Economics 2B
Suggested Solutions - Tutorial 2

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Abstract

This guide is supposed to be complementary to the official solutions supplied by the lecturer. All errors are my own.

Question 1

Today we are talking about money. After all this is what economics really is all about, right?

I have made a little table to illustrate the cash holdings at the beginning of each day:

	Day 1	Day 2	Day 3	Day 4	Average
Pre ATM	16	12	8	4	10
ATM	8	4	8	4	6
Credit Card	0	0	0	16[1]	4

As you can see as the person needs to keep smaller amounts of cash with them, their average cash holdings decrease. Traditionally economists have seen cash holdings as *wasteful*. Since money in your pocket, or under your mattress doesn't earn interest, economists had to find an explanation, why so many people keep so much cash[2] instead of investing it into government bonds or other assets. The explanation they came up with is called "*liquidity preference*" - cash is really useful if you need money right now (!), for example because you have an expensive hospital bill or a new exciting video game has just been released. The theory states then, that people are willing to "pay" (i.e. forgo interest) for the convenience that ready cash affords them.

[1] One might argue that he doesn't need to take out any cash at all. He could just pay off his credit card by bank transfer.

[2] This includes money you have in your checking account.

Question 2

Let's collect what we know:

$$\theta = 0.1$$
$$M^d = Y * (0.8 - 4i)$$
$$Y = 5000$$
$$H^s = 100$$

a)

$$H^d = \theta M^d = 500 * (0.8 - 4i)$$

so we found the demand for base money as a function of the interest rate.

b)

In equilibrium supply must equal demand so:

$$H^s = H^d$$
$$100 = 500 * (0.8 - 4i)$$
$$i = 0.15$$

c)

First, calculate money demand using the equilibrium interest rate:

$$M^d = Y * (0.8 - 4i)$$
$$M^d = 5000 * 0.2$$
$$M^d = 1000$$

Second, calculate money supply:

$$H^s = \theta M^s$$
$$\frac{100}{0.1} = M^s$$
$$M^s = 1000$$

Evidently demand equals supply.

d)

$$H^s = H^d$$
$$300 = 500 * (0.8 - 4i)$$
$$i = 0.05$$

The interest rate drops. Banks have more access to base money and are consequently there is less competition for deposits.

f)

You should use the fact that $M^s = M^d$ to get:

$$3000 = 5000 * (0.8 - 4i)$$
$$i = 0.05$$

Question 3

Now we are switching to a (slightly) more realistic story. The CB sets the interest rate and allows commercial banks to borrow as much as they want at that rate. So now the quantity of base money adjusts to satisfy the price (interest rate).

a)

$$M^s = M^d = 100 * (0.25 - 0.05)$$
$$M^s = 20$$

Note that we are not referring to base money any more, since it is adjusting automatically (in the background).

b)

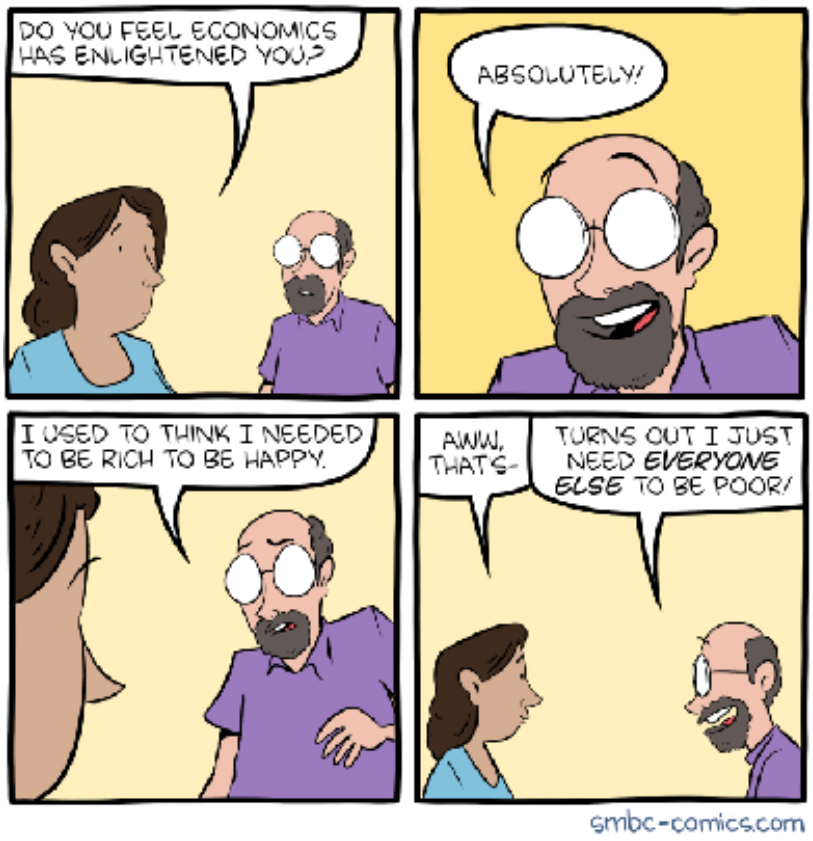
At the new interest rate:

$$M^s = M^d = 100 * (0.25 - 0.1)$$
$$M^s = 15$$

The money supply fell, since banks find it more expensive to get deposits and are thus trying to cut back on their balance sheets.

c)

As before $H^s = \theta M^s$, so we have $H^s_{5\%} = 2$ and $H^s_{10\%} = 1.5$, again base money drops proportionately to the drop in the overall money supply.


DO YOU FEEL ECONOMICS HAS ENLIGHTENED YOU?
ABSOLUTELY!
I USED TO THINK I NEEDED TO BE RICH TO BE HAPPY.
AWW, THAT'S-
TURNS OUT I JUST NEED EVERYONE ELSE TO BE POOR!
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