Chapter 1 : Introduction

EE312

Macroeconomics, Stephen Wiliamson, Chapter 1

2015

* *Note: Much of the contents in the lecture presentation are borrowed from Dr.Pichit's. He kindly allowed us to use his lecture presentation. Please note that I modified/added some parts on my own. Hence, any mistake is my own responsibility. Please notify me if you find any mistake.*

Outline

1. What is Macroeconomics?
2. GDP, Growth and Business Cycles : Two periods of analysis (1) long run and (2) short run
3. Economics is a 'science' : Model Building
4. Macroeconomics Model
    1. Variables in Macro Model
    2. Basic Structure of Macro Model
    3. Macroeconomics Variables
    4. Micro-foundation of modern macroeconomics
5. Debates in Macroeconomics
6. A Short History of Macroeconomics

1. What is Macroeconomics?

- Study of the aggregate level of economic activity.
- Behavior of economic agents at the aggregate level.
  - Consumers;
  - Firms;
  - Governments (fiscal and monetary policy);
  - Economic interactions among countries.

- Gross Domestic Product (GDP) is the quantity of final goods and services produced within the country's borders over a particular period of time.
  - The value of newly-produced final goods and services within a year.
  - Market (nominal) value versus constant price (real) value.
- Price Index$_t = \frac{P_t}{P_{\text{base year}}} \times 100$ (*actually there are many choices of the formula, depends on the prices and the weights used)
- Real GDP $= \frac{\text{Nominal GDP}}{\text{Price Index}} \times 100$
- GDP per capita $= \frac{GDP}{population}$

- Example: Real VS. Nominal (Review)
  Example 1.
  Year 2012 : A farmer produces 100 tons of corn worth $30,000. (Price of corn = $300 a ton)
  Year 2013 : The farmer produces 100 tons of corn worth $40,000. (Price of corn = $400 a ton)
  Example 2.
  Year 2012 : A wage earner earns 300 Baht a day, orice of meal = 30 Baht a meal, he/she can by ..... meals.
  Year 2013 : A wage earner earns 300 Baht a day, price of meal = 50 Baht a meal, he/she can by ..... meals.
- The focus is on “real variables”.
- Macroeconomics goals: “economic growth”, “price stability” and “equity”

