University of Macerata - Economics - Dr. Mattia Tassinari

Exercises Aggregate Demand and Supply

Exercise 1

Consider the graph of the hypothetical curves of aggregate demand and aggregate supply in the short term (that is, in a situation of sticky wages and prices, compatible with the Keynesian hypothesis). Show graphically and briefly describe what happens in correspondence with the following changes:

a. Reduction of Exports
b. The government decides to implement an expansionary fiscal policy by increasing public spending. Discuss whether this Keynesian policy is effective with respect to the fundamental objectives of macroeconomic policy (GDP growth, reduction of unemployment and containment of inflation).
c. The government implements a restrictive monetary policy (reduction of the money supply). Discuss the effects on the fundamental objectives of macroeconomic policy.

Exercise 2

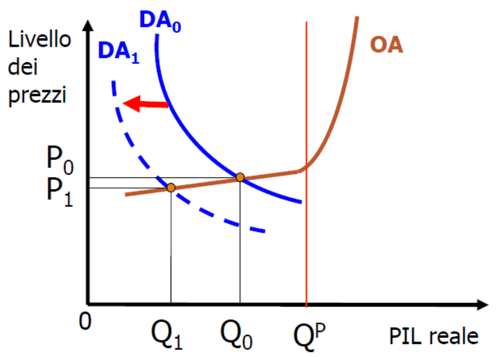
Consider the graph of the hypothetical curves of aggregate demand and aggregate supply in the long run (ie in a situation of flexible wages and prices, compatible with the neoclassical hypothesis). Show graphically and briefly describe what happens in correspondence with the following changes:

a. The prices of factors of production from abroad rise
b. The government decides to reduce taxes. Discuss whether this Keynesian policy is effective with respect to the fundamental objectives of macroeconomic policy (GDP growth, reduction of unemployment and containment of inflation).
c. The government implements a restrictive monetary policy (reduction of the money supply). Discuss the effects on the fundamental objectives of macroeconomic policy.
d. Important innovations in the organization of production involve most of the production sectors.

SOLUTIONS

Exercise 1

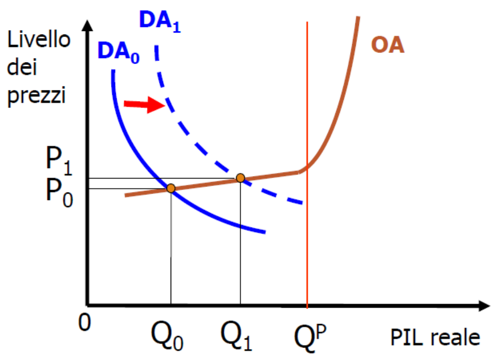
a. Reduction of Exports



Considering a short-term situation presupposes placing the equilibrium point of the economy (intersection between aggregate supply and demand) in the initial part of the aggregate supply (AS) curve, to the left of the potential output (Q^P), when the quantities produced in the economy do not involve the full exploitation of the potential productive capacity and the AS curve tends to be flat (ie wages and prices are sticky and struggle to adjust as the AD varies, consistently with the Keynesian hypothesis).

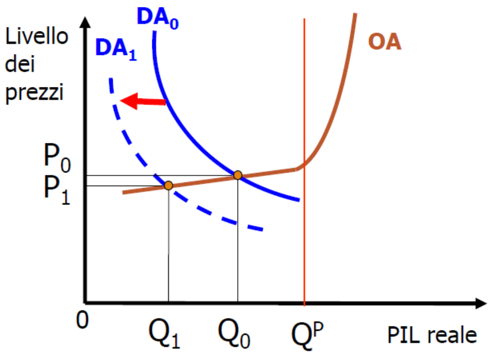
Reduction of exports reduces net exports, which are a component of AD. The AD decreases for each price level. Graphically, this change is represented by a shift of the AD curve from DA_0 to DA_1, resulting in a reduction in the quantity demanded for each price level. The excess supply occurring at P_0 has little effect on the (sticky) price level which decreases by a minimal quantity from P_0 to P_1, while real GDP decreases from Q_0 to Q_1 due to the reduction in aggregate demand.

b. The government decides to implement an expansionary fiscal policy by increasing public spending. Discuss whether this Keynesian policy is effective with respect to the fundamental objectives of macroeconomic policy (GDP growth, reduction of unemployment and containment of inflation).



