

# **Monetary theory and policy**

EE432

Kittichai Saelee; Semester 2/2016

# Agenda

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- ▶ **Logistics**
- ▶ What do we study in monetary theory and policy?
- ▶ Evolution of macroeconomics
- ▶ Introduction to modern macroeconomics

# Logistics

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## ▶ Instructor:

### ▶ Kittichai Saelee

▶ Ph.d. in Economics (UW-Madison)

▶ Area of research:

□ Structural Macroeconometrics / monetary economics

▶ Office: **Rm# 516 (Y-Building)**

▶ Office hour: **Tue: 14:00 – 17:00, by appointment**

▶ Contact: **kittichai\_lee[at]econ.tu.ac.th**

# Logistics

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- ▶ About the Lecture

- ▶ TUE/THUR: 11.00 – 12:30 (RM#206)

- ▶ No Class on Thursday 19<sup>th</sup>

- ▶ All the lecture scheduled during the sport university week will normally resume.

- ▶ Starts 11.05 am and finishes at 12.25pm.

# Logistics

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## ▶ Rules

- ▶ No class attendance check-up.
- ▶ Please don't be late.
- ▶ No chat, no cellphone, no #instagram / FB / VLOG / LIVE
  - ▶ Also NO POKEMON pls.
- ▶ Feel free to raise any questions related to this subject.

# Logistics

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## ▶ Evaluations

- ▶ Homework 10% (4 -5 times)
- ▶ Quiz 10% (4-5 times)
- ▶ Midterm exam 35% (March 7<sup>th</sup>, 11.00 – 13.00)
- ▶ Final exam 45% (May 29<sup>th</sup>, 13.30pm – 16.30pm)

**No make-up exam given unless it is an emergency reason!**

# Logistics

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- ▶ **Materials**

- ▶ See reading lists.

- ▶ Everything will be posted on BE moodle  
Passcode: 1454 (please don't share.)

# Agenda

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- ▶ Logistics
- ▶ **What do we study in monetary theory and policy?**
- ▶ Evolution of macroeconomics
- ▶ Introduction to modern macroeconomics

# Monetary theory and policy?

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- ▶ Advanced level of macroeconomics!
  - ▶ Require your firm understanding in macroeconomics!
- ▶ Focus on explaining/understanding **two important monetary stylized facts** and **one big policy-related question**.

# Monetary theory and policy?

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- ▶ The two important stylized-facts (regularities)
- ▶ Long-run
  - ▶ Money affects inflation, but *not (real) output*.
- ▶ Short-run (over the course of business cycle)
  - ▶ Money affects inflation, and also *(real) output*

