MACROECONOMICS I

Class 12. The Labor Market

May 23rd, 2014

Announcements

- **Final Exam:** May 30th, 10:30 – 12:30, S6

  Closed-book exam; bring your calculator!!!

- **Project deadline**: May 30th, before exam, hard copy

Project checklist:

✓ Summary of the article (main issue)

✓ Placing the issue in the context of our course

✓ General theory behind the issue

✓ Your opinion about the article and the issue

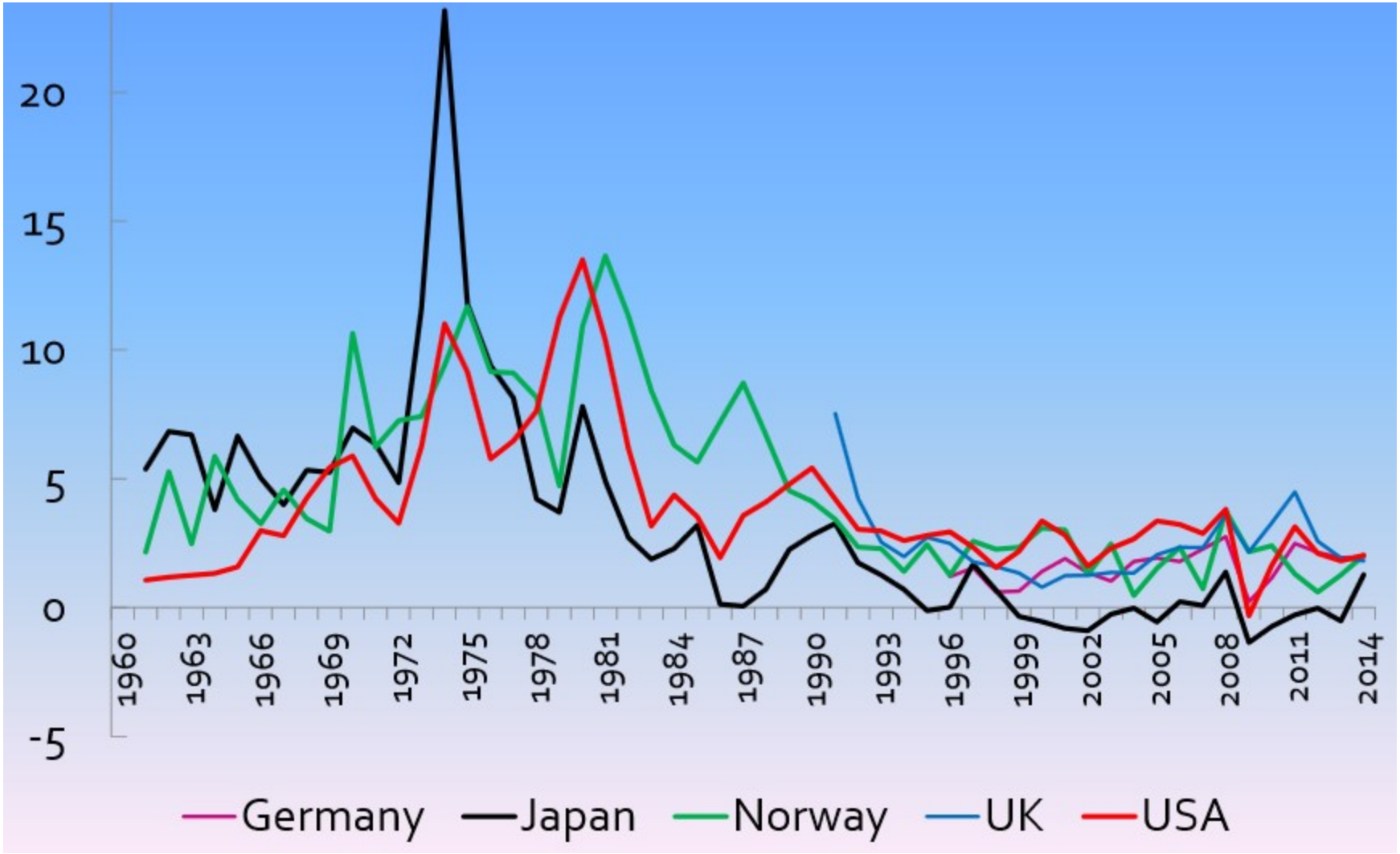
NO more than 4 pages !

Goals of the Economy

- Economic growth
- External balance (avoiding trade deficit)
- Price-level stability (low inflation)
- Low unemployment rate (full employment)

Conflicting goals in the short run

Inflation in Selected Countries



Source: OECD statistical database

Real Exchange Rate

- **Nominal ER:** Amount of national currency you pay for a unit of foreign currency
- **Real ER:** Relative price of foreign goods to domestic goods at the prevailing exchange rate (competitiveness)

$$e_{CZK/\$} = \frac{(CZK \; P_{\$})}{P_{CZK}} = \frac{P_{\$}}{P_{CZK}}$$

A rate at which we can trade goods and services of one country for that of another

Measuring RER

- Using a simple representative good
- Using the overall price level
- w/r to a single country or all trading partners

Real Exchange Rate (Cont.)

TE Price of McDonalds' hamburger in CR **is 35 CZK**

Price of McDonalds' hamburger in Vienna is **1 Euro**

• Comparing prices of hamburgers: converting into *common currency*

Nominal exchange rate: 1 euro = 27 CZK

Price of Austrian hamburger (in CZK) = 1 * 27 = 27 CZK

Price of Czech hamburger = 35 CZK

RER = 27/35 = 0.77

=> Hamburgers in Austria are 30 % cheaper than in CR (when expressed in the same currency)

Real Exchange Rate (Cont.)

- Measuring RER using a basket of representative goods

  Price level in **Czech Republic** (P)

  Price level in **Austria** (P*)

  Nominal exchange rate: **1 euro = 27 CZK**

  Real ER = Nominal ER · P* / P

- P and P* represent CPI or GDP Deflator price indexes

How expensive, on average, foreign goods are relative to domestic

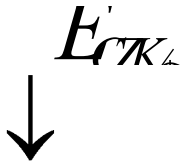
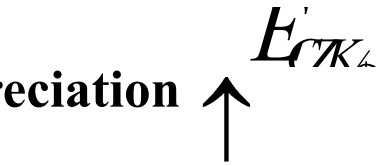
RER = 1.2 => average consumer prices abroad are 20 % higher than at home, *relative to a chosen benchmark*

Real Exchange Rate (Cont.)

✓ *What is the value of RER if the PPP holds?*

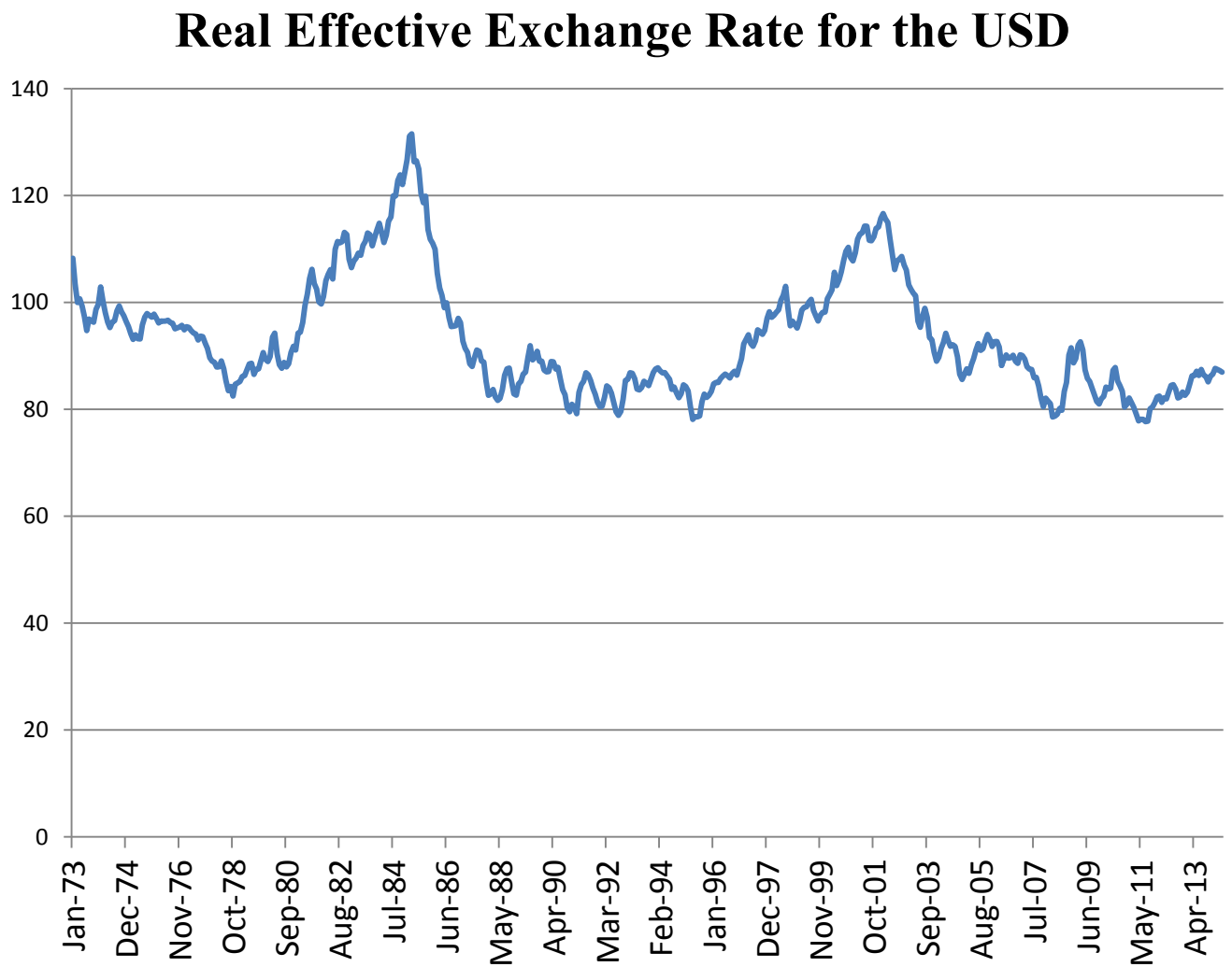
• When RER diverge from PPP, the nominal exchange rate experiences pressure to adjust

