

Lecture 3: September 8, 2010

Downturns and Financial Markets

Keynesians and Monetarists

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This is the lecture on the relationship between economic downturns and financial markets. The problem in economic downturns is that a lot of people who could work productively at wages that would make them and their employers happy are not. Yet when you talk to economists about how to cure such downturns they almost always come up with some theory or policy affecting finance. Why?

RECAPITULATION

Our Framework for Depression Economics

Last time we saw how recessions and depressions could come to be—how you can have collapses in the circular flow of economic activity and of total economy-wide spending like this one we are in now.

We started with a puzzle. Jean-Baptiste Say set forth the circular flow principle in 1803—the idea that because everybody's spending is somebody else's income there can be no depressions, no recessions, no “general gluts” but only sectoral shifts and readjustments. Nobody makes except to use themselves or to sell. Nobody sells unless to buy. Therefore supply creates its own demand: why have to worry about sectoral maladjustment in which their too much demand for one commodity and too little for another, but we don't have to worry about excess supply, deficient aggregate demand in general. That's what Say said in 1803. Malthus pointed out that that sounded good in theory but did not seem to work in practice. And by 1829 Say and John Stuart Mill agreed with Malthus.

We started with this circular flow principles, with “Say's Law,” and we broke it. We broke it by pointing out that the normal process of adjustment, by which workers smoothly move from industries and occupations where there is excess supply to industries and occupations where there is excess demand, simply does not work when the excess supply is of goods and services and the excess demand is for money—or some other kind of financial asset. Then people working in industries where there is excess supply lose their jobs. But there is no countervailing source of extra hiring in the economy to give them someplace to go.

And last time we saw how these recessions and depressions could come to be big. Workers who lose their jobs are in households that thus lose their incomes, and they cut back on their spending. This second round of falling spending on currently-produced goods and services amplifies the shortage of aggregate demand for goods and services, and multiplies the effect of whatever the initial problem was. Then there is a third round, a fourth, and a fifth, until the economy settles down in some high-unemployment depressed state.

What is the level of production at that depressed state? We presented a way to calculate it: our multiplier equation. We argued that the economy will tend to rapidly head for and then remain at a state in which total production and incomes Y are equal to aggregate demand, total spending on goods and services, or total expenditure E :

$$E = Y$$

that total expenditure E will be the sum of spending on consumption goods C and on other components of final demand O :

$$E = C + O$$

And that consumption spending will have a component C_0 that depends on confidence and other factors and a component $c_y \times Y$ that depends on households incomes:

$$C = c_0 + c_y \times Y$$

Those three relationships will all be in balance if and only if:

$$Y = (c_0 + O)/(1 - c_y)$$

If aggregate demand, expenditure E is greater than production and incomes Y , then inventories are falling and firms are busily hiring workers and expanding production. If E is less than production and incomes Y , then inventories are rising and firms are firing workers, cutting back on production, failing and closing down. Only if aggregate demand and expenditure on the one hand are equal to production and incomes Y is the economy in balance, in equilibrium.

We presented this aggregate expenditure framework, and we argued that it did a good job at getting at the essence of what is going on in recessions and depressions.

But we left one big question unanswered: What are the sources of the declines in c_0 and O that set in motion the decline in aggregate demand, in total expenditure on goods and services? What financial assets are businesses and households trying to buy that produces the excess demand in finance and the deficiency of demand for goods and services?

MACROECONOMICS AND FINANCIAL MARKETS

Economists have argued for more than a century about just what is the financial market excess demand that produces the shortfall in aggregate demand for goods and services. As best as we

can see, all these debates have been fruitless and counterproductive. It is like the parable of the blind philosophers and the elephant: each is touching a different piece of the elephant, and each is correctly reporting what he or she feels, but all are wrong in being vociferously sure that the piece of the animal that they have hold of is the entire beast.

