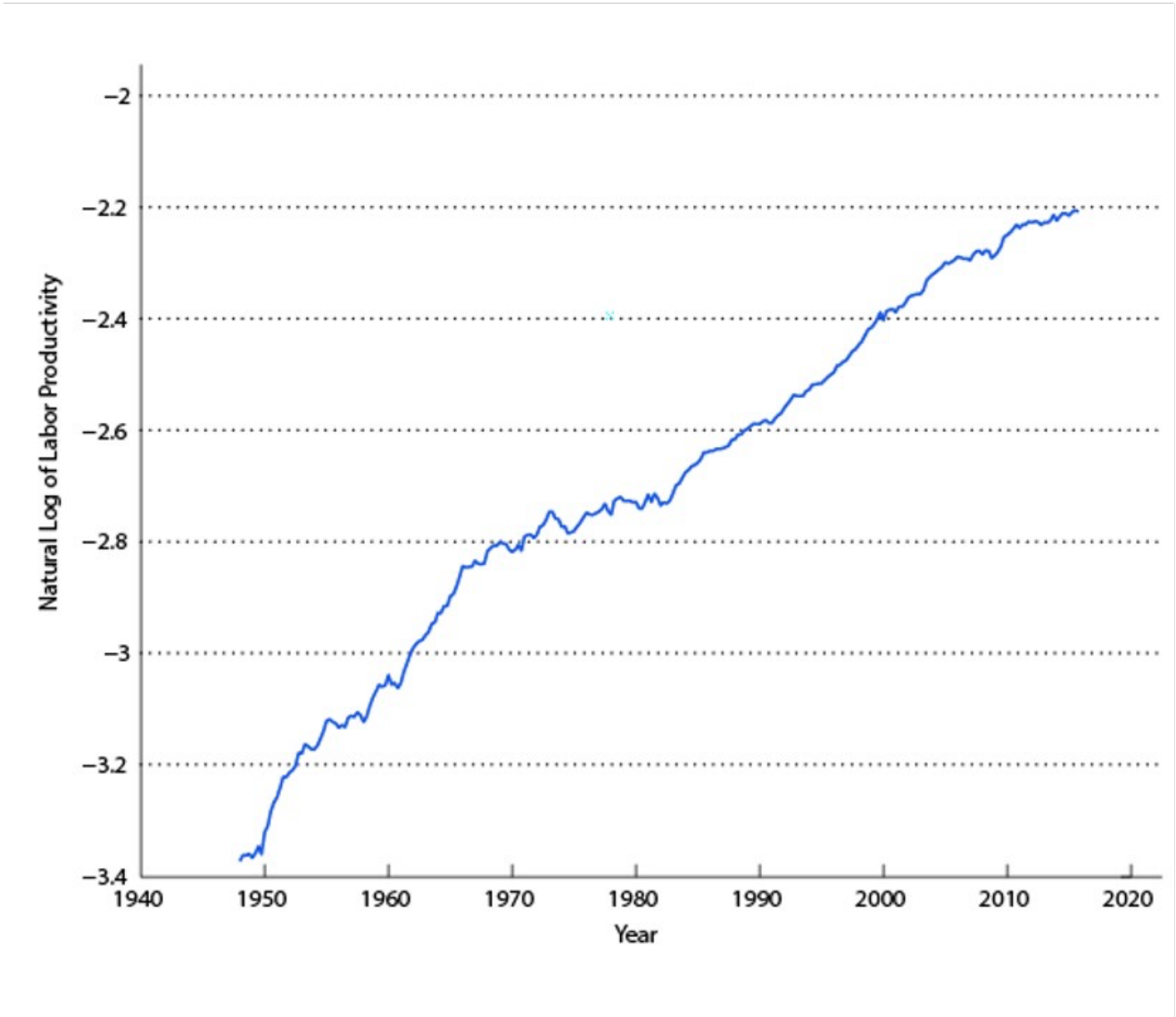
Twelve Key Concepts in Williamson

7. What consumers and firms anticipate for the future has an important bearing on current macroeconomic events
8. Money takes many forms, and society is much better off with it than without it. Once we have it, however, changing its quantity ultimately does not matter
9. Business cycles are similar, but they can have many causes
10. Countries gain from trading goods and assets with each other, but trade is also a source of shocks to the domestic economy
11. In the long run, inflation is caused by growth in the money supply
12. If there is a short-run trade-off between output and inflation, that has very different implications relative to the relationship between nominal interest rates and inflation

