



## **AP<sup>®</sup> Macro Economics (Operational) 2004 Sample Student Responses**

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3a) The change is \$5000.

3bi)  $90\% \times \$5000 = \$4500$

3bii) reserve ratio =  $\frac{1}{10}$

$$\begin{aligned} \text{max increase in money supply} &= \$5000 \times \frac{1}{\frac{1}{10}} \\ &= \$5000 \times 10 \\ &= \$50000 \end{aligned}$$

3c) The money supply would grow but by a smaller amount. By keeping some of the deposit as excess reserves, less money is ~~lent~~ <sup>lent</sup> than the total amount ~~of money~~ <sup>that is possible or allowed to be loaned out</sup>. Since lending is the mechanism by which money is created, and there is less lending than accounted for in (b) where it was assumed that the bank lent out all the excess reserves and kept none, the money supply grows by less than what was anticipated in (b).

3d) The money supply would grow but by a smaller magnitude. Since the public decides to hold some money in the form of currency rather than demand deposits, less money goes back to the bank. Banks therefore have less excess reserves and so can loan out less money. Since lending is the mechanism by which money is created and there is less lending, the ~~the~~ money supply grows by a smaller amount.

a. There is no change in money supply as no money can be lent out (0 excess reserves).

b i. Maximum amount bank can lend = ~~10~~ 5000 - ( $\frac{10}{100} \times 5000$ )  
= \$4,500.

The maximum amount the bank can lend is \$4,500.

ii. <sup>money</sup> multiplier =  $\frac{1}{\text{reserve ratio}} = \frac{1}{\frac{10}{100}}$   
= 10

max. increase in total money supply = ~~10 x 5000~~ 10 x 4500  
= ~~\$50,000~~ \$45,000

The maximum increase in total money supply is \$45,000.

c. If the bank were to keep some of the deposit as excess reserves, not all the money is lent out and less than the maximum increase in total money supply is ~~obtained~~ <sup>created</sup>. This is because money is created when banks lend money from their excess reserves and if they lend all their money, a total of \$45,000 is created. If some of the excess reserves is not ~~be~~ lent out, less than \$45,000 is created and the change in money supply is smaller. Banks are legally able to create money.

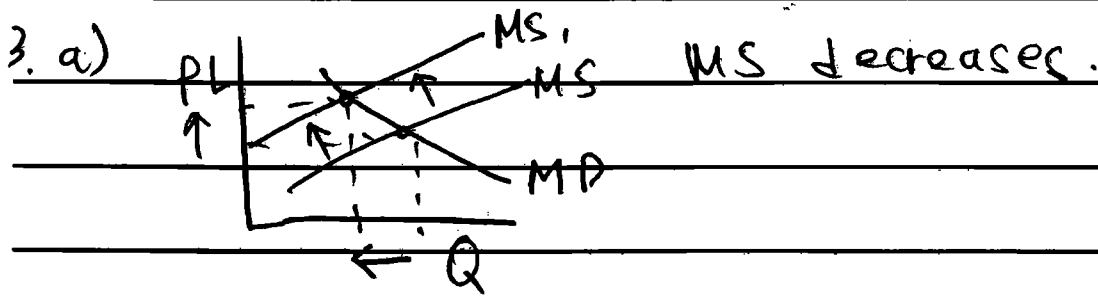
Write in the box the number of the question you are answering on this page as it is designated in the examination.

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d. less than maximum increase in money supply as banks are the only ~~one~~ ones ~~other~~ than the government to have the legal right to create money. With less in demand deposits, there ~~are~~ <sup>is</sup> less ~~loans~~ <sup>money to be</sup> lent out and less loans. This means excess reserves are less and banks can't lend out as much. If they can't lend out as much, less ~~the~~ money is created.

3.

Write in the box the number of the question you are answering on this page as it is designated in the examination.



b) (i) ~~Max. amount bank could lend is \$4500~~  
~~.....~~

(ii) Max. increase in total MS : ~~\$5000~~ \$5000-

c) Max increase in total MS would be less than \$5000 because the bank would keep part of the deposits as excess reserves.

d) Max. increase in total MS would go down.