Briefly, economists looking for the origins of recessions and depressions who admit that the circular flow principle is not perfect, that Say's Law can break, have broken up into three schools or sects, one for each type of excess demand for financial assets in downturns that we know of. One sect, call them "Keynesians," after the late English economist John Maynard Keynes of Cambridge University, sees the financial excess demand as an excess demand for bonds. A second sect, named "monetarists" by their intellectual leaders the late Irving Fisher of Yale and the late Milton Friedman of Chicago and Stanford, sees the financial excess demand as an excess demand for cash. And there is a third small sect which does not have a common agreed-upon name—call them Minskyites after the late Hyman Minsky, an economist at Washington University at St. Louis—sees the financial excess demand as an excess demand for safety, for high-quality places where you can put your wealth and be confident that it will not melt away and disappear.

Keynesians

One of the oldest sects, tracing its ancestry back to Swedish economist Knut Wicksell in the late nineteenth century, a sect now called "Keynesians" (to the great annoyance of Swedish economists) sees the financial excess demand as an excess demand for bonds. Bonds—and stocks, and loans, and other such assets—pay interest, dividends, return to you their principal or par value in the future, perhaps pay capital gains. They are all vehicles which you can use to move purchasing power from the present to the future: vehicles that people use to save. Bonds are created when businesses borrow and issue them to finance their investment spending and when the government borrows in order to finance its deficit spending.

To Keynesians—or perhaps more properly Wicksellians—downturns begin when households want to buy more bonds (and stocks, and pieces of real estate) to add to their financial wealth than businesses and the government together want to issue: when savings is greater than investment (plus the government deficit). The attempt by households to redirect their wealth from buying currently-made goods and services to buying bonds—to saving—is what produces the initial deficiency in aggregate demand that sets the downturn in motion.

Thus we reach the recommended economic policy of the Keynesians. If a downturn is the result of an excess of savings over investment plus the government deficit, take policy steps to:

1. increase household confidence so that they are willing to spend more and save less.
2. by reducing interest rates or otherwise improving the investment climate, induce businesses to spend more money investing to add to their capacity and so issue more bonds.
3. expand the government deficit so that the government will issue more bonds that households can then hold.

All three sets of policies eliminate the excess demand for bonds, and so also remove the deficient aggregate demand for currently-produced goods and services that sets the downturn in motion.

Monetarists

The second sect, Irving Fisher's and Milton Friedman's monetarists, starts with the observation that cash is a very special asset in any market economy. It is what you use to buy things—you show up at the store with cash (or with your credit card which is a promise that VISA will pay them in cash, or with your checkbook with a live and valid balance which is a promise that your bank will pay them in cash), and the storekeeper will accept your cash as payment and let you buy your stuff. Economists call this asset "money." (Note that in so doing they deviate from normal English usage, in which "money" can mean "wealth" as well as "cash": when we say that somebody "has a lot of money" we don't mean that they have \$10,000 in their pocket.) The monetarists there that downturns in production and employment are always due to an excess demand for cash money. When something has disturbed the supply or demand for liquid cash money so that households and businesses have less of it than they wish, they slow down their spending in an attempt to build their cash balances up, and it is this slowdown in spending that launches the downturn. A number of things can trigger such an excess demand for liquid cash money:

1. Under a gold standard, the shipment of gold bars abroad to pay for imports reduces the money supply, and so creates an excess demand for money—and thus to deficient demand for goods and services.
2. Open-market sales of government bonds by a central bank like the Federal Reserve by which the central bank trades government bonds for cash diminishes the supply of and so creates an excess demand for money—and thus to deficient demand for goods and services.
3. A loss of confidence by households in the banking system or in finance leads them to trade interest-earning assets for cash and then to stuff that cash under their mattresses increases their demand for cash money, and so leads to an excess demand for money—and thus to deficient demand for goods and services.
4. A failure of or runs on important banks that eliminate or freeze the checking-account deposits of households leads them to try to get more cash in their pockets and leads to an excess demand for money—and thus to deficient demand for goods and services.
5. A loss of confidence and a failure of nerve on the part of businesses that leads them to think that they need to have larger cash balances to deal with economic uncertainty creates an excess demand for money—and thus to deficient demand for goods and services.