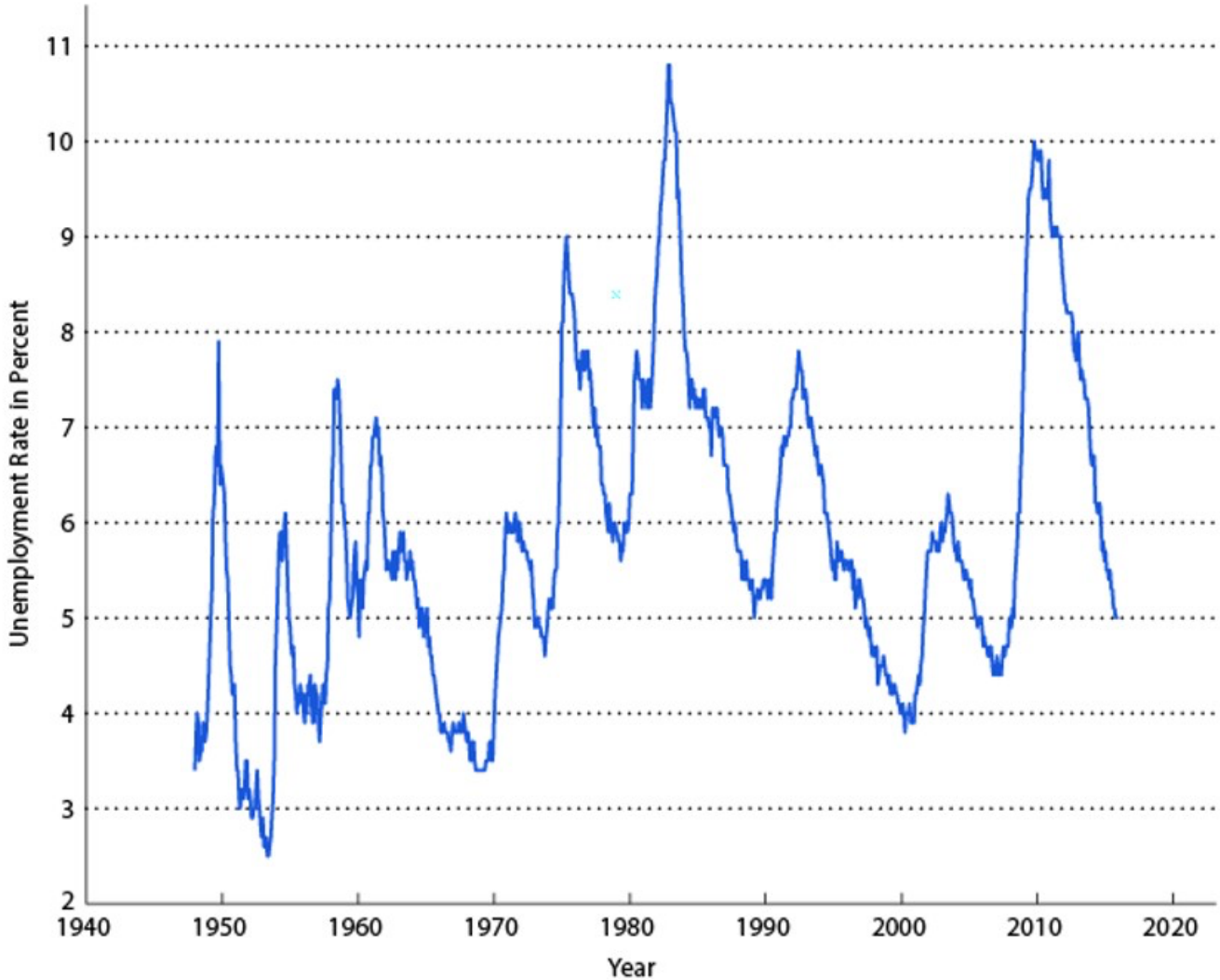
Current Macroeconomic Events

- We looked at GDP, let's look at some of the other macroeconomic time series we want to understand!

