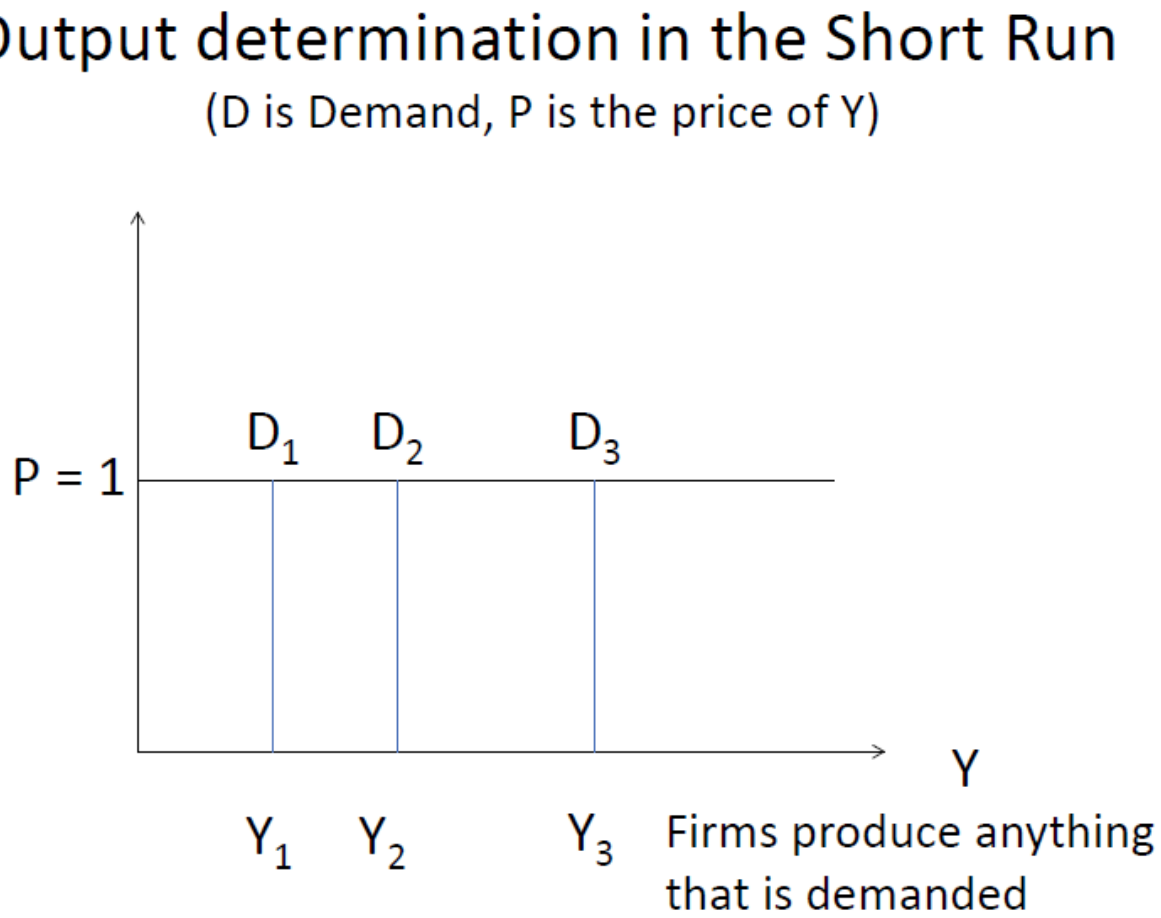
The Medium Run

14.02 Notes [1]

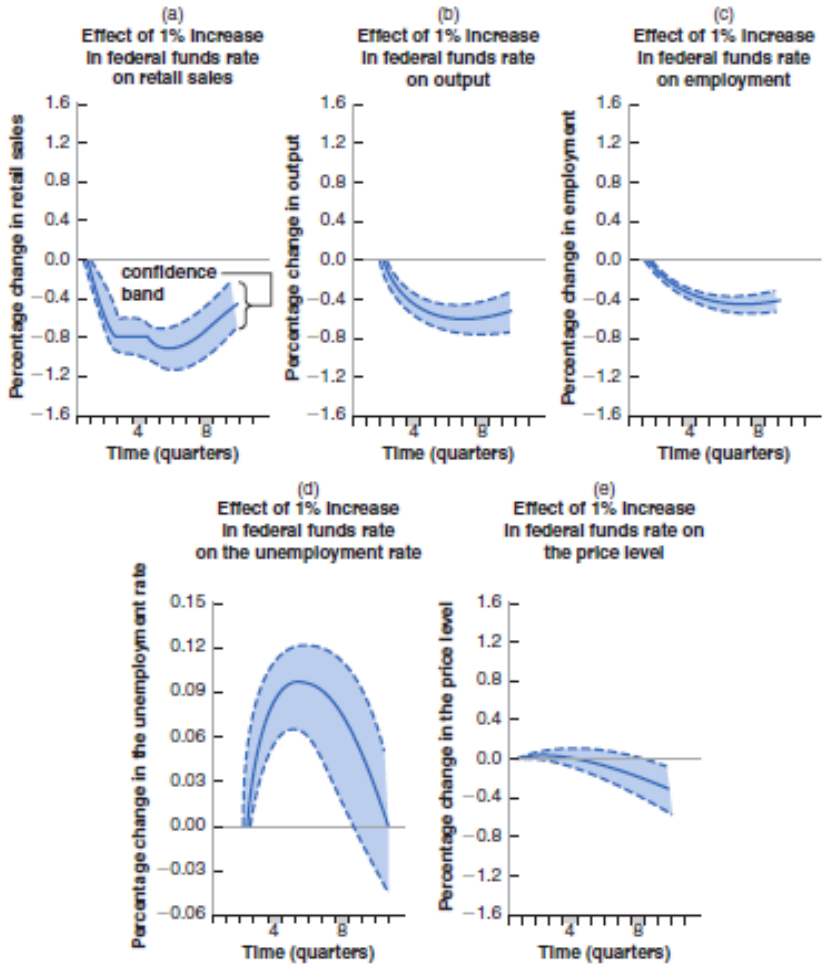
March 17, 2014

[1] These slides are NOT a substitute for chapters 6 to 9 of the book. They are meant to give you a more coincise and analytical presentation of the the Medium Run Model but many aspects of the model that are discussed in the book are not in these slides, and we shall assume you have read the book.

The Short Run



How bad is the assumption that prices don't move? Not too bad in the short run: 4 to 6 quarters.



Chapter 5 Goods and Financial Markets: The *IS–LM* Model

The Medium Run

- Think about what happens when firms respond to an increase in demand by increasing production
- Higher production will lead to higher employment
- Higher employment will lead to lower unemployment
- Lower unemployment will lead to higher wages
- Higher wages will increase production costs, leading firms to raise prices
- Higher prices will lead workers to ask for higher wages
- Higher wages will lead to further increases in prices
- and so on ...

- So far we assumed $P = 1$
- We now move away from this assumption
- To understand how the sequqnce of events described above happens we need to undertsand
  - how the labor market works: employm $\longrightarrow$ unempl$\longrightarrow$ wages
  - how firms set prices given production costs

Population, Labor force, Employment and Unemployment in the US (2010)

Population: 308.7 million

- Non institutionalized civilian population: 237.8 million
  - Out of the labor force: 84.0 million
  - Civilian labor force: 153.8 million
    - ★ Employment: 139 million
    - ★ Unemployed: 14.8 million

Labor market flows: measurement

- The Current Population Survey (CPS), is a monthly sample survey of approximately 60,000 households.
- Each month, the CPS is administered to about 40.000 households that were also in the survey during the previous month.
- The other 20.000 consists of new households

The month-to-month overlap allows the Bureau of Labor Statistics to track individuals who change labor force status from one month to the next

	Status in current month		
Status in prior month	*Employed*	*Unemployed*	*Not in labor force*
Employed.....	EE	EU	EN
Unemployed.....	UE	UU	UN
Not in the labor force	NE	NU	NN

Figure is in the public domain courtesy of the Bureau of Labor Statistics.

