

Macroeconomics VIII:
Equilibrium of Aggregate Supply
and Demand

(it all comes together!)

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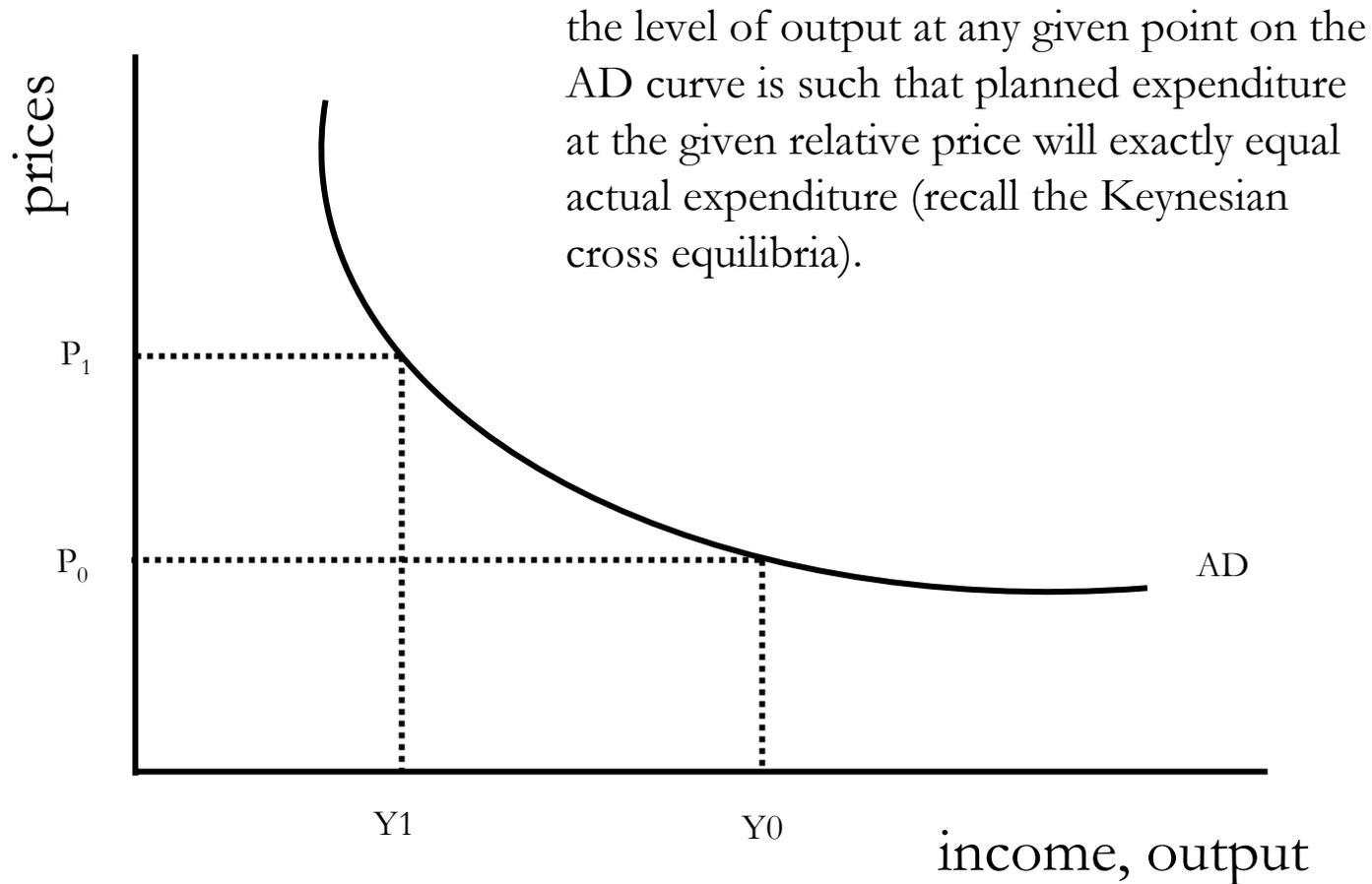
aggregate demand revisited

- Recall that aggregate demand (AD) comprises four components:
 - consumption - C
 - investment - I
 - primary government spending (i.e. net of transfers) - G
 - net exports – $NX = X - M$
- The level of income (both current and expected) is an important determinant of consumption, government spending and net exports.
- The real exchange rate (q) influences net exports ($q \uparrow \implies NX \uparrow$).
- The interest rate (r) influences consumption and investment ($r \uparrow \implies C \downarrow$ and $I \downarrow$).
 - Investment also depends upon output expectations and Keynes' animal spirits.

why does the AD curve slope down?