▪ **Three determinants**: P, P* and nominal ER

A real exchange rate **appreciation**  and **depreciation** 

Overvalued currencies **(RER<1)** => pressure to depreciate

Undervalues currencies **(RER>1)** => pressure to appreciate



Source: FED statistics

Causes of Inflation

- ✓ **Demand-pull** inflation — Increase in aggregate demand (through inputs market)
- ✓ **Cost-push** inflation — Increase in the costs of production independent of demand
- ✓ **Increase in M^S** — M^S growth faster than Y

"Inflation is always and everywhere a monetary phenomenon, in the sense that it cannot occur without a more rapid increase in the quantity of money than in output." *M. Freedman*

Short Run vs. Long Run

- Quantity Theory of Money

$$MV = PY$$

In the long run:

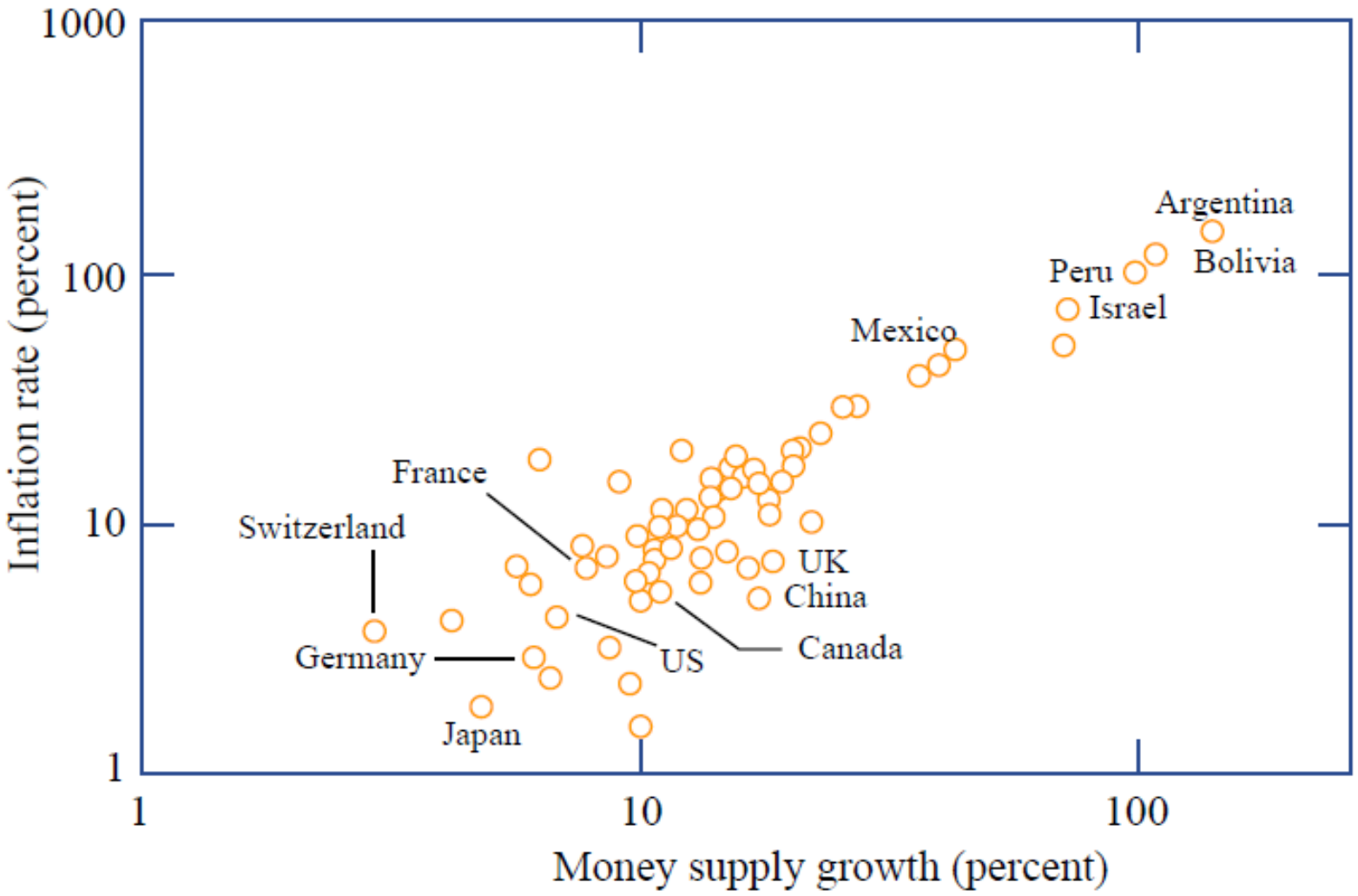
- **Real output** (Y) is determined by available L, K, and A
- Velocity is constant (empirical fact)

$\Rightarrow$ Increase in M^S leads only to an increase in P

Money neutrality: changes in M^S do not affect REAL variables

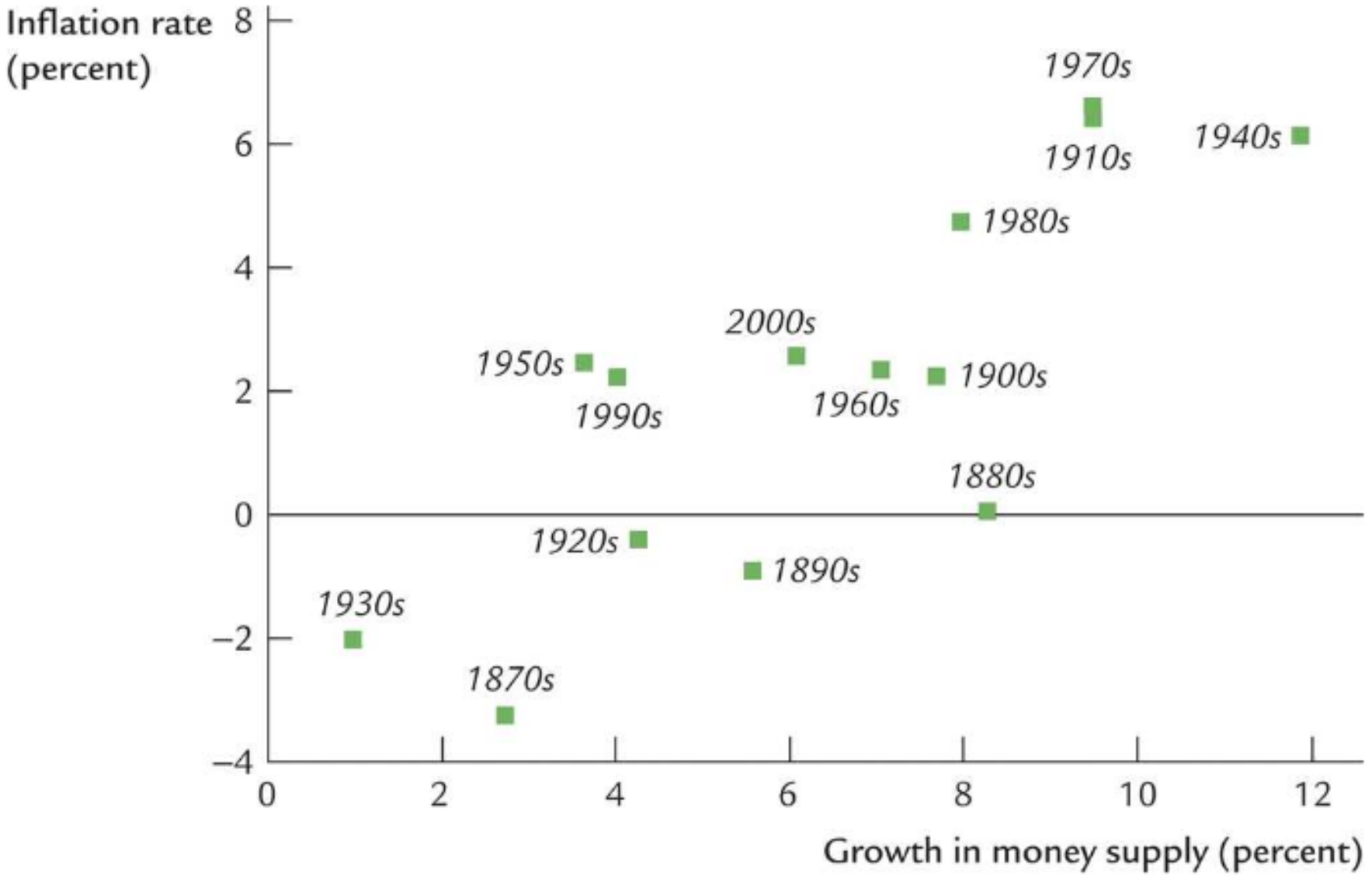
Empirical tests: long-run + across countries