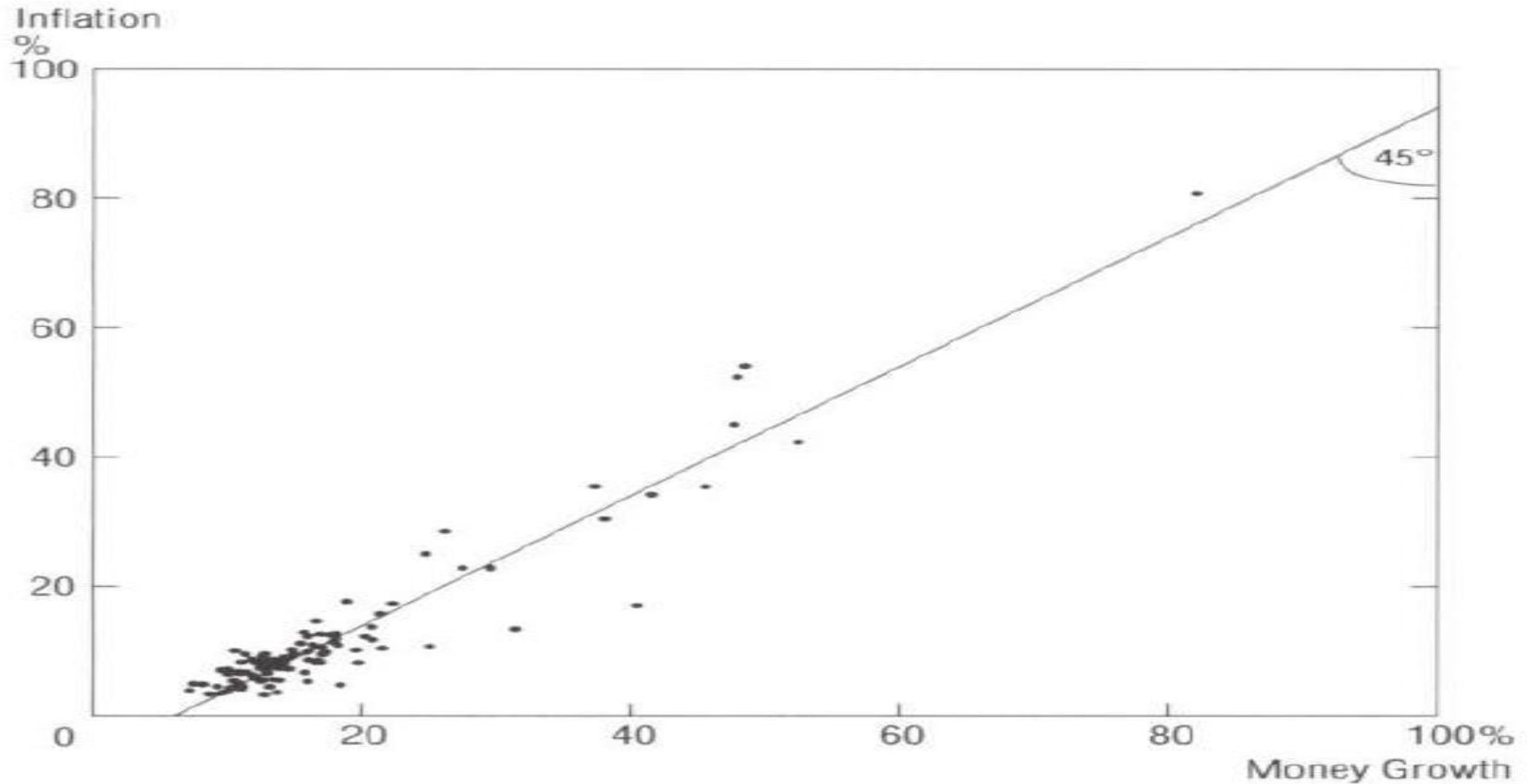
Empirically, what do they mean by?

Evidences?

# Monetary theory and policy?

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Average Annual Rates of Growth in M2 and in Consumer Prices During 1960–90 in 110 Countries