- Three reasons why the aggregate demand curve slopes downwards:
 - The first is the **real balance effect** (or Pigou effect). When prices rise unexpectedly, the real value of assets whose prices are fixed in nominal terms (such as some government bonds, money, and gold) falls. Consumers have less real wealth, which leads to lower consumer spending.
 - The second is the **real exchange rate**. If the nominal exchange rate is fixed, then an unexpected price rise causes the real exchange rate to appreciate ($q \downarrow$). This leads to a deterioration in the primary current account, by making imports (M) cheaper to domestic consumers and exports (X) more expensive to foreign consumers.
 - The third is the **Keynes effect**. When prices rise unexpectedly, people need more money for day to day transactions and so try to switch their money balances from bonds and shares (there is an increase in the transactions' demand for money). This raises the interest rate (since the amount of loanable funds falls), and thus reduces interest-sensitive spending, such as investment.

the aggregate demand curve



long-run aggregate supply revisited

- We say that the labour market is in equilibrium when inflation is stable (at the NAIRU).
- At the equilibrium unemployment rate, there will be both voluntary unemployment (workers who do not wish to work at the current real wage – frictional U) and involuntary unemployment (workers who would like to work but cannot find jobs at the current real wage – structural U).
- If there is a unique and stable level of equilibrium unemployment, then there is also a unique and stable equilibrium rate of output (from the aggregate production function).
- In the long-run, the economy should return to its long-run equilibrium rate of output. Prices do not affect this long-run level of output (recall the LRAS curve is vertical in Y-P space).

