

MACROECON 2105: ANSWER-KEY

- 14-1 Money is used as a medium of exchange for goods and services, as a unit of account for expressing price, and as a store of value.

People will only accept money in exchange for goods and services and for the work they perform if they can be reasonably certain that the medium of exchange—money—will retain its value until they are ready to spend it. In runaway inflations of the thousands or tens of thousands of percent a year, people revert to barter.

Again, drastic inflation greatly reduces money's use as a measure of value, for it is impossible to adjust instantaneously all prices strictly in line with their relative values. Thus, opportunities are afforded to speculators to profit at the expense of the less sophisticated who, eventually, will learn to distrust money's usefulness as a measure of value.

Finally, and most obviously, money's usefulness as a store of value is destroyed in a drastic inflation. The "rule of 70" is instructive here. By dividing the absolute inflation rate into 70, one can estimate how long it takes one's dollar savings to lose half their purchasing power. At 7 percent inflation, the dollar will be worth half as much in ten years.

- 14-2 Commercial banks and thrift institutions offer checkable deposits.
Currency held by banks is not counted in either M1 or M2.

- 14-4 $M1 = \text{currency (in circulation)} + \text{checkable deposits}$. The largest component of $M1$ is currency (54 percent), and it is the only part that is legal tender. If the face value of a coin were not greater than its intrinsic (metallic) value, people would remove coins from circulation and sell them for their metallic content. $M2 = M1 + \text{noncheckable savings deposits} + \text{money market deposit accounts} + \text{small time deposits} + \text{money market mutual fund balances}$.

- 15-1 A balance sheet is a statement of assets and claims (or liabilities and net worth). It must balance because every asset is claimed by someone, so that assets (the left-hand side) = liabilities + net worth (the right-hand side).

The major assets of a bank are: cash (including cash reserves held by the Fed), its property, the loans it has made, and the securities it holds over and above general loans. Its liabilities are the deposits of its customers. The difference between the assets and liabilities is the bank's net worth, which is shown on the liabilities side, thus ensuring that the balance sheet balances.

- 15-2 Reserves provide the Fed a means of controlling the money supply. It is through increasing and decreasing excess reserves that the Fed is able to achieve a money supply of the size it thinks best for the economy.

Reserves are assets of commercial banks because these funds are cash belonging to them; they are a claim the commercial banks have against the Federal Reserve Bank. Reserves deposited at the Fed are a liability to the Fed because they are funds it owes; they are claims that commercial banks have against it.

Excess reserves are the amount by which actual reserves exceed required reserves: $\text{Excess reserves} = \text{actual reserves} - \text{required reserves}$. Commercial banks can safely lend excess reserves, thereby increasing the money supply.

- 15-5 When a bank grants a loan, it can expect that the borrower will not leave the proceeds of the loan sitting idle in his or her account. Most people borrow to spend. Therefore the lending bank can expect that checks will be written against the loan and that the bank will shortly lose reserves to other banks, as the checks are presented for payment, to the full extent of the loan. In short, when a bank grants loans to the full extent of its excess reserves, it can shortly expect to lose these excess reserves to other banks. From this it can be seen why a bank cannot safely lend more than its excess reserves. If it did, it would soon find that its cash reserves were below its legal reserve requirement.

From the above it can be seen why the commercial banking system can safely lend a multiple of its excess reserves. Whereas one bank loses reserves to other banks, the system does not. With a legal cash reserve requirement of, say, 20 percent, Bank "B" on receiving as a new deposit the \$100 loaned by Bank "A" (the excess reserves of Bank "A"), may safely lend \$80 (80 percent of \$100). Bank "C", on receiving as a new deposit the \$80 loan of Bank "B", loans 80 percent of that, namely \$64. Note that the \$100 initial excess reserves of the banking system have already resulted in the money supply increasing by \$244 ($= \$100 + \$80 + \64). The money supply will continue to increase, at a diminishing rate (Bank "D" will increase the money supply by \$51.20 in loaning this amount), until the total increase in the money supply is \$500.

The algebra underlying the monetary multiplier is that of an infinite geometric progression. Designating the fixed fraction of the previous number as b (0.8 in our case) and k as the sum of the progression, we have:

$$k = 1 + b + b^2 + b^3 + \dots + b^n$$

Solving this for a very large n , we get, $k = 1/(1 - b)$

In our example, the multiplier k is $1/(1 - 0.8) = 1/0.2 = 5$. And 5 is the reciprocal of the reserve ratio of 20 percent or 0.2. The multiplier is inversely related to the reserve ratio.

- 16-6 The basic objective of monetary policy is to assist the economy in achieving a full-employment, non-inflationary level of total output.

The major strengths of monetary policy are its speed and flexibility compared to fiscal policy, the Board of Governors is somewhat removed from political pressure, and its successful record in preventing inflation and keeping prices stable. The Fed is given some credit for prosperity in the 1990s and early 2000s.

Monetary policy is formed by the 7 members of the Board of Governors. Fiscal policy requires the consent of both houses in Congress, plus the President. One of the implications is that monetary policy has a much shorter administrative lag than fiscal policy.

- 16-10 A change in the nation's money supply (achieved by changing reserves in the banking system) will cause an opposite change in the interest rate. A reduction in the money supply will make funds increasingly scarce and drive up their price (interest rate). The interest rate and investment spending are also inversely related. A rising interest rate will make some investments (capital spending projects) unprofitable, so spending on those will decline. Investment spending is part of aggregate demand, so they will move together, as will real GDP. A decline in spending (AD) will reduce inflationary pressure (and will reduce prices if they are downwardly flexible).