

## ECONOMICS U\$A LESSON #13

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Stasio: Economics U\$A. One of a series of programs designed to explore Twentieth Century micro and macro economic principle. The subject of this edition is Monetary Policy and the Relationship Between Money, Interest Rates and Economic Activity. Our guest is Philip Kagen, Professor of Economics at Columbia University and visiting scholar at the American Enterprise Institute. I'm Frank Stasio.

Stasio: 1873. A Philadelphia bank, J. Cook and Company goes under. Panic followed and the whole country plunges into a deep depression. Business activity falls by a third. Bankruptcies triple. Half of New York City's workforce is laid off. It is six years before the economy begins to recover. The recovery doesn't last long. In eighteen eighty-four there is another depression. This one lasts four years then a brief recovery and another crash of eighteen ninety-three and again in 1907. Each of these disasters was accompanied by an acute shortage in the supply of money. This chronic pattern of economic disruption led Congress in nineteen thirteen to establish the Federal Reserve System, to regulate the money supply and prevent shortages from accelerating economic downturns. To be effective the Federal Reserve needs to know the relationship between money and economic activity. Classical economists believe the supply of money had no

effect on real economic activity. They taught that changes in the money supply could only be reflected in price fluctuations. Contemporary economists, however, argue that the money supply can effect economic activity, particularly during a recession. Philip Kagen is a Professor of Economics at Columbia University and a visiting scholar at the American Enterprise Institute.

Kagen: If you have more money coming into the economy in our kind of advanced commercial, industrial economy, it comes in through financial markets. In our case, the Federal Reserve buys Treasury Bills, which puts more money into the hands of the bond dealers. They in turn deposit this in the banks. The banks have more reserves. The banks make more loans so that generally speaking an expansion of the money supply shows up as an expansion of lending on the part of commercial banks. But the additional borrowers then spend this on various kinds of capital goods and their business, so right away you have an increase in aggregate demand. People's incomes are increasing. Either the firms that sell the goods can produce more and hire more workers or other goods that may be an inventory are being sold that were previously just being held so that the whole circular flow of payments in the system begins to expand in this way.

Stasio: According to a contemporary model of the relationship between the money supply and economic activity, an increase in the money supply will lower interest rates, which in turn encourages investment and raises output. This is a simplified view of the relationship between the money supply and the economy as a whole. To determine the most effective monetary policy, government needs a detailed understanding of how individuals in businesses react to changes in the money supply. Their behavior effects something economists call, "velocity." Velocity is the rate at which money travels

through the economy, in the same way that cars racing in the Indianapolis Five Hundred don't end up five hundred miles from the starting point. So our dollars go around the track a number of times to equal the total amount of money spent on goods and services in a single year. In that way the money supply itself is less than the amount of total spending. Classical economists believe that the velocity didn't change very much from year to year. They based this on the presumption that people's spending habits stayed about the same. Assuming a stable velocity and constant output at full employment, economists developed what we now call, "the crude quantity theory of money and prices."

Kagen: Original quantity theory in...in this context generally assumed that velocity was a certain amount or that it was known in some other way. There wasn't much in the quantity theory that said very much about velocity was, but it...but it assumed or asserted that the velocity would be a certain amount at a particular time based on the determinants of the demand for money. And that given that velocity then whatever happened to the price level and aggregate spending would be determined by changes in the money supply. So the quantity theory of money asserts that major changes in prices and aggregate spending are determined or related to changes in the quantity of money with velocity perhaps changing a little bit, but being a rather minor element in these changes.

Stasio: With velocity and output constant the crude quantity theory showed that prices rose as the money supply increased. The problem is velocity isn't always stable.

Kagen: Over some periods the changes in velocity have been rather minor. And in other periods they've been rather important. Certainly in all the major, large changes in the

price level during major inflationary periods and those changes in...in the price level and output that occur over long-run periods, changes in the money supply have clearly been the most important factor. While velocity does change and has changed both in the short run and the long run, its changes have been limited and the really large changes have come from the quantity of money. When you look at very short-run periods where the changes in the quantity of money are not very large, then relatively speaking the velocity changes become important.