Labor market flows

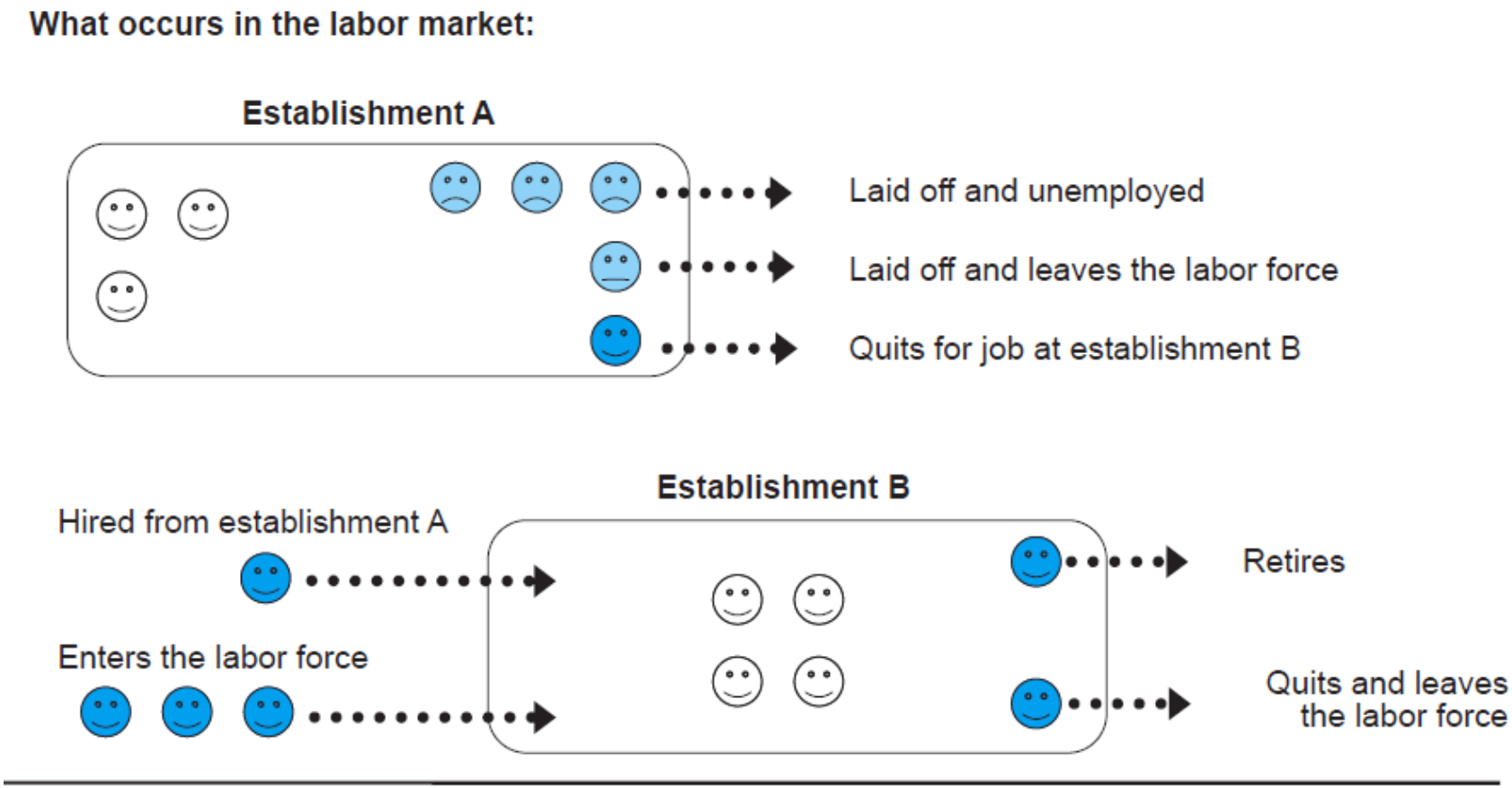


Figure is in the public domain courtesy of the Bureau of Labor Statistics.

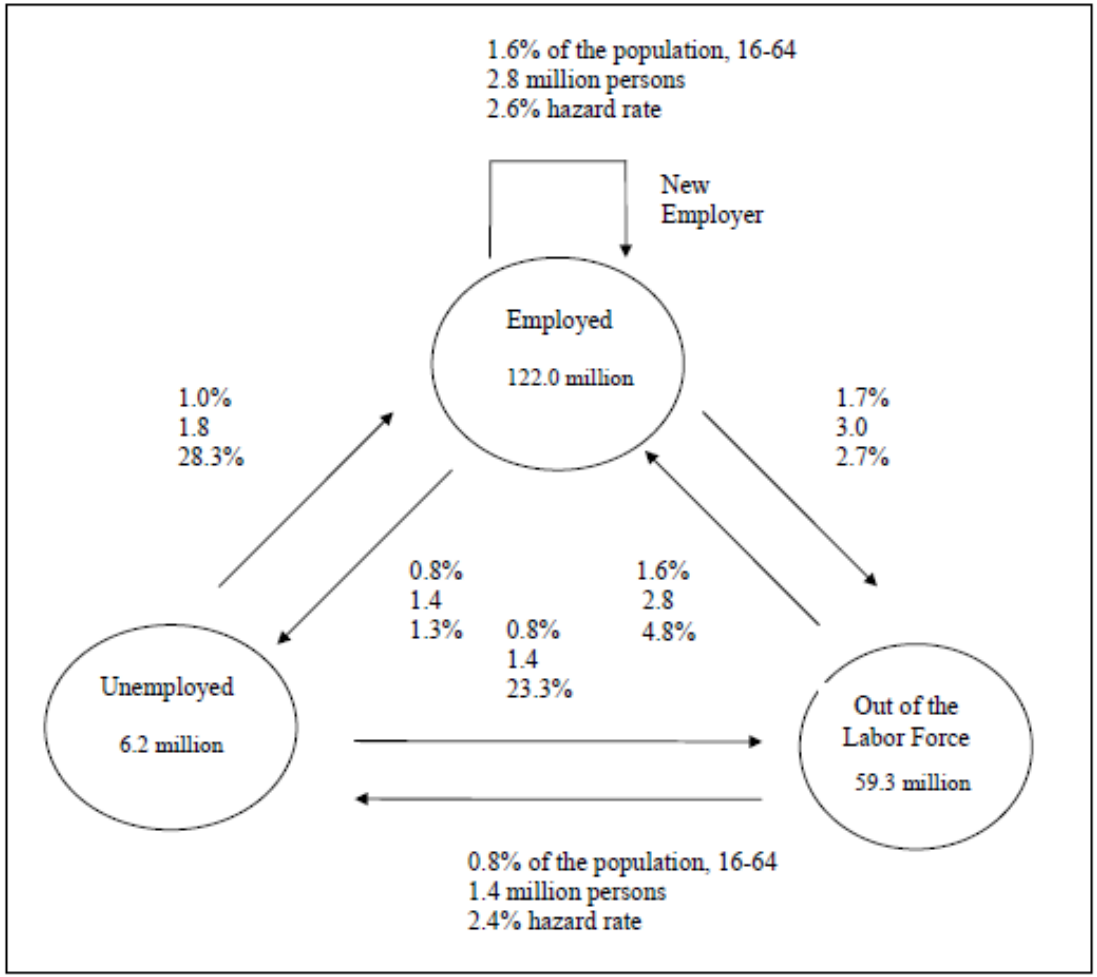
Labor market flows

Table 1. Labor force status flows, average monthly estimates, CPS data, 1990–2006

Labor force flows	Number of individuals (in thousands)	Percent of population	Percent of labor force	Percent of original stock
Employed to unemployed (EU)	1,821	0.9	1.3	1.4
Employed to not in labor force (EN)	3,561	1.7	2.6	2.7
Unemployed to employed (UE)	2,035	1.0	1.5	27.4
Unemployed to not in labor force (UN)	1,642	.8	1.2	22.1
Not in labor force to employed (NE)	3,398	1.6	2.5	4.9
Not in labor force to unemployed (NU)	1,832	.9	1.3	2.7

Figure is in the public domain courtesy of the Bureau of Labor Statistics.