Everybody needs cash—and/or a checking account at a reliable bank with cash, and/or an unspent balance on a credit card—in order to carry out their normal day-to-day transactions. What happens when people find that they have less cash than they wish? They cut back on their spending and divert some of their income to trying to build up their cash balances. That cut back

on their spending is, monetarists say, the thing that produces the initial fall in aggregate demand that sets the downturn in motion.

Thus we reach the recommended economic policy of the Monetarists: have a central bank that uses open-market operations to keep the supply of cash money in balance with demand, they say. Without any excess demand for cash, there will be no deficient aggregate demand for goods and services. And so there will be no downturns: no depressions, no recessions, no "general gluts."

Minskyites

There is a third sect, until recently too small and too disorganized to have a name. We call them Minskyites. This sect says that, for big downturns at least, the key is not that the economy has too little cash money or too few bonds, but instead that it has too few high-quality safe assets. It is not that people are cutting back on spending on currently-produced goods and services because they want to have more cash in their pockets or more bonds in their portfolio than exist. Instead, people are fearful that their wealth is unsafe: that they need to sell their risky assets and buy safe ones or else their wealth might simply melt away overnight as whatever partnerships, companies, banks, or governments they have invested in shut their doors, fail, and default on their debts. Thus the policy recommendation of the Minskyites: bailout. The problem is that the economy does not have enough safe high-quality assets, and the private sector cannot create more because nobody trusts any partnership, company, or bank to be good for its current debts let alone for any new ones it might create. The solution is for the government to step in: to support shaky banks so that they can meet their obligations, to take over shaky companies and recapitalize them, to issue its own safe high-quality bonds and use the proceeds to buy up risky private assets, to generally calm the panic.

There are many problems with bailout as a policy. It is unfair, and it sets the stage for more trouble down the road. It is unfair in that it enriches those very financiers and investors whose reckless, speculative, and heedless portfolio strategies that triggered the panic and the general rush by everybody to move a greater proportion of their portfolio into safe, secure, high-quality assets. Those whose actions set the stage for the downturn should not profit. It sets the stage for more trouble down the road because every time Minskyite policies of bailout are adopted risk-loving financiers become more confident that the government will bail them out the next time as well, and so see even more of an incentive to engage in reckless, speculative, and heedless portfolio strategies.

As the late MIT economist Charles Kindleberger put it, writing of the need for a "lender of last resort" to perform the bailouts, but:

if the market is sure that a lender of last resort exists, its self-reliance is weakened.... The lender of last resort... should exist... but his presence should be doubted.... This is a neat trick: always come to the rescue in order to prevent needless deflation, but always leave it uncertain whether rescue will arrive in time or at all, so as to instill caution in other speculators, banks, cities, or countries.... some sleight of hand, some trick with mirrors... [because] fundamentalism has such unhappy consequences for the economic system...

Or as former Federal Reserve Vice Chair Don Kohn put it, the lender of last resort should act because teaching a few thousand investment bankers a lesson that they deserve is not worth doing if the cost is the jobs of millions.

Back in the nineteenth century, London Economist editor Walter Bagehot had a plan for how to deal with such panics and crises. The central bank and the government should, he argued, support the market by buying up risky assets and issuing safe ones and so satisfying the market demand for extra safe-high quality assets. But it made sure that those whose excessive speculation had caused the problem did not profit. "Lend freely" to banks and other financial institutions that needed safe assets in order to avoid bankruptcy themselves, "but at a penalty rate"—at a high rate of interest which would make them poor in the long run as they were forced to hand over their cash or ownership stakes in their firms to the government, and would make them wish that they had not been so reckless in the first place.

In the late financial crisis central banks and governments have followed the first half of Walter Bagehot's plan. They have indeed "lent freely" in order to increase the supply of safe, high-quality financial assets. But they have been unable or unwilling to implement their policies in such a way that their support for financiers is "at a penalty rate," and leaves financiers poor and wishing they had been more prudent before the crisis.

Who Is Right?

Which of these three sects is right?

