

Chapter 10

Keynesian Business Cycle Theory: The Sticky Wage Model and The Animal Spirits

Keynesian Business Cycle Models

- Developed by Hicks in late 1930s
- Advanced by Samuelson in 1950s
- Large-scale Models in 1960s

- Here: Sticky Wage Model
- Chapter 11: Other BC models

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc. Slide 2

Keynesian Sticky Wage Model

- The **Nominal** wage rate is not flexible to clear the labor market in the short run. **Not Marketing Clearing Framework.**

- Property: 1) **Money is not Neutral.**
 - • Money → • Aggregate Output and Employment
 - Monetary policy **can be** used to be improve ECN welfare.

- Property: 2) **Unemployment exists.**

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc. Slide 3

Plan

Labor Market, Money Market, Goods Market

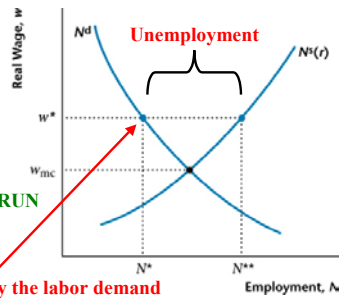
→ derive IS and LM curves

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 4

Figure 10-1 The Labor Market in the Keynesian Sticky Wage Model

Nominal Wage rate is
STICKY
Because
Institutional Rigidities
ONLY in the SHORT RUN



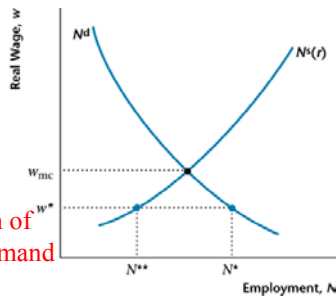
Labor is determined by the labor demand

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 5

Figure 10-2 The Labor Market in the Keynesian Sticky Wage Model When There Is Excess Demand

There is no
Unemployment



This is a situation of
Excess Labor Demand

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 6

Figure 10-3 Construction of the Aggregate Supply Curve

Sticky Wage

→ Labor Supply is irrelevant

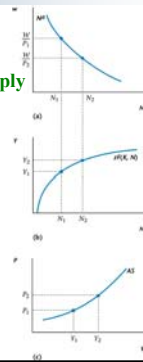
→ r is irrelevant to determine Output Supply

Given W (nominal wage) fixed

• $P \rightarrow \bullet w \rightarrow \bullet N \rightarrow \bullet Y$

Given W (nominal wage) fixed

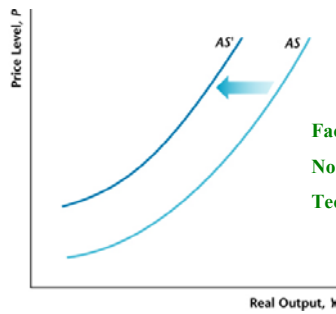
Graph the relation between P and Y



Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 7

Figure 10-4 The Effect of an Increase in W or a Decrease in z



Factors Shifting AS:
Nominal Wage Rate W (-)
Technology Z (+)

How about the interest rate?

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 8

Construction of Aggregate Demand

From the IS and LM curves

- IS is exactly the same as Y^d in Chapter 7.
- We will derive the LM curve (slide 11).