Average monthly worker flows, 1996-2003



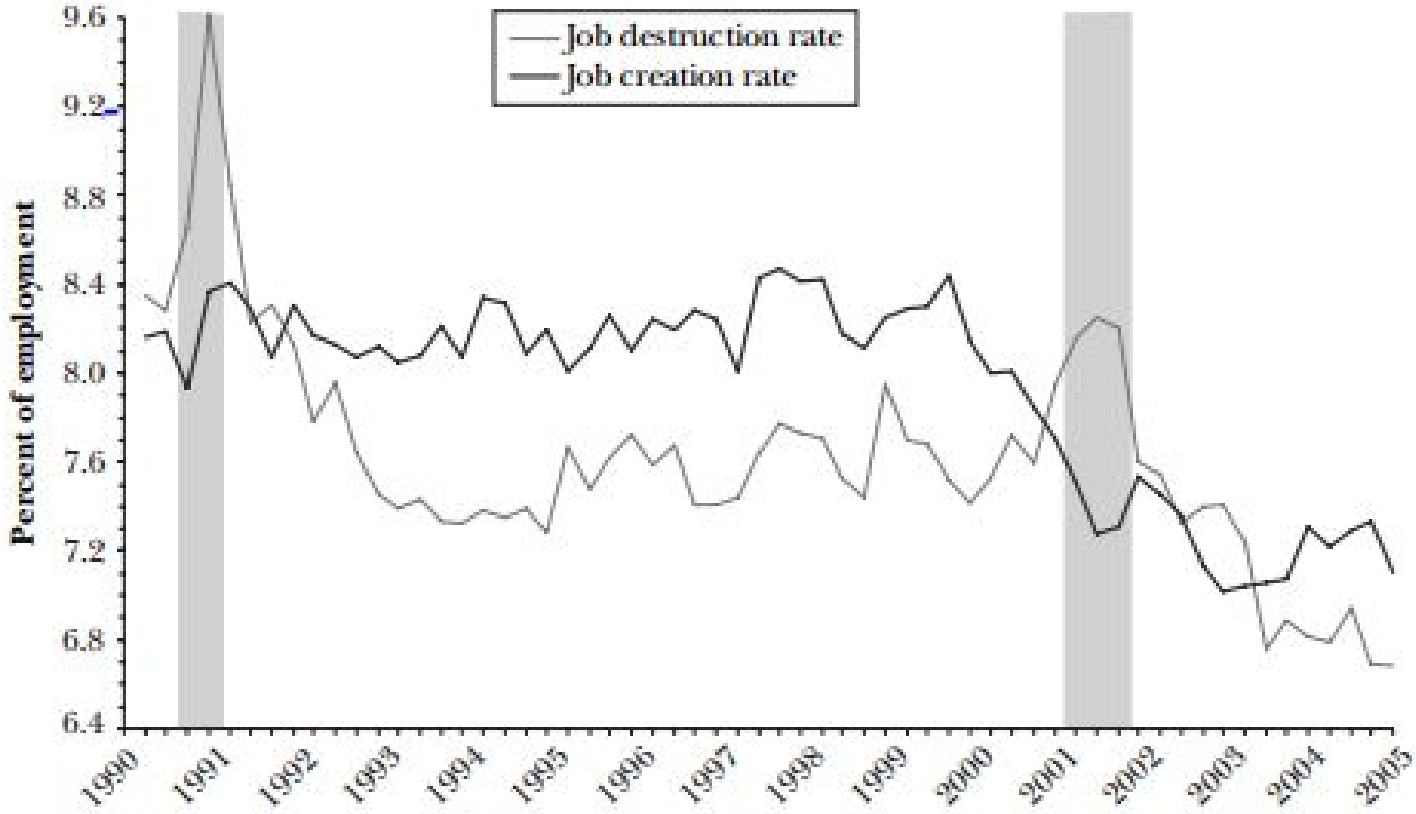
Source: Current Population Survey tabulations reported in Fallick and Fleischman (2004)

Courtesy of Steven J. Davis, R. Jason Faberman, John Haltiwanger, and the American Economic Association. Used with permission.

Job creation and job destruction over the cycle

Figure 2

Quarterly Job Flows in the Private Sector, 1990–2005



Source: Faberman (2006); tabulated from BLS Business Employment Dynamics (BED) micro data.
Note: Shaded areas show NBER-dated recessions.

Courtesy of Steven J. Davis, R. Jason Faberman, John Haltiwanger, and the American Economic Association. Used with permission.