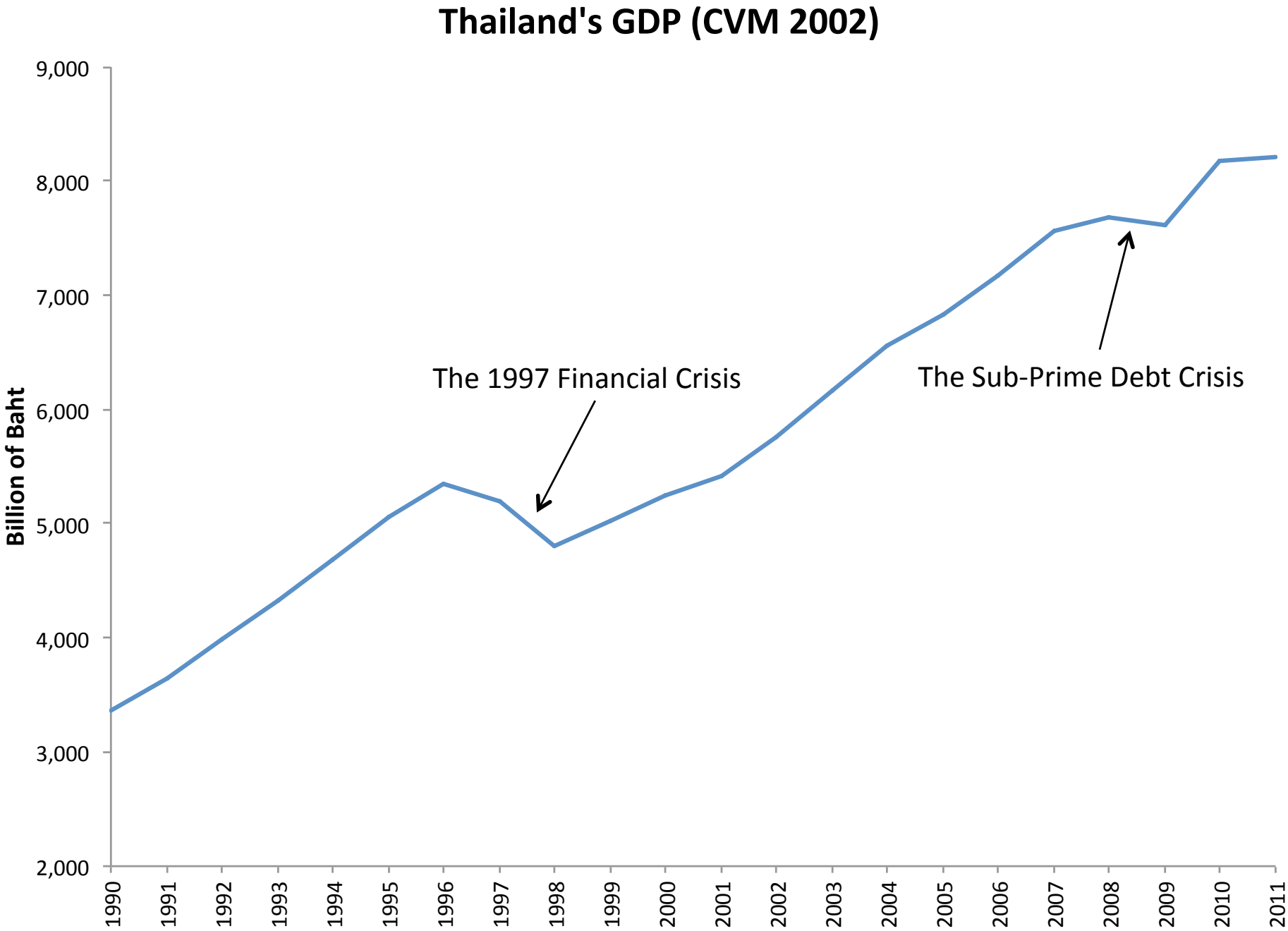
GDP (billions of US dollars)

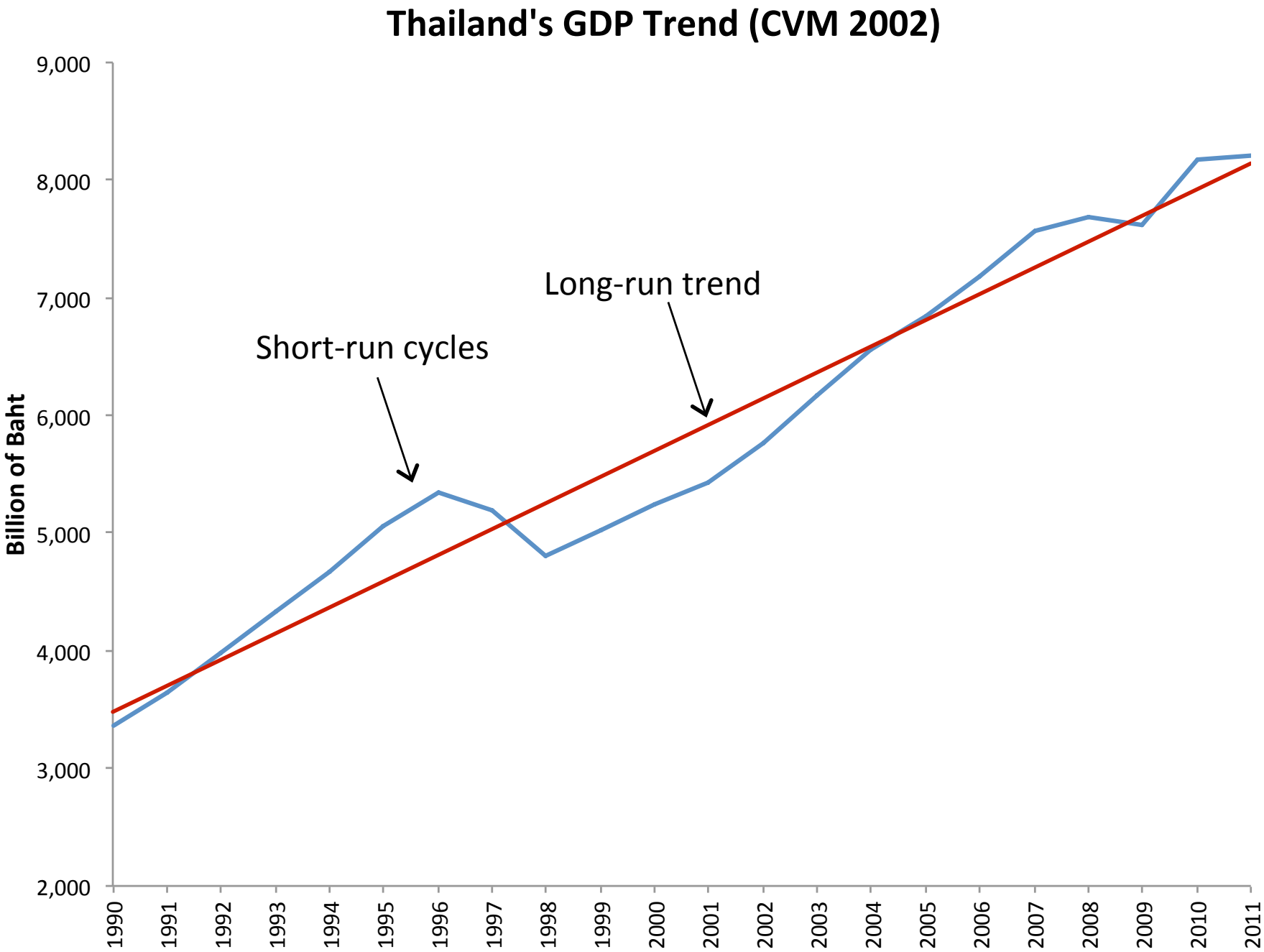
Country	1990	2006
Thailand	85.3	206.2
Hong Kong	76.9	189.5
China	390.9	2626.3