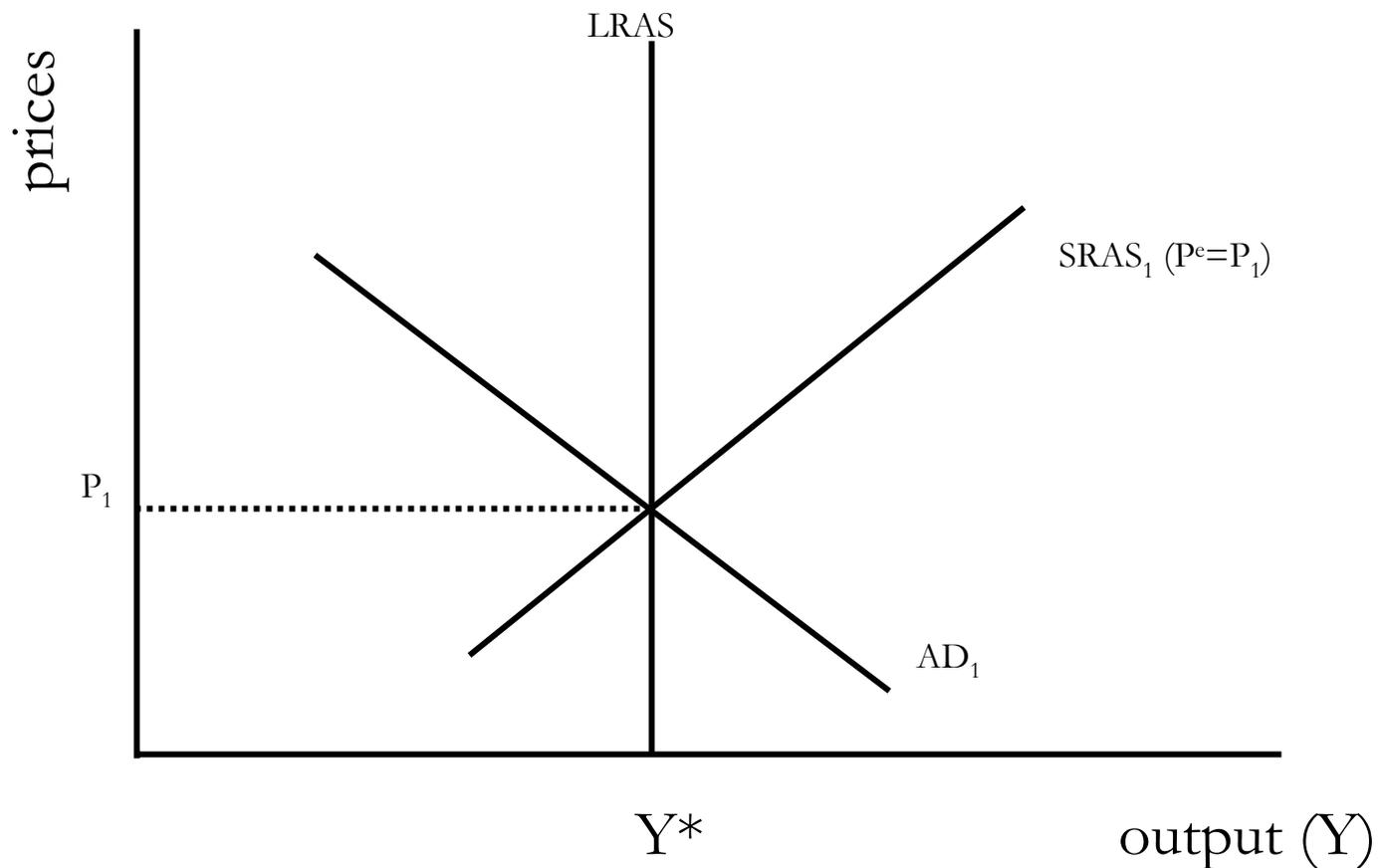
short-run aggregate supply revisited

- In the short-run, there is no reason to expect actual output to equal its long-run equilibrium level.
- We have four models why changes in nominal variables (P) may lead to temporary changes in real output (Y) :
 - sticky-wages
 - worker-misperception
 - imperfect information
 - sticky-prices
- All of these generate a similar aggregate ‘surprise-supply’ function, which has the form:

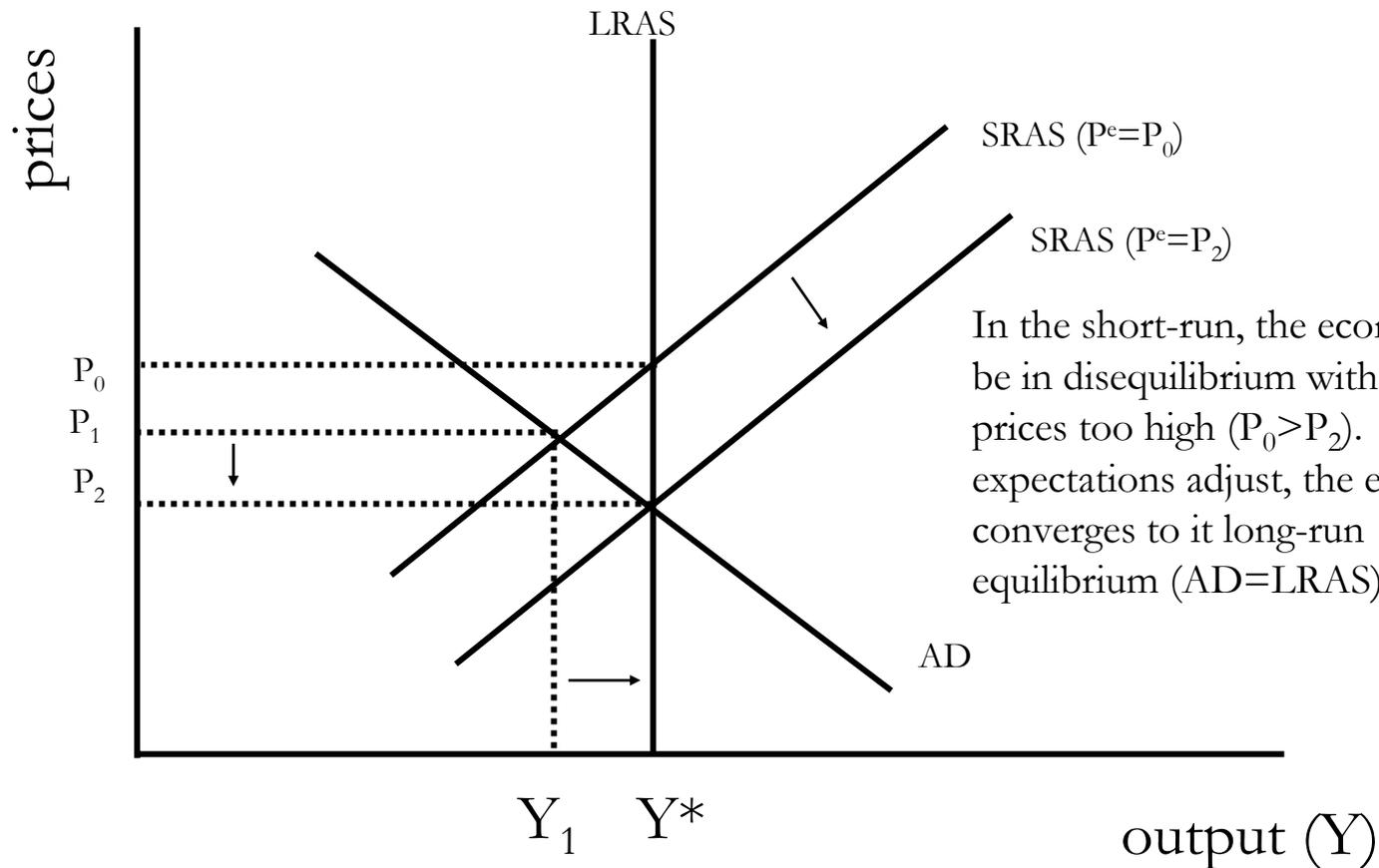
$$Y = Y^* + \alpha (P - P^e)$$

AS-AD in long-run equilibrium

(intersection of SRAS and AD coincides with LRAS)



