Class 6

Econ 402

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Class 6 Outline

- Circular Flow Diagram and General Equilibrium
- Do Economists Actually Use the Classical Model?
  - Wage Determination
  - The Consumption Function and Crowding Out
- Summary and Looking Ahead

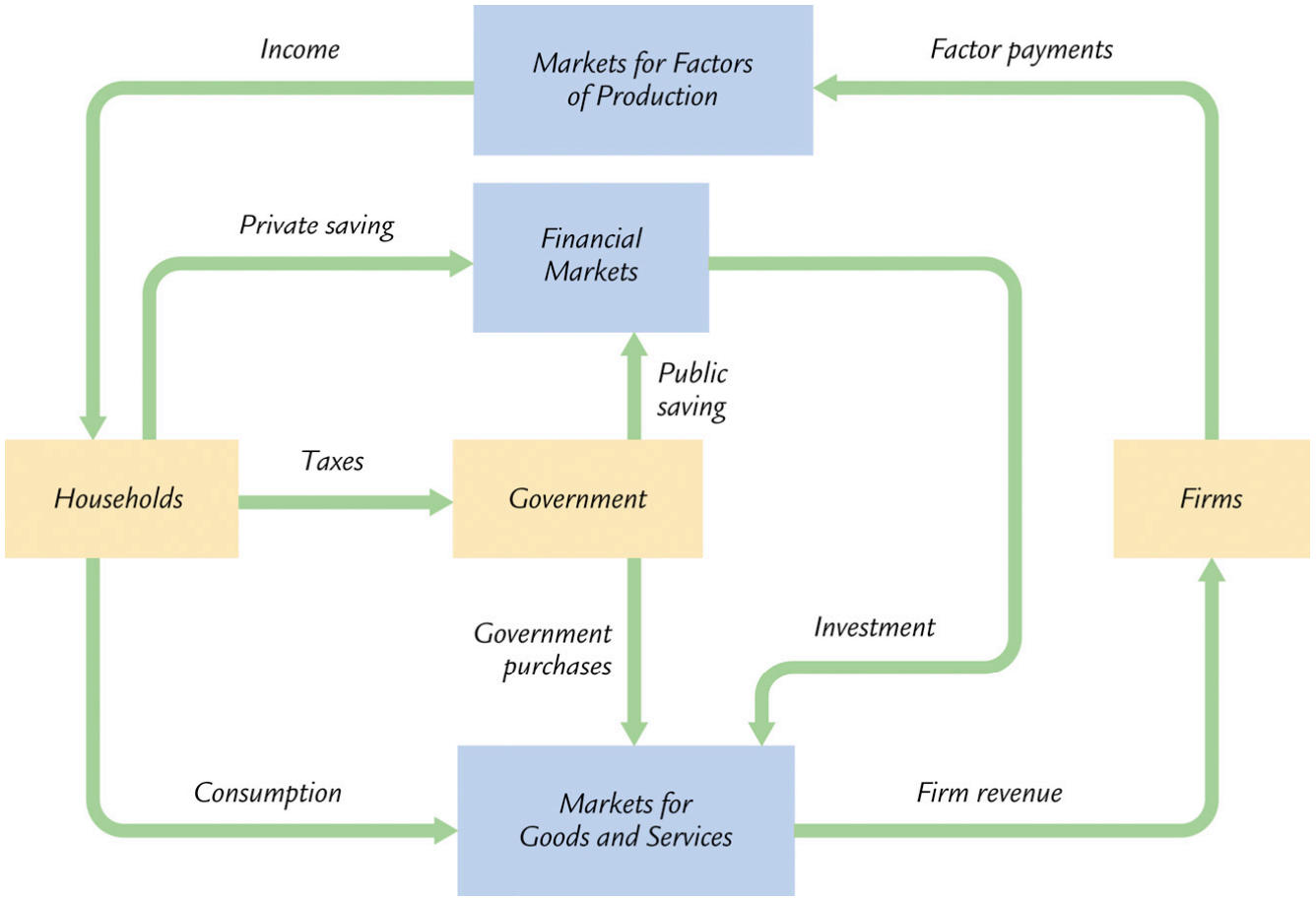


Figure 3.1 The Circular Flow of Dollars Through the Economy
Mankiw: Macroeconomics, Sixth Edition

Using the Classical Model

- Wage determination

Let $Y=F(K,L)= 100*K^{0.5}L^{0.5}$

Does this production function exhibit constant returns to scale? Does it exhibit diminishing marginal product with respect to labour? (For simplicity, if you want, fix K=100.)