Stasio: Why in the short run does velocity change so much? To understand this, we first need to see how the demand for money can change. Most of us have a fair idea of how much money will be needed to carry out our day-to-day transactions. Knowing what we regularly spend on groceries, gasoline, household bills and the like, we try to adjust our checking account and the amount of cash we carry with us, to meet those needs. And if possible hold a little more for unexpected expenses. All of these routine transactions create a demand for money. But how do we decide how much of our wealth to hold as money? And how much to convert to other assets? The answer depends on the prevailing economic conditions. During periods of relatively low inflation, we pay a price for holding money. That price is the amount of interest we lose by not investing in so-called interest-bearing assets, like savings accounts or securities.

Kagen: There is a lot of evidence that interest rates influence people's willingness to hold money. Previously money didn't pay any interest. So if the interest rate on other short-term liquid assets went up, there would be some incentive for people to switch from money into these other kinds of assets. In recent years we've now had money-like accounts, such as NOW accounts that pay interest. So now it would be the differential

between the interest paid on NOW accounts and other short-term liquid assets that would influence people's willingness to hold those accounts.

Stasio: Some changes in the demand for money and velocity can also be predicted by fluctuations in the interest rate. But changes in the interest rate don't explain all of the short-run changes in velocity. Economists are divided over the question of whether changes in velocity are predictable and to what extent the economy is self-regulating. The opposing view points of the Kantians and monetarists, lead to very different conclusions about attempts by the government to stabilize the economy and adjust for sudden disruptions in economic activity.

Kagen: The issue of...of to what extent the economy is subject to shocks and to what extent it is fairly self-regulating reflects and also a...a monetarist's view that...that most of the fluctuations in the economy have reflected changes in the money supply. And that if these were eliminated by a proper monetary policy that you'd have, that the fluct, remaining fluctuations would be far less severe. Whereas the Keynesians have looked not to improper monetary supply in the past, but to other factors that they claim have caused major fluctuations in...in output. And that, therefore, just a proper monetary policy would not be sufficient here to smooth out, to...to give you a steady growth in the economy.

Stasio: So rather than focus on the money supply, Keynesians have traditionally argued that monetary policy should be based on interest rates. In periods of inflation, interest rates should be allowed to rise, to check excess demand. During recessions they argue the interest rates should be held down to encourage spending.

Kagen: In order to conduct this policy properly, we really need to be watching real interest rates and real interest rates are not observed in the economy. It's much more difficult. You have to have some estimate of what real interest rates are. And it's been alleged that during the nineteen seventies, the Federal Reserve was misled by the rise in nominal rates when in fact the real interest rate was not rising and in some cases was very low, or even falling. So they interpreted the rise in...in nominal rates as a tightening of the market which they tried to counteract by expanding monetary policy. And this simply fueled and, the inflationary efforts, inflationary pressures that were already underway and made some terrible mistakes. It also can be argued that the Federal Reserve has been too concerned with interest rates because there's always a tendency to want to stabilize interest rates for the benefit of stabilizing financial markets. And that while this stability may be nice for financial markets, it can be the wrong thing to do for the economy as a whole. In an expanding economy of the, expanding phase of the business cycle when investment demand is very strong, there's a tendency for interest rates to be pulled up. This is an indication of a tightening in financial markets, but it may be altogether appropriate that that tightening occurs and is even re-enforced by a tightening of monetary policy in order to prevent the expansion of investment expenditures from producing too strong an economy and producing a rise in aggregate demand that was going to be inflationary or overstimulative for the economy. So interest rates can be a very tricky variable to interpret and one that you don't all, that...that you don't want to stabilize over the business cycle and yet one that the Federal Reserve is frequently trapped into stabilizing for reasons of stabilizing financial markets and losing sight of the stability for the economy as a whole that they want to produce.

Stasio: Let's suppose now that you're in a position to decide monetary policy for the United States. You're faced with rising unemployment and declining output. Knowing about the relationship between interest rates and the supply of money, what would you do to stimulate demand? If your decision is to increase the money supply, you have under certain conditions made the right choice.