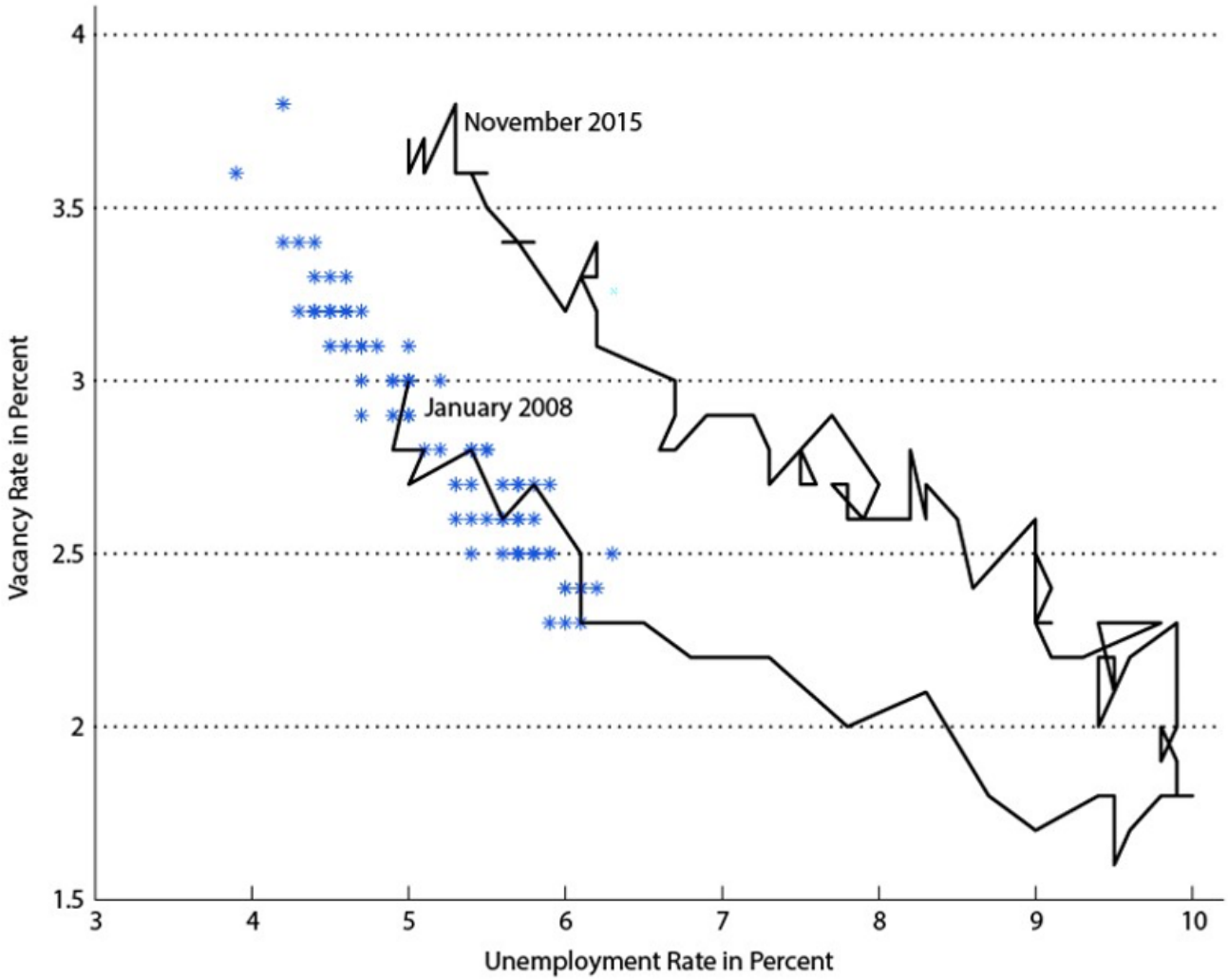
Productivity



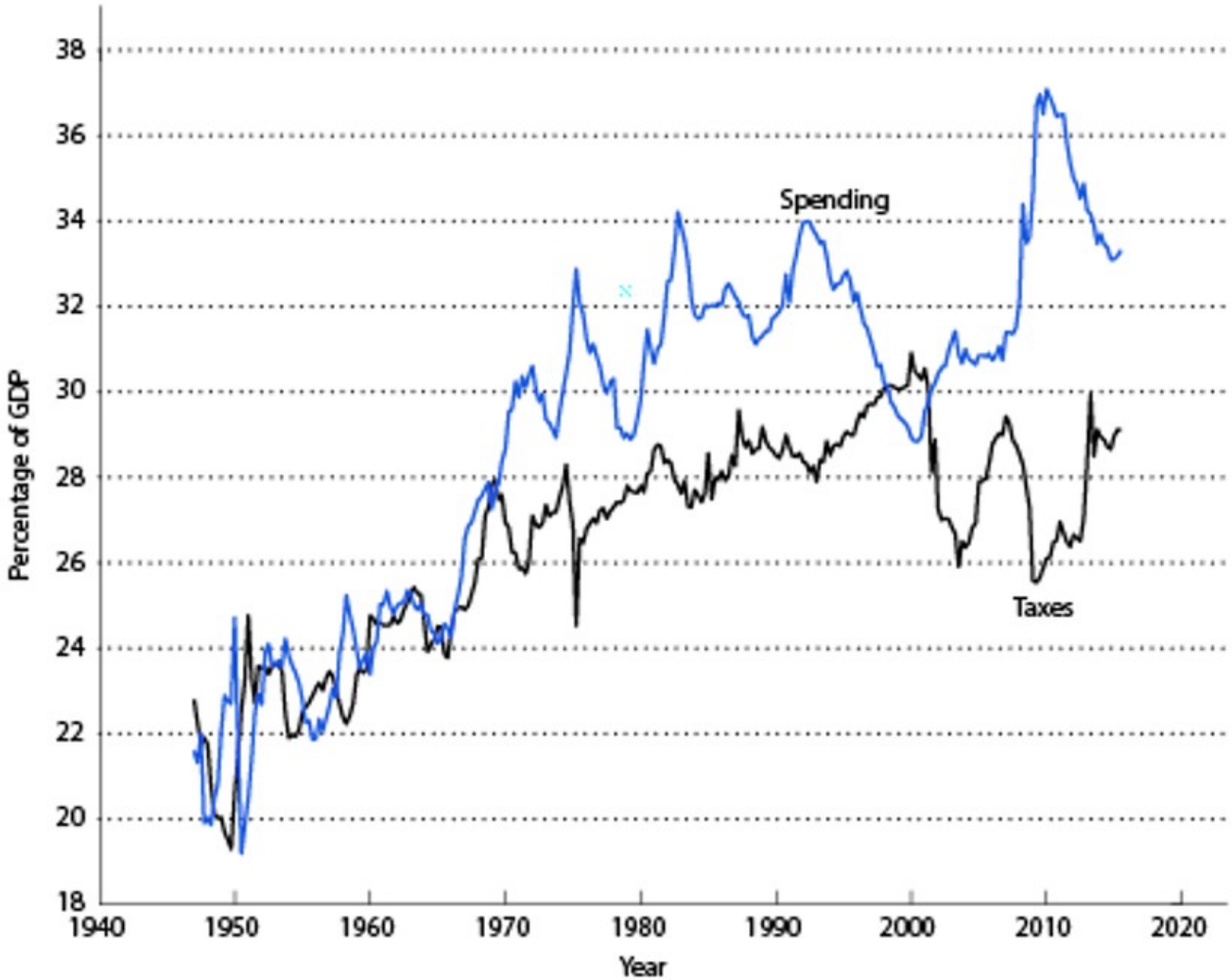
Unemployment Rate