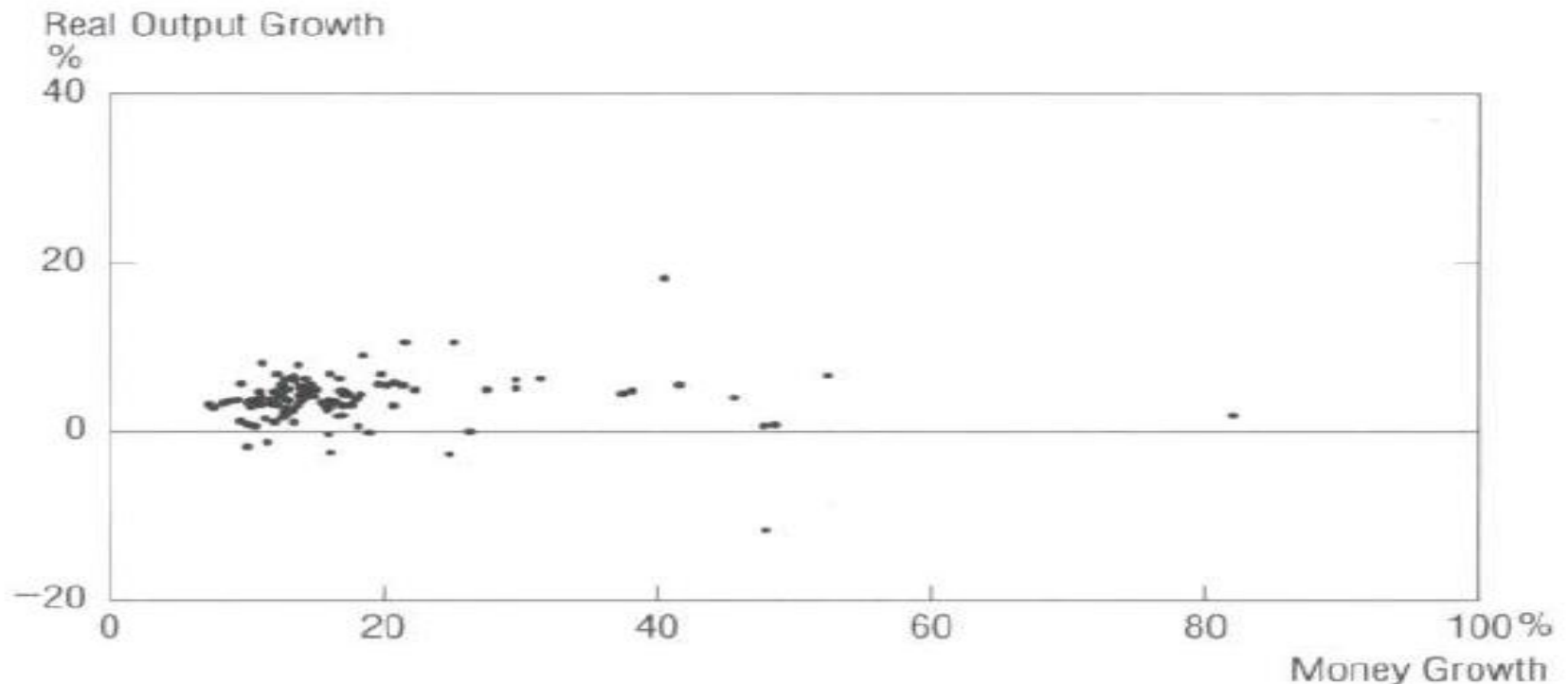
Source: International Monetary Fund



# Monetary theory and policy?

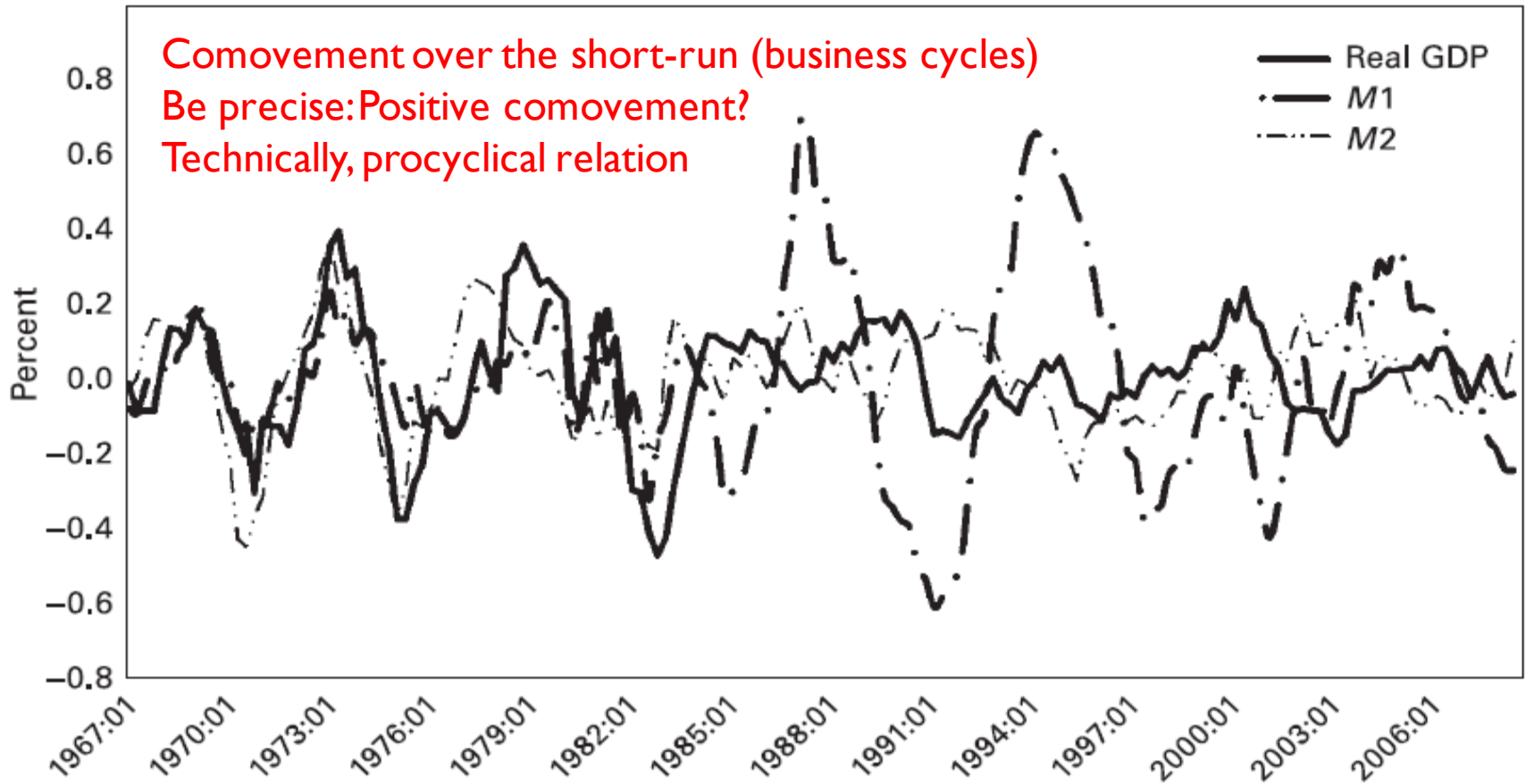
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Average Annual Rates of Growth in M2  
and in Nominal Gross Domestic Product, Deflated by Consumer Prices  
During 1960–90 in 110 Countries



