South Dakota State University

Macroeconomics II: National Income Determination

Business cycles and economic fluctuations, recession and expansion

A business cycle is an irregular, seemingly random, and persistent fluctuation of real GDP around its trend growth rate that is accompanied by co-movements in many other economic variables such as real income, employment, industrial production and wholesale and retail sales. A business cycle is comprised of four phases: recession, expansion, trough, and peak. According to the National Bureau of Economic Research (NBER), a recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. A less precise and NBER-discredited definition of a recession is two successive quarters of negative real GDP growth. An expansion is a significant and sustained increase in economic activity. A trough is the low point of a recession; a peak is the highpoint of an expansion.

Aggregate demand

In the short run, the equilibrium level of output is the level of output at which aggregate expenditures and output are equal. Aggregate expenditures are comprised of consumer expenditures, private investment expenditures, government expenditures and net export expenditures. Some of these expenditures are likely negatively related to the real rate of interest, which is determined in the money market. Because the price level determines the supply of real money balances, the price level and the interest rate are positively related; hence the price level and the equilibrium level of aggregate expenditures are negatively related.

The aggregate demand curve exists in output-price space. It is the collection of points that represent the equilibrium levels of output (and hence aggregate expenditures) and average prices in the economy. Again, because the price level and the real money supply are negatively related, the aggregate demand curve slopes downward: as the price level, say, increases, the real money supply decreases; hence the real interest rate increases and aggregate expenditures decrease. Under standard assumptions, aggregate demand increases [decreases], or the aggregate demand curve shifts to the right [left], when either any component of aggregate expenditure increases [decreases] or when the money supply increases [decreases].

Aggregate supply

In the short run, an increase in output causes many, but not all, production costs to increase, which in turn causes the price level to increase. Some factor prices such as nominal wages, rents and interest payments are rigid in the short-run. So, as demands are placed on an economy to increase production, firms can increase production to some extent; however, as production increases, some factor prices and the amount of inputs needed to increase production also increase. Therefore, the economy's average price level increases along with output.

The aggregate supply curve exists in output-price space. It is the collection of points that represent the levels of output produced and average prices in an economy. Again, because increases in production and the average price level are positively related, the aggregate supply curve slopes upward: as output increases, prices of most inputs increase and disproportionately greater amounts of inputs are needed to produce a unit of output. Under standard assumptions, aggregate supply increases [decreases] - or the aggregate supply curve shifts to the right [left] - when production costs decrease [increase], either because factor prices decrease [increase] or productivity increases [decreases].

Equilibrium output and price level, short-run vs. long-run equilibria

A short-run macroeconomic equilibrium occurs at a level of output and average price level that satisfies both the aggregate demand and aggregate supply curves; graphically, this equilibrium occurs where the aggregate demand and aggregate supply curves intersect. Changes in either aggregate demand or aggregate supply will change the level of output and average price level consistent with a short run macroeconomic equilibrium. In the long run, the economy returns to its full employment level of output: if an aggregate demand shock pulls, or an aggregate supply shock pushes, the economy away from full employment, factor prices that did not adjust immediately to the shock will do so eventually; this adjustment will return the economy to its full-employment equilibrium.

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