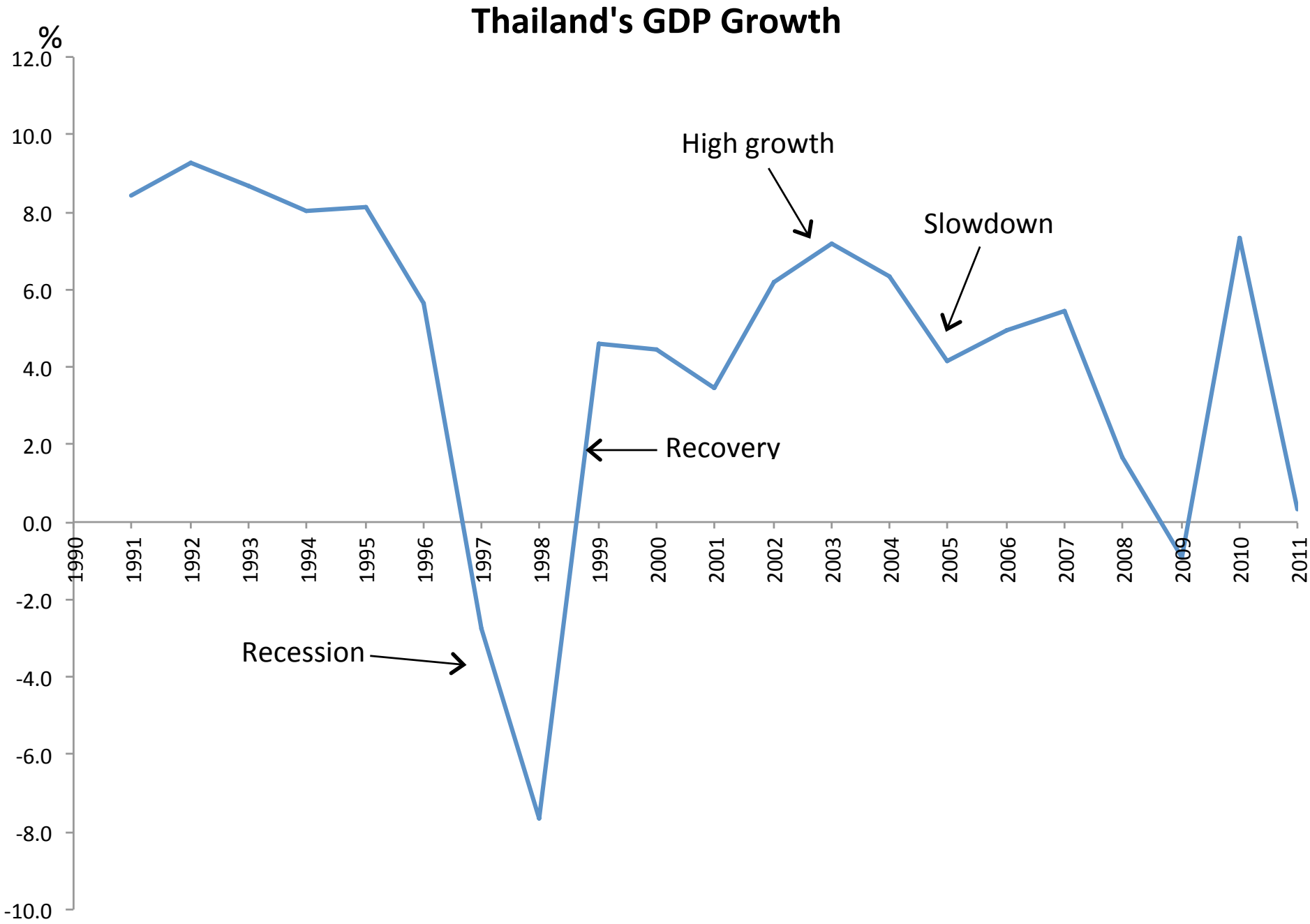
PPP GDP Per Capita in U.S. Dollars

Country	1990	2006	2013 (IMF est.)	2014 (IMF est.)
Thailand	3,623	9,084	9,888	10,532
Hong Kong	15,834	38,127	52,686	55,383
China	1,318	7,598	9,828	10,660
Malaysia			17,526	

- standard of living $\leftarrow$ GDP per capita
- economic growth matters in the long run


Thailand's GDP (CVM 2002)
Billion of Baht
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
The 1997 Financial Crisis
The Sub-Prime Debt Crisis


Thailand's GDP Trend (CVM 2002)
Billion of Baht
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
Short-run cycles
Long-run trend
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011


Thailand's GDP Growth
%
12.0
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
High growth
Slowdown
Recovery
Recession

Two periods of analysis

- The time series of GDP can be separated into trend and business cycle components.
- Two periods of analysis are as follows.

1. Long-run growth: long-term trends.
   - Factors which determine long-run growth.
   - Growth theories.
2. Short-run fluctuations: business cycles.
   - Deviations of GDP growth from long-term trends.
   - Factors which cause GDP to deviate from trends.
   - Business cycle theories.

“Motivating questions” (Page 22. Williamson)

1. What causes sustained economic growth?
2. Could economic growth continue indefinitely, or is there some limit to growth?
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 decreases and increases in economic growth repeated?
6. Should government act to smooth business cycles?

3. Economics is a ‘science’.

- Economics comprises a set of analytical principles that work with consistent regularity.
- Economics cannot rely on lab experiments.
  - Use of ‘models’: assumptions, hypothesis, prediction and empirical test.
  - Study of human behavior within the context of markets.
  - ‘Lab tests’ and accuracy are not central.
  - The focus is on only important “factors”.

- Example :
  - “Suppose an economist contructs a theory that implies that U.S. output would drop by half if there were no banks in the United States.”
  - How to evaluate the theory? $\rightarrow$ “shut down the bank for a year and see what would happen”

- Example: Demand/Supply model
  - Hypotheses : $P_x \rightarrow Q_x$
  - Prediction
    - Law of Demand : Price $\uparrow \Rightarrow$ Quantity demand $\downarrow$
    - Law of Supply : Price $\uparrow \Rightarrow$ Quantity supply $\uparrow$
  - Assumptions :
    - certeris paribus, “other things being equal”
    - “perfect competition”, “monopoly”, etc.
  - Empirical test :
    - Questionaire and Econometrics Testing

- Economics versus other ‘hard’ sciences:
  - Physics: high precision and lab tests.
  - Astronomy: high precision, no lab tests.
  - Meteorology: low precision, no lab tests.
- All sciences use models to obtain predictions for testing against empirical evidence.
- Regularity of results — laws and theories.

