Money Velocity

Homework

1) VELOCITY OF MONEY EQUATION

Solve for V using the following equation: $V = (P \times Y) / M$

A) P x Y = $800 M = $500

B) If the price level is $300, output is 60, and the money supply is $200, what is velocity?

C) Suppose a very small economy has a money supply of $500. In one year, the following transactions occurred. What is the velocity of money?

i) The farmer sells $300 worth of vegetables.
ii) The doctor provides $200 worth of services.
iii) The tailor sells $450 worth of clothing.
iv) The gas station sells $250 worth of gas.

2) QUANTITY EQUATION

Solve for (P x Y) using the following equation: $M \times V = P \times Y$

A) M = $2.3 Trillion V = 1.6

B) The Fed has put $4.2 trillion worth of money into the economy, and they have calculated that velocity will hold at 3.9. What is nominal GDP?

C) The Fed has collected the following data. Has nominal GDP increased or decreased? By how much?

i) Money supply is stable at $2.4.
ii) Velocity has decreased from 10.2 to 8.5.

3) REAL MONEY DEMAND EQUATION

Solve for V using the following equation: $M / P = Y / V$

A) M / P = 0.25 Y = 2

B) The Fed knows the price level is $8 and the output level is 1.2. If the Fed sets the money supply at $3, what is the velocity of money?

C) The Fed has collected the following data. Has velocity increased or decreased? By how much?

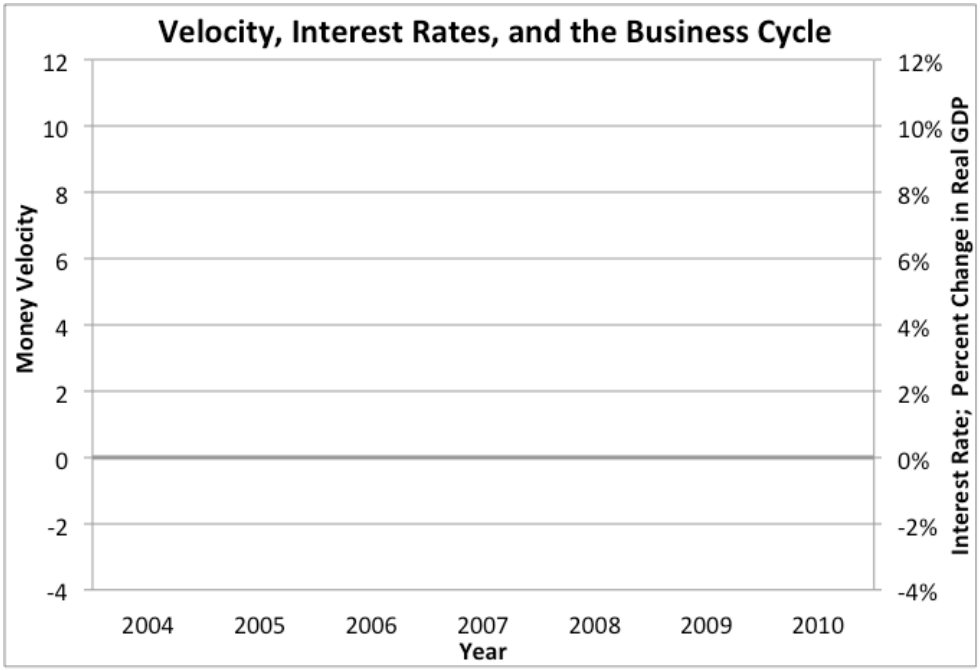
i) Price level is stable at $12.
ii) Output is stable at 4.
iii) Money supply has increased from $4 to $6.

4) MONEY VELOCITY IN THE UNITED STATES

A) Complete the table by calculating "M1 Velocity" and "M2 Velocity." V = (Nominal GDP) / M

B) Graph "M1 Velocity" and "M2 Velocity" on the chart below.

Year	Nominal GDP	M1	M2	M1 Velocity	M2 Velocity	Fed Funds Rate	% Change in Real GDP
2004	$12,275	$1,344	$6,236			1.35%	3.1%
2005	$13,094	$1,372	$6,505			3.21%	3.0%
2006	$13,856	$1,375	$6,847			4.96%	2.4%
2007	$14,478	$1,373	$7,269			5.02%	1.9%
2008	$14,719	$1,435	$7,766			1.93%	-2.7%
2009	$14,419	$1,638	$8,393			0.16%	-0.2%
2010	$14,964	$1,742	$8,602			0.18%	2.7%



5) VELOCITY AND INTEREST RATES

A) Graph "Fed Funds Rate" on the chart.

B) What relationship exists between changes in interest rates and changes in velocity?

C) Using M/P = Y/V, explain why this relationship between interest rates and velocity exists.

6) VELOCITY AND THE BUSINESS CYCLE

A) Graph "% Change in Real GDP" on the chart.

B) What relationship exists between changes in real GDP and changes in velocity?

C) Using M/P = Y/V, explain why this relationship between real GDP and velocity exists.