Money and Banking, Assignment 5

Due date: **May 20th** (Friday, in-class)

Part I Multiple Choices: (only one of the four options is correct)

1) The three players in the money supply process include
A) banks, depositors, and the U.S. Treasury.
B) banks, depositors, and borrowers.
C) banks, depositors, and the central bank.
D) banks, borrowers, and the central bank.

2) The sum of the Fed's monetary liabilities and the U.S. Treasury's monetary liabilities is called
A) the money supply.
B) currency in circulation.
C) bank reserves.
D) the monetary base.

3) Total Reserves minus vault cash equals
A) bank deposits with the Fed.
B) excess reserves.
C) required reserves.
D) currency in circulation.

4) Suppose that from a new checkable deposit, First National Bank holds two million dollars in vault cash, nine million dollars in excess reserves, and faces a required reserve ratio of ten percent. Given this information, we can say First National Bank has _____ million dollars on deposit with the Federal Reserve. (Assume that the First National Bank does not make loans.)
A) one
B) two
C) eight
D) ten

5) The effect of an open market purchase on reserves differs depending on how the seller of the bonds keeps the proceeds. If the proceeds are kept in _____, the open market purchase has no effect on reserves; if the proceeds are kept as _____, reserves increase by the amount of the open market purchase.
A) deposits; deposits
B) deposits; currency
C) currency; deposits
D) currency; currency

6) If a member of the nonbank public purchases a government bond from the Federal Reserve in exchange for currency, the monetary base will _____, but reserves will _____.
A) remain unchanged; rise
B) remain unchanged; fall
C) rise; remain unchanged
D) fall; remain unchanged

7) When the Federal Reserve calls in a discount loan from a bank, the monetary base _____ and reserves _____.
A) remains unchanged; decrease
B) remains unchanged; increase
C) decreases; decrease
D) decreases; remains unchanged

8) The Fed does not tightly control the monetary base because it does not completely control
A) open market purchases.
B) open market sales.
C) borrowed reserves.
D) the discount rate.

9) If reserves in the banking system increase by $100, then checkable deposits will increase by $1000 in the simple model of deposit creation when the required reserve ratio is
A) 0.01.
B) 0.10.
C) 0.05.
D) 0.20.

10) If a bank has excess reserves of $5,000 and demand deposit liabilities of $80,000, and if the reserve requirement is 20 percent, then the bank has actual reserves of
A) $11,000.
B) $20,000.
C) $21,000.
D) $26,000.

11) Decisions by depositors to increase their holdings of _____, or of banks to hold _____ will result in a smaller expansion of deposits than the simple model predicts.
A) deposits; required reserves
B) deposits; excess reserves
C) currency; required reserves
D) currency; excess reserves

12) Decisions by _____ about their holdings of currency and by _____ about their holdings of excess reserves affect the money supply.
A) borrowers; depositors
B) banks; depositors
C) depositors; borrowers
D) depositors; banks

13) Everything else held constant, an increase in currency holdings will cause
A) the money supply to rise.
B) the money supply to remain constant.
C) the money supply to fall.
D) checkable deposits to rise.

14) An increase in the monetary base that goes into currency is _____, while an increase that goes into deposits is _____.
A) multiplied; multiplied
B) not multiplied; multiplied
C) multiplied; not multiplied
D) not multiplied; not multiplied

15) Everything else held constant, an increase in the required reserve ratio on checkable deposits causes the M1 money multiplier to _____ and the money supply to _____.
A) decrease; increase
B) increase; increase
C) decrease; decrease
D) increase; decrease

Part II Analytical Exercises:

Suppose that currency in circulation is $600 billion, the amount of checkable deposits is $900 billion, and excess reserves are $15 billion.
a. Calculate the money supply, the currency deposit ratio, the excess reserve ratio, and the money multiplier.
b. Suppose the central bank conducts an unusually large open market purchase of bonds held by banks of $1400 billion due to a sharp contraction in the economy. Assuming the ratios you calculated in part a are the same, what do you predict will be the effect on the money supply?
c. Suppose the central bank conducts the same open market purchase as in part b, except that banks choose to hold all of these proceeds as excess reserves rather than loan them out, due to fear of a financial crisis. Assuming that currency and deposits remain the same, what happens to the amount of excess reserves, the excess reserve ratio, the money supply, and the money multiplier?

d. Following the financial crisis in 2008, the Federal Reserve began injecting the banking system with massive amounts of liquidity, and at the same time, very little lending occurred. As a result, the M1 money multiplier was below 1 for most of the time from October 2008 through 2011. How does this relate to your answer to part c?