All of them—sometimes. Each has been right at at least one moment in the past generations.

We can see when there is an excess demand for liquid cash money that you can use to purchase things in the economy. When there is an excess demand for liquid cash money, savers and investors are trying to sell all their other financial assets at whatever prices they can in order to get their hands on cash. Thus the prices of stocks, real estate, and bonds are low—which means that the interest rates on all kinds of bonds are very high, for when the price of a bond is low the interest coupon it pays every six months is a large proportion of its value. In 1982 there was such a liquidity squeeze in the U.S. economy: pretty much everybody was attempting to build up their cash balances and trying to sell other financial assets to do so, and interest rates reached their highest levels of the post-World War II period.

Where did this liquidity squeeze—this excess demand for liquid cash money—come from in 1982? It had been deliberately created by the Federal Reserve, which believed that it had to break the cycle by which Americans had come to expect that each year would see 10% inflation. The only way to do that, then Federal Reserve Chair Paul Volcker and his colleagues concluded, was to create a situation of high unemployment, slack capacity, low production, and depression economics so that neither firms nor workers would dare to ask for the price and wage increases that they had planned. It worked: the 1970s had been a decade of accelerating and the 1980s were a decade of low inflation. It came at a high cost: the unemployment rate peaked at 10.8% at the end of 1982.

We can see when there is an excess demand for bonds—for vehicles to carry purchasing power forward from the present into the future, when there is a savings glut. When there is an excess demand for bonds, savers are willing to pay almost any price for bonds and as a result the interest rates on pretty much all kinds of bonds are very low, for when the price of a bond is high the interest coupon it pays every six months is a low proportion of its value. In 2003 there was such a savings glut in the U.S. economy and indeed worldwide: pretty much everybody was attempting to buy up bonds to hold so that they could shift spending on goods and services from the present into the future, and interest rates as a group reached their lowest levels of the post-World War II period.

And over the past three years we have seen an excess demand for safe, high-quality assets. That has been the excess demand that has triggered pretty much everybody to cut back on spending on current goods and services as they try to build up more wealth in vehicles in which they can be confident it will not melt away. When there is an excess demand for high-quality assets, then the prices of risky assets—stocks, real estate, and corporate and other bonds seen as possible candidates for default—will be low, which means that the interest rates on risky bonds will be high, for when the price of a bond is low the interest coupon it pays every six months is a large proportion of its value. By contrast when there is an excess demand for high-quality assets, then the prices of safe assets—bonds issued by governments regarded as credit worthy, and private loans guaranteed or backed in some way by governments or by ample collateral—will be high because savers are willing to pay almost any price for high-quality bonds, and as a result the interest rates on high-quality bonds will be low, for when the price of a bond is high the interest coupon it pays every six months is a low proportion of its value. Credit spreads—the difference between the interest rates on high-quality bonds and risky bonds—will be extraordinarily high. And whenever a set of bonds shifts in investors' expectations from being high-quality to low-quality—as the bonds of the government of Greece did—the interest rate on those bonds will jump massively. That is what we have seen over the past three years.

No pure types...

CALCULATING OUTPUT GAPS

Savings-Investment Gaps

The Keynesian framework focuses on excess quantity demanded for bonds as a source of pressure making for economic downturns. The quantity demanded of bonds is equal to whatever the current stock of bonds held by households is, plus the flow of savings into financial markets. What is the flow of savings? It has two components. First, there is planned domestic savings S^d : the difference between households' incomes Y and the sum of what they plan to spend on consumption goods C and what they pay in taxes T to the government:

$$Y - C - T = S^d$$

Second, there are foreigners' savings: whenever net exports are negative, foreigners are selling us more goods and earning more dollars via imports than they need to pay for what we export. They take the difference and invest it in the United States. This difference is net savings from abroad: it is equal to the negative of our net exports: $-NX$.

The quantity supplied of bonds is equal to whatever the current stock of bonds issued by businesses and the government is, plus the flow of new issues into the bond market. Businesses' issues of bonds are equal to the amount I they spend on investment adding to their productive capacity. Governments' issues of bonds are equal to the difference between government purchases G and taxes T .