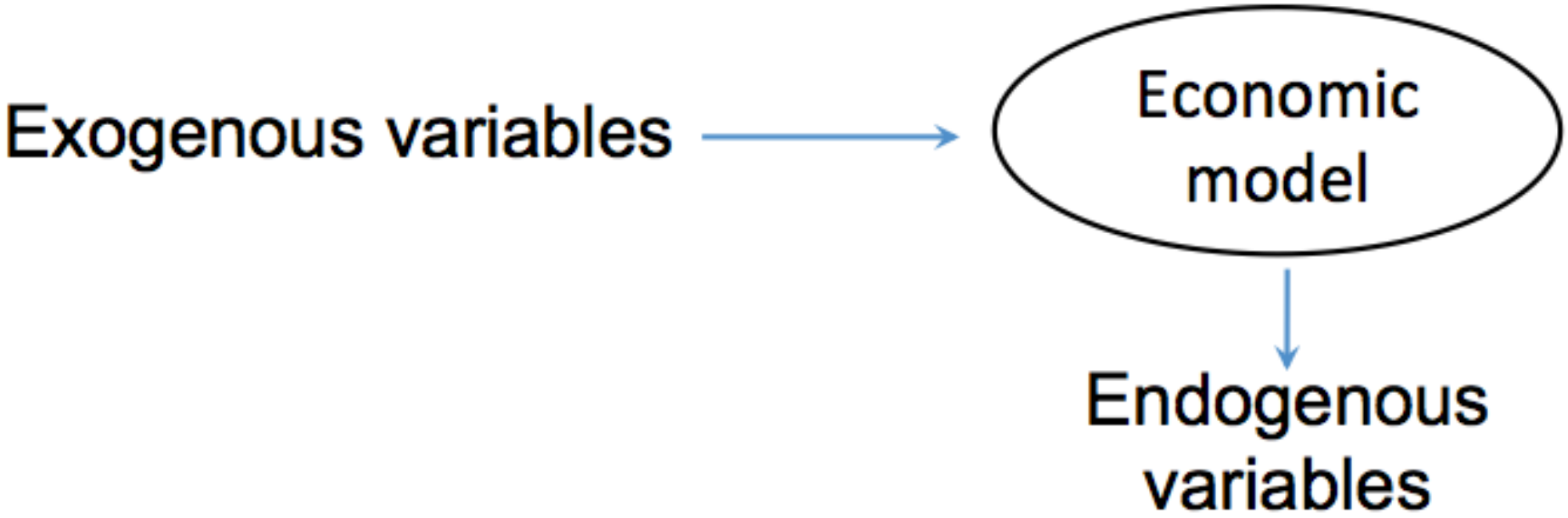
Economic Model building

- A simplified economic system consisting of only variables which are important to the question at hand.
- Causation approach: Cause —> Effect.
- Ceteris paribus clause: ‘other things being equal’.
- Prediction and empirical tests.

4. Macroeconomic Models

- A simplified picture of the real-world economic system.
- Includes the essential features of the macro-economy to analyze a particular problem.
- Models replicate the behavior of the macro-economy.
- Being simple and ‘unrealistic’ — leaving out unessential details (like ‘city maps’).

- Exogenous variables: values are determined outside the system.
- Endogenous variables: values are determined inside the system.