Kagen: Generally speaking an expansion of the money supply shows up as an expansion of lending on the part of commercial banks. But the additional borrowers then spend this on various kinds of capital goods and their business, so right away you have an increase in aggregate demand, people's incomes are increasing. Either the firms that sell the goods can produce more and hire more workers, or other goods that may be in inventory are being sold that were previously just being held so that the whole circular flow of payments in the system begins to expand in this way. What will happen under those circumstances is that there will be an amount of money that people don't want to hold and so they will tend to lend it to other people who will spend it. And in this way you get a change in the total aggregate amount of spending in the economy. As a result the incomes will go up and the price level will tend to go up and this, the changes in those variables will then adjust people to the amount of money that they're actually holding. So that you can have a case where the interest rate changes, forces changes in these other variables and the same quantity of money that people previously didn't want to hold, they will now be willing to hold.

Stasio: Monetarists led by Nobel Laureate Milton Friedman found that there was a close correlation between changes in the money supply and the cycles of economic activity.

Friedman: The fluctuations in the money supply are a source of uncertainty in the economy. They effect the economy, not instantaneously, but with a considerable lag. The Federal Reserve in trying to offset changes in the economy is always in a sense fighting the last war. What it does now has an effect six or nine months from now, with respect to the economy, a year or two years from now with respect to inflation. It's impossible for them to foresee what action now is appropriate in light of the future. As a result in my opinion, the actions of the Federal Reserve have added to the uncertainty, have added to the instability of the economy, rather than reduced it. And let me emphasize, stable monetary growth is not a guarantee of stable economy. It's a guarantee that you will not have disturbing elements introduced by the operation of monetary policy. It's a way, I said, for, to keep the Federal Reserve from doing mischief and not a way to produce nirvana.

Stasio: Specifically Friedman showed that the rate of change in the money supply peaks about sixteen months before the peak of the business cycle. And there is about a year separating low points in the rate of change in the money supply and business activity.

Kagen: The important point of this from a monetary policy point of view is that these changes in monetary growth presumably are having some influence on activity whether you think they're the major cause or not. And if they tend to have this long lead time and if the lead time tends to vary, then it means it's going to be very difficult to use an active monetary policy for countercyclical purposes because you'd have to be able to see ahead down the line what the proper monetary policy ought to be. And we simply don't have that ability to forecast. So Friedman concluded from this that the monetary authorities in an...in an attempt to smooth out fluctuations in the economy were probably adding to

them, more than they were eliminating them and that they would be much better off simply following a policy of constant monetary growth.

Stasio: Pure monetarists' theory argues that the Fed should fix a target for the growth of the money supply and stick to it. Once the target of say, three or four percent is achieved, monetary policy should be adjusted to keep the growth rate at a constant level.

Friedman: In my opinion, the right way to respond the, I don't mean the right way, but the most desirable way to respond to a recession is to have a monetary policy, a steady monetary growth as a result of which the recessions will be mild when they occur and will correct themselves as the effects of the various forces unleashed by the recession work out. And you will have not a perfectly steady economy, but a much stabler economy than you now have. Japan at the moment provides the best illustration of the results of what I would call an appropriate monetarist's policy. It's a fascinating thing. Of all the central banks in the world, the Japanese rhetoric is least monetarist. Of all the central banks in the world, the Japanese politic, policy, the Japanese banks' policy is the most monetarist. In nineteen, from nineteen seventy-three to now prior to nineteen seventy-three, Japan was going through the same experience other countries did. You had a rapid inflation. The inflation rate reached twenty-five percent in nineteen seventy-three in Japan. Japan drastically changed its monetary policy and really changed, stepped sharply on the brake, brought down the rate of monetary growth very sharply. And from that point to this monetary growth in Japan has been relatively stable, around a steadily declining trend. What happened was that you initially had a fairly severe recession by Japanese standards. It lasted about a year and a half. Since about nineteen seventy-five, you have had a very stable economy with a rate of inflation coming down from twenty-

five percent to where it's essentially zero right now. And in between times it was much less affected by the success of oil shocks in other countries. And I believe that that's the most successful monetary policy of any other countries. And that followed, it was a consequence, I believe, of this relatively steady monetary growth.

