

Practice Problems: Money Basics

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1. Explain how it is possible that the demand for real money balances actually reflects the demand for goods and services in an economy. Use both a verbal explanation and the dimensions of the variables in the definition of real money balances.
2. Use hat algebra and the Quantity of Money Identity (letting the change in velocity be zero) to answer the following.
 - a. If the money supply is growing at 5% a year and real GDP is growing at 3% a year, what is the rate of inflation in this economy?
 - b. If real GDP is growing at 4% a year and the central bank would like 3% inflation, at what rate should they print money?
3. Suppose the growth rate of the nominal money supply is 5% and inflation is 5%.
 - a. In terms of the money market, explain what is happening to the nominal interest rate.
 - b. If velocity is constant, use the quantity equation of money to determine the growth rate of real GDP.
 - c. Show how your answer in part (b) is diagrammatically consistent with the money market analysis.
4. Consider the case of a temporary increase in the nominal stock of money.
 - a. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices change instantly*.
 - b. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices are slow to change*.
 - c. Show result in part (b) in an Aggregate Demand – Aggregate Supply graph. Add time paths for output and unemployment.
5. Consider the case of a temporary decrease in the nominal stock of money.
 - a. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices change instantly*.
 - b. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices are slow to change*.
 - c. Show result in part (b) in an Aggregate Demand – Aggregate Supply graph. Add time paths for output and unemployment.
6. Consider the case of an increase in real income.
 - a. Show the time paths for nominal money, the price level, real money balances, and interest rates
 - b. Why don't I specify if this change is temporary or permanent? In what sense is it irrelevant here and likewise why doesn't it matter if prices are slow or quick to change?

7. Consider the case of a decrease in real income.
 - a. Show the time paths for nominal money, the price level, real money balances, and interest rates
 - b. Why don't I specify if this change is temporary or permanent? In what sense is it irrelevant here and likewise why doesn't it matter if prices are slow or quick to change?

8. Consider the case of an unannounced permanent increase in the nominal money stock. Using the equilibrium condition in the money market, show and explain the effect of this destruction.
 - a. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices change instantly*.
 - b. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices are slow to change*.
 - c. Show result in part (b) in an Aggregate Demand – Aggregate Supply graph. Add time paths for output and unemployment.

9. Consider the case of an unannounced permanent decrease in the nominal money stock. Using the equilibrium condition in the money market, show and explain the effect of this destruction.
 - a. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices change instantly*.
 - b. Show the time paths for nominal money, the price level, real money balances, and interest rates *if prices are slow to change*.
 - c. Show result in part (b) in an Aggregate Demand – Aggregate Supply graph. Add time paths for output and unemployment.

10. Explain the law of one price. How is purchasing power parity different from the law of one price? In what sense is the exchange rate just another price in the economy?

11. If domestic inflation is 10% and foreign inflation is 7%, what is the rate of change of the nominal exchange rate? Is this depreciation, depreciation or no change? Explain the intuition behind this result.

12. If domestic inflation is 10% and foreign inflation is 12%, what is the rate of change of the nominal exchange rate? Is this depreciation, depreciation or no change? Explain the intuition behind this result.