

AUGUST 30, 2006

The Classics, Keynes, Monetarists, RE's and Neo-Keynesianism: a Quick Perspective

Mr. Keynes and the "Classics"

The Building Blocks

The *consumption* function

$$[1] \quad c = f(y, r) \quad 0 < f_y < 1 \quad f_r \leq 0$$

The *investment* function

$$[2] \quad I = I(r) \quad -\infty \leq I_r \leq 0$$

The definition of private expenditures

$$[3] \quad \begin{aligned} & e \equiv c + I = \\ & = e(y, r) \quad 0 < e_y < 1 \quad e_r \leq 0 \end{aligned}$$

The equilibrium condition for the commodity market:

$$[4] \quad e = y$$

The demand for money function

$$[5] \quad m_d = \mathcal{L}(y, r) \quad \mathcal{L}_y > 0, -\infty < \mathcal{L}_r < 0$$

Monetary equilibrium requires

$$[6] \quad \mathcal{L}(y, r) = M/P$$

where $M/P \equiv m$ is the actual real money stock, with [6] defining combinations of real income and the real interest rate resulting in monetary equilibrium --the familiar "LM" function.

The 'Extreme' Keynes proposition

If $I_r = 0$ and $c_r = 0$, then

$$[3'] \quad e = e(y)$$

and equilibrium is given solely by [3'] and [4]: the interest rate may be responsive to changes in the real money stock, but it does not influence private expenditures. Investment depends on entrepreneurs' "animal spirits"

If $\mathcal{L}_r = -\infty$, then the interest rate is fixed by the "liquidity trap" at some level $r = \bar{r}$ and, again, [3'] becomes relevant.

Hicks: "Mr. Keynes and the Classics"

If $I_r < 0$ and $-\infty < \mathcal{L}_r \leq 0$,

then substitution of [3] into [4] defines

$$[3'] \quad e(y, r) = y$$

as the combination of real income and the real interest rate for equilibrium in the goods market --the familiar "IS" curve.

Aggregate Demand

Consider expressions [3'] and [6]

$$[3'] \quad e(y, r) + g = y$$

$$[6] \quad \mathcal{L}(y, r) = M/P$$

where in the first we have added the usual term for real government expenditures, g .

It is trivial to show that, for a given nominal money stock, M_o and a real level of

government expenditures, g_o , there are combinations of the price level and real income satisfying both expressions, defining then a function

$$[7] \quad \Omega(y, P; M_o, g_o) = 0$$

Notice that this expression is *not* a "schedule", in the same sense as the demand curve for gadgets, but merely describes an association, or a combination of levels of y , P , for which there is equilibrium in both the commodities and the "money" market.

"Aggregate Supply"

Define y_f as the "full employment" equilibrium level of real income (output), corresponding to the "natural" rate of unemployment. Then

[8] $y = y_f$

defines "full employment equilibrium". Consequently, [7] and [8] yield an overall, full employment equilibrium. This is basically the equilibrium of the pre-Keynesian "classics". Figure 1 shows a general form for these two functions, with the specification of what happens outside each of them in the planes P , y .

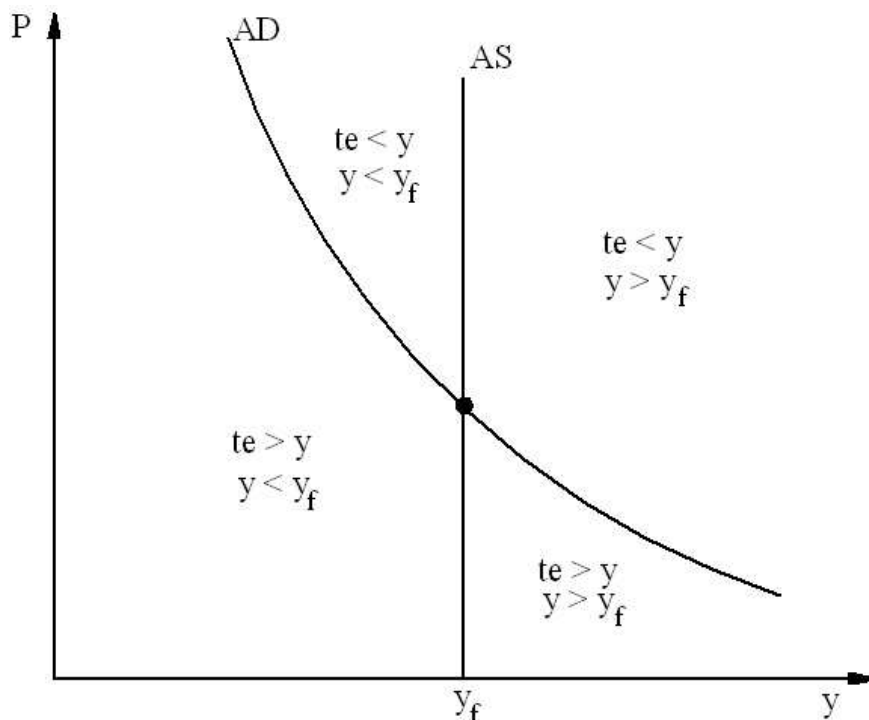


Figure 1

A naive, elementary dynamics

Two adjustment equations:

$$[9] \quad dP/dt = f(y - y_f) \quad f' > 0$$

$$[9'] \quad dy/dt = g(te - y) \quad g' > 0$$

The adjustment laws of motion are described in Figure 2. This is, essentially, an adjustment process compatible with the descriptions of the "classics" (back to Hume). Of course, lack of determinacy (infinite paths of prices and real income, depending on the initial values).