$Y=F(K,L)= 100*K^{0.5}L^{0.5}$

Solve for the equilibrium real wage if K=100 and L=25. (First explain how you would solve and then find the numerical answer.) List the assumptions made in the classical model about the behaviour and circumstances of firms, the determination of K and L, and the relationship between the factors of production and output.

$Y=F(K,L)= 100*K^{0.5}L^{0.5}$

In the real world, the marginal product of labour is unobserved. However, we can observe the average product of labour Y/L. Given the Cobb-Douglas aggregate production function, how could we test the relevance of the Classical Model in terms of the relationship between the MPL and real wages?

TABLE 3-1

Growth in Labor Productivity and Real Wages: The U.S. Experience

Time Period	Growth Rate of Labor Productivity	Growth Rate of Real Wages
1959–2003	2.1%	2.0%
1959–1973	2.9	2.8
1973–1995	1.4	1.2
1995–2003	3.0	3.0

Source: *Economic Report of the President 2005*, Table B-49. Growth in labor productivity is measured here as the annualized rate of change in output per hour in the nonfarm business sector. Growth in real wages is measured as the annualized change in compensation per hour in the nonfarm business sector divided by the implicit price deflator for that sector.

Table 3.1
Mankiw: Macroeconomics, Sixth Edition

International Wage Determination and Globalization

Andrew M. Warner

March 2002

Abstract

This paper analyzes new data on wages and salaries in 3256 companies in 58 countries. Multinational companies pay a wage premium that averages about 14 percent for high-paying occupations in relatively poorer countries. They do not pay a significant premium in OECD countries nor for very low-paying occupations in poorer countries. The data also indicate that larger companies pay higher wages in all occupations. When we look at wages by occupation across countries the data indicate that minimum wage rules have a small effect in raising pay of low-wage occupations. Cross country differences in the extent of democratic rights or in wage-setting institutions or unionization rates appear to have little effect on wages. The size of the immigrant population and the share of workers in agriculture is also not strongly correlated with wages of low-paying occupations. Wages and salaries generally are tightly correlated with the level of GDP, as expected. However, the association is much weaker for salaries of managers. Empirical tests suggest that this is linked to the fact that executives in certain countries which either speak English as a primary language or have high foreign language attainment can more readily market themselves globally rather than locally. This means that labor markets are global but only for certain high paying professions and for certain internationally-oriented countries.