Since the current stock of bonds held by households is equal to the current stock issued by businesses and the government, the flow-of-funds in financial markets will be in balance if the rate at which funds are flowing into financial markets from households and foreigners is equal to the rate at which funds are flowing out to businesses and the government, if:

$$S^d - NX = I + (G-T)$$

If the quantity that people plan to buy of bonds is greater than the quantity that businesses plan to supply, if:

$$S^d - NX > I + (G-T)$$

then households and firms will be cutting back on their spending, and there will be downward pressure on output and incomes Y —and downward pressure on employment.

How far will output and incomes fall if there is a Keynesian gap, an excess of planned savings over planned investment? We can draw a graph with planned savings and planned investment plotted on the vertical axis and with the level of incomes Y on the horizontal axis.

We see that if incomes are lower, planned savings are lower as well—and eventually if incomes fall low enough planned savings fall low enough to be equal to investment. At that point there is no longer downward pressure on spending, output, and incomes, and the economy is in equilibrium balance.

How to calculate where that point is? The requirement that savings equals investment (plus the government deficit) is our equilibrium condition:

$$S^d - NX = I + (G-T)$$

Substitute our expression for the level of domestic savings into this equation:

$$Y - C - T - NX = I + (G-T)$$

Note that a $-T$ appears on both sides, so we can cancel it:

$$Y - C - NX = I + G$$

Recall our consumption function:

$$C = c_0 + c_y \times Y$$

And substitute it into our equation, thus breaking consumption spending down into its components $c_0 + c_y \times Y$:

$$Y - (c_0 + c_y \times Y) - NX = I + G$$

We want to determine the value of total output and incomes Y at which this equilibrium condition is satisfied, so collect the terms in Y on the left hand side

$$Y \times (1 - c_y) - c_0 - NX = I + G$$

Move the other terms on the left over to the right:

$$Y \times (1 - c_y) = c_0 + NX + I + G$$

and then solve for Y :

$$Y = (c_0 + NX + I + G)/(1 - c_y)$$

That tells us the level of output and incomes Y at which the excess demand for bonds, the excess of planned savings over planned investment, is eliminated. That tells us what the equilibrium level of Y will be in this Keynesian framework.

If you cast your minds back to an earlier section, you remember an alternative expression for the equilibrium level of Y , calculated from the consumption function and the equilibrium condition that expenditure equalled output (and incomes):

$$Y = (c_0 + O)/(1 - c_y)$$

and if you remember the definition of "other spending" O :

$$O = NX + I + G$$

you see that these two lines of argument are the same thing.

At this point you should ask how this can be. One of these lines of argument is a result of the equilibrium condition that firms be happy with their level of production—that expenditure equalled production so that inventories were neither rising nor falling. The other line of argument is a result of household savers being happy with their holdings of bonds—that plans between savers and investing businesses be consistent so that there be no excess demand for bonds, and thus that the flow-of-funds through financial markets be in balance.

How is it that these two lines of argument lead to exactly the same conclusions?

The answer is: it is because of the circular flow principle. Whenever expenditure = output = incomes, then the flow-of-funds through financial markets will be in balance and savings will be equal to investment (plus the government's budget deficit). Whenever the flow-of-funds through financial markets will be in balance and savings will be equal to investment (plus the government's budget deficit), then expenditure = output = incomes. That one is the same as the other is a requirement of the accounting identities we used to set up this system of national income, a requirement of, as John Stuart Mill put it, "the metaphysical necessity of the case."