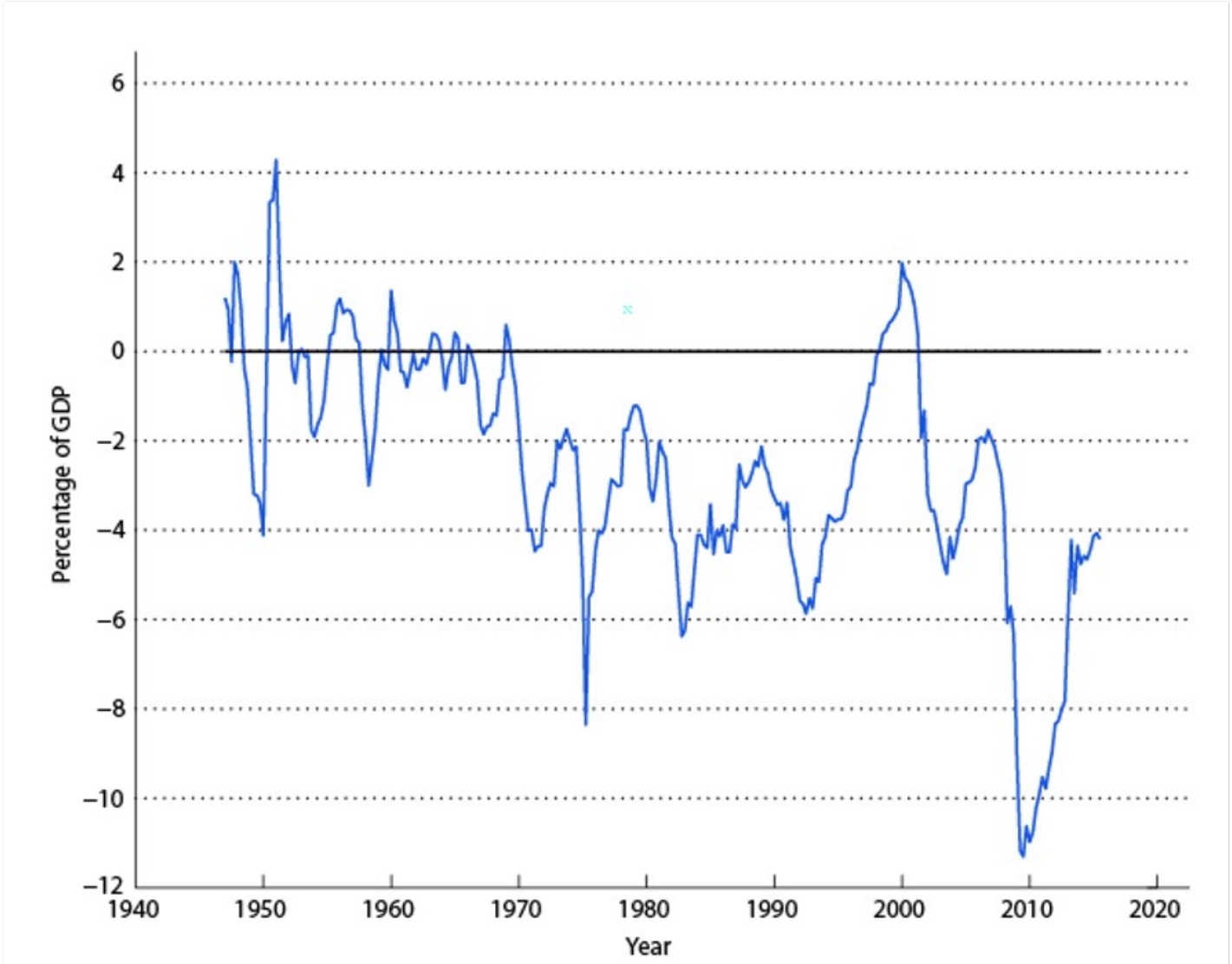
Unemployment and Vacancies



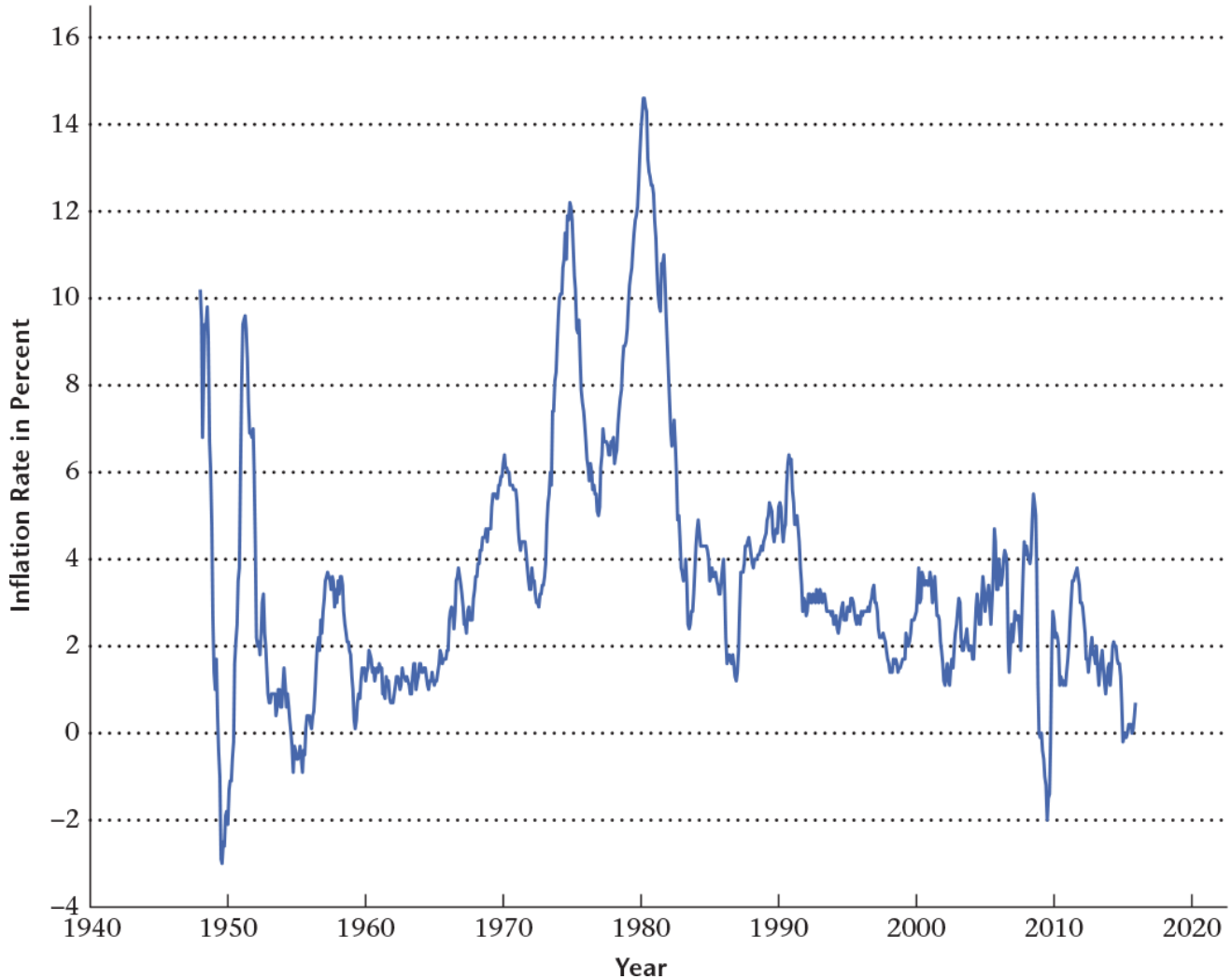