AS-AD in disequilibrium

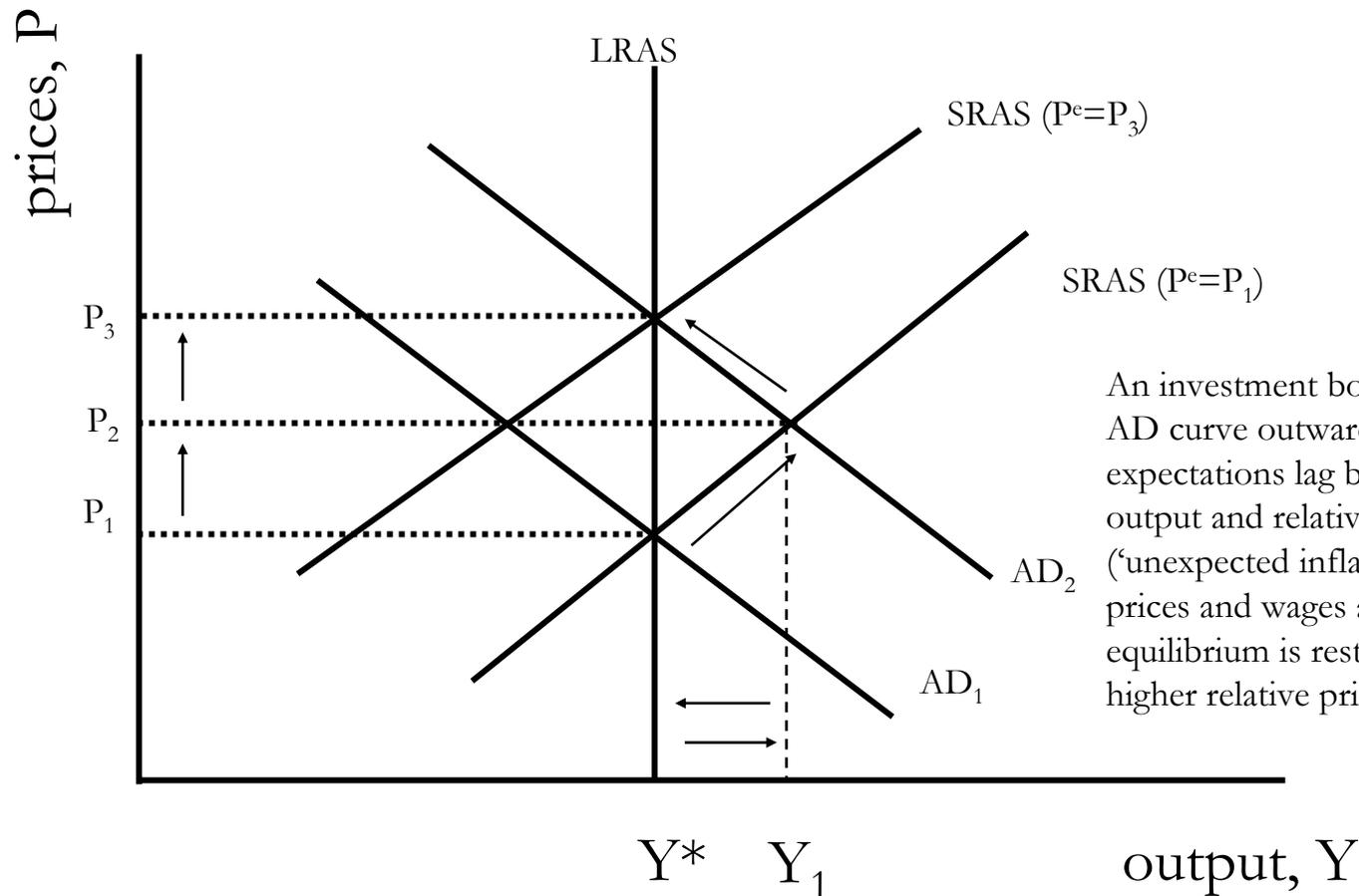


In the short-run, the economy can be in disequilibrium with expected prices too high ($P_0 > P_2$). As expectations adjust, the economy converges to its long-run equilibrium ($AD=LRAS$).

shocks to the economy

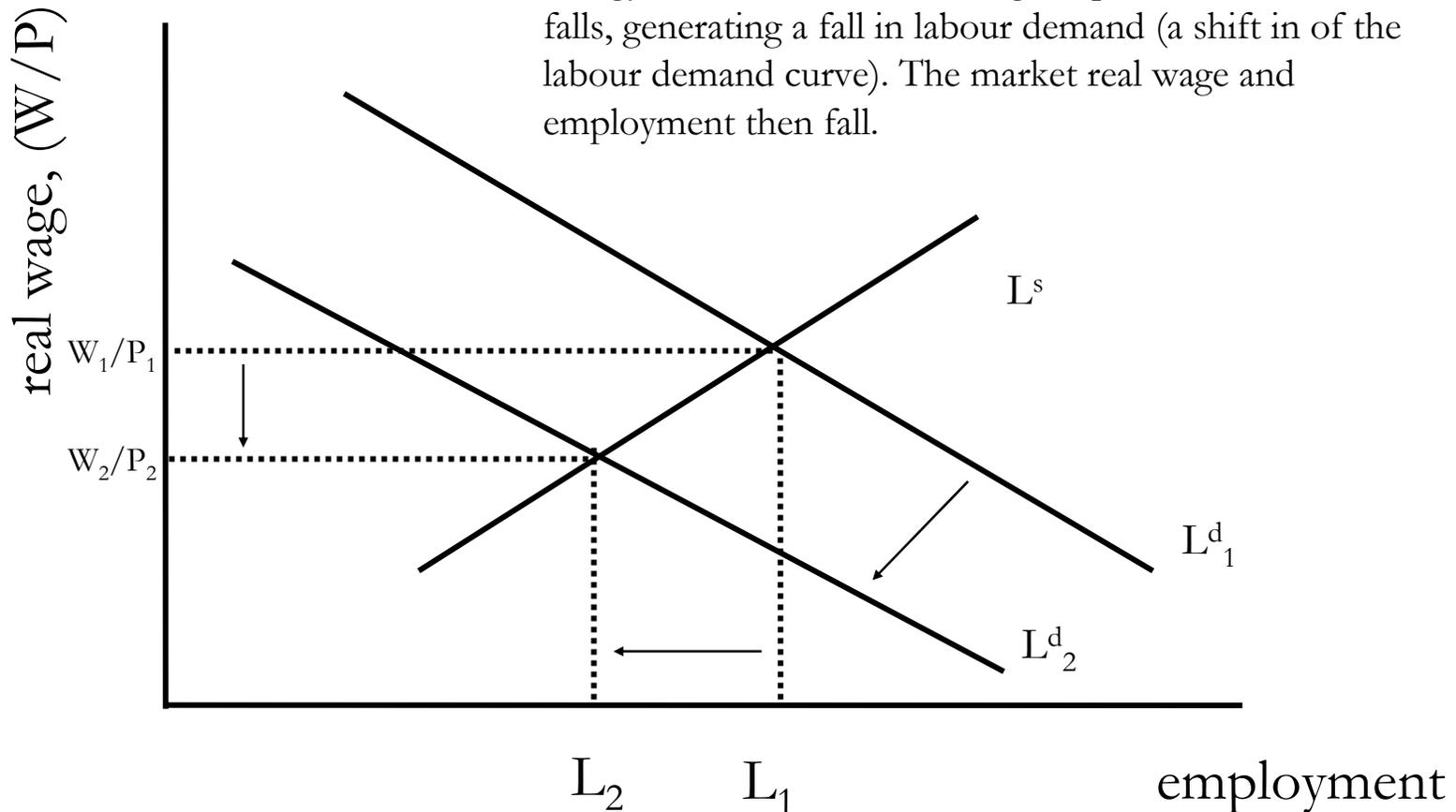
- Why might the economy get ‘shocked’ away from equilibrium?
- Aggregate demand (AD) shocks
 - an investment boom ($I \uparrow$ from animal spirits)
 - a pre-election government spending spree ($G \uparrow$)
 - a sudden rise in the real exchange rate ($q \uparrow \implies NX \uparrow$)
 - a consumer boom abroad ($X \uparrow \implies NX \uparrow$)
 - a boom in the housing market ($I \uparrow$ directly; maybe $C \uparrow$ due to wealth effect by existing owners)
 - an unexpected cut in interest rates ($C, I \uparrow$)
 - a slump in share prices ($C \downarrow$ due to a wealth effect; $I \downarrow$ as firms cannot raise as much capital by share issues)
- Aggregate supply (AS) shocks
 - a sudden rise in oil prices (input price rise reduces output supply)
 - the invention and diffusion of a new technology (changes in A)

