Masters Macroeconomics — Fall 2015
Homework Assignment — Due: 14 October

1. Suppose that the Economia has a monetary base consisting of €1000 of currency. Calculate the money supply in each of the following four scenarios:

a. All money in Economia is held as currency.
b. All money is held as demand deposits in banks, but banks hold 100 percent reserves (in currency) against these deposits.
c. All money is held as demand deposits, and banks hold 20 percent of their deposits in currency as reserves (and lend the remainder).
d. People hold 50% of their money as currency and 50% of their money as demand deposits. Banks hold 20 percent of their deposits as reserves in the form of currency.

2. Continuing with Economia from the previous question, suppose that its central bank increases the monetary base by 10%, or €100. How much will the money supply increase in each case? By what percentage does the money supply increase in each case?

3. Table 4-1 from the Mankiw text shows how the money supply, the monetary base, and their components changed from August 1929 to March 1933, as the U.S. crashed into the Great Depression with widespread bank failures. As shown in the table, the currency-deposit ratio increased as customers switched their money holdings out of bank deposits and into currency, and the reserve-deposit ratio increased as banks held more reserves in anticipation of the possibility of "runs."

TABLE 4-1
The Money Supply and Its Determinants: 1929 and 1933

	August 1929	March 1933
Money Supply	**26.5**	**19.0**
Currency	3.9	5.5
Demand deposits	22.6	13.5
Monetary Base	**7.1**	**8.4**
Currency	3.9	5.5
Reserves	3.2	2.9
Money Multiplier	**3.7**	**2.3**
Reserve–deposit ratio	0.14	0.21
Currency–deposit ratio	0.17	0.41

Source: Adapted from Milton Friedman and Anna Schwartz, *A Monetary History of the United States, 1867–1960*, Princeton, NJ: Princeton University Press, 1963, Appendix A.

a. What if the monetary base and the currency-deposit ratio had behaved as in the table, but the reserve-deposit ratio had held steady at the 1929 value instead of increasing in 1933? What would have happened to the money supply in 1933 in this hypothetical case?
b. Now perform the same kind of experiment with the currency-deposit ratio held at the 1929 level but the reserve-deposit ratio (and the monetary base) changing according to the table. What would have happened to the money supply in this case?
c. Based on these results, which of the two changes in ratios caused the greater part of the collapse of the money supply?

4. (For purposes of this problem, assume that all money is held as currency so that the money supply equals the monetary base.) Suppose that the central bank of Argentina increases the money supply by 15% in 2016 and that, as a result, prices in Argentina go up by 15%. The money-supply growth and inflation are perfectly anticipated, so the inflation is built into interest rates and contracts.

a. Explain exactly how the Argentine government obtains "inflation tax" revenue from this situation. How much revenue does it gain?
b. Explain exactly who pays this inflation tax and how. How much do they pay in total?