Our depression-economics formula for the level of output Y when the source of the downturn is a Keynesian excess demand for bonds:

$$Y = (c_0 + NX + I + G)/(1 - c_y)$$

suggests policies to get us out of recession or depression:

1. Have the central bank lower the interest rates at which businesses can borrow, and thus make businesses increase their investment spending I —when you can borrow money to expand capacity more cheaply you borrow more of it because the cost of expanding capacity is lower.
2. Provide businesses with other incentives, like special tax credits, to increase investment spending I
3. Increase government purchases G —expansionary fiscal policy.
4. Have the central bank lower the interest rates international currency speculators receive on their portfolio investments in the United States, thus making your currency worth less in terms of other currencies, thus making foreigners more eager to buy domestically-made products and increasing net exports NX
5. Encourage businesses to export more, thus raising net exports NX .
6. Encourage—via taxes, quotas, or other policies—wholesalers and retailers to import less, thus raising net exports NX .
7. Claim that prosperity is just around the corner, and thus make businesses more confident about the future and hence raising investment spending I .
8. Claim that prosperity is just around the corner, and thus make households more confident about the future, hence raising the baseline consumption-spending confidence term c_0 , and so cut saving.
9. Cut taxes, thus giving households more money in their pockets and hence raising the baseline consumption-spending confidence term c_0 —but be careful, for if the tax cut convinces households that the government has no plan for financing itself in the long run, a tax cut will not improve but diminish confidence and will not raise but lower c_0 : under those conditions it is actually a tax increase that is expansionary.

In normal times, when central banks have the freedom of action to raise and lower interest rates, most Keynesian economists would say that the best tool to try to use to fight recession and depression is option number (1). The first line of defense against downturns—and usually the only one that is needed—is for the central bank to respond by lowering interest rates and thus providing businesses with incentives to boost their investment spending. Such expansionary monetary policies are the easiest to put into action, likely to be among the most rapidly working, least likely to become footballs for destructive political games, and tend to have fewer adverse side effects than the other policies.

But when—as has been the case since 2008—the central bank has lowered the interest rates it controls as far as it possibly can, governments must either wash their hands of the situation or resort to one or more of the other policies for fighting a Keynesian downturn.

Money Demand-Money Supply Gaps

The monetarist framework focuses on excess quantity demanded for liquid cash money as a source of pressure making for economic downturns. Take the total liquid cash money supply in the economy—cash, reserve deposits at the twelve regional Federal Reserve banks, deposits in checking accounts, unspent VISA authorizations—and call it M, for money. Divide it by the average price level, which we will call P, in the economy. The quotient M/P we call the real money stock.

The monetarist version of depression economics says that when M/P goes up households and businesses try to get rid of their excess cash by spending more faster, and they do until the higher rate of their spending makes them think that they need all the liquid cash money they are holding. Conversely, when M/P goes down households and businesses try to build up their cash balances by spending less slower and they do until the lower rate of their spending makes them think that they have enough liquid cash money and do not need to be holding any more. Monetarist founder Irving Fisher hypothesized that the relationship between total expenditure E and the real money stock M/P would be more-or-less a proportional one:

