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. There are apps available for Apple and Android mobile devices that can create PDF documents using your device's camera, including the Apple iPhone's native *Notes* app (use the *scan document* feature) and *Adobe Scan* app available for Android and Apple mobile devices. There are also free online tools such as https://online2pdf.com/ and https://www.easypdfcloud.com/.

1. Suppose the required reserve ratio in 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 the monetary base is \$1,200 billion, the required reserve ratio is 5%, banks do not hold any excess reserves, and consumers hold currency balances that are about 5% of what they hold in deposits in banks. Suppose uncertainty increases in the banking sector regarding consumer default and depositors needs causing them to increase excess reserves from 0% to 5%.

   (a) Compute M1 money supply before and after the change in excess reserves.

   (b) Compute the amount of deposits held in the banking sector before and after the change in excess reserves.

   (c) Compute the amount of required reserves, excess reserves, and total reserves before and after the change in excess reserves.

3. 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 in $800 billion, the required reserve ratio is 3% and banks hold an extra 2% of deposits in excess reserves.

   (a) Compute the M1 money supply before and after the change in currency holdings.

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

   (c) Compute the amount of required reserves, excess reserves, and total reserves before and after the change in currency holdings.