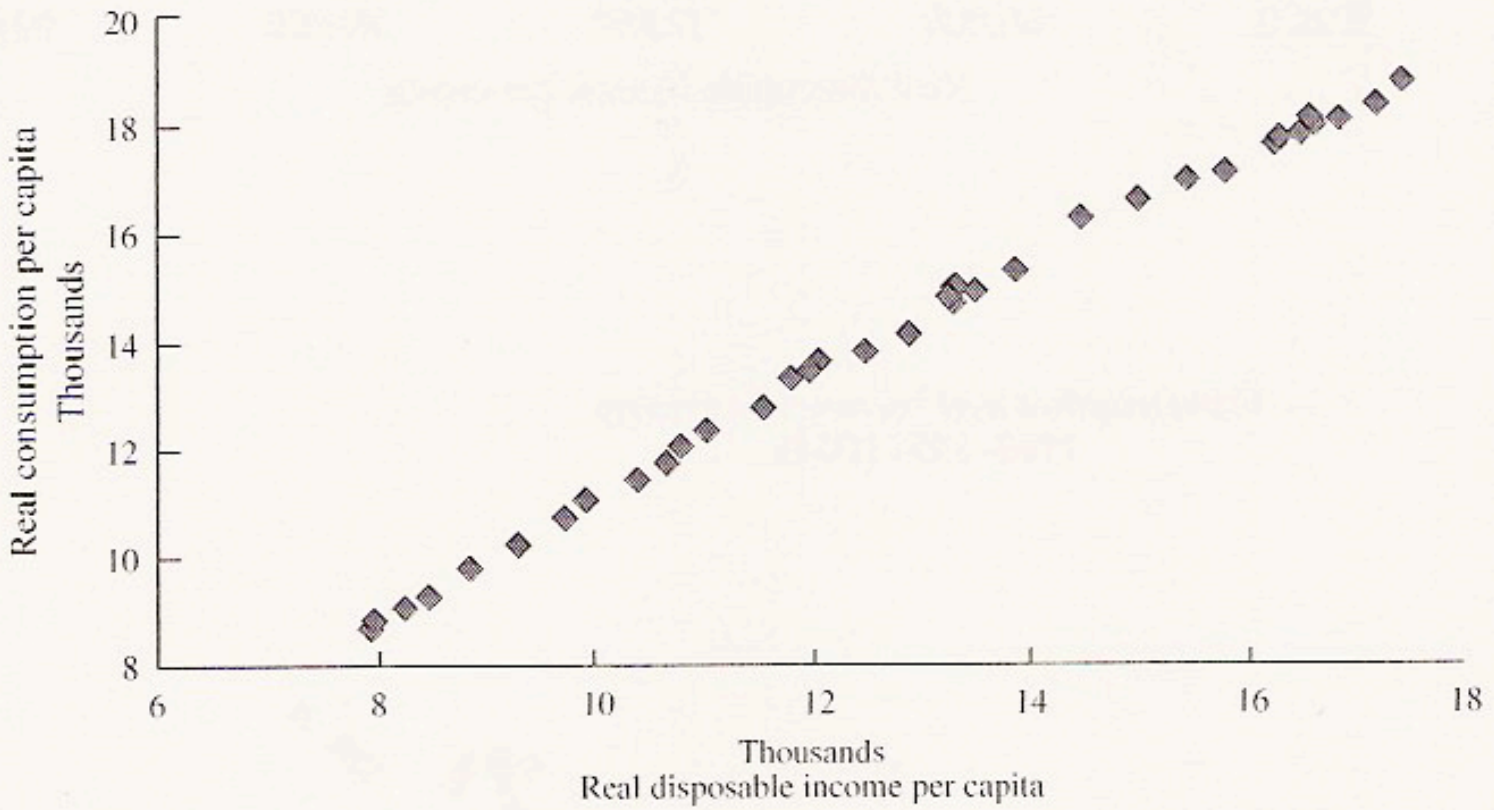
Figure 2

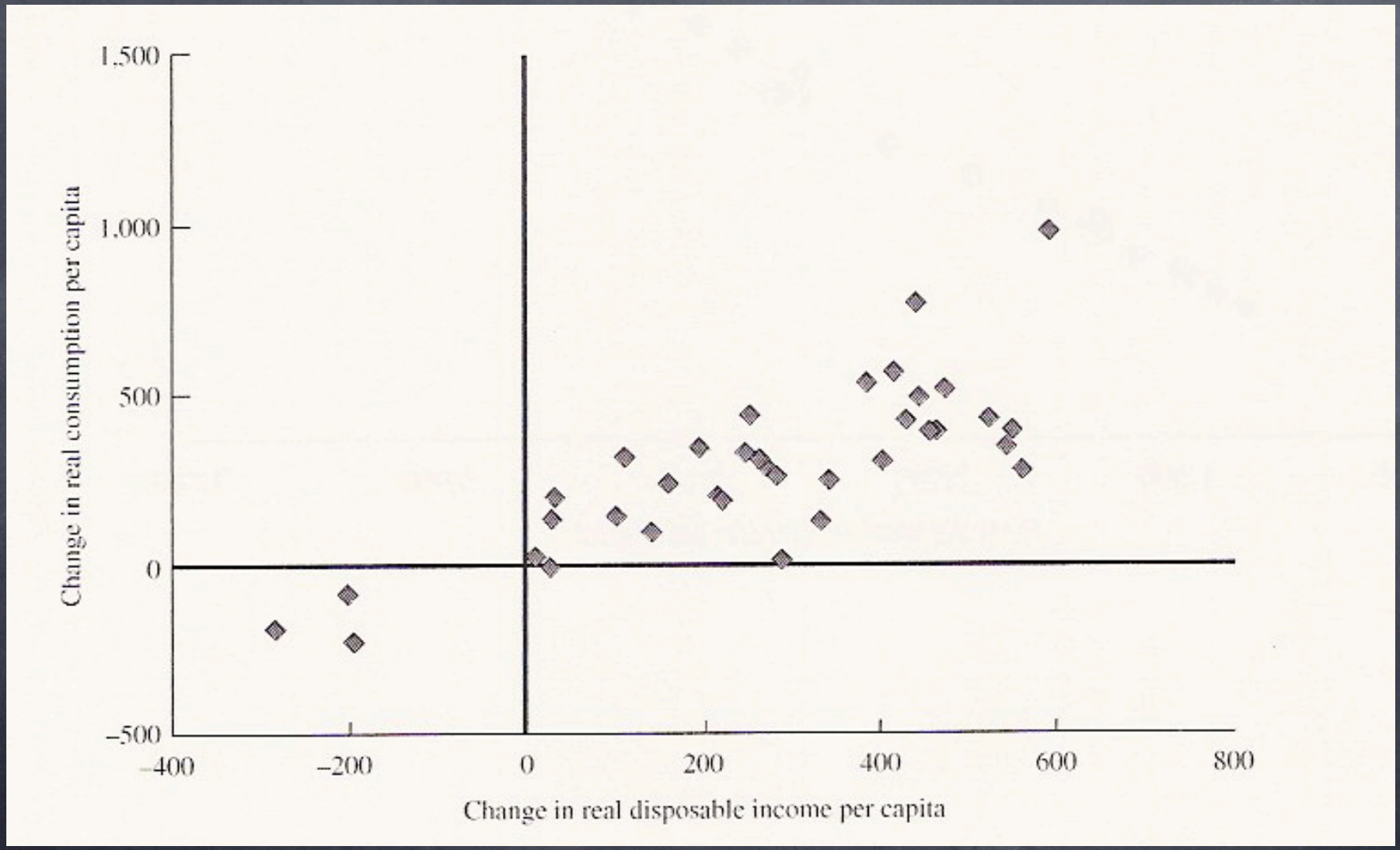

log of annual income of Drivers (in USD)
12
10
8
6
6
8
10
12
log of GDP per worker (in USD)
Switzerland
Singapore
Portugal
Chile
Korea
Czech Re
Hungary
Philippines
Egypt
India
Bulgaria
Ukraine
Russia

Consumption Function

- How reasonable is the consumption function?
  - C=C(Y-T)