Hires, separations, quits and layoffs over the cycle

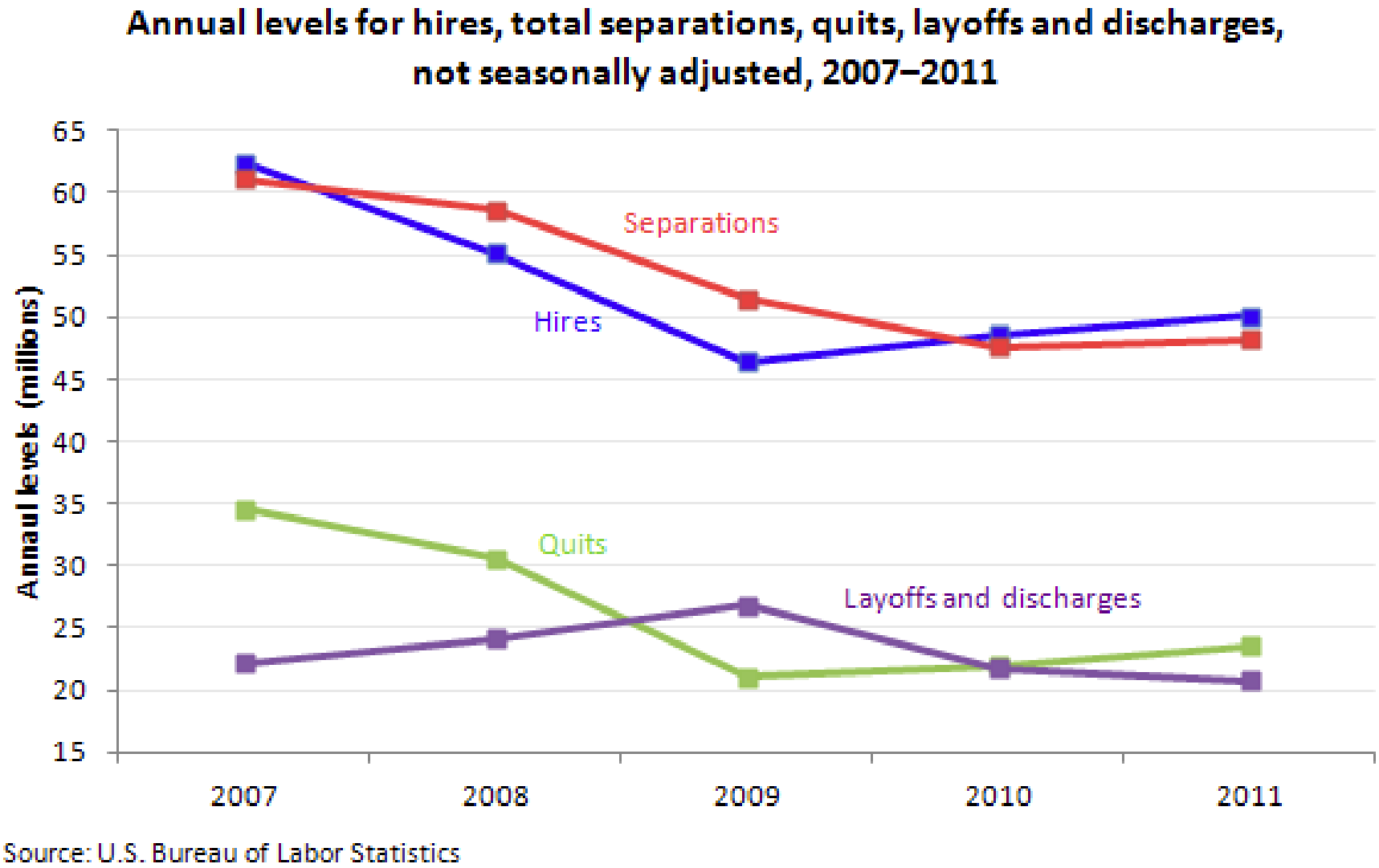
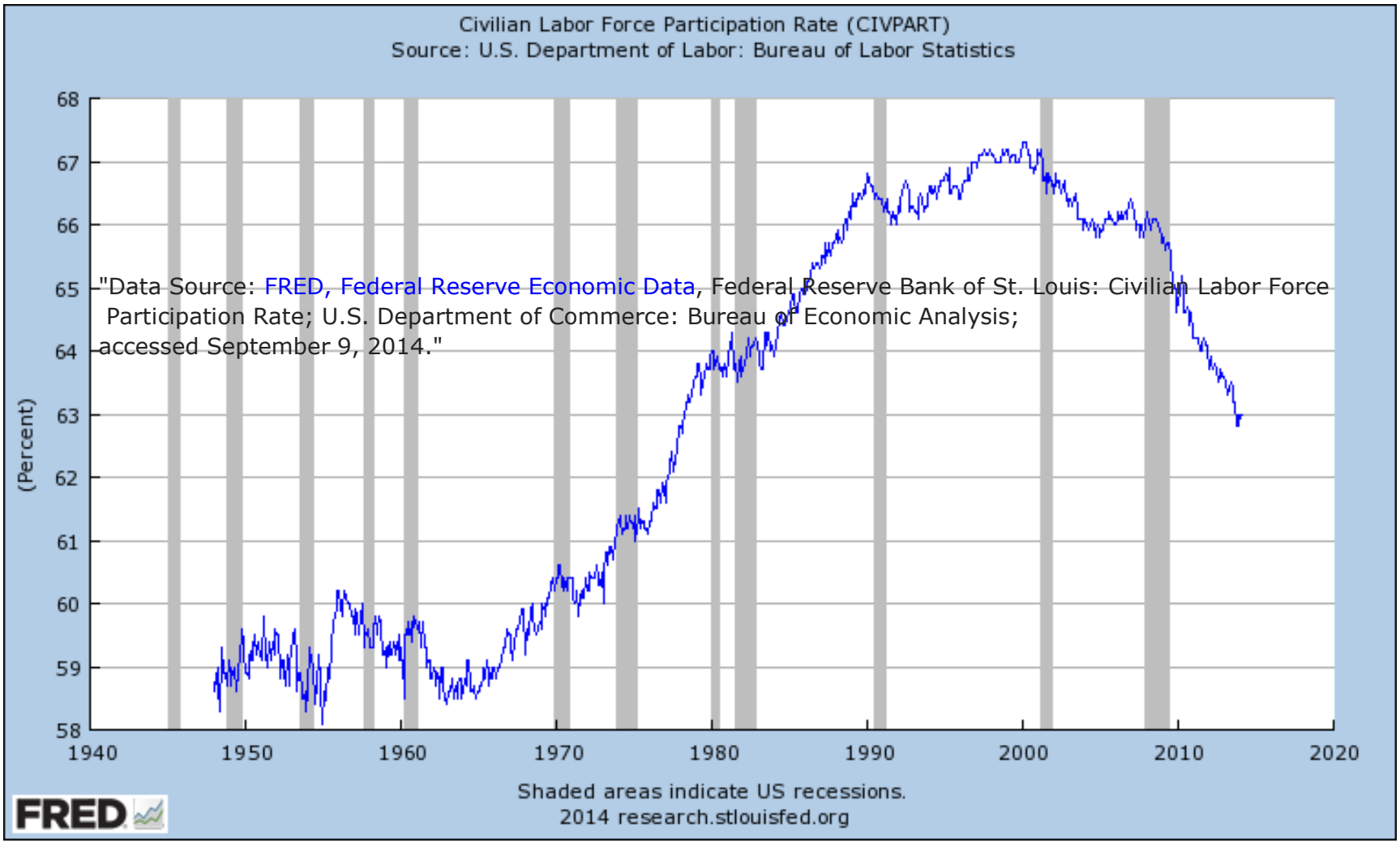


