Name: **Key**

ECON 201—Montgomery College

**Exam 2**

* There are 110 possible points on this exam. The test is out of 100.
* You have one class session to complete this exam, but you should be able to complete it in less than that.
* Please turn off all cell phones and other electronic equipment.
* You are allowed a calculator for the exam. This calculator cannot be capable of storing equations. This calculator cannot double as a cell phone.
* Be sure to read all instructions and questions carefully.
* Remember to show all your work.
* Recall basic logic. “Water is wet” is a true statement. “Water is wet and leopards have stripes” is a false statement.
* *Please print clearly and neatly.*

**Part I: Matching.** *Write the letter from the column on the right which best matches each word or phrase in the column on the left. You will not use all the options on the right and you cannot use the same option more than once.*

2 points each.

|  |  |
| --- | --- |
| 1. **K** Aggregate demand 2. **C** Automatic stabilizer 3. **B** Marginal propensity to save 4. **A** Monetary multiplier 5. **J** Phillips Curve 6. **D** Real shock (negative) 7. **E** Real shock (positive) 8. **L** Short run aggregate supply 9. **I** Store of value 10. **H** Unit of account | 1. Bigger of this means a bigger shift 2. Cannot be greater than one 3. Example: Food stamps 4. Example: Hurricanes 5. Example: Human capital increases 6. Example: Social Security 7. Money must be portable/divisible 8. Money must be uniform 9. Money cannot rot or decay 10. One reason why monetary policy is hard 11. Shifts if car prices increase 12. Shifts if raw material prices increase 13. Shifts if there is inflation |

1. *If car prices increase, people’s nominal wealth increases (similar to if housing prices increase), thus they will consume more and AD shifts right.*
2. *When recession hits, more people are eligible for food stamps; government spending increases without any explicit act of Congress.*
3. *MPS is the portion of additional income that goes to savings. It cannot be greater than one because your additional savings cannot be greater than your additional income.*
4. *The monetary multiplier determines how far AD shifts when monetary policy; if the multiplier is large, total additional borrowing will be very high when real interest rates fall.*
5. *This curve describes a short-run negative relationship between inflation and unemployment. Since the goal of monetary policy is to keep both low, monetary policy is very hard!*
6. *A negative real shock would mean the economy, on a fundamental level, produces less. Since hurricanes destroy the capital stock on a massive scale, this natural disaster is a good example of a negative real shock.*
7. *A positive would mean the economy, on a fundamental level, produces more. More human capital means people are more productive so this would certainly suffice.*
8. *Raw materials are a kind of input; if input prices increases, SRAS, and not LRAS, shifts left.*
9. *If money falls apart, or otherwise inherently loses value, it cannot keep its value over time. It will not function as a store of value.*
10. *If different units of currency have different values, it will not be possible to determine how much something is worth. The value of “10 laptops” depends on the quality of the laptops in question.*

**Part II: Multiple Choice.** *Choose the best answer to the following.*

3 points each.

1. One can argue the internet made prices less sticky. Which of the following would ***clearly*** be a logical explanation for this?
2. Consumer expectations are less likely to change
3. **Menu costs are lower**
4. Contracts last a longer amount of time
5. A & B
6. None of the above

*Menu costs, or the cost associated with changing a price, are clearly a little lower. The process of literally changing the price on, say, Amazon is functionally zero as it’s just a matter of changing a couple of lines of computer code. This does not mean all internet-related menu costs are zero—there are other costs to consider besides changing the menu such as market research and advertising—but it certainly reduces it and thus makes it less sticky.*

*Neither (A) nor (C) are correct. Option (C) would make prices stickier (it’s also not clear why the internet would change how long contracts last). While the internet would alter consumer expectations (people can shop around easier), it would probably make them more fluid, not less. Here, the direction of stickiness matters: consumers are willing to accept a lower price but expectations means they are loathe to accept a higher price (even if it’s paired with a higher wage). So, again, Option (A) is likely to make it stickier, not less sticky.*

1. If the reserve requirement (aka reserve ratio) is 20% and the MPS is 0.1, what is the monetary multiplier?
   1. 1.25
   2. **5**
   3. 10
   4. 20
   5. None of the above

*The monetary multiplier is found by dividing the reserve requirement/ratio by 1. 1 / 0.2 = 5; MPS plays no role concerning the monetary multiplier.*

1. According to the signaling theory for why more education leads to a higher income, if this class was famously difficult, which students would be better off?
2. All students would be better off because they would learn so much more.
3. **Only the best students would be better off.**
4. Only the students planning to be economists would be better off.
5. No students would be better off, but no one would be worse off.
6. All students would be worse off.