Source: International Monetary Fund

# Monetary theory and policy?



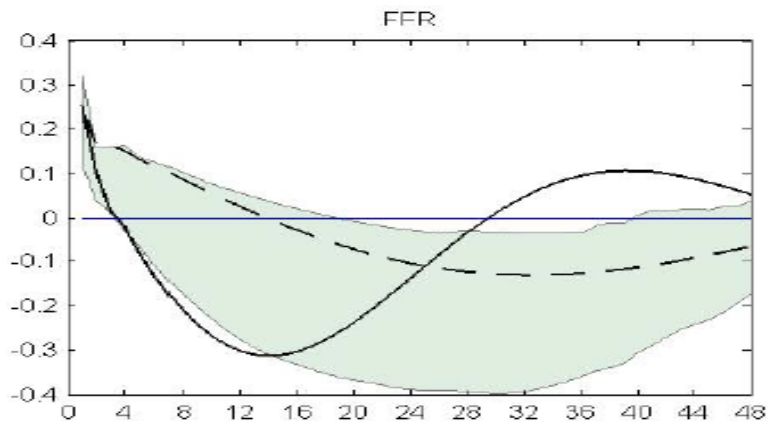
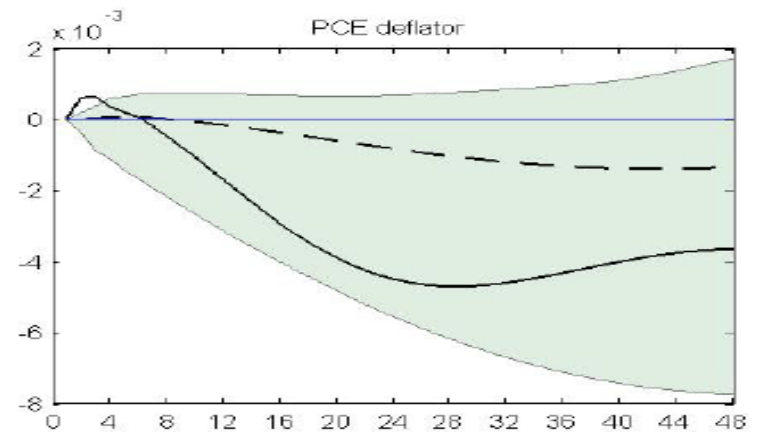
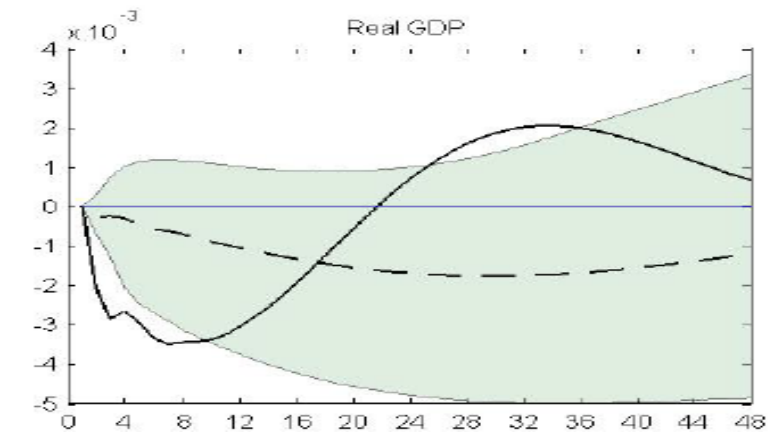
**Figure 1.6**  
Detrended money and real GDP, 1967:1–2008:2.