Average Inflation Rates & Money Supply Growth



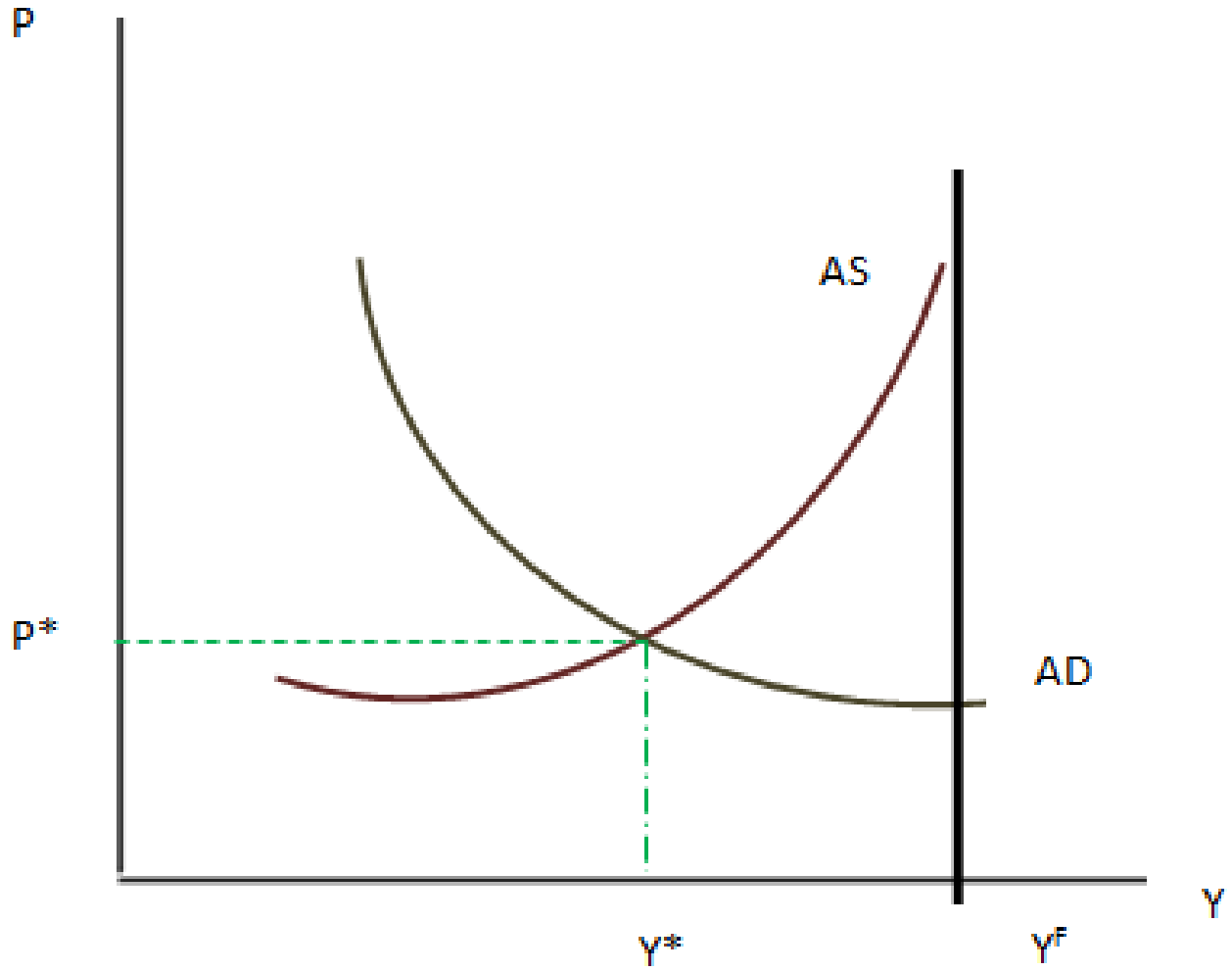
Source: Mankiw, 2012

The Quantity Theory in the US Across Time



AD-AS Model: The Equilibrium

Equilibrium: Y* and P*



Costs of Inflation

- Fall in the real value of savings
- Fall in net exports
- Fall in investment expenditures
- Fall in GDP
- Increase in unemployment
- Redistribution of real income (decreasing liabilities of debtors and assets of creditors in real terms)
- Loss of the purchasing power? => Money neutrality

The Labor Market: Major Players

DEMAND

SUPPLY

Firms

Labor

Wages

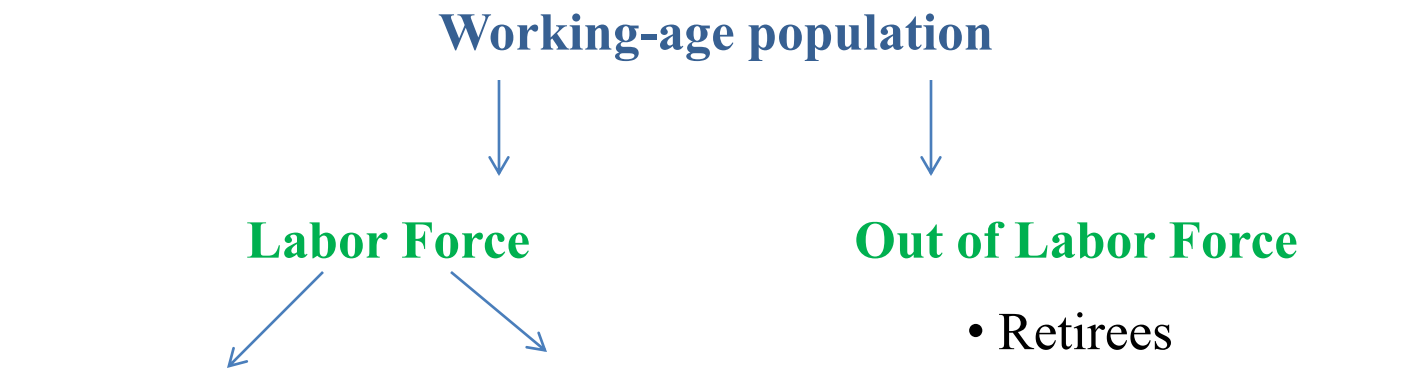
Labor Force

Government
- Minimum wage
- Unemployment insurance
- Training programs

Labor unions
- Wage bargaining
- Protection of rights

- Working age 15-65
- Employed + Unemployed
- Non-institutionalized

Structure of the Labor Force



Participation rate: $\frac{\text{Labor force}}{\text{Working age population}} \cdot$

TE Participation rate in Czech Republic in 2012 was 58.8 %

Males: 67.8 %

Females: 50.1 %

Structure of the Labor Force (Cont.)

TE Czech Republic in 2005

Total population: 10.2 mil

Working age population: 70.5 %

Out of labor force: 3.5 mil

Working age population (mil): 10.2 _____

Labor force (mil): 7.2 _____

Participation rate: 3.7 / 7.2 = _____

Labor Force: Unemployed Population

- A person without a job who puts efforts to find one

Unemployment rate: Percentage of the labor force not working **but looking**

$$UR = \frac{\#\text{ unemployed}}{\text{labor force}} \cdot 100$$

- A summary measure of the **health** of the labor market

Low unemployment rate => **Tight labor market**

Can the unemployment rate be equal to 0? Generally NO

Unemployment Rate (Cont.)

Active or stagnant labor market?

- Average duration of unemployment and its type

Unemployment Rate

Limitations

- Does not say anything about unemployment **duration**

  Long-term unemployment – more than 1 year

- Does not distinguish between **full-time** and **part-time** employment

- Very difficult to distinguish between unemployed and those out of labor force

Discouraged workers: people who report being out of labor force, but in fact may be willing to work (gave up after unsuccessful search)

- **Underemployment** (skill waste)

