

## ECO 301: Money and Banking

### Week 3 Homework: Money Creation Process

**Directions:** Provide written answers for the following questions and prompts. You may print these sheets and put your answers in the space provided or you may use your own paper to write your answers.

When you have finished, scan or take pictures of your work, combine all images to a single PDF file, and upload your work as a single PDF file to the Canvas Assignment area.

1. Suppose the required reserve ratio is 3%, banks hold an extra 5% of deposits in excess reserves, and consumers hold currency balances that are about 8% of what they hold in deposits in banks. Suppose the Fed makes an open market sale of \$500 billion of government bonds.

(a) Compute the impact on the monetary base.

(b) Compute the impact on the M1 money supply.

(c) Compute the impact on the amount of deposits held in the banking sector.

(d) Compute the impact on required reserves, excess reserves, and total reserves held by banks.

2. Suppose an improvement in computer financial technology causes consumers to decrease the amount of money they hold in currency from 10% of the amount they hold in deposits to 5%. The monetary base is \$800 billion, the required reserve ratio is 0% and banks hold 12% of deposits in excess reserves.

(a) Compute the money multiplier for both before and after the change in currency holdings.

(b) Use the new and old multiplier, the size of the monetary base (assume for simplicity that the monetary base does not change). Compute the M1 money supply before and after the change in currency holdings.

(c) Compute the amount of deposits held in the banking sector before and after the change in currency holdings.

(d) Compute the amount of total reserves before and after the change in currency holdings.