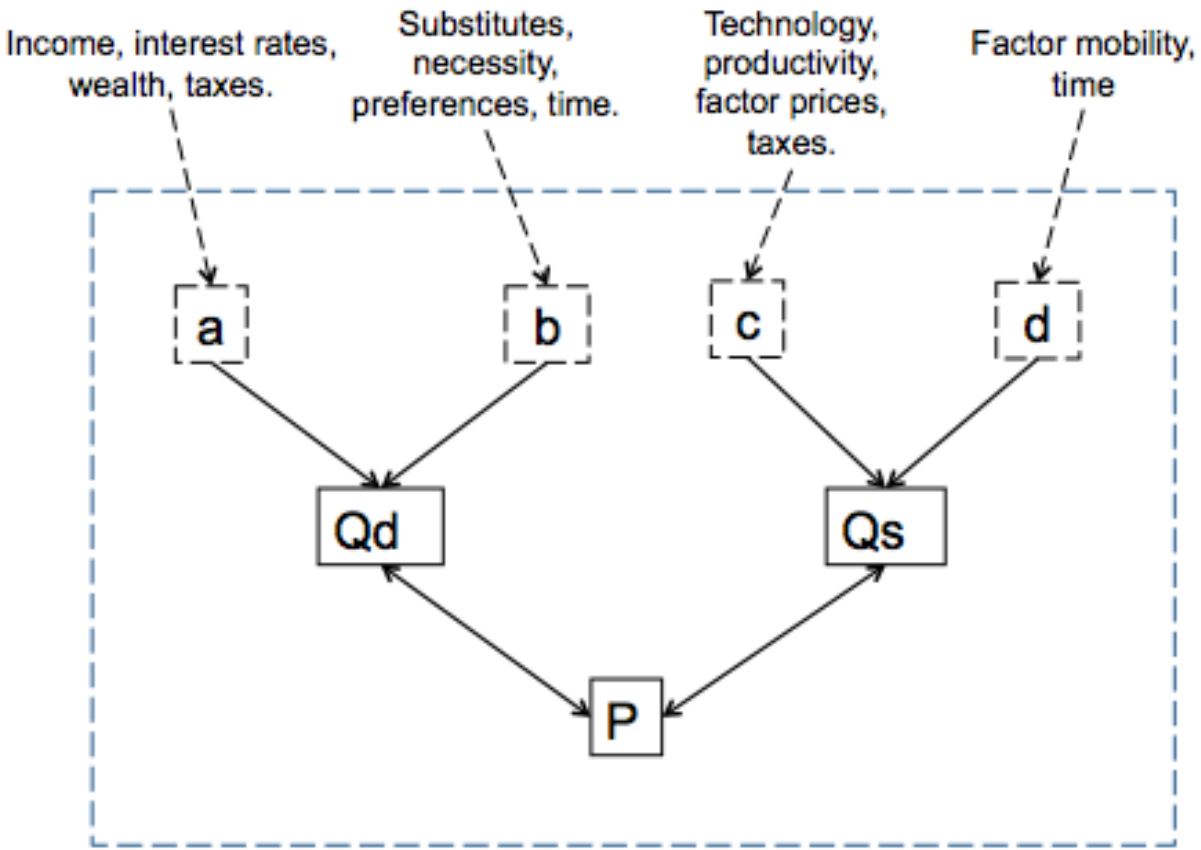
- Example : The market model
- $Q^d = a + bP$; $a > 0, b < 0$
- $Q^s = c + dP$; $c < 0, d > 0$

  Equilibrium

- $=$

$$a + bP = c + dP$$

- $P^* = \dfrac{(a-c)}{(d-b)}$
- $Q^* = \dfrac{ad - bc}{d - b}$


Income, interest rates, wealth, taxes.
Substitutes, necessity, preferences, time.
Technology, productivity, factor prices, taxes.
Factor mobility, time
a
b
c
d
Qd
Qs
P

4.2 Basic structure of a macroeconomic model

- Actors: consumers, firms, government, the rest of the world.
- The set of goods that consumers consume.
- Consumer's preference over goods.
- Firms' production technology.
- Resources available.

4.3 Macroeconomic variables

- Gross Domestic Product (GDP)
- Aggregate productivity
- Unemployment
- Inflation Taxes and government spending
- Interest rates
- The current account (exports and imports)

4.4 Micro-foundation of modern macroeconomics

- Macro behavior is the sum of microeconomic decisions by consumers and firms.
- Exogenous variables affect behavior of individual consumers and firms, then the economy as a whole.
- Model building from the micro behavior to the aggregate levels.

- Model structure:
  - Consumer preferences: Consumer optimization.
  - Production technology: Firm optimization.
  - Government taxes/spending.
  - The current account.
- Macroeconomics before the 1980s lacked micro-foundations (e.g., EE212).