*If the class is famously difficult, the best students could use the class as a strong signal of their intelligence, hard work, etc. which would help them get the job they want. Option C would be the best answer if this was according to the human capital theory.*

1. If the U.S. dollar becomes less valuable, what happens in the U.S. economy?
   1. AD shifts
   2. LRAS shifts
   3. SRAS shifts
   4. A & B
   5. **A & C**

*AD shifts right as the U.S. dollar’s value drops because imports are more expensive and exports become less expensive. As a result, real GDP will rise. SRAS shifts left because the higher import prices means higher input prices. LRAS does not change at all.*

1. Which of the following tax policies would act as an automatic stabilizer?
2. An annual tax of $50 from each person.
3. **An annual 10% tax to the value of all owned jewelry.**
4. An annual 15% tax on all incomes.
5. A & C
6. None of the above

*Though the tax is directly proportional—it’s fixed at a certain percent—because wealthy people are more likely to own jewelry and are more likely to own a lot of jewelry, the tax is functionally progressive (though difficult to enforce). When times are bad, one would expect people would buy less jewelry and sell off what jewelry they have. Thus they would not be taxed on it and the tax burden, relative to income, would fall.*

*Option C is what’s called a flat tax: tax burden relative to income doesn’t change. Option A is the opposite of a progressive tax, called a regressive tax. The poorer you are, the great the burden this tax is.*

1. Which of the following is an example of adverse selection?
   1. Buying a laptop you know won’t work.
   2. Voting for an honest politician who then uses his influence unethically.
   3. **Adopting a dog who turns out to have a bad temper.**
   4. A & C
   5. None of the above

*Only option C is adverse selection; the dog didn’t become bad because you chose her. It always had a bad temper; you just didn’t know it.*

*Option B is moral hazard: the politician was honest but then the opportunities presented by his position incentivized him to become corrupt.*

*Option A isn’t anything but stupid. If you know the laptop doesn’t work, why are you buying it? Recall both adverse selection and moral hazards are examples of asymmetric information; there is no asymmetric information here.*

1. Which of the following would cause the U.S. AD to shift right?
   1. The government spends more, funded by increasing taxes.
   2. Incomes in China, Europe, and other countries fall due to a recession.
   3. Scientists discover a new energy source which can be implemented immediately.
   4. A & B
   5. **None of the above**

*Option A has no net effect: government spending shifts AD right but increasing taxes shifts it left. Falling incomes abroad would cause AD to shift left, not right. Option C would cause a rightward shift but of LRAS—because a new energy source would alter the fundamentals of production—not AD. None of these would cause AD to shift right.*

1. Economists often debate the size of the fiscal multiplier, particularly when there’s a recession. What is the significance of this debate?
2. A large fiscal multiplier means unemployment will stay high.
3. A large fiscal multiplier implies there will be a lot of inflation.
4. A large fiscal multiplier ensures fiscal policy will be very effective.
5. B & C
6. **None of the above**

*Larger multipliers mean a small increase in government spending shifts AD very far. If the cause of the recession is a drop in AD, then Option C is correct but that relationship is not guaranteed; a recession could be caused by a real shock. If it is caused by a real shock, Option B is correct: inflation will follow and the price level will rise farther if the multiplier is large.*

1. Consider the fictional island nation of Mepos, where fishing is the main industry. The government uses a progressive tax system much like the United States. For taxable incomes up to $20,000, the marginal tax rate is 10% and 20% beyond that. If a fisherman makes $50,000 in taxable income, how much does he owe in taxes?
2. $5,000
3. **$8,000**
4. $10,000
5. $12,000
6. None of the above

*This progressive tax system works off of marginal rates. For the fisherman, the first $20,000 he makes is taxed at 10% ($2,000) and the rest of his income ($30,000) is taxed at 20% ($6,000). Thus the total tax owed is $8,000.*

1. Some individuals argue that fractional reserve banking is inherently unstable. Suppose we did away with fractional reserve banking, setting the reserve requirement (aka reserve ratio) to 100%. How would this change alter the effectiveness of open market operations?
   1. It would completely eliminate any effectiveness
   2. **It would significantly hinder its effectiveness**
   3. It would have no change on its effectiveness
   4. It would enhance its effectiveness
   5. It is impossible to tell with the information provided

*With 100% reserve requirements, the monetary multiplier drops to 1. That means money created by the Fed doesn’t get multiplied nearly as much. If the Fed buys government securities from banks then that money can be lent out (because such funds are not subject to reserve requirements) but it won’t be lent out again. There will be a small drop in interest rates, but not much. AD will shift right a little, but it not very far.*

1. What is the federal funds rate?
2. The rate banks borrow from the Fed.
3. **The rate banks borrow from each other.**
4. The rate banks buy government securities from the Fed.
5. The rate banks buy government securities from each other.
6. None of the above

*Option A is the discount rate. The federal funds rate is how overnight interest rate banks charge each other.*

1. Which of the following could cause cost-push inflation?
   1. Too much hard currency in circulation.
   2. The price of laptops suddenly and dramatically increases.
   3. The price of a variety of goods and services rise.
   4. B & C
   5. **None of the above**

*An increase in the price of a key good or service, such as oil, causes cost-push inflation. Laptops are not important enough; it’s hard to imagine they should influence many other goods. Option C is just inflation and not a cause of inflation.*