$$E = (M/P) \times V$$

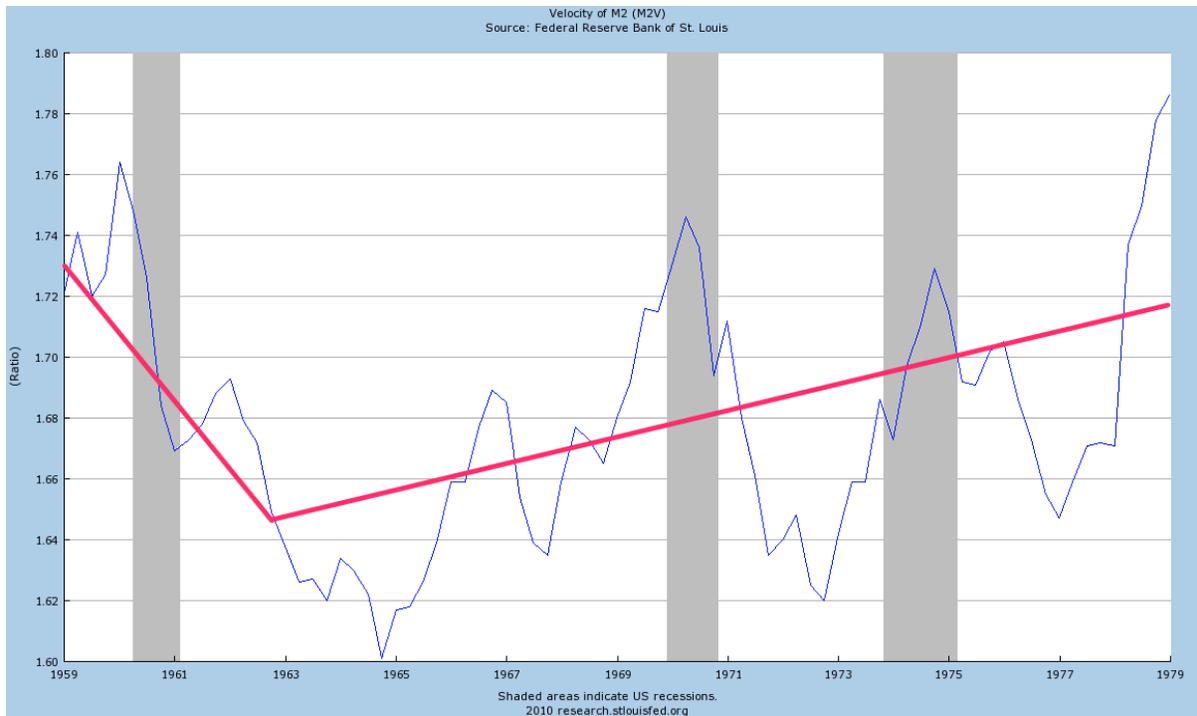
and he named the factor of proportionality V, calling it the "velocity" of money through the economy. Combine this behavioral relationship with our businesses-neither-expanding-nor-contracting-production equilibrium condition:

$$Y = E$$

and you have the monetarist theory of downturns: the economy is in recession or depression because the real money stock M/P or V or both are too low.

Thus the monetarist way to cure a downturn is for the central bank to buy bonds for cash, thus raising the real money stock until spending, output, and incomes—and employment—are once again back at normal levels.

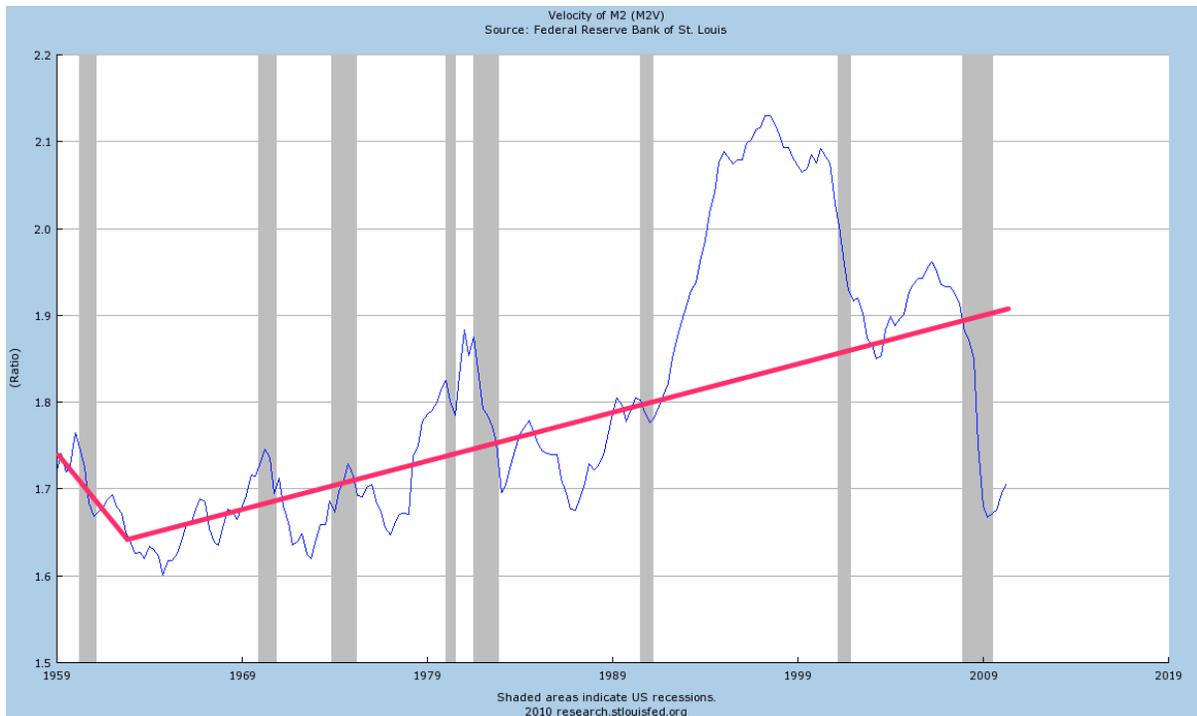
According to the monetarists the Keynesians were looking at the tail and thinking it was wagging the dog. The Keynesians talked about how Federal Reserve open-market purchases of bonds for cash in a downturn decreased the supply of bonds and so restored equilibrium to financial markets. They, the monetarists said, ought to have talked about how Federal Reserve open-market purchases of bonds for cash in downturns increased the supply of money and so restored equilibrium to financial markets. And, of course, the Keynesians said that any excess demand for money there was was simply a reflection of the fact that there weren't enough bonds available for people to hold.