Unemployment and Long-Term Unemployment

• Average for the period 1991-2001

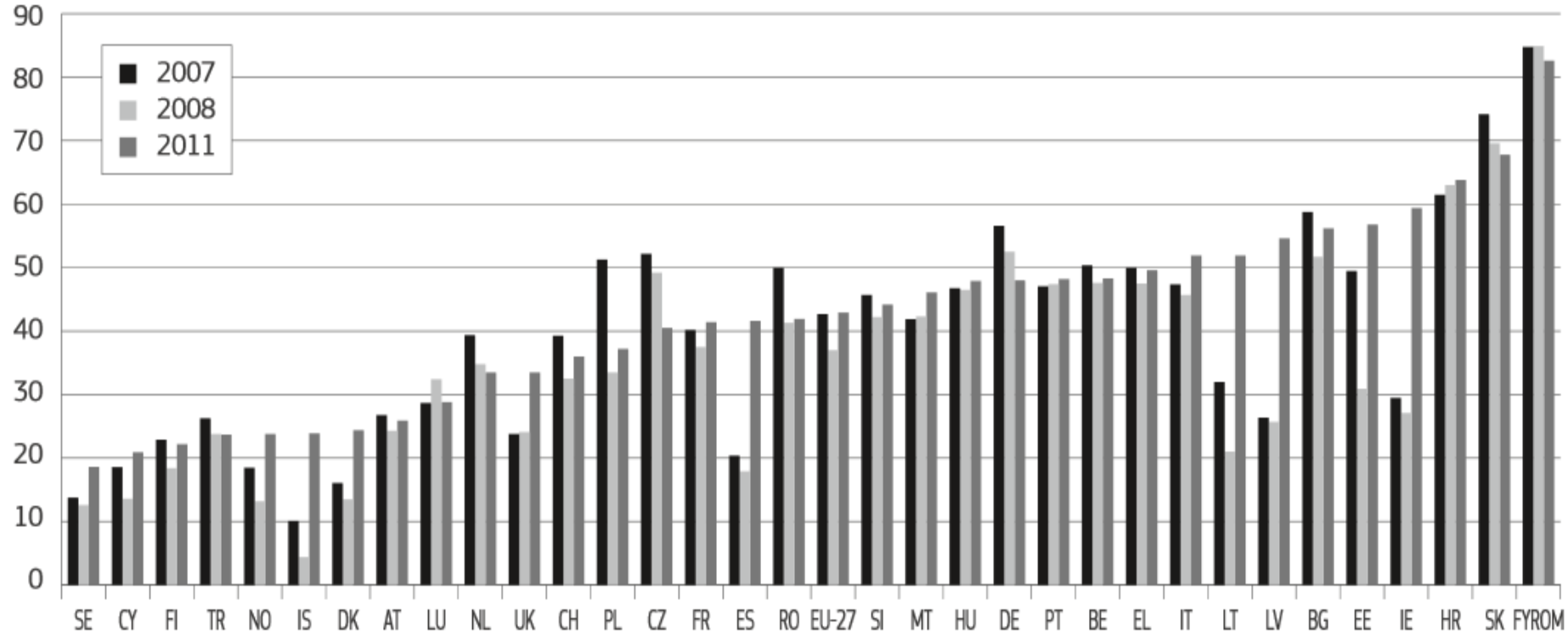
	U rate	LTU rate
Czech Republic	8.2	4.3
Hungary	5.8	2.7
Poland	18.2	7.8
Slovak Republic	18.6	10.2
Lithuania	12.6	3.5
Denmark	6.7	1.7
Finland	12.8	3.4
France	11.2	4.5
Germany	8.2	3.9
Portugal	5.6	2.6
Spain	19.3	10.1
Sweden	7.9	1.7
United Kingdom	7.7	2.9
United States	5.4	0.5

Average duration of unemployment in 2012

- **The US –** 5 month **(the lowest!)**
- **EU –** 27 months
- **France –** 40 month
- **Czech Republic –** 12 months
- **Slovakia –** 26 months

Source: OECD.StatExtracts

Long-Term Unempl. as a % of the Total Unemplo



Measuring Labor

TE In the US: **Bureau of Labor Statistics (BLS)**

Current Population Survey (monthly): 60,000 households

- People who are working
- People who are not working but looking
- People who are not working and not looking (out of labor force)

In Czech Republic: National Statistical Office (CZSO)

Quarterly Labor Force Sample Survey: 26,500 households


THE GATHERING OF GOVERNMENT LABOR STATISTICS...
PLEASE HELP
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SELF-EMPLOYED
CHECK
PLEASE HELP
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Categories of Unemployment

Why there is unemployment in the economy?

- **Short term**

1. Frictional Unemployment

• Qualified individuals with transferable skills that move between jobs/careers

• Outcome of the labor market turnover

• A sign of healthy economy

• It takes time for workers to find jobs that are best suited for them

Special case: *Seasonal unemployment*: move b/w jobs that change with seasons

• Increases with an increase in **unemployment benefits**

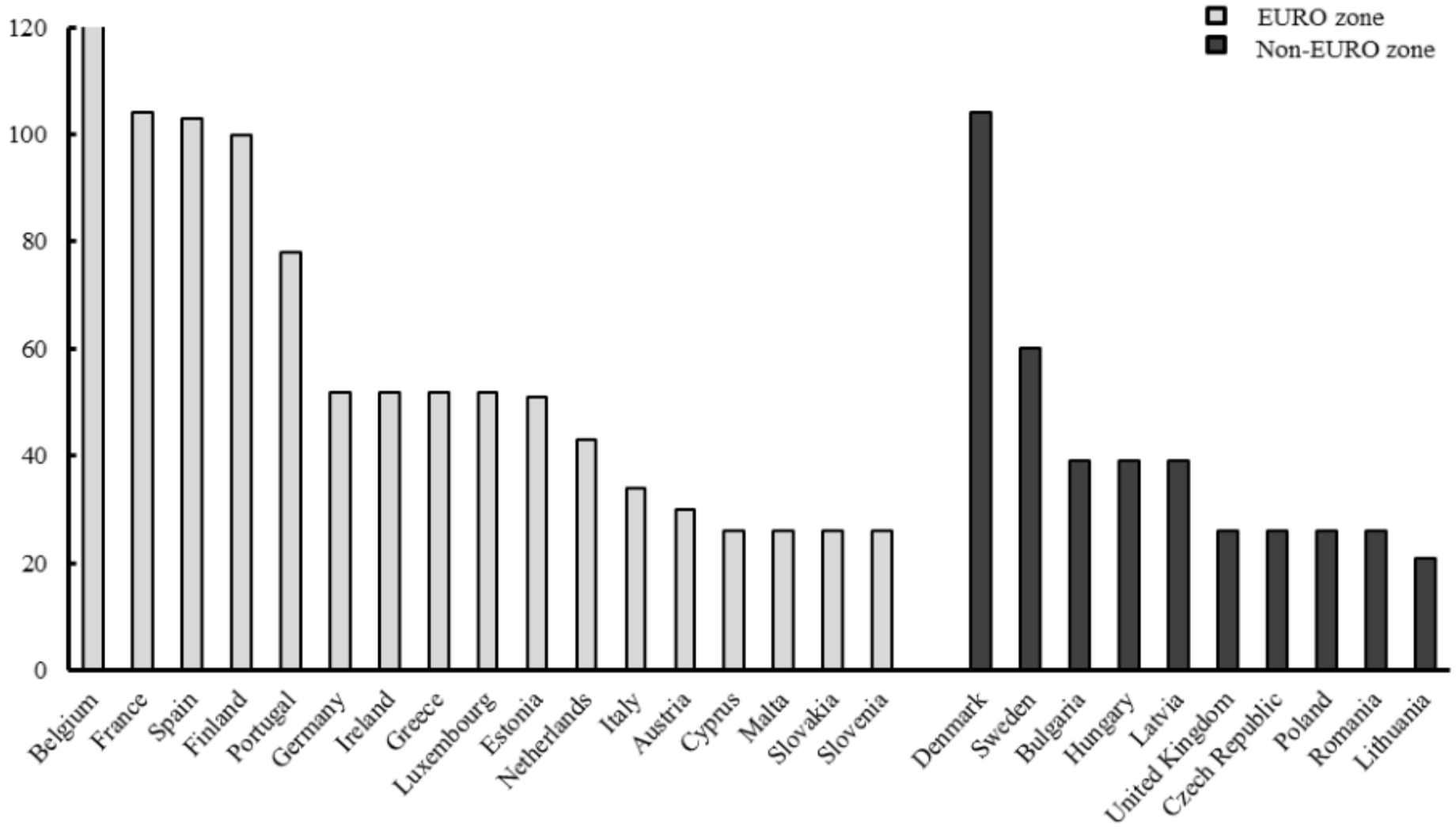
Unemployment Insurance

Country	Initial phase of unemployment		Long-term unemployment	
	Single person	Married with 2 children	Single person	Married with 2 children
Czech Republic	50	54	31	71
France	71	76	41	70
Germany	61	78	61	68
Greece	46	50	0	3
Italy	52	60	0	0
Netherlands	71	78	58	72
Norway	66	73	42	64
Slovak Republic	62	72	42	91
Spain	70	75	27	41
Sweden	81	83	51	78
UK	45	46	45	73
USA	56	53	7	41

Average duration

- 1 year in general
- 4-5 years in Netherlands and Denmark
- **Unlimited** in Belgium

Duration of Unemployment Benefits (in weeks),



Categories of Unemployment (Cont.)