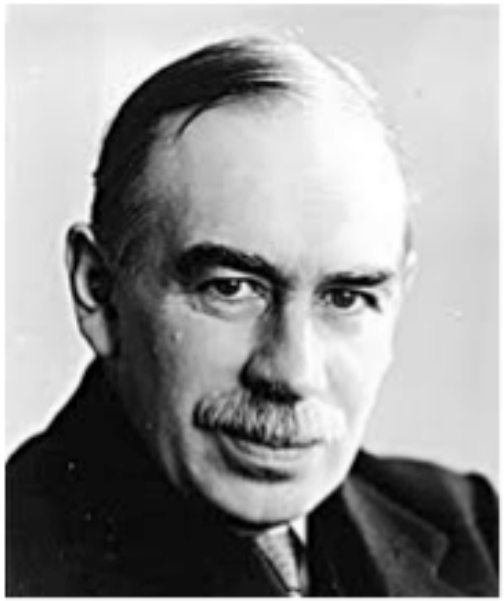
5. Debates in Macroeconomics

- Long-run growth theory:
  - Solow growth model.
  - Endogenous growth models.
- Short-run fluctuations:
  - Real business cycle theory;
  - Market segmentation theory;
  - Keynesian sticky-wage IS-LM, AD-AS model.

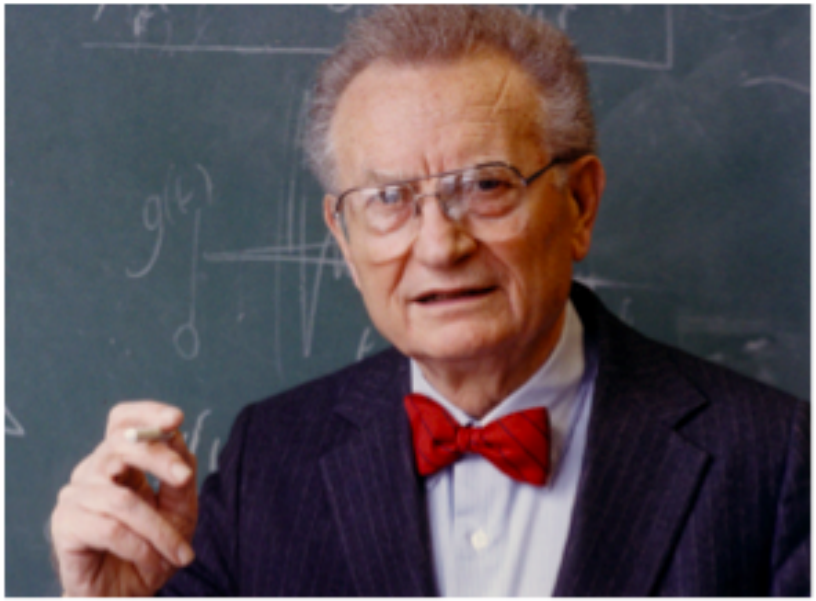
6. A short history of macroeconomics

- Economics before the 1930s:
  - Price theory from Marshall and Walras.
  - Laissez-faire policy.
- The **Great Depression** (the 1930s) shook the confidence in price theory at the macro level.
  - Laissez-faire policy lost credibility.
  - Pressure on government to act.
  - Public works policy (e.g. New Deal in the US).

- Keynesian revolution
  - 1936: John Maynard Keynes ‘The General Theory of Employment, Interest and Money’.
    - Rejection of Marshallian theory at the macro level.
    - Defective markets and government intervention.
    - Rejection of long-run analysis.
  - Keynesian economics (the 1950s-1960s):
    - Hansen, Hicks, Samuelson, etc.
    - Macro courses around the world (e.g., EE212).
    - Solow growth model.