Taxes and Spending



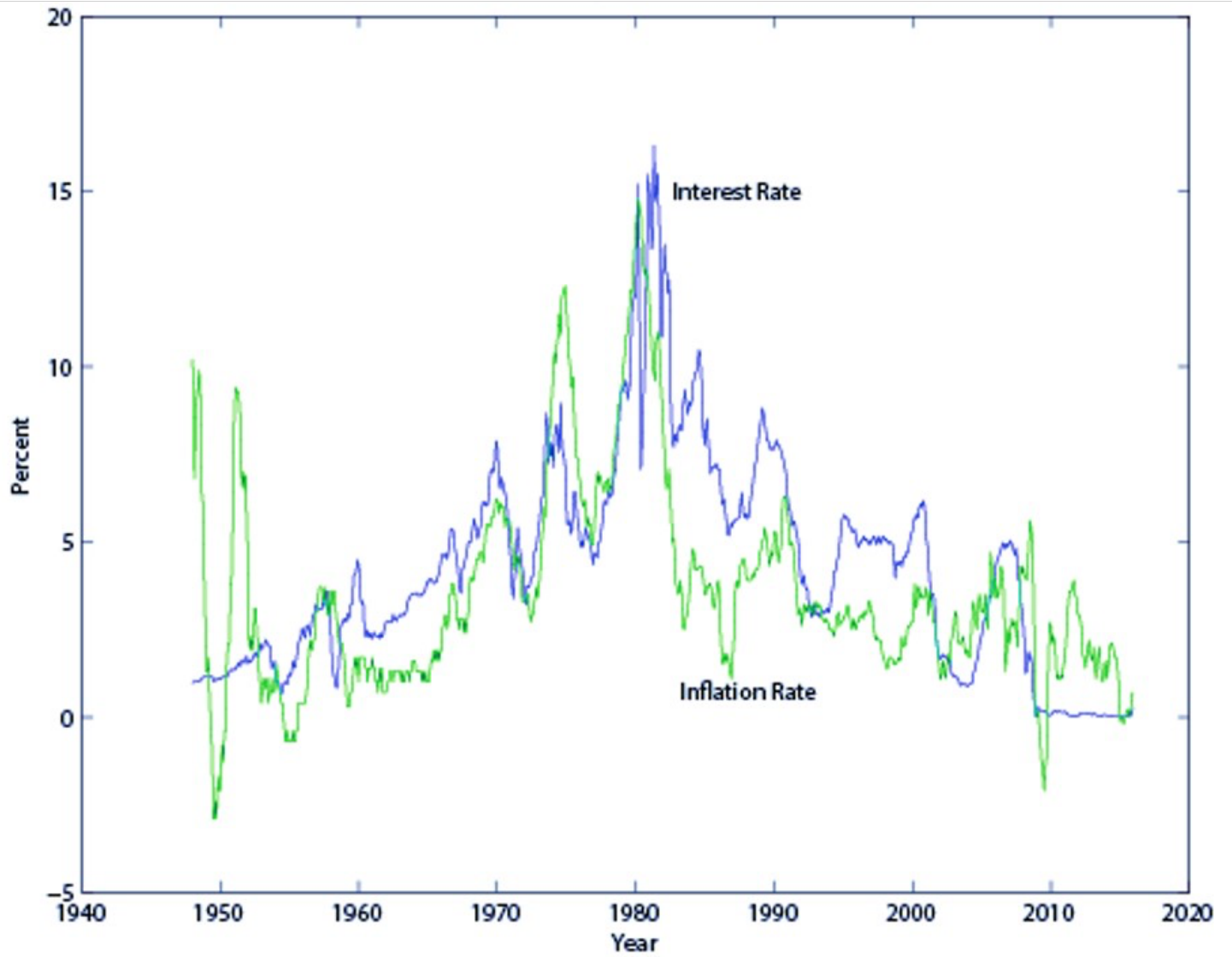
Government Surplus



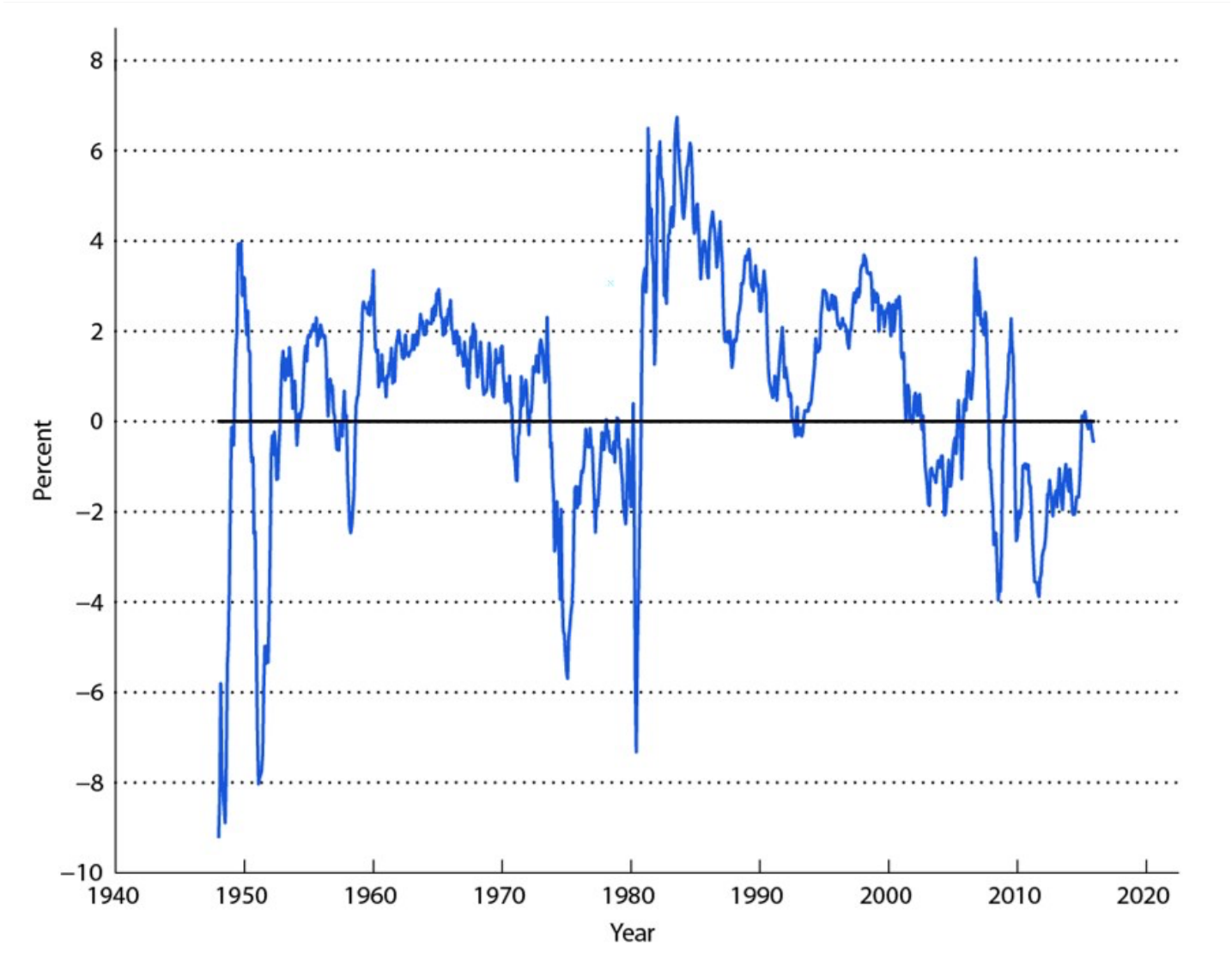