- **Long term**

2. Structural Unemployment- changes in the technology and foreign competition

• A whole industry dies

• A mismatch between necessary skills and skills of the labor force

• A sign of innovative society

TE NAFTA

• Back to school (re-training)

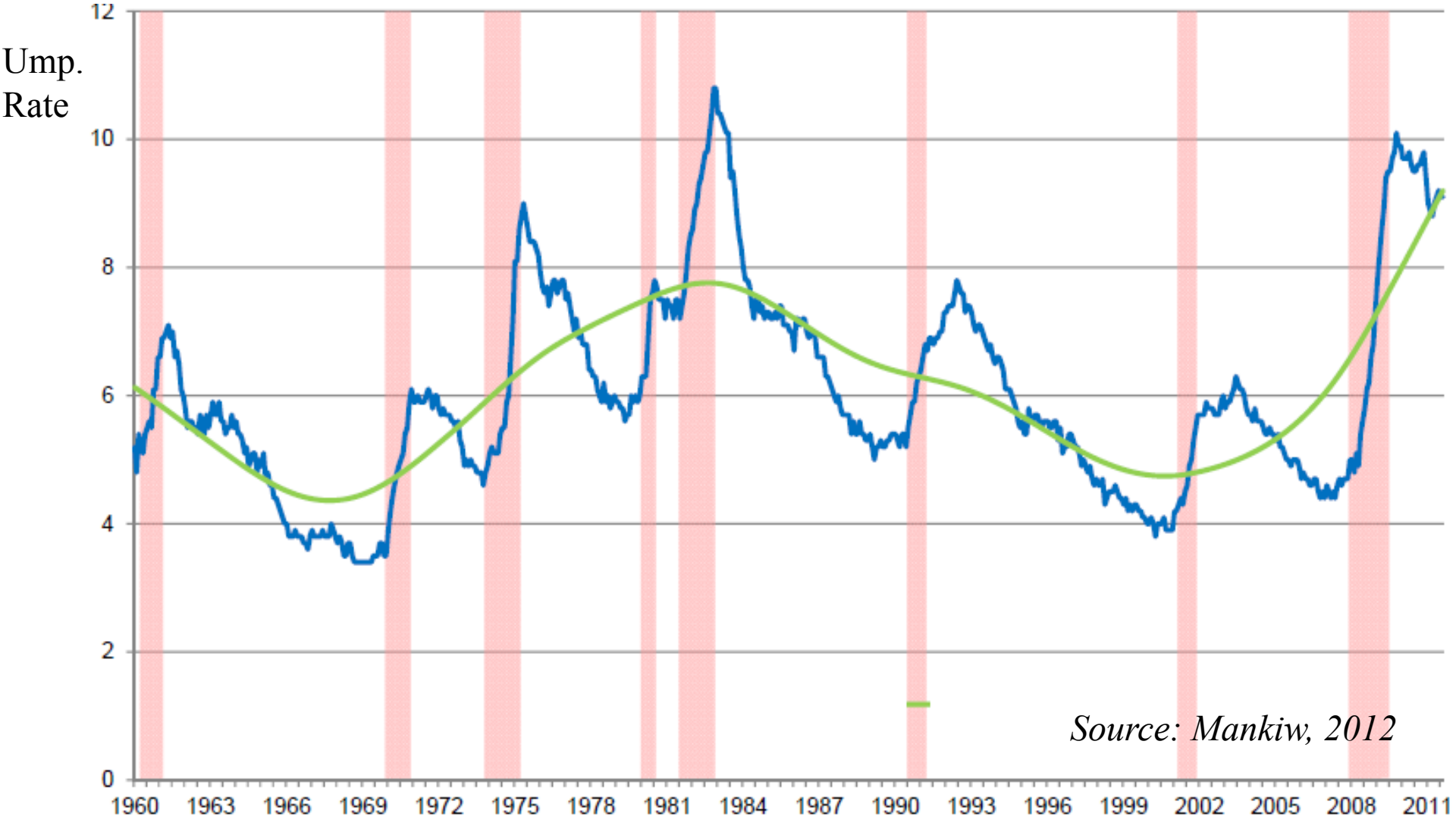
3. Cyclical Unemployment - follows the business cycle

• Economic contractions

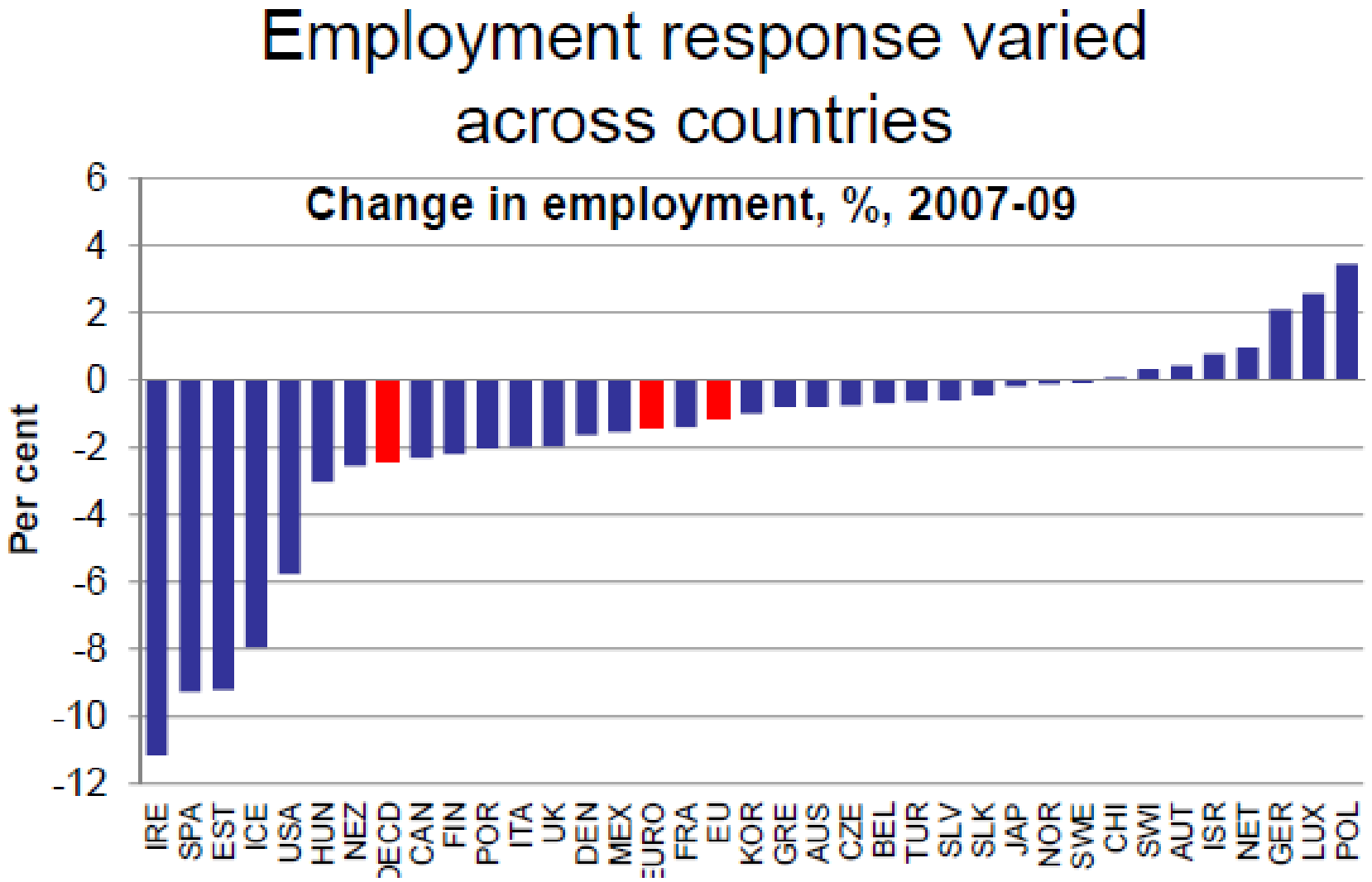
• Difficult to predict when jobs would come back (all cycles are different)

Business Cycle and Unemployment

TE The US Unemployment rate during 1948-2008



Recession of 2007-2009



Source: Pissarides, 2012

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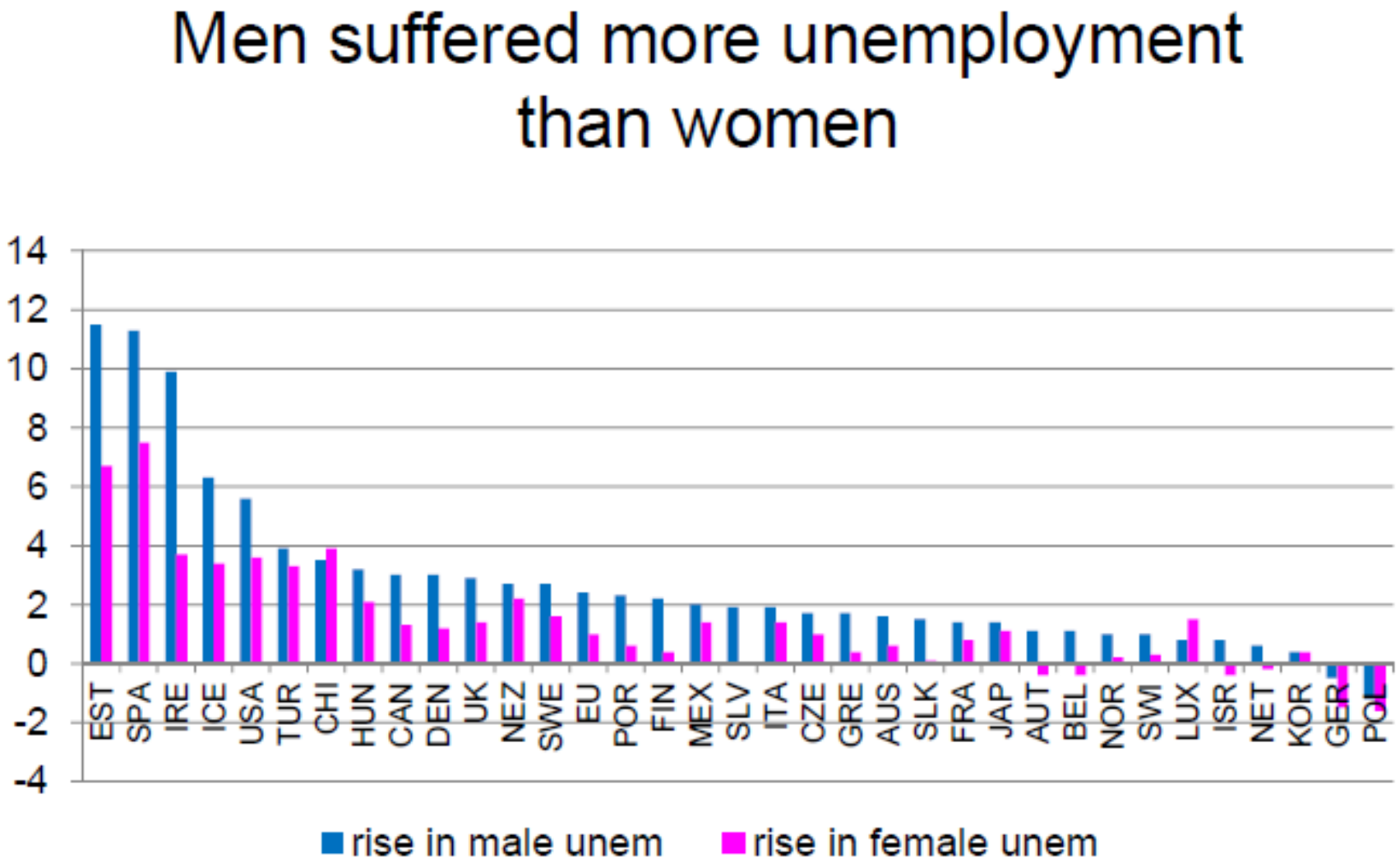