# Monetary theory and policy?

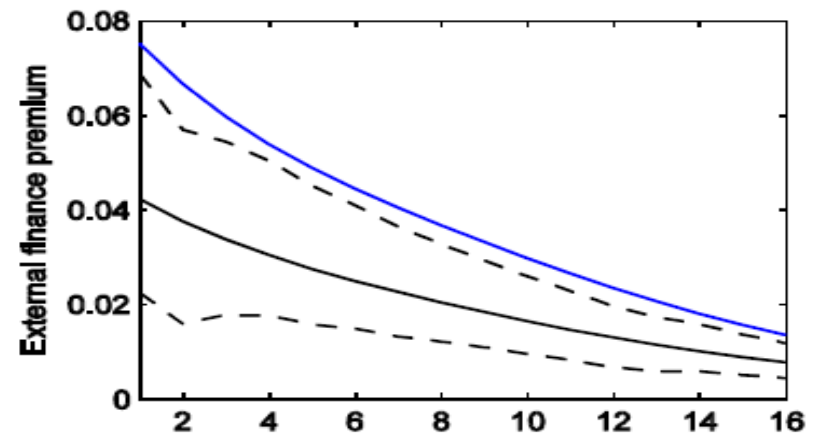
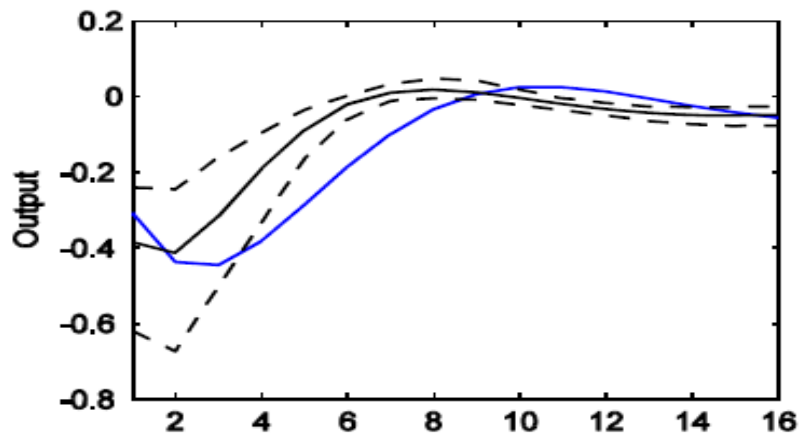
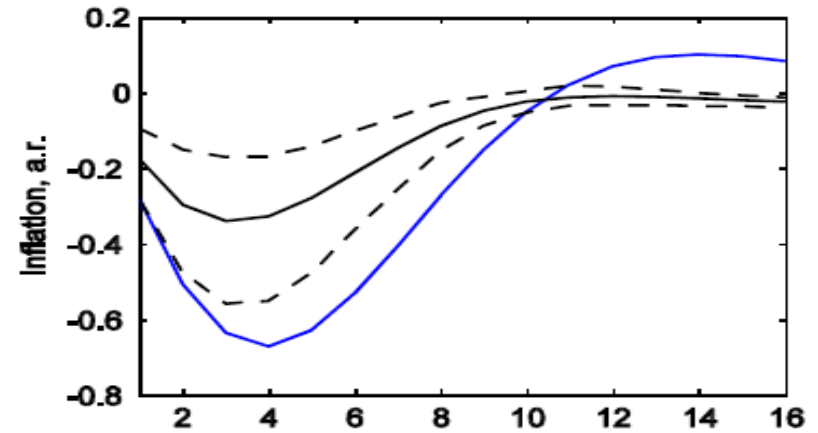
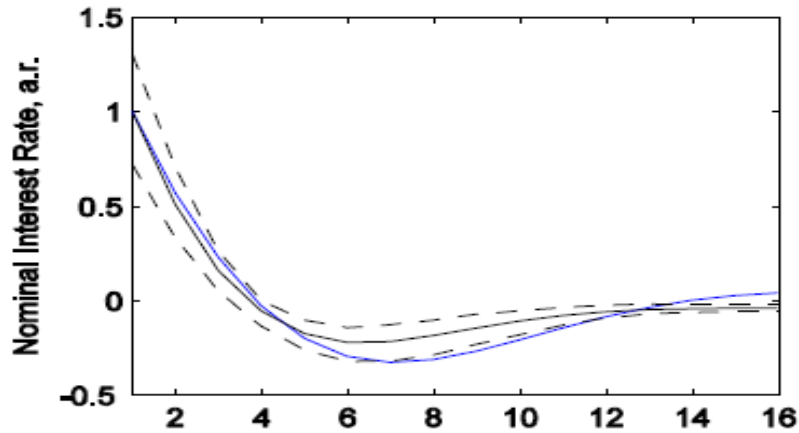
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- ▶ Does monetary policy affect output?
  - ▶ Evidences?
  - ▶ Methods?
- ▶ If yes, how should monetary policy be conducted? Limit of monetary policy?