Inflation Rate



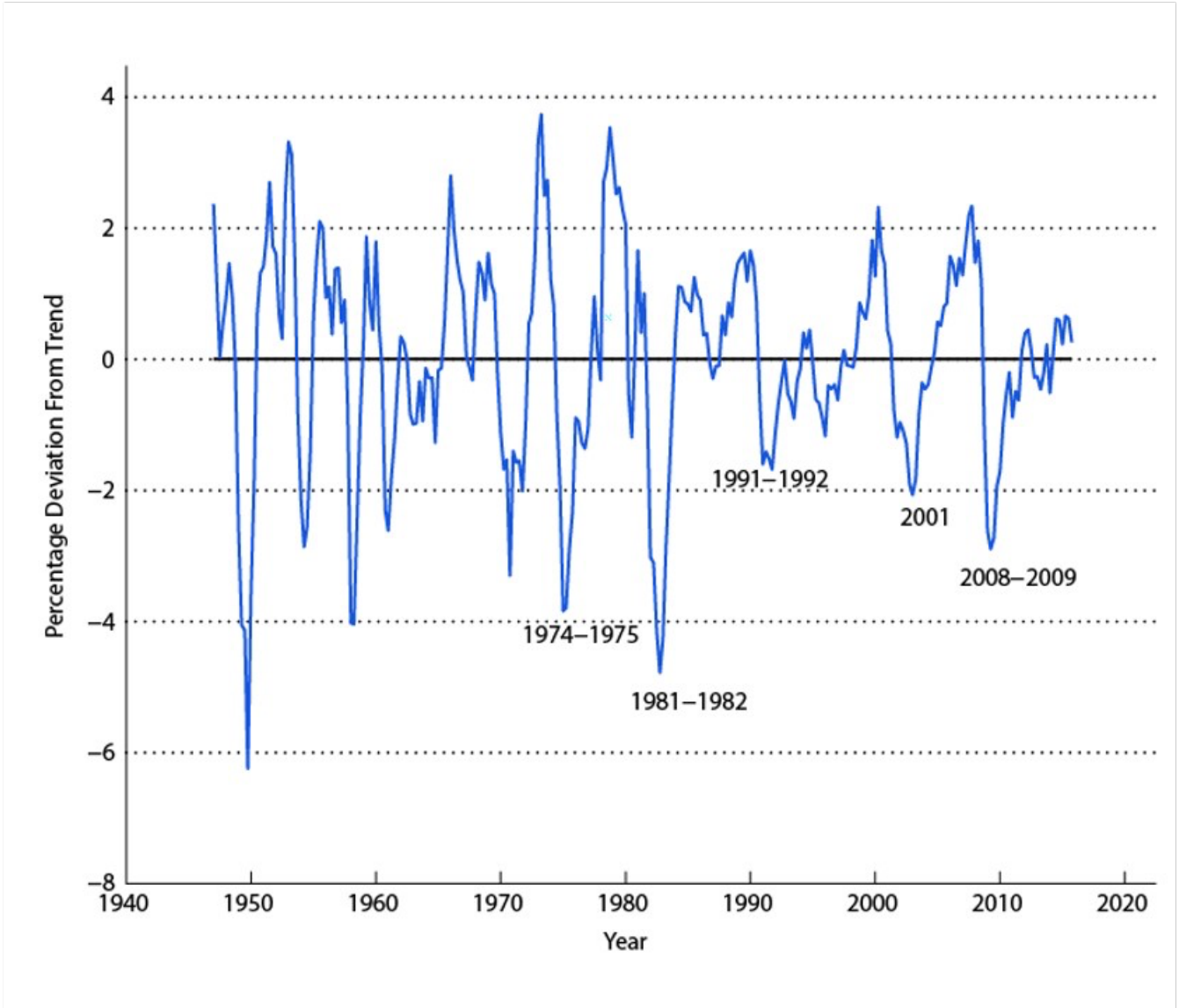
Nominal Interest Rate and Inflation Rate