1. Suppose there’s an expected increase in inflation. Who does this increase in inflation hurt?
2. Borrowers
3. Savers
4. Creditors
5. B & C
6. **No one**

*If the change in inflation is expected, it won’t hurt anyone. Savers and creditors will see a higher nominal interest rate precisely to compensate. But if this increase in inflation was unexpected, then Option D would be the correct answer.*

1. Suppose the velocity of money increased and GDP was the same. What could happen?
2. The supply of money falls
3. Inflation
4. Deflation
5. **A and/or B**
6. None of the above

*Recall the monetary equation: Mv = pY. If v, velocity, increases and Y is constant, then either the price level, p, must rise (inflation) or the amount in the money supply, M, falls. Either course of action would balance the equation. A mixture of the two could also happen, assuming their total effect equals that of the change in velocity.*

**Part III: Short Answer.** *Answer the following.*

12 points each.

1. Below is a table of hypothetical data concerning various factors about various economies. Assume all factors matter equally for purposes of determining currency value. On the lines below, rank the currencies in order starting with the one that is getting the most valuable (note this could mean the currency is depreciating; it’s just depreciating less than the others). For each currency, indicate if it is appreciating or depreciating.

Do not include the Rest of the World in your ranking; you are only ranking these six countries.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Country’s Currency* | *Domestic Price Level* | *Domestic Productivity* | *Domestic Interest Rate* | *Domestic Demand for Imports* | *Foreign Demand for Exports* |
| Rest of the World | +2% | +1% | +2% | +1% | +3% |
| Chinese yuan | +3% | -1% | +5% | +0% | -3% |
| Japanese yen | +2% | +3% | +1% | +2% | +1% |
| North Korean won | +5% | -3% | +0% | +6% | -1% |
| Russian ruble | +2% | +1% | -2% | -3% | -5% |
| South Korean won | +0% | +4% | -1% | +3% | +2% |

*The assumption that all factors matter equally is key; it makes this possible to solve. The easiest way to answer this question is to add or subtract the values as appropriate.*

* *Domestic price level should be subtracted;*
* *Domestic productivity should be added;*
* *Domestic interest rate should be added;*
* *Domestic demand for imports should be subtracted;*
* *Foreign demand for exports should be added.*

|  |  |  |
| --- | --- | --- |
| *Chinese yuan* | *-3+-1+5+-0+-3=* | *-2* |
| *Japanese yen* | *-2+3+1-2+1=* | *+1* |
| *North Korean won* | *-5+-3+0+-6+-1=* | *-15* |
| *Russian ruble* | *-2+1+-2+3+-5=* | *-5* |
| *South Korean won* | *0+4+-1+-3+2=* | *+2* |

*Next, we check the Rest of the World: -2+1+2-1+3=+3*

*Because all currencies are in terms of all other ones, all of these currencies are depreciating. Compared to the currencies in the Rest of World, these currencies are less preferred. Starting with the most valuable:*

*South Korean won Depreciates*

*Japanese yen Depreciates*

*Chinese yuan Depreciates*

*Russian ruble Depreciates*

*North Korean won Depreciates*

1. Briefly explain how the Federal Reserve engages in monetary policy using its most commonly used tool. (Make sure to identify what this tool is called in your answer.)

*The Fed’s most commonly used tool for monetary policy is open market operations. The Fed begins by creating money and then using this money to buy government securities from commercial banks. With more reserve, the federal funds rate falls and the money supply increases. With more money for loans available, interest rates fall and investment rises. AD shifts to the right (based on the monetary multiplier) and real GDP increases.*

*When the Fed sells government securities, money is taken out of the system. This increases interest rates and reduces inflation; AD shifts left.*

1. Consider the AD-AS diagram of an economy below. Illustrate the effect of (1) a terrible drought which affects most of the country, (2) expansionary fiscal policy in response to that drought, and (3) the long-run effect of that policy. You should label each shift to make the order clear.

YR

LRAS

SRAS

AD’

SRAS’

LRAS’

AD’’

(1)

(1)

(2)

(3)

PL

*A major drought is a real negative shock; thus the LRAS and the SRAS shift left. If the government attempts to correct this shock through fiscal policy, AD will shift right, causing a small increase in real GDP and price level in the short run. In the long run, however, crowding out will shift AD back.*

1. Consider the AD-AS diagram of an economy below. Illustrate the short and long run effects of a drop in the real interest rate due to an increase in the money supply. You should label each shift to make the order clear.

YR

LRAS

SRAS

AD’

AD

(1)

(2)

PL

SRAS’

*A fall in real interest rates causes AD to shift to the right as borrowing for consumption and investment increases. Because there is a lot more money floating around in the economy, this increase isn’t crowded out by a fall in something else (say, other kinds of consumption or government spending). Otherwise, AD wouldn’t move at all; it would shift out and in at the same time.*

*The economy is now in an inflationary gap; with the competition for resources, input prices increase, causing SRAS to shift left. Note this is an illustration of demand-pull inflation.*