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 9

Figure 10-5 The IS Curve

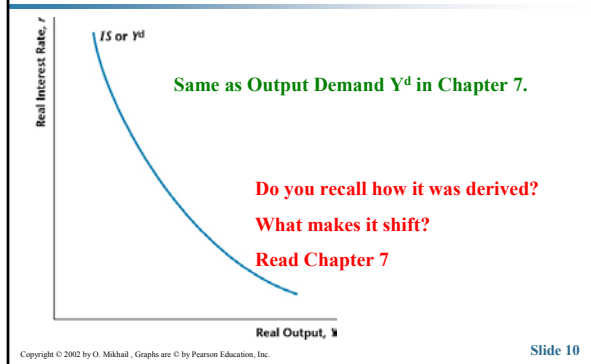


Figure 10-6 Money Demand, Money Supply, and the LM Curve

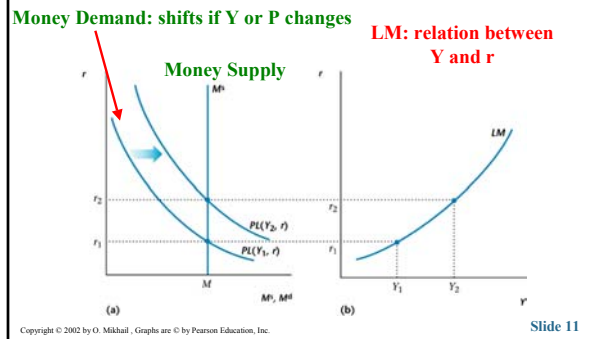
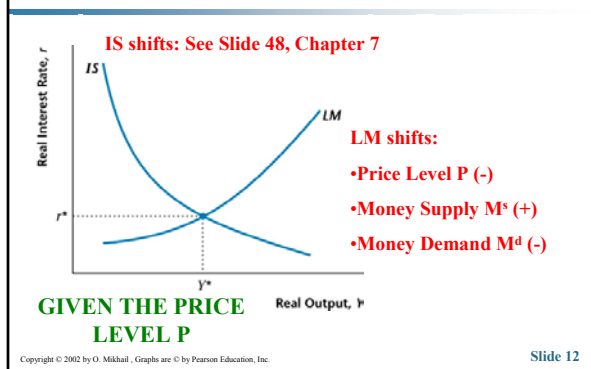


Figure 10-7 Determination of r and Y Given P



AGGREGATE DEMAND from IS/LM

Derive the Aggregate Demand AD from the IS/LM

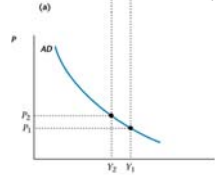
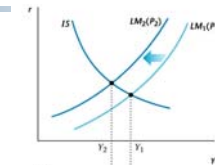
Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 13

Figure 10-11 The Aggregate Demand Curve

• $P \rightarrow$ • $LM \rightarrow$ • Y

Track relation between P and Y



Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 14

Aggregate Demand / Aggregate Supply

- AD shifts:
 - IS (+)
 - LM (+)

- AS shifts: slide 8
 - Wage (-)
 - Technology (+)

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 15

The KEYNESIAN Sticky Wage Model

THE MODEL (non-market clearing)

- IS / LM
- AD / AS

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

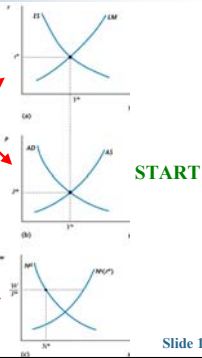
Slide 16

Figure 10-14 The Keynesian Sticky Wage Model

AD / AS \rightarrow P and Y

P \rightarrow determines position of LM
 \rightarrow determines r

P \rightarrow determines w/P \rightarrow N



Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 17

Figure 10-15 An Increase in the Money Supply in the Sticky Wage Model

Direct:

$\uparrow M^s \rightarrow \uparrow AD \rightarrow \uparrow Y$ and $\uparrow P$

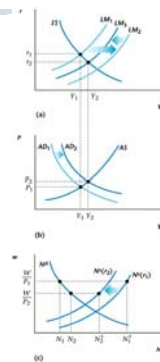
$\uparrow M^s \rightarrow \uparrow LM$

Secondary:

$\uparrow P \rightarrow \downarrow LM$, therefore $\downarrow r$ and $\uparrow Y$

END RESULT:

$\downarrow r$, $\uparrow Y$, $\uparrow P$, $\downarrow N^s$, $\downarrow w$, $\downarrow UE$



Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 18

Is Money Neutral?

- NO in Keynesian Sticky Wage Model.
- Money has REAL effects through the monetary transmission mechanism.
- Is it a 'good' model? Let's compare the predictions of the model to the Data.

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 19

STICKY WAGE vs. DATA

Table 10.1 Data vs. Predictions of the Keynesian Sticky Wage Model with Monetary Shocks

	Data	Model
Consumption	Procyclical	Procyclical
Investment	Procyclical	Procyclical
Price Level	Countercyclical	Procyclical
Money Supply	Procyclical	Procyclical
Employment	Procyclical	Procyclical
Real Wage	Procyclical	Countercyclical

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 20

COMPARE PREDICTIONS of

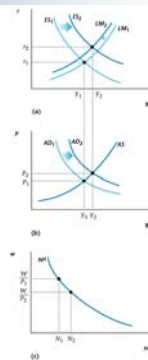
**REAL BUSINESS CYCLE MODEL
(Chapter 7)**

to

**KEYNESIAN STICK WAGE MODEL
(Chapter 10)**

Figure 10-16 An Increase in the Demand for Investment Goods in the Sticky Wage Model

ANIMAL SPIRITS



Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 22

ANIMAL SPIRITS vs. DATA

Table 10.2 Data vs. Predictions of the Keynesian Sticky Wage Model with Investment Shocks

	Data	Model
Consumption	Procyclical	Countercyclical
Investment	Procyclical	Procyclical
Price Level	Countercyclical	Procyclical
Money Supply	Procyclical	Acyclical
Employment	Procyclical	Procyclical
Real Wage	Procyclical	Countercyclical

Copyright © 2002 by O. Mikhail. Graphs are © by Pearson Education, Inc.

Slide 23