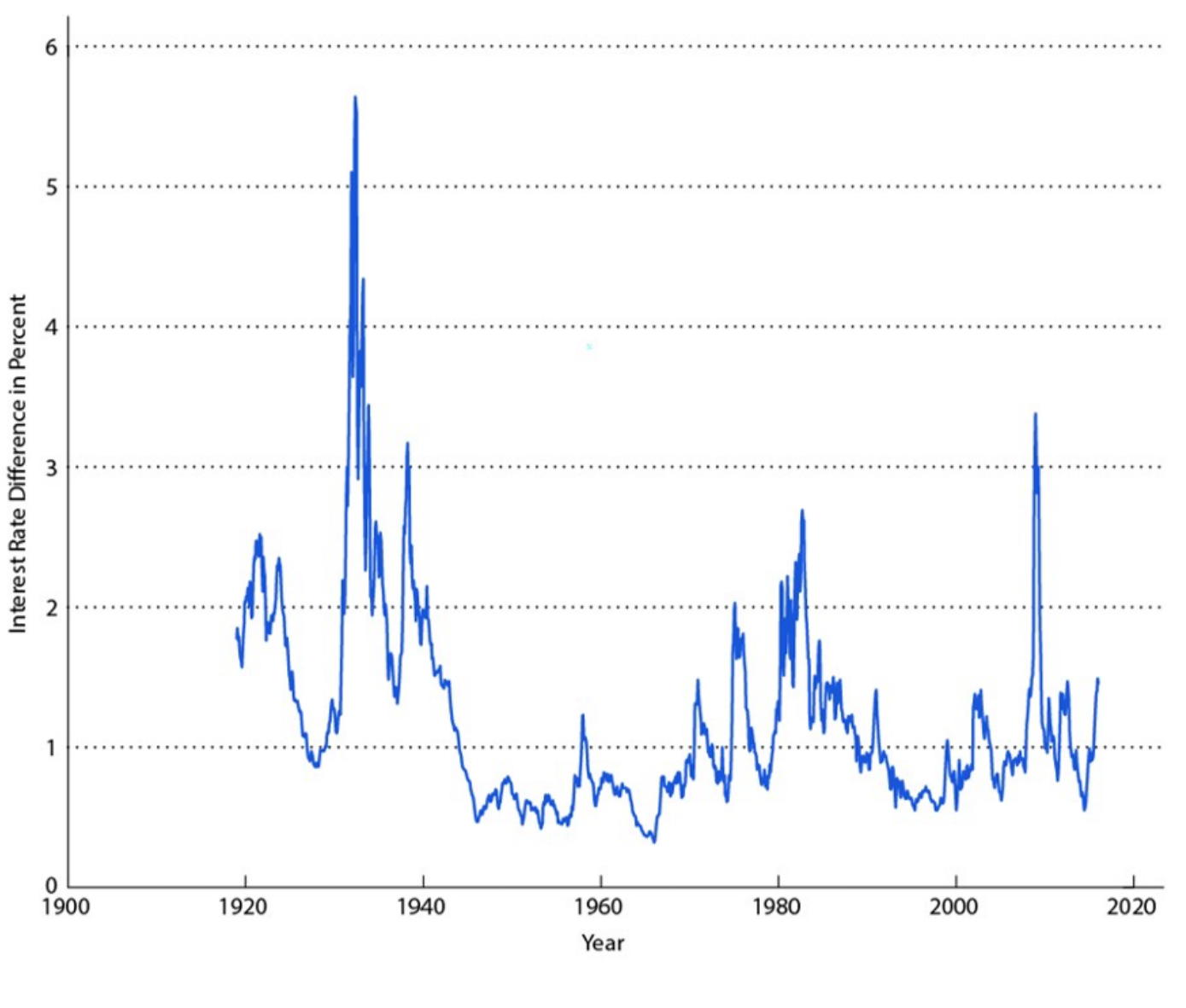
Real Interest Rate



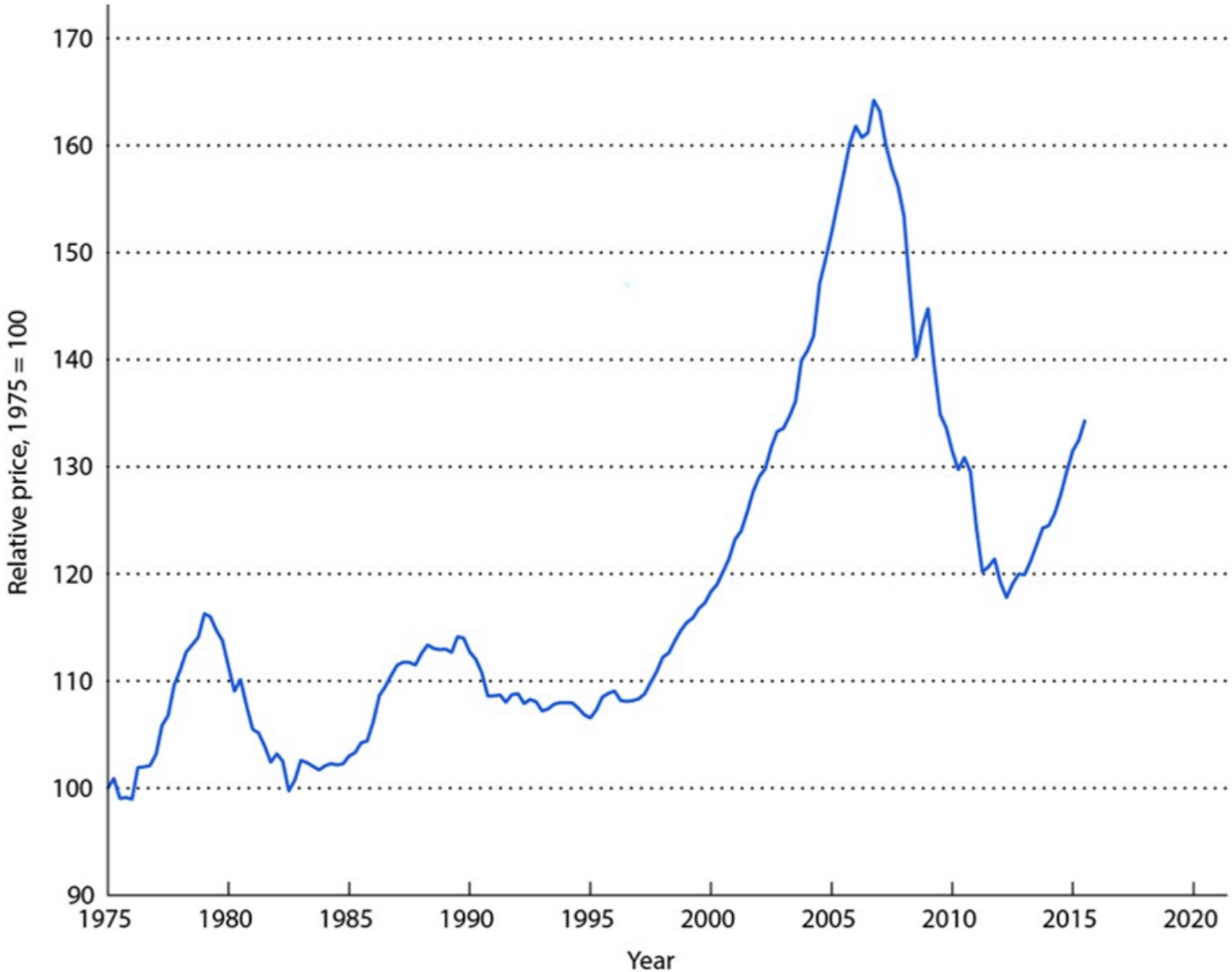
Business Cycles in U.S.