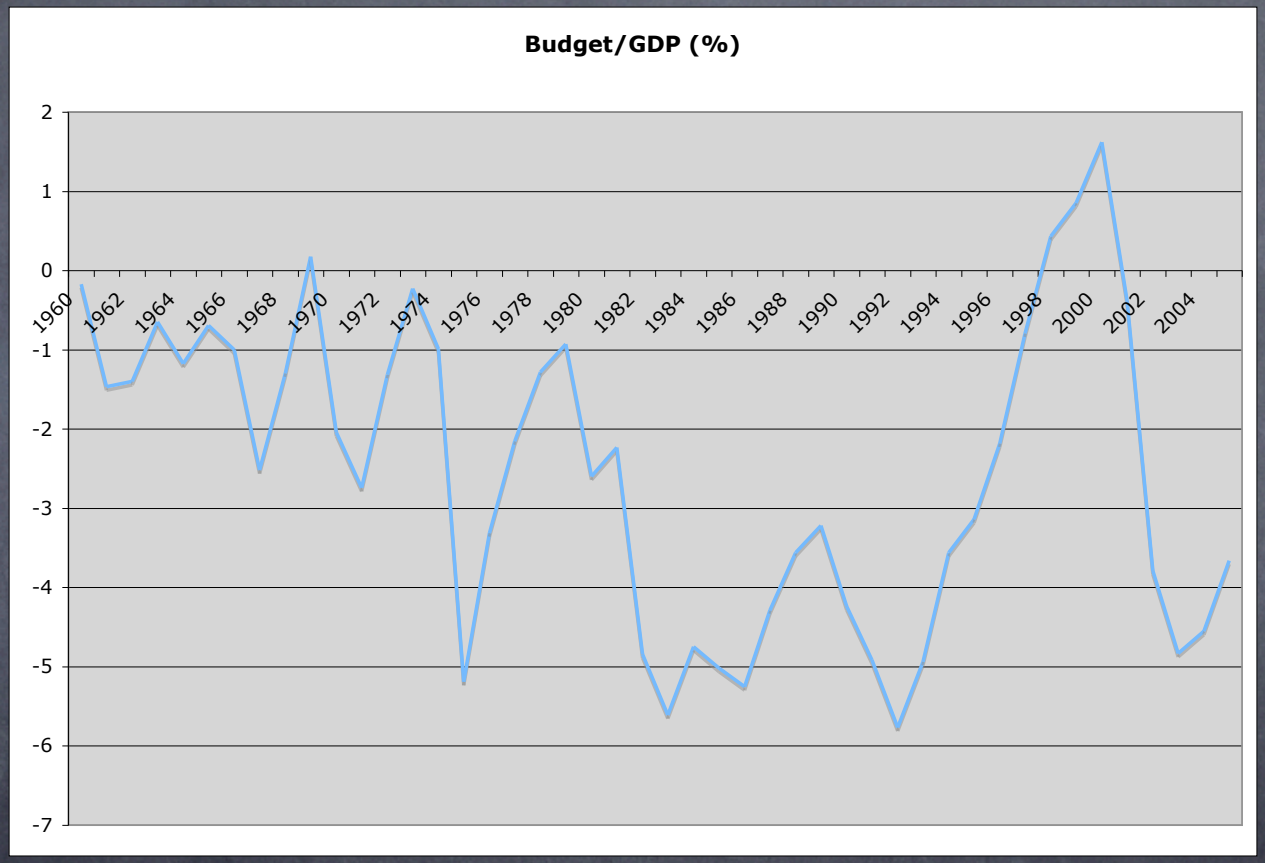
Figure 1 **Consumption and Income: United States, 1959–1995**
(1992 chained dollars)