# Monetary theory and policy?



# Monetary theory and policy?



# Monetary theory and policy?

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- ▶ This course is organized into three parts!
- ▶ Part I: **Money and inflation**
  - ▶ How does demand for intrinsic valueless money arise?
  - ▶ Develop monetary model that justifies the existence and the essential role of money.
  - ▶ Understand **long-run implication of money growth**, i.e. long-run neutrality of money
    - ▶ i.e. money only affects **nominal variables!**
  - ▶ Answer one important policy-related questions: **what is the optimal inflation level?**

# Monetary theory and policy?

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- ▶ Part II: **Modeling real-effect of money**
  - ▶ Under what circumstances, can the money affect output!
  - ▶ Proposed framework under New Classical economics
  - ▶ Proposed framework under New Keynesian economics
  - ▶ The role of credit market in propagating the effect of money

# Monetary theory and policy?

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- ▶ Part III: **Central banking and monetary policy**
  - ▶ Part I + Part II → basic monetary policy model
  - ▶ Model that explains how monetary policy affects the economy.
  - ▶ Current generation = **New Keynesian model** (3 equations model)
  - ▶ Theory of monetary policy
    - ▶ Goals and Targets (goals derived from Welfare of households)
    - ▶ Implementations?
  - ▶ Inflation targeting framework
  - ▶ Financial crisis and Unconventional monetary policies

# Monetary theory and policy?

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- ▶ Modern approach to monetary economics studies heavily rely on *micro-foundation* and *General equilibrium*.
  - ▶ Usable for policy analysis
  - ▶ Criteria decision is based on Welfare ranking!
- ▶ To make the presentation concise, it is unavoidable to use mathematics in the presentation.
- ▶ **Math tools needed!**
  - ▶ Solving the optimization
  - ▶ Solving the system of equations
    - ▶ Multi-market demand and supply.

# Agenda

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- ▶ Logistics
- ▶ What do we study in monetary theory and policy?
- ▶ **Evolution of macroeconomics**
- ▶ Introduction to modern macroeconomics

# Evolution of macroeconomics

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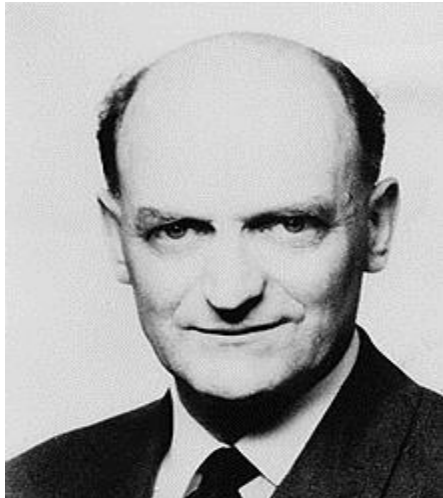
- ▶ “Traditional” macroeconomics has emerged during the 1930s.
  - ▶ The First Great Depression!!!
- ▶ Emerge as the response to the skepticism over the Classical economics thoughts!
  - ▶ Why doesn't market clear?
  - ▶ Why does the recession so persist?
- ▶ John Meynard Keynes has revolutionized the thinking framework of economists about macroeconomics theory and policy.
  - ▶ Known under the “Keynesian economics”