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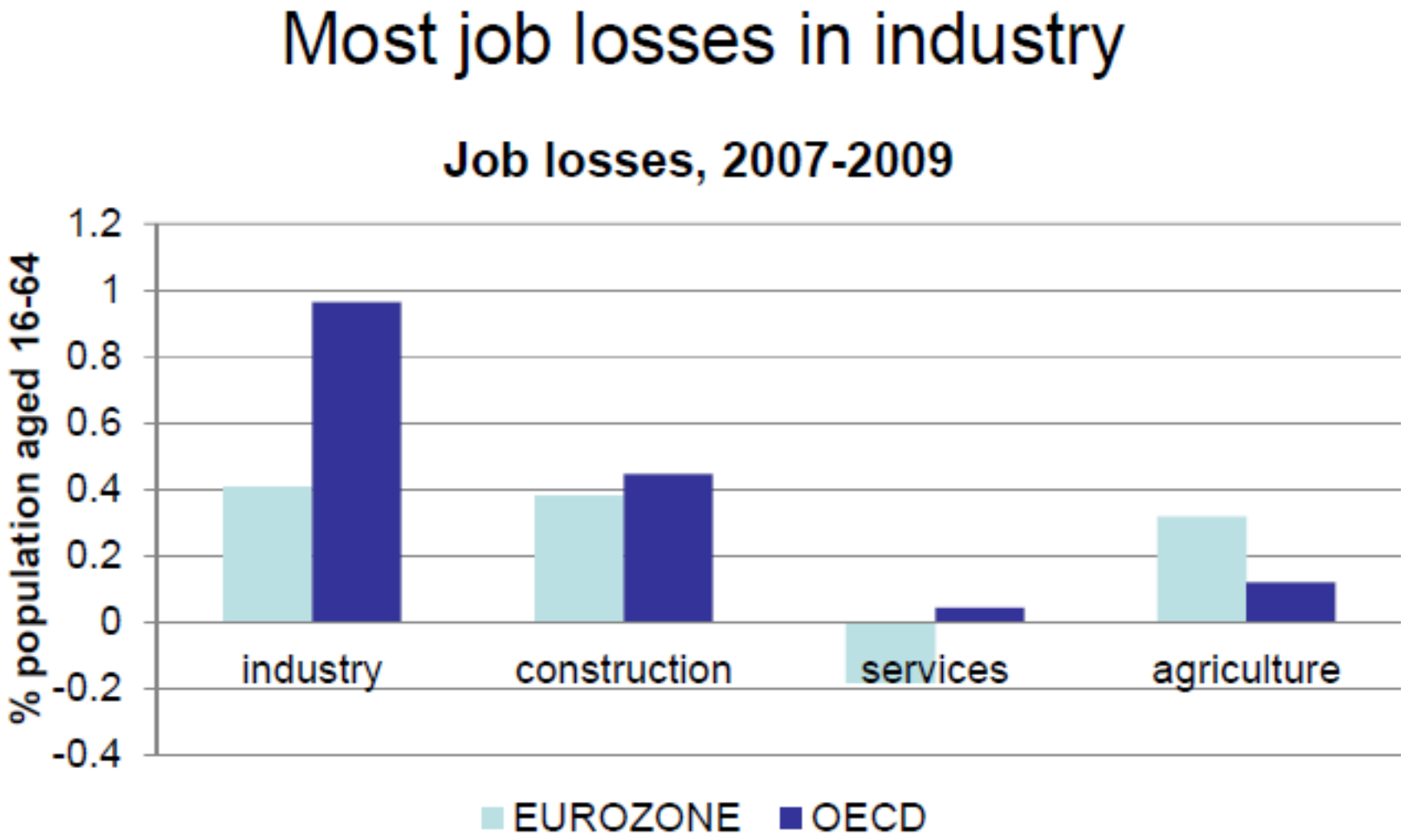


Source: Pissarides, 2012

Natural Rate of Unemployment

- Unemployment rate when the business cycle component is eliminated
- Only **frictional** and **structural** unemployment
- Always positive in dynamic economies, when the free movement of labor is allowed

=> **Full employment => Potential GDP**

Determinants

- Demographics

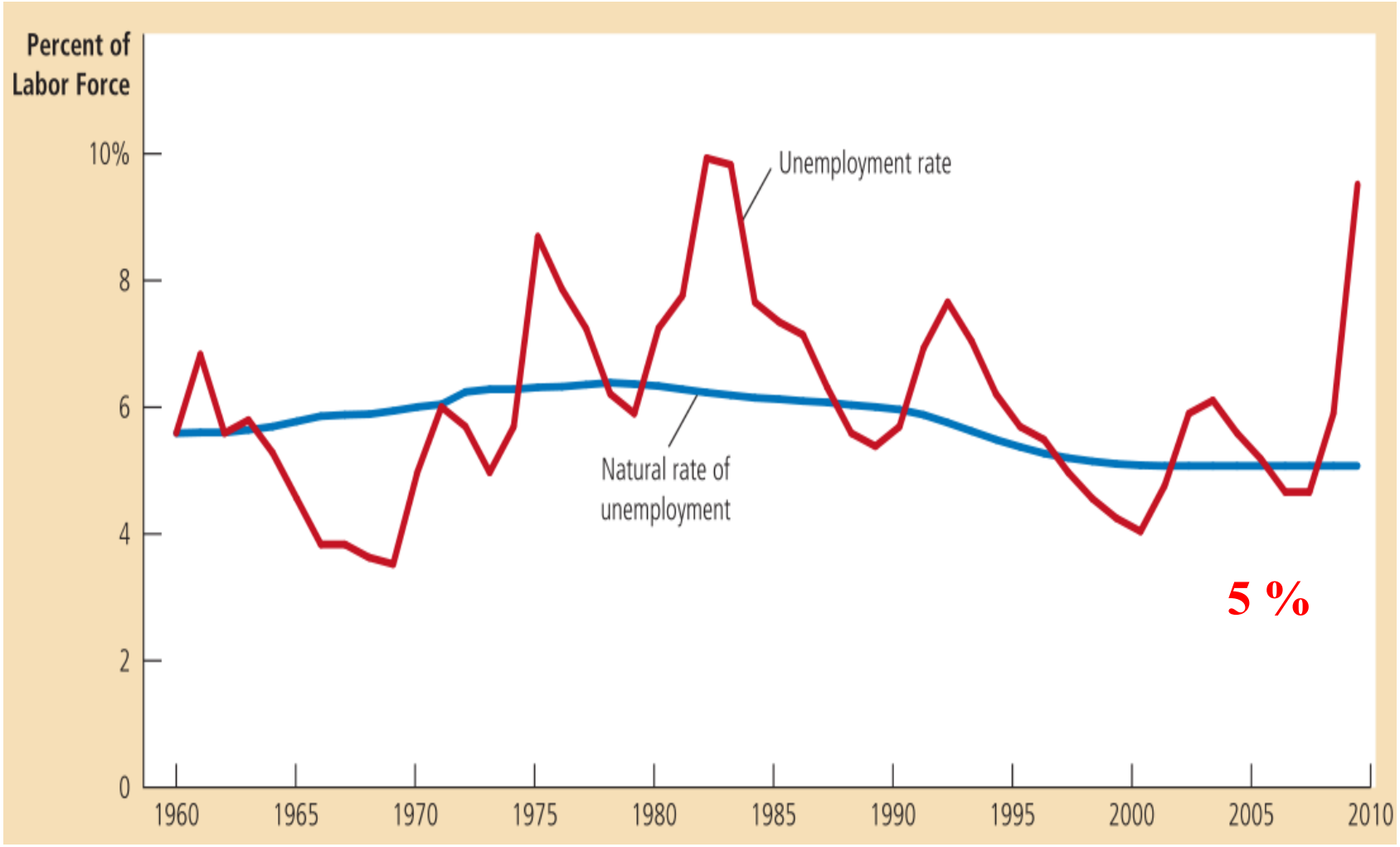
  Older labor force => Less frictions => Lower natural rate

- Government unemployment insurance

  More generous benefits => Higher natural rate

- Wage rigidity: Minimum-wage laws
- Efficiency wage

Natural Rate of Unemployment , the USA



Minimum Wage

- **Wage rigidity** – the failure of wages to adjust to the equilibrium level

  •A legal minimum on wages set by the law

  • In the range of 30-50% of the average wage in manufacturing

  Objective: Rising the income of working poor

  Major criticism: Increases unemployment

  • Causes teenagers to drop out of school

  • Prevent low skilled workers from the participation in training programs

Gross minimum wages Euros per month, 2012

Source:

Labor Supply and Labor Demand

Aggregate supply: the sum of individuals' labor supply

Extensive margin: Whether or not participate in the labor market?