The increase in public spending, which is a component of the AD, causes an increase in the AD for each price level. Graphically, this change is represented by a shift of the AD curve from DA_0 to DA_1, resulting in an increase in the quantity demanded for each price level. The excess demand occurring at P_0 has little effect on the (sticky) price level, which increases by a minimal amount from P_0 to P_1, while real GDP increases from Q_0 to Q_1 due to increased aggregate demand. In this short-term situation, Keynesian policy is therefore effective in increasing the level of real GDP, in increasing the level of employment (since the greater quantities produced lead to a higher exploitation of the productive capacity of the economy, Q1 is closer to Q^P than Q_0), and in containing inflation as the price level grows to an almost negligible extent.

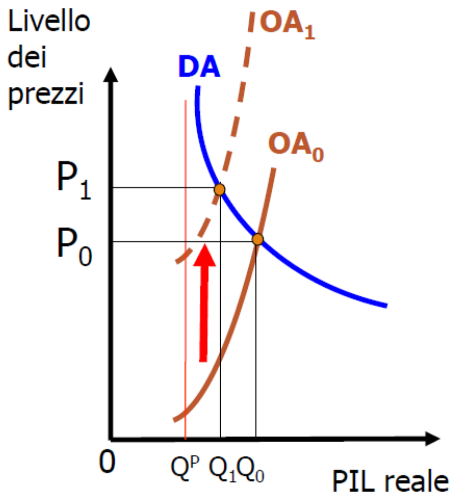
c. The government implements a restrictive monetary policy (reduction of the money supply). Discuss the effects on the fundamental objectives of macroeconomic policy.



The reduction in the money supply raises interest rates and worsens credit conditions (borrowing is more expensive) causing a reduction in investments and consumption of durable goods. Graphically, this change is represented by a shift in the AD curve from DA_0 to DA_1, resulting in a reduction in the quantity demanded for each price level. As in the case above (a), while prices fall negligibly, there is a reduction in real GDP which passes from Q0 to Q1 due to the reduction in aggregate demand. In this short-term situation, a restrictive monetary policy is harmful as it discourages consumption and moves the economy away from full exploitation of potential production capacity (increasing unemployment). Conversely, an expansive monetary policy, in this short-term situation, would have reduced interest rates and encouraged consumption and investments.

Exercise 2

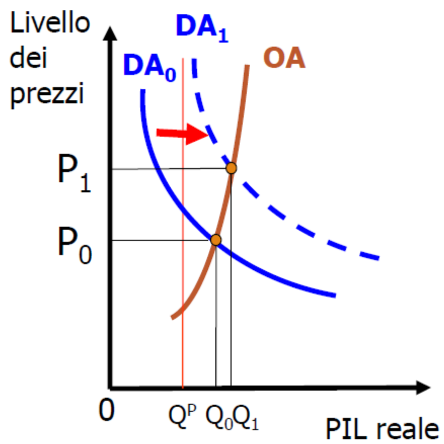
a. The prices of factors of production from abroad rise



Considering a long-term situation presupposes placing the equilibrium point of the economy (intersection between aggregate supply and demand) in the final part of the aggregate supply (AS) curve, to the right of the potential product (Q^P), when the quantities produced in the economy imply full exploitation of potential productive capacity and the AS curve tends to be vertical (ie wages and prices are flexible and adjust to varying supply and demand conditions, compatibly with the neoclassical hypothesis).