an investment boom

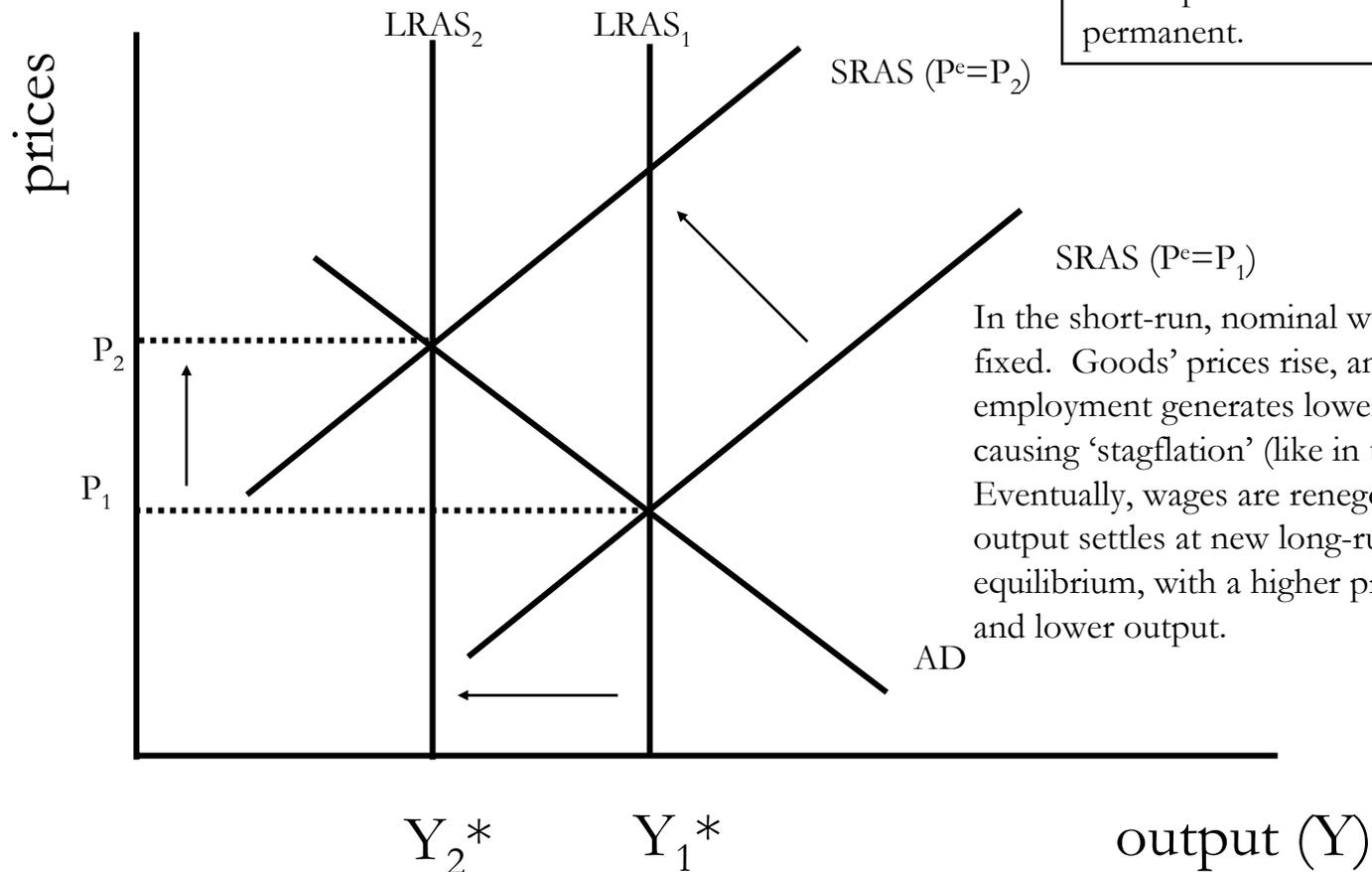


an 'oil price shock' & labour

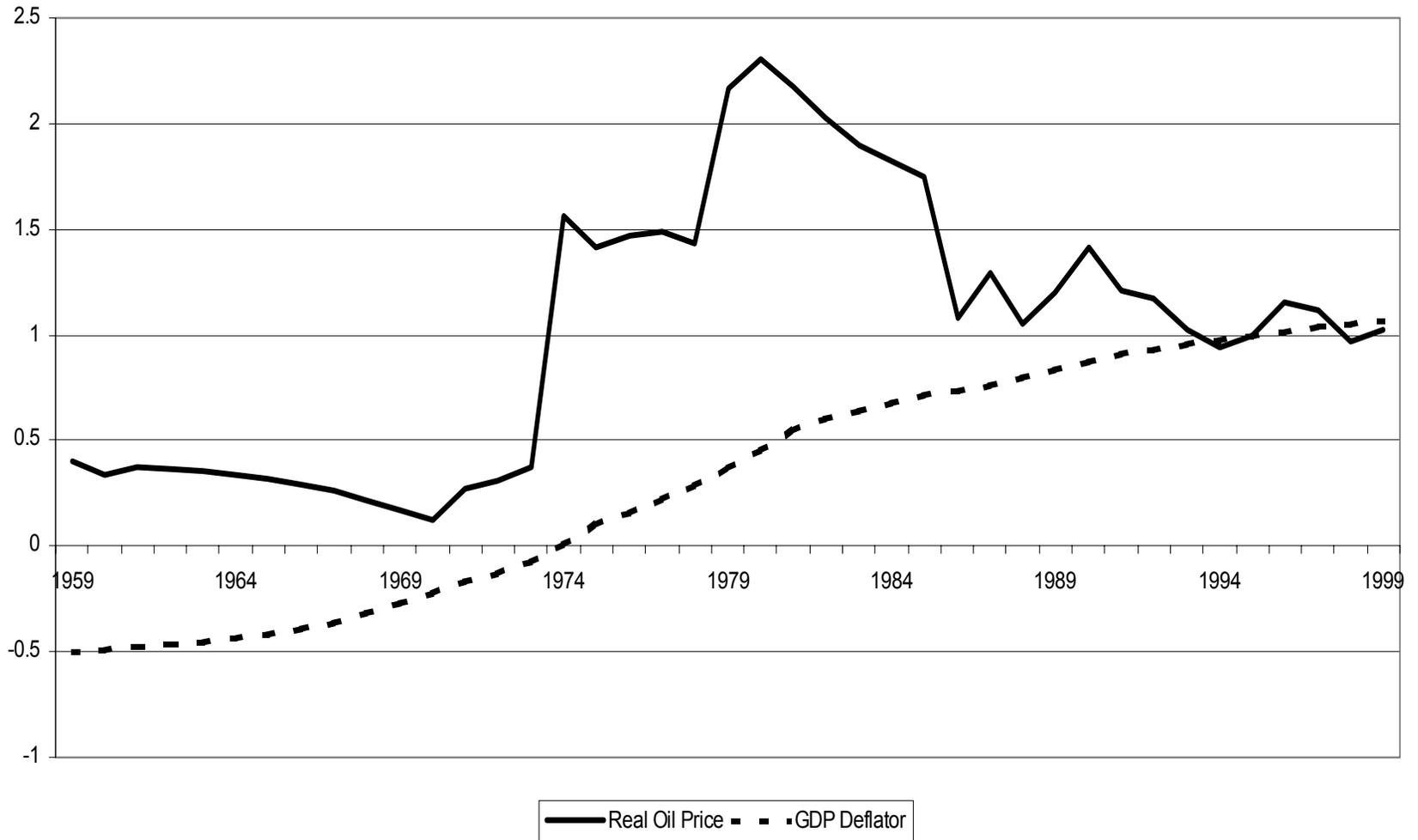
A rise in energy prices lowers energy use. When labour and energy are complements in production, the fall in energy use means that the marginal product of labour falls, generating a fall in labour demand (a shift in of the labour demand curve). The market real wage and employment then fall.