Things to notice about the adjustment:

- If $y < y_f$ (unemployment): Wages will be falling (and so, in a competitive environment, will prices); as prices fall real money increases, the rate of interest fall, investment rises and so do total

expenditures, and then output, through [9']. Notice that [9] is, basically, a "Phillips curve"

- If $te < y$, competitive firms, which take their price as given, cut down in production.

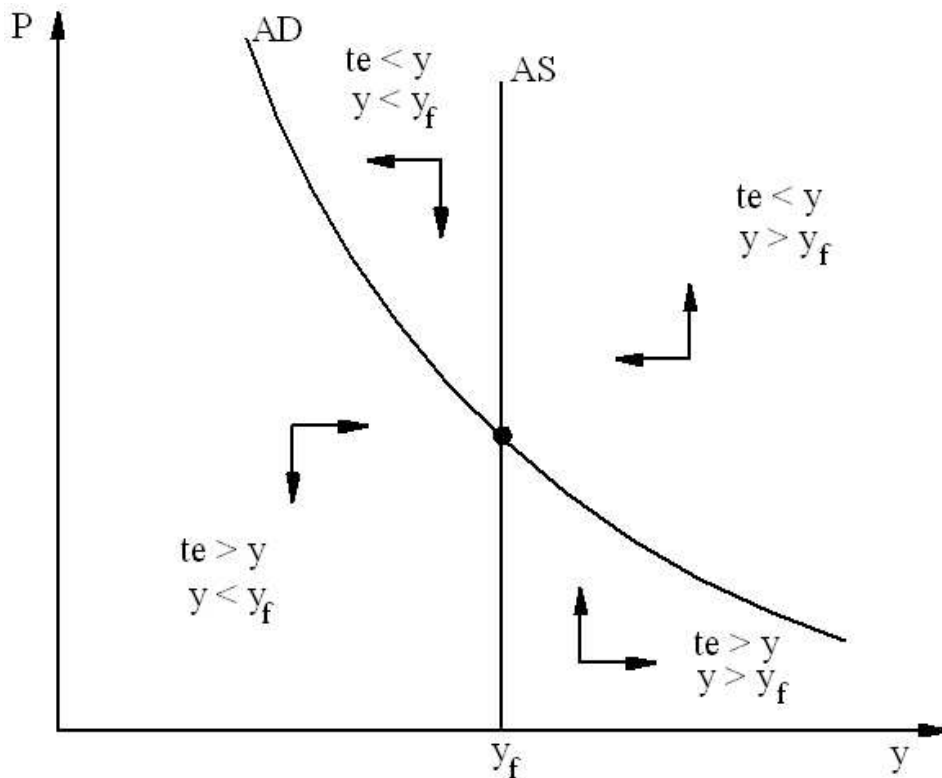


Figure 2

The Keynesian points:

- 1.- If investment is unresponsive to the interest rate, then the "adjustment mechanism" may bring about a change in prices, and in the interest rate, but private expenditures will not respond
- 2.- If wages are rigid (fixed?) then so will prices, the AD will be horizontal at the "God's determined" level of prices, and output will be exclusively determined by expenditures, which will not change even if $y \neq y_f$.
- 3.- If we are in the "liquidity trap" case, the real interest rate is fixed at $r = \bar{r}$, and changes in prices, which change the real money stock, will not change the interest rate and hence private expenditures.

Notice that only the last Keynesian "objection", if valid, is "mortal" to the classical

adjustment, if the "real cash balance" effect is taken seriously (even via the interest rate channel on consumption). The classical response to the rigidity of nominal wages is simply that, of course, if such a distortion is imposed in the system, then the system will fail to adjust. Notice also that the first two objections may defeat the market adjustment "automatic" mechanism, but still leave monetary policy as an effective tool: if prices don't fall, then an alternative way to increase real balances is monetary policy.

The third objection (the liquidity trap) is, if valid, more lethal: not only the adjustment will fail, but monetary policy will be ineffective -- with fiscal policy being the only alternative.

MONETARISM

- The demand for money as the "stable" function (meaning no liquidity trap), as opposed to the consumption function (Friedman)
- Also associated with "monetarism" (or "global monetarism", as it was sometimes called): Challenge to the output-rather-than-price adjustment.
- The idea of a "natural" rate of unemployment, with the Phillips curve being only a very 'short-run' contraption, with the true relationship being of the form

$$dP/dt = (dP/dt)^e + f(y - y_f)$$

where $(dP/dt)^e$ is the expected inflation rate (Friedman, Phelps)

- The treatment of inflation as a possible long-run equilibrium, and of expectations (initially, in the simple "adaptive" form (Cagan). Notice the connection between this and the previous point.