Figure is in the public domain courtesy of the Bureau of Labor Statistics.

Labor force participation in a boom and in a recession



"Data Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis: Civilian Labor Force Participation Rate; U.S. Department of Commerce: Bureau of Economic Analysis; http://research.stlouisfed.org; accessed September 9, 2014."

How are wages and prices set

- wage setting

$W = P^e F(u, z)$

Let's assume for the time being $P^e = P$, so that dividing by P we get the real wage W/P

$$\frac{W}{P} = F(u, z), \quad F_u < 0, \quad F_z > 0$$

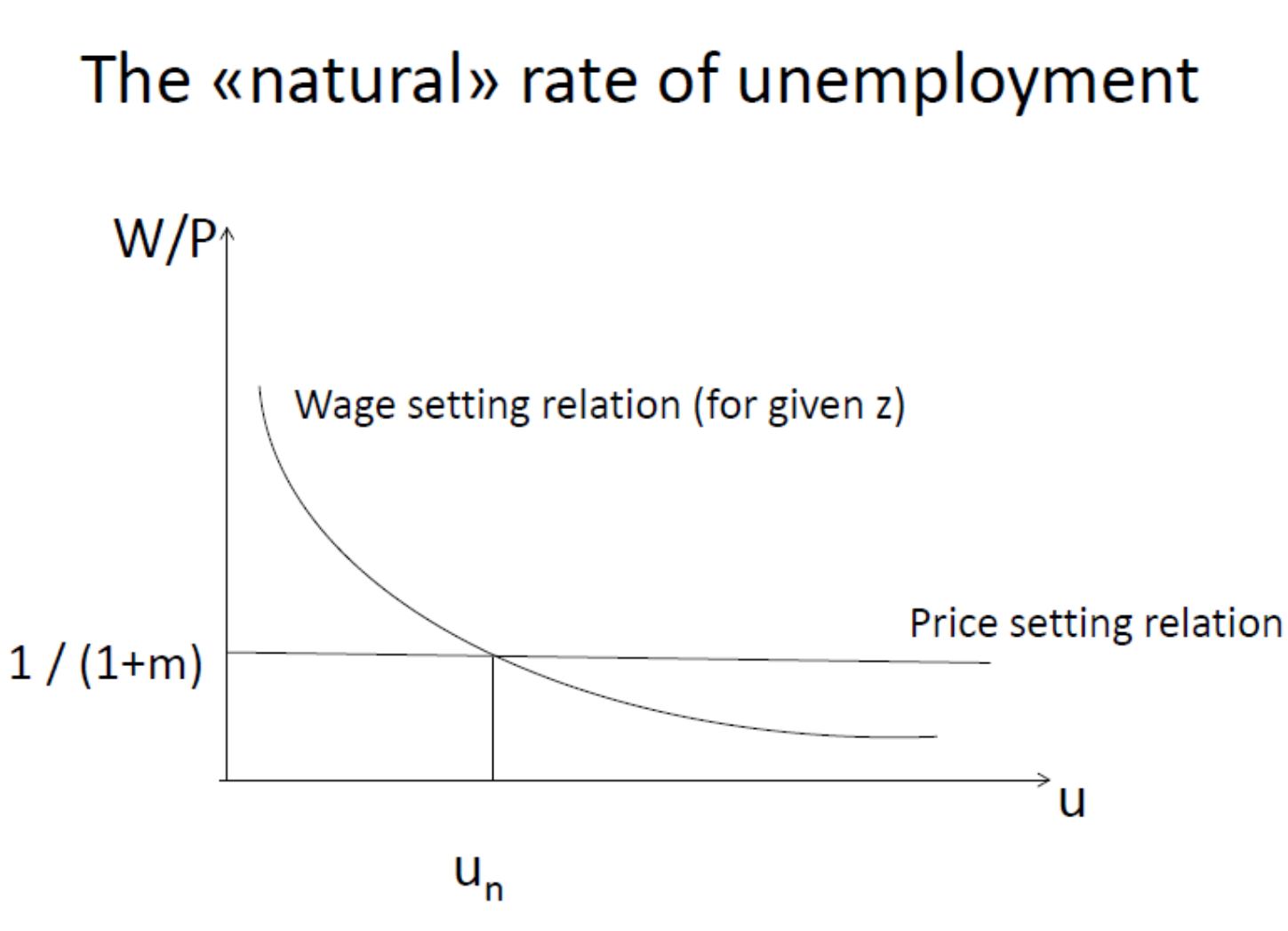
- price setting: start from the production fct assuming only one factor, N and constant returns to scale, so that marginal cost is W