# Evolution of macroeconomics

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- ▶ **Central idea of Keynesian economics!**
  - ▶ Price/wage stickiness and Sluggish adjustments.
  - ▶ Emphasizing the role of factors that drive/determine aggregate demand.
  
- ▶ **Model framework**
  - ▶ Keynesian cross model
  - ▶ The IS-LM model
  
- ▶ **Policy implications:**
  - ▶ Fiscal and monetary policy: **countered-cyclical policy**

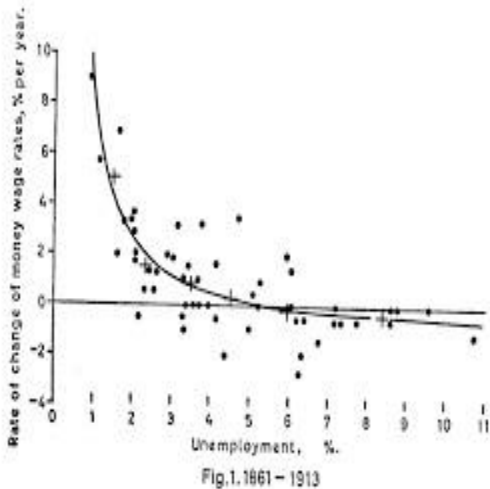
# Evolution of macroeconomics



▶ Traditional Keynesian orthodox centers on the idea of **Phillips curve!!**

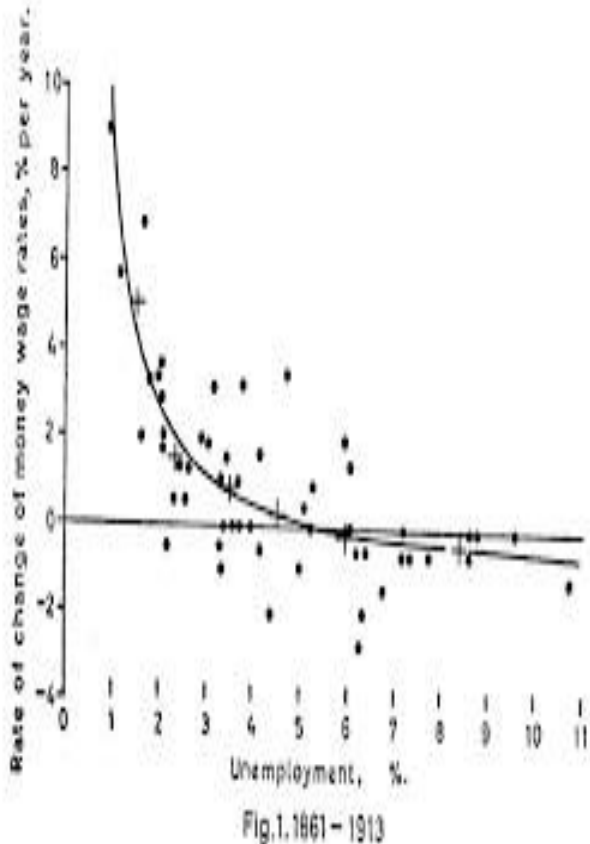
▶ A.W. Phillips (1952) : **Wage growth and unemployment (trade-off)**

▶ Subsequently, researchers have reinvented the analogue version of Phillips' curve to the, but instead establishing the relationship between **inflation and unemployment (output growth)**.