an 'oil price shock' and AS-AD



Log Real Oil Price and US Price Level (1995=1) 1959 to 1999



fiscal policy and the economy

- ‘If the Treasury were to fill old bottles with bank notes, bury them at suitable depths in disused coal mines which are then filled up with town rubbish, and leave them to private enterprise... to dig them up again, there need be no more unemployment. It would, indeed, be more sensible to build houses and the like, but if there are political and practical difficulties in the way of this, the above would be better than nothing’ J.M. Keynes, 1936.
- Changes in the government’s fiscal stance (that is, the difference between government spending and taxation) shift the aggregate demand curve.
- If the economy is at long-run output, increases in spending (or tax cuts) will lead to an inflationary boom, which eventually will lead only to higher prices in the long-run.
- If the economy is below long-run output, increases in spending (or tax cuts) will tend to raise output (as well as prices) and shift the economy back to the LRAS.

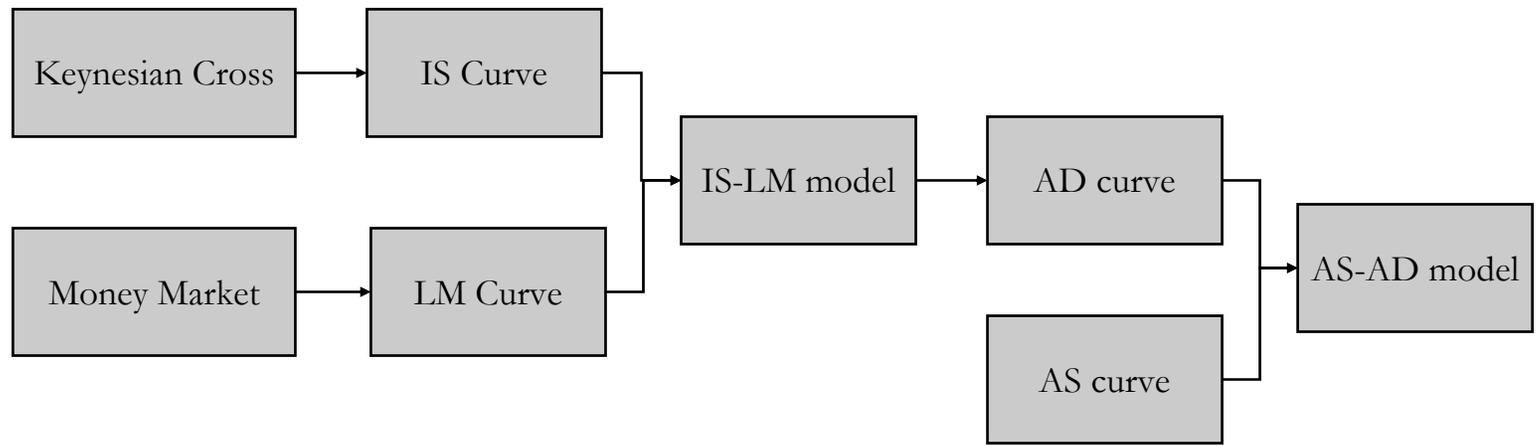
the limits to fiscal policy

- But there are problems with the use of fiscal policy:
 - Measurement of output: where are we? where are we going? how fast? will we know when we get there?
 - Lags in the fiscal policy process: implementation (recognition & administrative lags) and operational;
 - What kind of fiscal policy? Spending (on what?) or tax cuts (for whom?);
 - Will spending 'crowd-out' other spending, either directly or indirectly?
 - Will consumers pierce the veil? Will they attempt to offset the actions of the government (Ricardian Equivalence)?.

monetary policy and the economy

- ‘Having regard to human nature and our institutions, it can only be a foolish person who would prefer a flexible wage policy to a flexible money policy, unless he can point to advantages from the former that are not obtainable from the latter’ J.M.Keynes, 1936.
- Monetary policy can be implemented through either changes in the money supply or interest rate. A cut in the interest rate means that there is a rise in the money supply (more available funds).
- Changes in the interest rate shift the aggregate demand curve.
- If the economy is at long-run output, interest rate cuts will lead to an inflationary boom, which eventually will lead only to higher prices.
- If the economy is below long-run output, interest rate cuts will tend to raise output (as well as prices) and shift the economy back towards the LRAS.

short-run fluctuations and the macroeconomy – forthcoming attractions



summary

- “But this *long run* is a misleading guide to current affairs. In the *long run* we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again.” J.M. Keynes, 1936.