When I started in this business in 1978-1979, the monetarists had a good case. In the post-WWII United States, at least, the velocity of money looked amazingly stable: it looked like when the real money stock fell production fell, and when the real money stock rose production rose, and that little else had much if any effect on spending, production, incomes, and employment. As a result, at the end of the 1970s Federal Reserve Chair Paul Volcker announced that the Federal Reserve was going to pay more attention to the monetarists—with their focus on the supply of money and on the money market—than it had on the past.

This may have been his biggest mistake. The close correlation between the real money stock on the one hand and production and income on the others almost immediately broke down. Before 1979 there were very few times when velocity was more than 4% away from its trend. After 1979 it has been that far away from trend more often than not. Thus it is difficult now to trust monetarist analyses of depression economics—and their claim that if only the Federal Reserve would engage in more open-market purchases of bonds for cash things would rapidly return to normal.

Since 1979 the velocity of M2 in the United States has usually been more than 5% away from its long-run trend...



Panic and Flight to High-Quality Assets

If you are a monetarist or a Keynesian stating why the economy is in a downturn and recommending what should be done to fight depression is very easy and straightforward. In each case all you have to do is to remember and apply one equation. In the monetarist case you have to remember and apply:

$$Y = (M/P) \times V$$

In the Keynesian case you have to remember and apply:

$$Y = (c_0 + NX + I + G)/(1 - c_y)$$

But what do you do if you are a Minskyite, if you think that downturns—big downturns at least—are the result not of an excess demand for cash (which would produce high interest rates across the board) or of an excess demand for bonds (which would produce very low interest rates across the board) but of an excess demand for safe, high-quality assets which produces very low interest rates on low-risk securities like the debt of fiscally-sound governments and very high interest rates elsewhere in the economy?

Unfortunately for you, there is no single-equation Minskyite counterpart to the single-equation income-expenditure formulation of the Keynesian model or the single-equation quantity-theory-of-money formulation of the monetarist model. The Minskyites have been a small sect rather than a large school, and so have not had the intellectual firepower to determine how to strip their theory down to its essentials so that it can be taught via a single equation to Econ 1 students.

Unfortunately for me, the past three years have been overwhelmingly a "Minskyite" downturn. There has been no general shortage of liquid cash money—interest rates on safe alternative assets like short-term U.S. Treasury bonds have remained low. If we were in a primarily "monetarist" downturn with a cash shortage those interest rates would have skyrocketed, as they did in the early 1980s. There has been no general shortage of bonds either—prices of corporate bonds have in fact fallen and interest rates risen. If we were in a primarily "Keynesian" downturn with a savings glut those interest rates would have plunged, as they did in the early 2000s. We are in a more complicated and confused situation, one that is hard to teach to Econ 1 students.

And that is our topic for the first half of next time.