$$Y = N$$

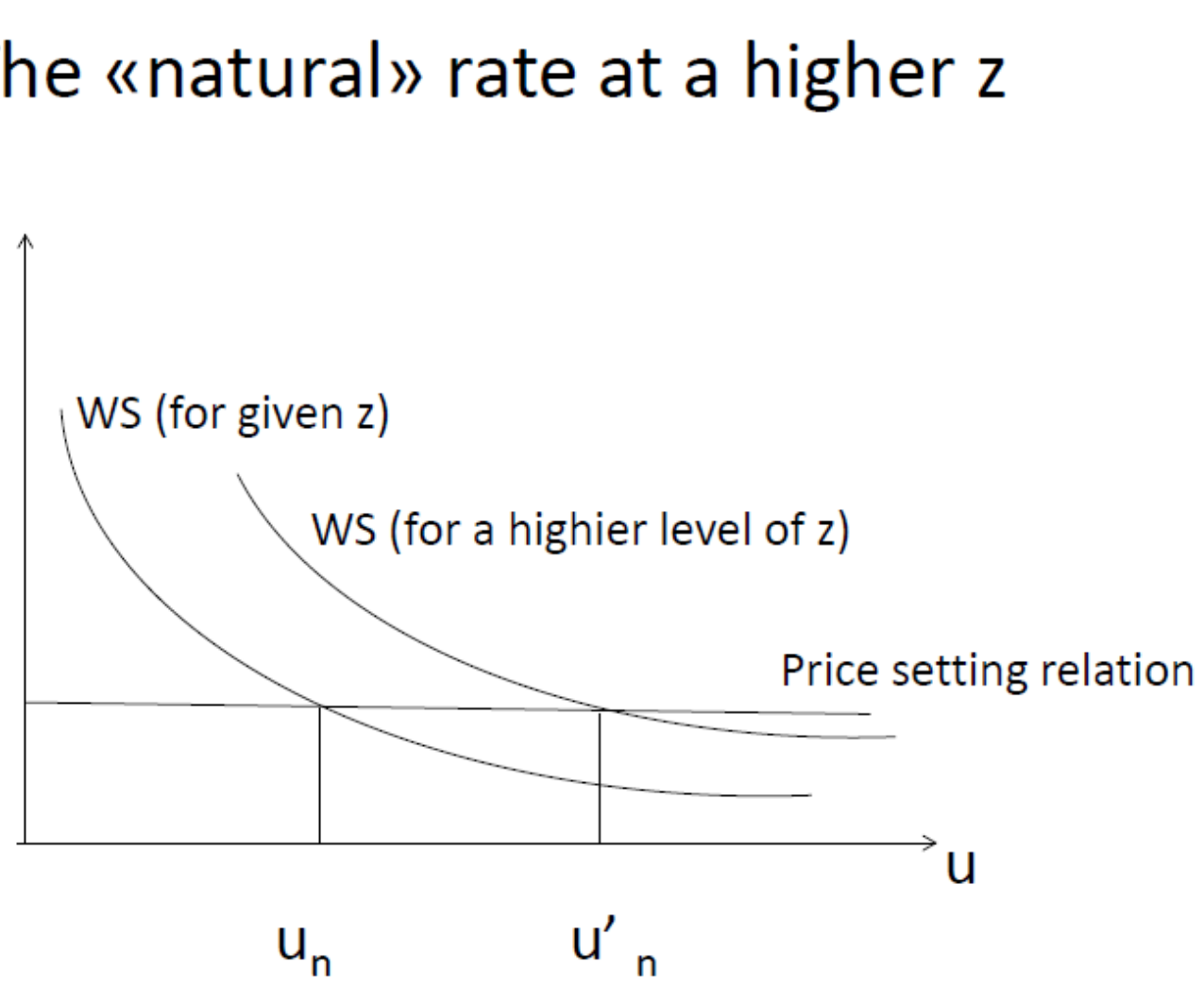
$$P = (1 + m)W$$

$$\frac{W}{P} = \frac{1}{1 + m}$$

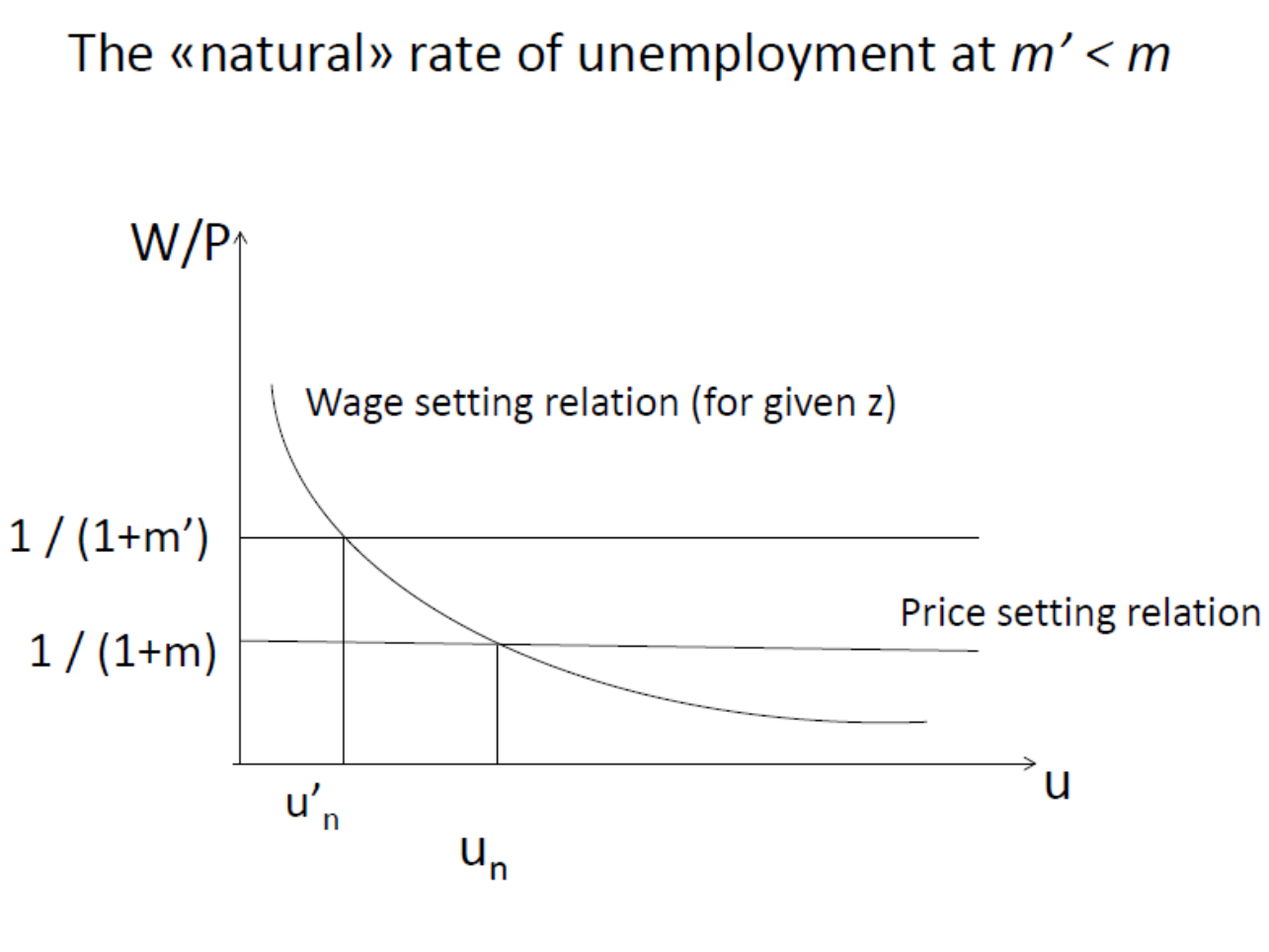
Wages, prices and the "natural" rate of unemployment



An increase in the generosity of unemployment benefits



Higher competition (lower mark-ups) reduce the natural rate of u



Model 3: a macroeconomic model of the Medium Run

- Aggregate supply (for given P^e)
  - wage determination
    $$W = P^e F(u, z)$$
  - price determination
    $$P = (1 + m)W$$

$$P = P^e(1 + m)F(u, z)$$

- Going from u to Y

$$u = \frac{U}{L} = \frac{L - N}{L} = 1 - \frac{N}{L} = 1 - \frac{Y}{L}$$

- Price setting (for given P^e)

$$P = P^e(1 + m)F(1 - \frac{Y}{L}, z)$$

Model 3: a macroeconomic model of the Medium Run

- Aggregate demand

$$\frac{M}{P} = YL(i)$$

14.02 Principles of Macroeconomics

Spring 2014