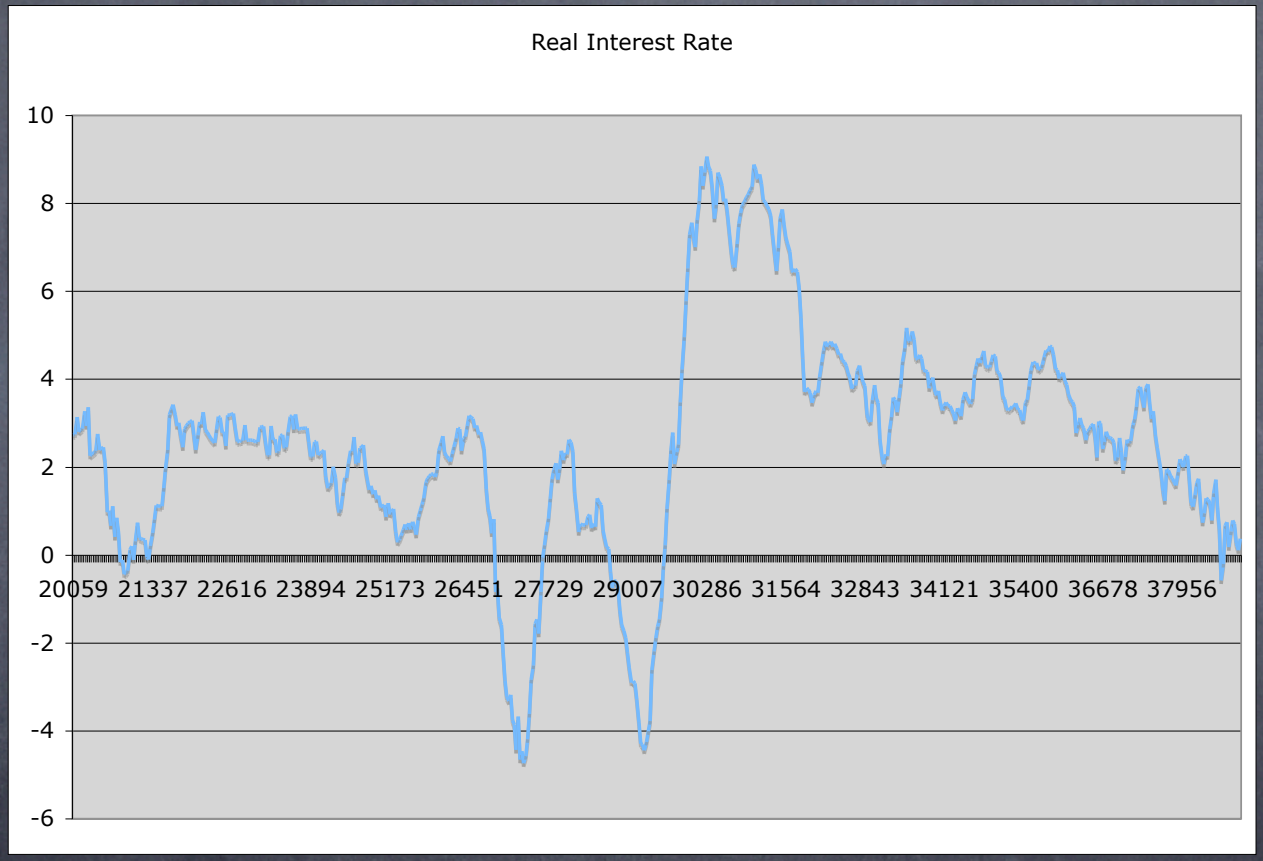


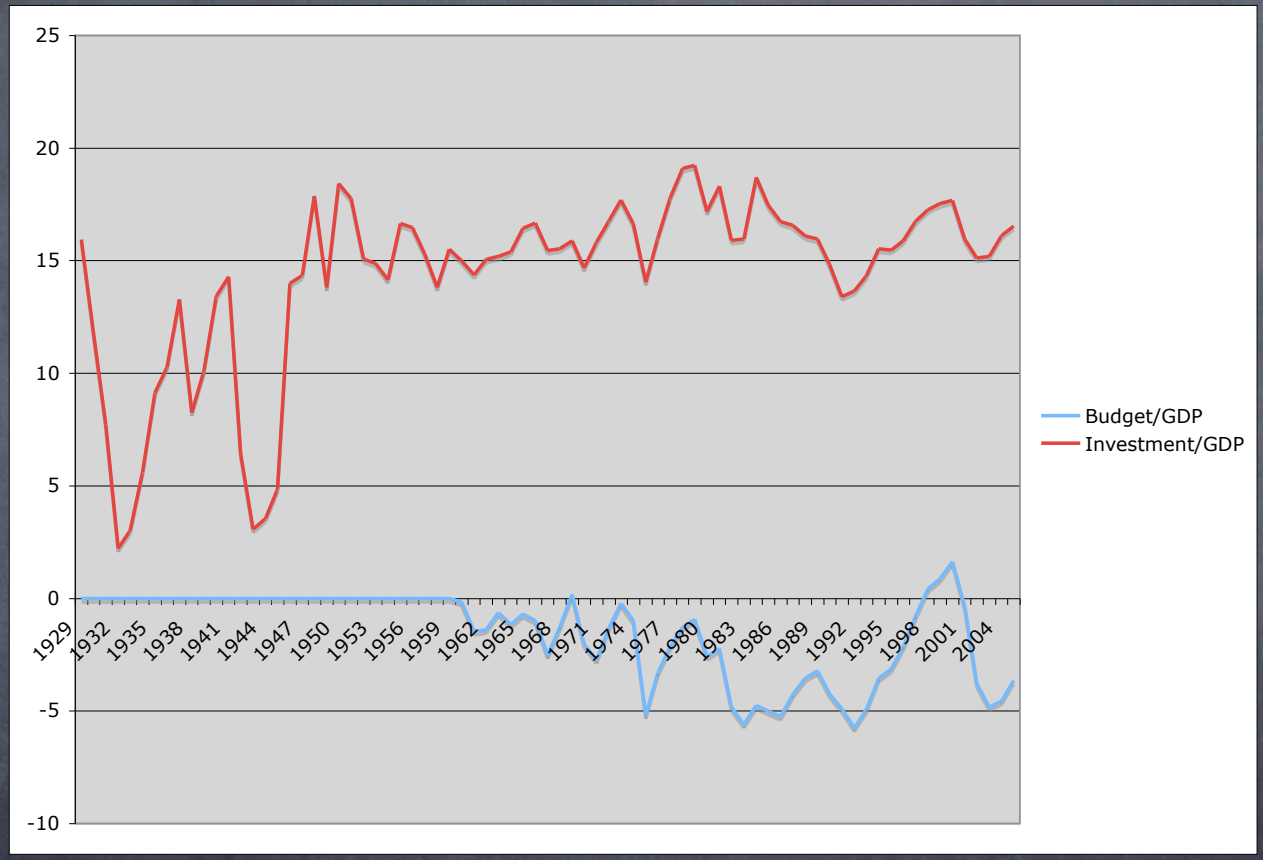

1,500
1,000
500
0
−500
−400
−200
0
200
400
600
800
Change in real consumption per capita
Change in real disposable income per capita

Using the Classical Model

- Crowding out


Budget/GDP (%)
2
1
0
-1
-2
-3
-4
-5
-6
-7
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004


Real Interest Rate
10
8
6
4
2
0
-2
-4
-6
20059 21337 22616 23894 25173 26451 27729 29007 30286 31564 32843 34121 35400 36678 37956


25
20
15
10
5
0
-5
-10
1929
1932
1935
1938
1941
1944
1947
1950
1953
1956
1959
1962
1965
1968
1971
1974
1977
1980
1983
1986
1989
1992
1995
1998
2001
2004
Budget/GDP
Investment/GDP

Summary of Classical Model

- Goods Markets: $Y=C(Y-T)+I(r)+G$
- Factor Markets: $Y=F(K,L)$
- Financial Markets: $S=I$
  - $S=(Y-T)-C + (T-G)$
  - $S=Y-C-G=I$

- Exogenous variables:
  - K*, L* (endowment)
  - T*, G* (policy, politics)
  - P* (money)

- Endogenous variables (sometimes trivially):
  - Flows
    - Y, C, I, S
  - Real Prices
    - W/P, R/P, r

- Assumptions:
  - F() has constant returns to scale and diminishing marginal products
  - C() is linear
  - I() is negative
  - Firms are profit maximizing and price takers in input and output markets

What have we done?

- Made strong assumptions (profit max, stable F(), C(), I(), fixed K,L, exogenous G,T)
- Generated strong predictions (productivity and wage determination, budget deficits and crowding out)
- Considered historical data, including as motivation for function form of F(K,L)

Going forward

- Open economy can explain failure of crowding out prediction (ch. 5)
- Real interest rate may not be only thing to adjust to bring about general equilibrium (chs. 10-11)
- More complex models of consumption may be relevant too (intertemporal considerations) (ch. 16)

- Next time: Money and Inflation (Chapter 4 of Mankiw)