Answer:
a. Money Supply=currency + checkable deposit
= $600B + $900B
=$1500B

currency deposit ratio=currency/checkable deposit
=$600B/$900B
=66.7%

excess reserve ratio = excess reserves/checkable deposit
= $15B/$900B
=1.7%
Monetary Base = currency + total reserve
= $600B + $15B + $900B*10%
= $705B
Money Multiplier = Money Supply/Monetary Base
= $1500B/$705B
= 2.13

b. This purchase will increase the monetary base by $1400B. hence with a money multiplier as 2.13, this will increase the money supply by $1400B*2.13=2982.

c. After this transaction,
excess reserves = $15B+$1400B=$1415B
excess reserve ratio=$1415B/$900B=157.22%
money supply=$600B+ $900B=$1500B
monetary base=$600B+$1415B+$900B*10%=$2105B
money multiplier= money supply/monetary base=0.71

d. This is exactly what we have shown in part c.

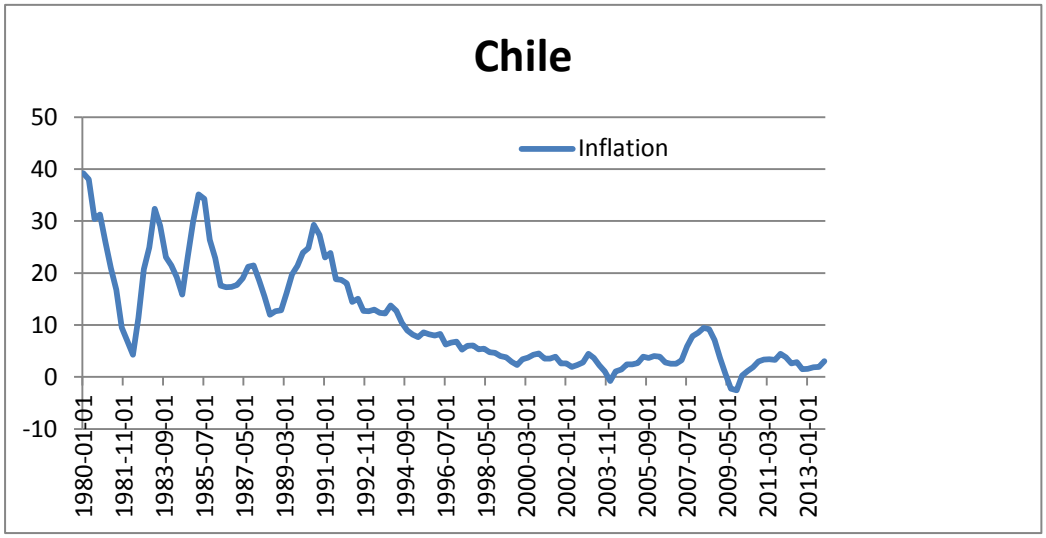
In the class we have shown three successful countries that have been implementing inflation targeting monetary policy: New Zealand, Canada and United Kingdom. However, not all countries that have adopted this monetary policy are successful, especially for those developing countries. Go to the website of Federal Reserve Bank of St. Louis (FRED)