# Evolution of macroeconomics

## ► Policy implications



- The trade-off is **permanent!!**
- By exploiting the “trade-off” relationship, policymaker has two basic options:
  - (i) **pro-growth: low unemployment *but* high inflation**
  - (ii) **pro-stability: low inflation *but* high unemployment.**

# Evolution of macroeconomics

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- ▶ Controversy occurred during the 1970s.
  - ▶ Most Cowles foundation model (miserably) **fails** to explain what happens.
  - ▶ Sustained high inflation! (output loss associated!)
- ▶ **May be! What we thought that we had a complete understanding about how inflation and unemployment trade-off arise might be incorrect!**

# Evolution of macroeconomics



- ▶ During the 60's, two American economists were trying to put an idea that our understanding on inflation and unemployment were **misguided!!**
- ▶ The Phelps-Friedman's inflation acceleration Theorem
  - ▶ The trade-off is **NOT** permanent.
    - ▶ Government cannot exploit the trade-off forever.
    - ▶ Policy has its limit., i.e. there exists such thing that we call **Natural rate of unemployment / Natural rate of output.**
  - ▶ The attempt to push further beyond the natural limit would generally lead a long-term big problem, especially when people have **rational expectation.**
- ▶ **Once inflation expectation is formed; it is hard to change people's mind or the way they believed.**

# Evolution of macroeconomics

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- ▶ Phelps-Friedman's acceleration theorem!
  - ▶ Trade-off is NOT permanent.
    - ▶ Government cannot exploit the trade-off forever; policy has its limit.
    - ▶ There exists such thing that we call the *Natural rate of unemployment*, and hence *Natural rate of output*.
  - ▶ The attempt to push our economy further beyond the natural limit would generally lead a long-term big problem, especially when people have *rational expectation / forward-looking*.
  - ▶ *Once inflation expectation is stigmatized, it is hard to fix!!*

# Evolution of macroeconomics

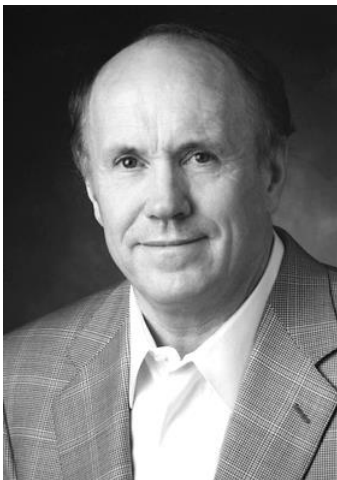
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- ▶ Phelps and Friedman didn't conceptualize their ideas in a formal analysis.
- ▶ Lucas (1972) has published an important paper: *"Expectation and Neutrality of money"*
  - ▶ *A breakthrough in methodological framework of macroeconomics*
- ▶ Lucas (1973) has provided a first-handed empirical evidence that supports the version of Phelp-Friedman Phillips' curve.
  - ▶ Phillips curves can shift up due to **the rise of inflation expectation!**

# Evolution of macroeconomics

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- ▶ The contribution of Lucas is important!!
  - ▶ Transformation of methodological framework in macroeconomics analysis using the *micro-foundation framework*.
- ▶ Built on 1975's paper of Lucas, Finn Kydland and Edward Prescott have pushed further the idea of Lucas, by proposing a business cycles research program that explains **the cycles and fluctuations on macroeconomy** using micro-foundation general equilibrium framework.
  - ▶ Behavioral assumptions of agents; Market structure; Expectation formation; Institution settings

# Agenda

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- ▶ Logistics
- ▶ What do we study in monetary theory and policy?
- ▶ Evolution of macroeconomics
- ▶ **Introduction to modern macroeconomics**

# Introduction to modern macroeconomics

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- ▶ Modern macroeconomics study about empirical regularities and data.
- ▶ Interpret **data** as the **equilibrium** resulting from of **optimizing agents**.
- ▶ Features of equilibrium model?

# Introduction to modern macroeconomics

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- ▶ Features of equilibrium model
  - ▶ Describing players / what agent does, i.e. household & firm
  - ▶ How do they interact and make their decisions?
    - ▶ Optimize under: time-dimension / market structure/ environment/ constraints/ frictions or impediments to trade, etc.
  - ▶ Making decision based on information/expectations!
- ▶ Behavior decision rules (Demand/supply) are derived and obtained, with the equilibrium arising from **market clearing conditions**.

# Next time

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- ▶ Basic General equilibrium model for macroeconomics
- ▶ Require knowledge on optimization
- ▶ Solving system of equations