Intensive margin: For participants, how many hours of labor to supply

• Most variations in labor supply is due the **extensive** margin (new entries)

Two goods: Consumption and leisure

• Wage is the opportunity cost of leisure

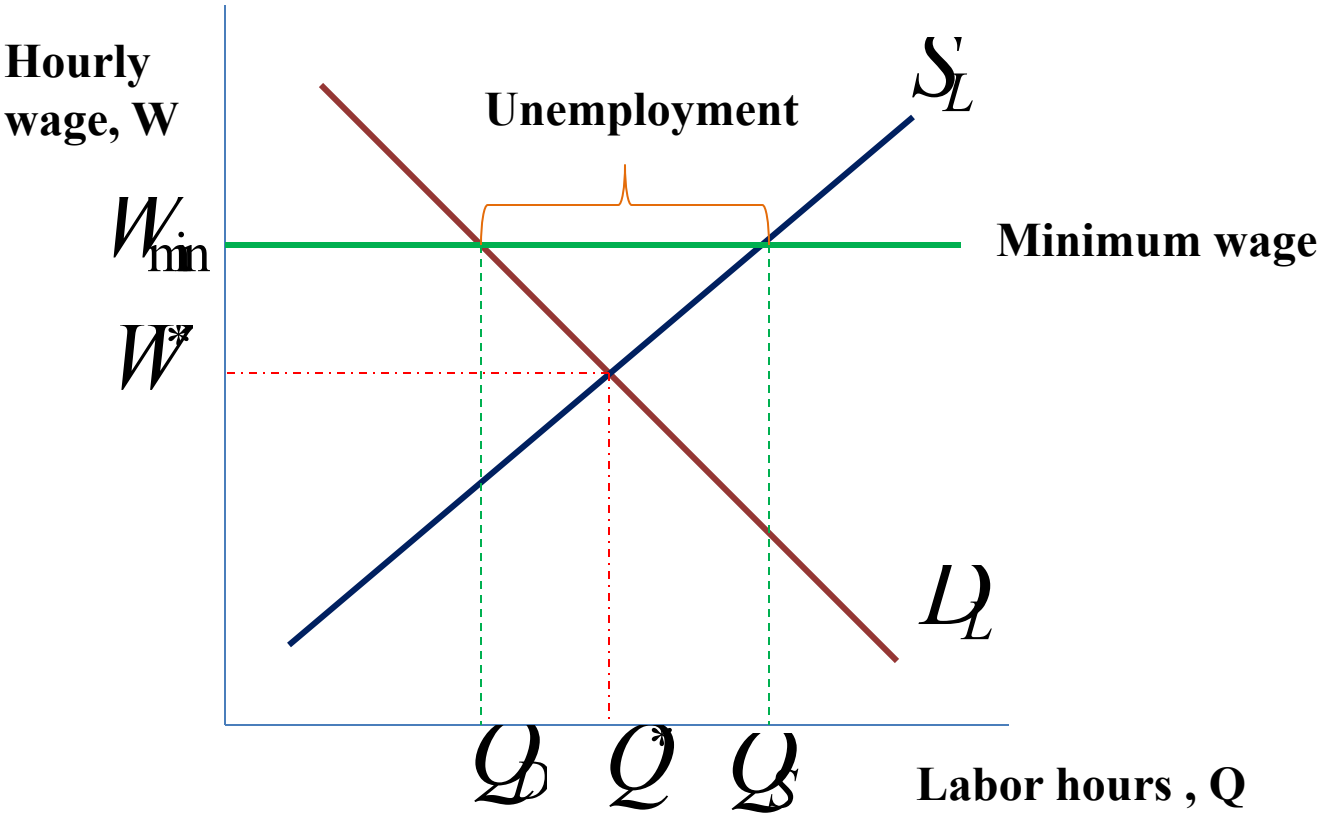
Reservation wage – the wage such that the agent participates in the labor market

• At the reservation wage workers are indifferent b/w staying on the job or leaving

A famous supermodel once said that she would not get out of bed for less than $10 000 (presumably per day)

Labor Demand: maximization of profits/ minimization of costs

The Labor Market: Equilibrium



N!B! Minimum wage results in the unemployment increase

- Different markets for different skills types
- The most affected are the least skilled whom the policy is intended to help

Increase in Minimum Wage

Assume the government raises the minimum wage.

- What does this do to the natural rate of unemployment?
- Do these effects arise by changing the amount of frictional unemployment or by changing the amount of structural unemployment?

Unionization

• Organization of workers in some industry that bargains with firms about wages and working conditions

• The wages of union workers are determined by the bargaining between union leaders and firm management

⇒ Higher than equilibrium wages

Wage effect

• Union status increases wages of workers by 10-20 %

• Outsiders are hurt by low fewer job offerings

The Importance of Labor Unions

Percent of Workers Covered by Collective Bargaining	
United States	18%
Japan	23
Canada	38
United Kingdom	47
Switzerland	53
New Zealand	67
Spain	68
Netherlands	71
Norway	75
Portugal	79
Australia	80
Sweden	83
Belgium	90
Germany	90
France	92
Finland	95
Austria	98

Source: Mankiw, 2009

The Role of Labor Unions (Cont.)

1. *Unions in the US have become considerably weaker and less prevalent since the 1950s. What did this do to the natural rate of unemployment?*

2. *Did these effects arise by changing the amount of frictional unemployment or by changing the amount of structural unemployment?*

Wage Distortion: Efficiency Wage

- Improve workers productivity and effort
- Reduce labor turn-over
- Improves average quality of the firm's work force

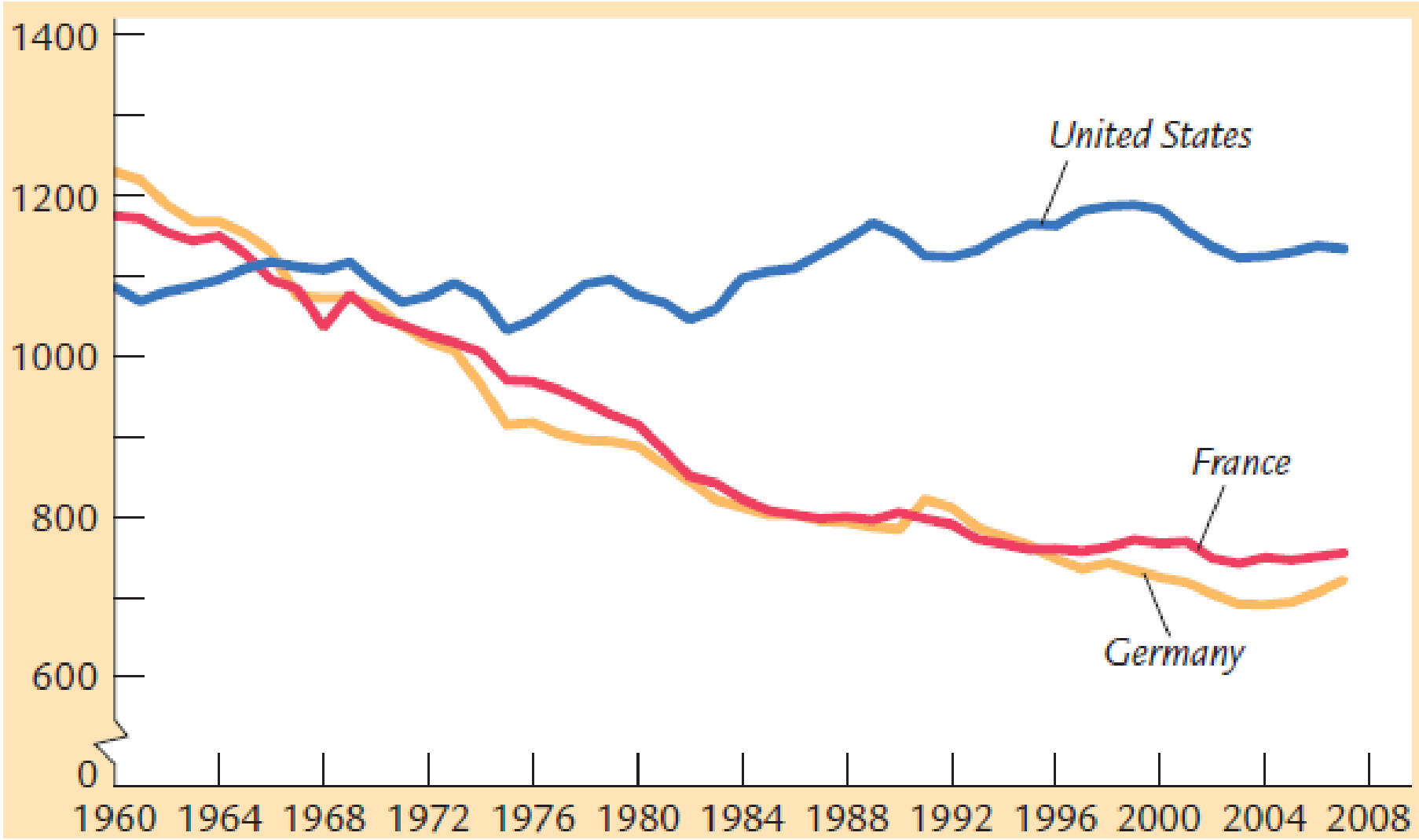
TE Ford Motor Company

- In 1914 the company started paying workers $5 per day

"We wanted to pay these wages so that business would be on a lasting foundation… The payment of $5 per day was one of the finest costs cutting mover we ever made" Henry Ford