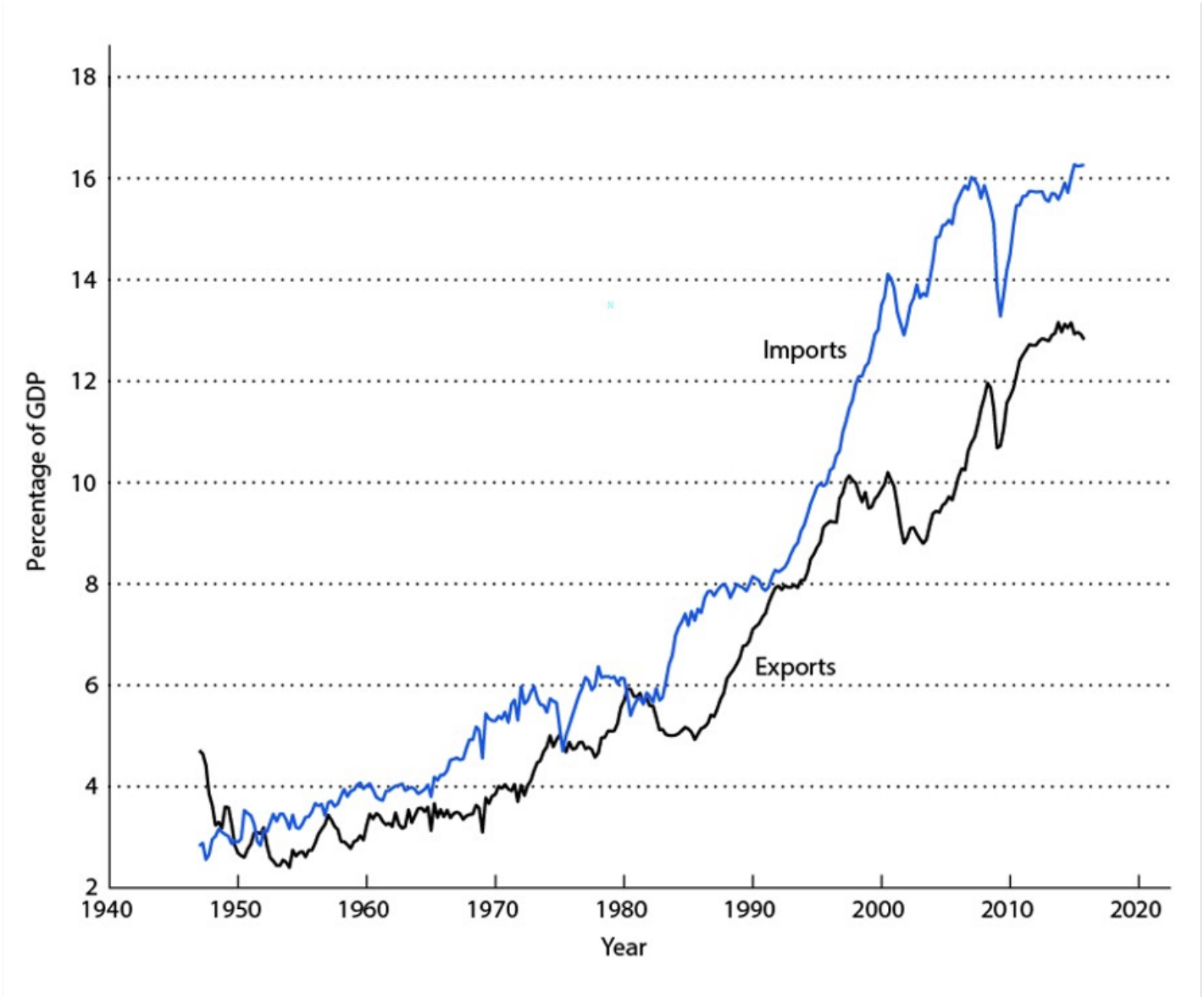
Interest Rate Spread



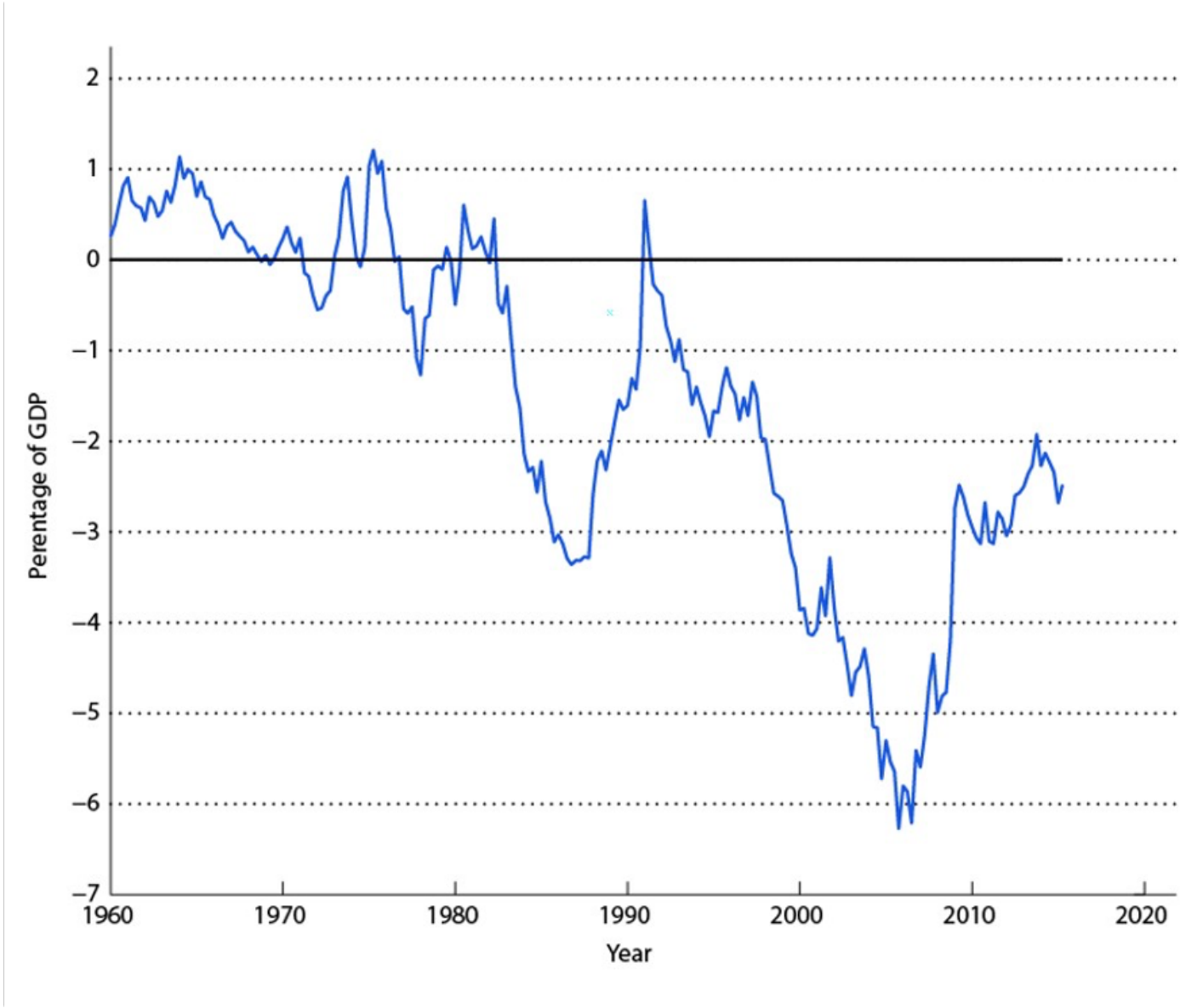
Interest Rate Spread



Exports and Imports of Goods and Services as Percentages of GDP



Relative Price of Housing



Summary

- Modern macro builds up models from microeconomic principles
- We want to build up a model that can explain the phenomena we see
- With it, we can give policy advice!