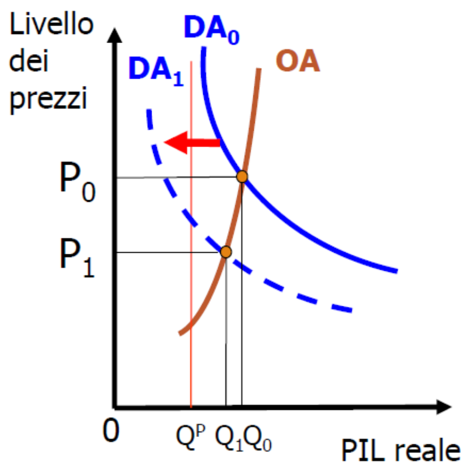
Import prices are one of the factors affecting production costs. As production costs increase, companies will be willing to produce each level of production only at a higher price. In this case, the productive capacity of the economy (Q^P) remains unchanged, while the price level increases for each quantity produced (inflation). Graphically, this change is represented by a shift in the AS curve from OA_0 to OA_1.

b. The government decides to reduce taxes. Discuss whether this Keynesian policy is effective with respect to the fundamental objectives of macroeconomic policy (GDP growth, reduction of unemployment and containment of inflation).



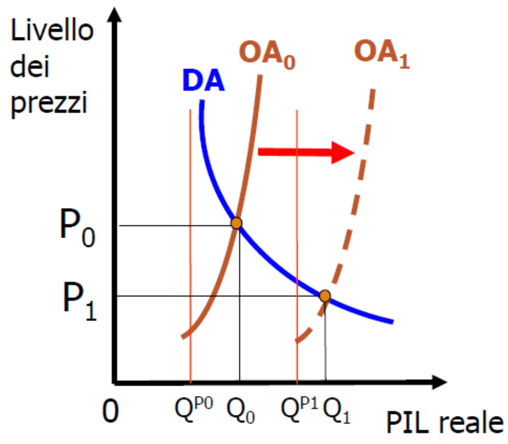
The reduction in taxes increases disposable income and stimulates consumption, causing an increase in AD for each price level. Graphically, this change is represented by a shift in the AD curve from DA_0 to DA_1, resulting in an increase in the quantity demanded for each price level. In this long-term situation, however, the economy has already reached the full exploitation of production capacity and the supply of goods and services is unable to grow in order to satisfy demand, except to a negligible extent. The excess demand that occurs at P_0 pushes a significant increase in the level of (flexible) prices, which pass from P_0 to P_1, while real GDP increases only negligibly from Q_0 to Q_1. In this long-term situation, Keynesian policy is ineffective in raising the level of real GDP and in raising the level of employment, while it is harmful in that it favors inflation.

c. The government implements a restrictive monetary policy (reduction of the money supply). Discuss the effects on the fundamental objectives of macroeconomic policy.



The reduction in the money supply raises interest rates and worsens credit conditions (borrowing is more expensive), resulting in a reduction in investments and consumption of durable goods. Graphically, this change is represented by a shift in the AD curve from DA_0 to DA_1, resulting in a reduction in the quantity demanded for each price level. In this long-term situation, however, while prices fall significantly (from P_0 to P_1), the reduction in real GDP is negligible, passing from Q_0 to Q_1. In this long-term situation, a restrictive monetary policy is effective as it favors the reduction of prices and the containment of inflation, with a negligible reduction in real GDP and employment, which is already in a condition of full exploitation.

d. Important innovations in the organization of production involve most of the production sectors.



Innovation and technical improvements increase the potential product, which passes from Q^{P0} to Q^{P1}. Firms have greater production capacity and will be willing to produce larger quantities for each price level. Graphically, this change is represented by a shift in the AS curve from AS_0 to AS_1. The excess supply that occurs at P_0 leads to a reduction in (flexible) prices, which pass from P0 to P1. The reduction in the price level increases the purchasing power of money and encourages consumption: real GDP increases from Q_0 to Q_1. In the long run, technological innovation leads to a significant increase in GDP and a reduction in the price level.