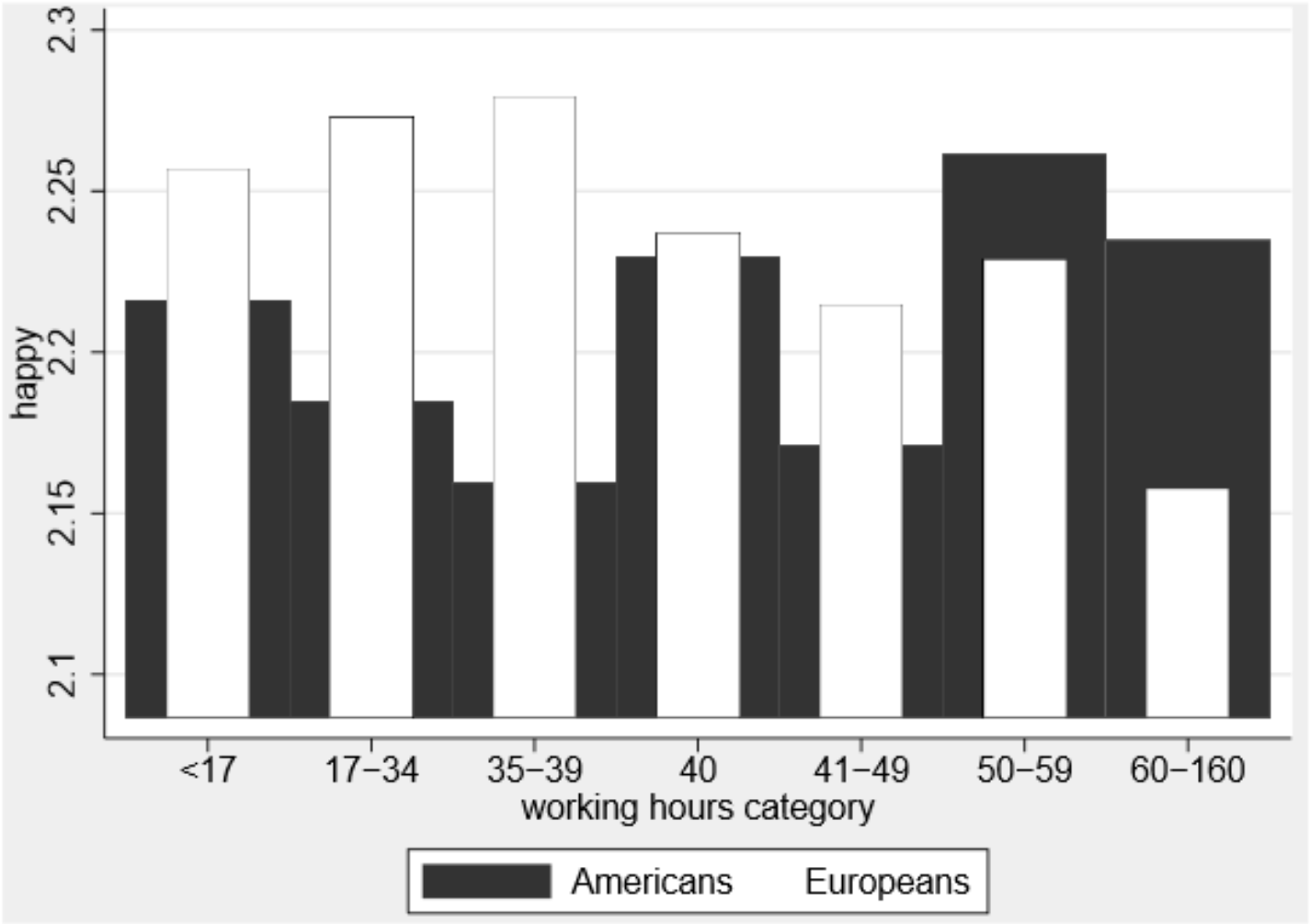
American vs. European Labor Markets

Annual hours worker per person



Source: Mankiw, 2009

Happiness by Working Hours in the US and Eur



Source: Okulicz-Kozaryn, 2013

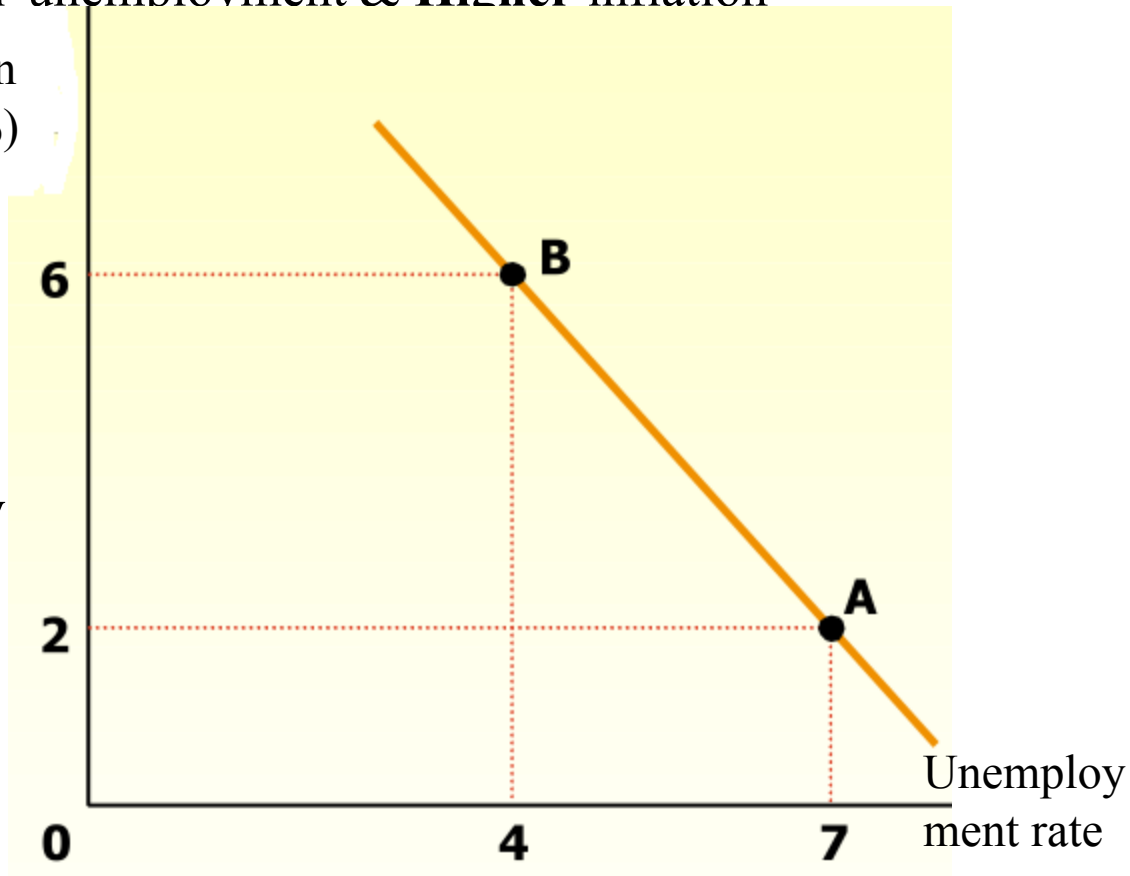
Inflation and Unemployment

• A trade-off: in the short run, inflation and unemployment move in opposite directions

• Empirical finding for the UK data 1861-1957

• Expansionary policy => **Lower** unemployment & **Higher** inflation

▪ **Phillips curve**



• Fighting inflation with **contractionary** monetary policy

$M^S \uparrow$ => AD $\downarrow$ => Y $\downarrow$ => U $\uparrow$

Inflation Targeting

Monetary policy is tailored with a focus on inflation

⇒Long-term goal for inflation (inflation target)

Target values: 2 % values for developed economies and 4 % for emerging

Price stability + Maximum employment

Why inflation target is not 0? => Benefits of inflation

✓ Reduce probability of falling into deflation

✓ Heating lower zero bound

✓ Downward nominal rigidities in factor prices

Critique: Shifting focus from other macroeconomic goals

Benefits of Positive Inflation

1. "Greasing the wheels of the economy"

- People dislike nominal wage cuts
- If inflation is positive, real wages decline
- People quite jobs rather than accept wage cuts => increase in unemployment
- Keeping inflation positive allows to eliminate this type of unemployment

2. Some inflation can may monetary policy easier