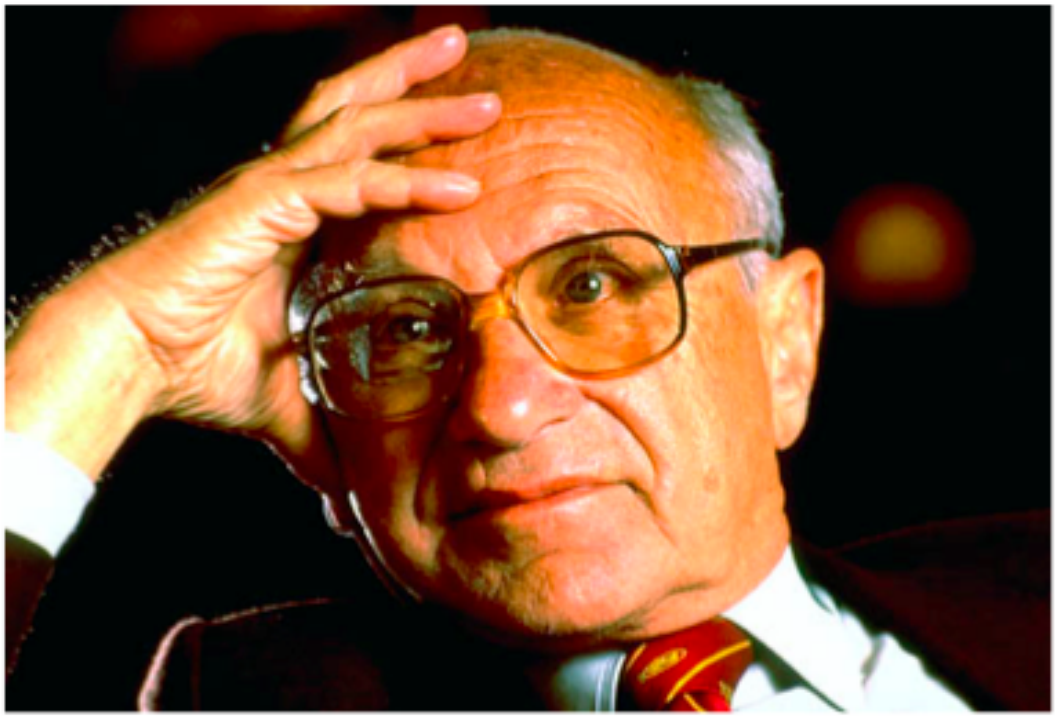


John Maynard Keynes
(1883-1946)



Paul A Samuelson
(1915-2009) Nobel prize
1970

- Monetarist counter-revolution
  - The crisis of Keynesianism (the 1970s):
    - Supply-side shocks, public debt, stagflation.
  - Monetarism (the 1970s-1980s):
    - Milton Friedman's 'quantity theory of money'.
    - Competitive markets and non-discretionary policy.
    - The money surprise theory.



Milton Friedman (1912-2006)
Nobel prize 1976

- Modern macroeconomics
  - New classical macroeconomics (the 1980s):
    - The rational expectations hypothesis.
    - Competitive markets and policy ineffectiveness.
    - Real business cycle models (RBCs) (the 1990s).
  - New Keynesian economics (the 1990s).
    - Coordination failure; menu cost; efficiency wage.
  - Revival of long-run growth theory:
    - Neoclassical endogenous growth models.

- Neoclassical macroeconomics
  - Analysis of long-run growth as the major framework.
  - Business cycle theories to explain short-run fluctuations about trends.
  - Emphasis on the micro-foundations to explain macro-behaviors.
  - Competitive markets and non-discretionary policy.

Conclusions

- Macroeconomics : Behavior of economic agents at the aggregate level.
- Two periods of analysis : long-term trends(growth theory), Short-run fluctuations (business cycles theory)
- Economics is a ‘science’. Economics comprises a set of analytical principles that work with consistent regularity.
- Macroeconomic Models
  - Specification
    - A simplified picture, includes the essential features to analyze a particular problem.
    - Being simple and ‘unrealistic’ — leaving out unessential details
  - Variables
    - Exogenous variables: values are determined outside the system.
    - Endogenous variables: values are determined inside the system.
  - Micro-foundation of modern macroeconomics : Model building from the micro behavior to the aggregate levels

- Debates in Macroeconomics
- A short history of macroeconomics
  - before the 1930s: **Laissez-faire policy**
  - *The Great Depression (the 1930s)*
  - 1936: **John Maynard Keynes** : government intervention and rejection of LR analysis
  - The crisis of Keynesianism (the 1970s): Supply-side shocks, public debt, *stagflation*
  - **Monetarism** (the 1970s-1980s) : Competitive markets and non-discretionary policy
  - Modern macroeconomics
    - **New classical, RBC, New Keynesian, Neo-classical**