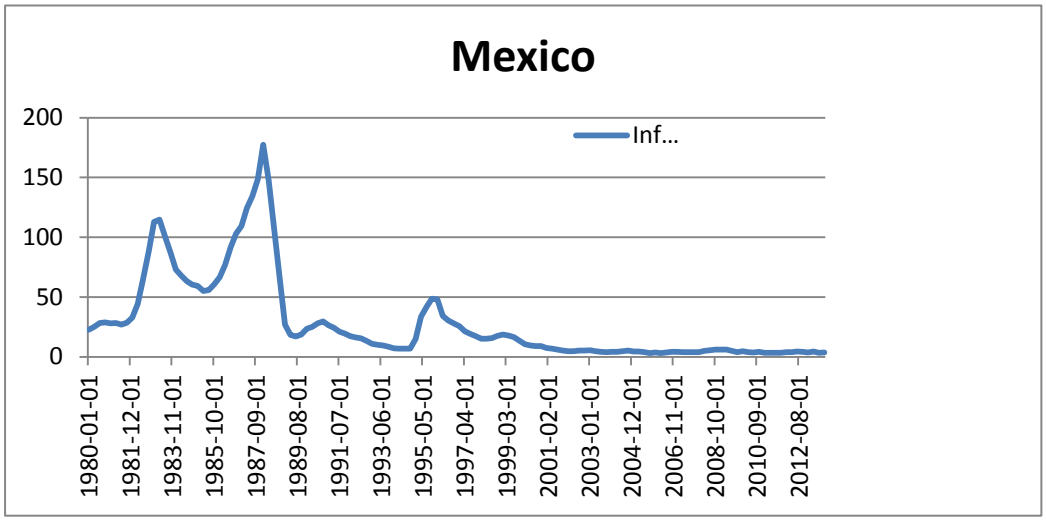
http://research.stlouisfed.org/fred2

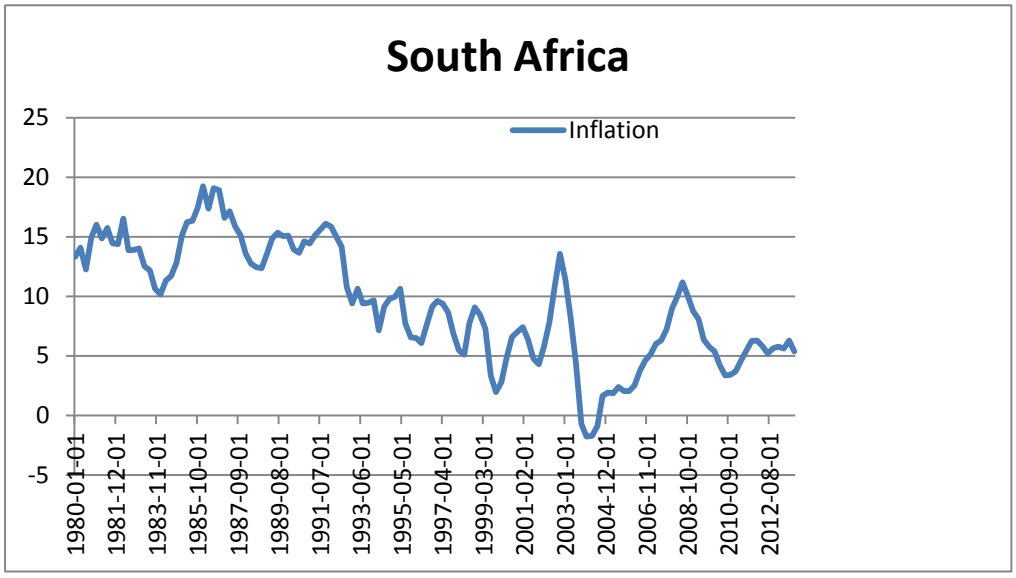
and find the **quarterly** inflation rates between **1980 and 2013** for Chile, Mexico and

South Africa. Note that the inflation rates can be calculated from the CPI data, and these three countries started to use inflation targeting monetary policy respectively in 1991, 1999 and 2000. Is inflation targeting monetary policy effective in these countries? (In terms of reducing inflation, both in level and volatility.) If not, try to provide some explanations.

Answer:
Your graph should look similar to the following ones:







As we can see, the inflation targeting monetary policy works quit well in both Chile and Mexico, but not so well in South Africa. One possible reason is the central bank in South Africa lacks the accountability that is vital to the success of inflation targeting monetary policy.

Note that to calculate the inflation rate using quarterly CPI from the website, we must use the link relative ratio: that is we calculate the inflation rate of 1980-01 as the its growth rate of CPI relative to 1979-01. The following two graphs give the key steps in obtaining the inflation rates data (using Chile as the example):

Consumer Price Index: All Items for Chile© (CHLCPIALLMINMEI)

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Source(s):	Organisation for Economic Co-operation and Development
Release:	Main Economic Indicators (Not a Press Release)
Units:	Index 2010=100 Description of growth rate formulas
Frequency:	Quarterly Aggregation Method: End of Period
Date Range:	1979-01-01 to 2013-12-01
File Format:	Excel
Seasonal Adjustment:	Not Seasonally Adjusted
Notes:	Copyright, 2014, OECD. Reprinted with permission. All OECD data should be cited as follows: OECD (2010), "Main Economic Indicators - complete database", Main Economic Indicators (database),http://dx.doi.org/10.1787/data-00052-en (Accessed on date)
Updated:	2014-03-12 11:31 AM CDT

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