Stasio: Critics charge that leaving the Fed without discretion over the money supply neutralizes an important tool for smoothing out the booms and busts in the business cycle.

Kagen: An interesting example occurred in nineteen eighty-two in which the economy was very weak. It was not recovering from the recession as many people had predicted. At that time the Federal Reserve felt that it had to stimulate the economy in order to bring us out of the recession and also bring down interest rates. And the Federal Reserve engaged in August of nineteen eighty-two in a very expansionary monetary policy. Such a change in direction would be, was and would always be holding in consistent with a monetary targeting procedure. Because while monetary growth had been unnecessarily slow previously, now it went from being too slow to very, way too high. A straight mark monetary targeting procedure would have followed a level monetary growth throughout this period. Well, the Federal Reserve departed from this because they felt there were some current developments that they had to take account of. And the critics of monetary targeting then would point to similar examples over the business cycle when they feel the Federal Reserve has to use its discretionary judgment about changing the rate of monetary growth to deal with current conditions.

Stasio: Another problem for policymakers is determining just what the money supply actually is. Kagen says that members of the Federal Reserve Board have been skeptical about monetary targeting for this very reason.

Kagen: They've always argued that the concept of money is somewhat vague and, therefore, they developed a series of different monies depending on how you defined it. So the narrow definition of money, the one that's called, "M-one" and the one that's most closely watched is the one that I referred to before. That's the medium of exchange, its currency and checking deposits which can be directly transferred. But many people feel that that's too narrow a definition of a prom, of a def, too narrow a definition of money that's useful for monetary economics. And they want to include other very liquid assets that they feel are so highly substitutable for checking deposits that the public makes no important distinction between them and monetary economics should not also. So they define an M-2 which includes everything that's in M-1 and in addition savings and time deposits and other kinds of deposits in the banking system that are close substitute. But then they, not sure they want to stop there and they go on to an M-3 which includes other liquid assets that are considered also close substitutes, but maybe not quite as close as those that they included in...in M-2 and indeed when Arthur Burns was chairman of the Federal Reserve System during the nineteen seventies, initially I believe they had about seven definitions of the money supply.

Stasio: The Fed's attempts to define money were further complicated by the deregulation of the banking industry in nineteen seventy-eight. Deregulation allowed money market funds and other investment institutions to grant check-writing privileges for their customers. The effect was to increase the liquidity of assets the Fed had previously not

counted as money. The resulting confusion created some cynicism among financial experts. Alan Sloan is a senior editor at Forbes Magazine.

Sloan: There used to be this crazy business where if I got an American Express account bill for fifteen hundred dollars, I wrote a check on the Howard Savings Bank where my account is. Then there was no money created, but if I took fifteen hundred dollars from my Dreyfuss liquid assets money market account and said that's my American Express, suddenly fifteen hundred dollars had been created. And that's all craziness, because it was the same amount of money regardless. Because Dreyfuss had a...had a fifteen hundred dollars invested somewhere. So they just took it out of wherever it was and gave it to me and I gave it to American Express. But somehow that...that transaction where I paid American Express created fifteen hundred dollars. And the Federal Reserve was running around going crazy because people kept writing ..., the equivalent of checks on the money market accounts and screwed up all their numbers. So I think they ended up changing the numbers to accommodate money market accounts, which is like the story that I'm so fond of telling of the village idiot. It was also the village marksman because he ran around shooting arrows and then throwing bulls' eyes around the arrows. That man was always on target.

Stasio: And what about credit card receipts, do we add them to the money supply at the time of purchase or when the credit card bill is paid? New credit cards lower the demand for money.

Kagen: I think people are confused by credit cards as...as a monetary mechanism because of course they make payments with the credit card in the same way that they

used to make payments with a check or with currency. So it is a...it is a money-like mechanism. But the proper way to look at is that what's happening with the credit card, is that the credit card company is making the payment for you, so you are in effect borrowing money from the credit card company when you make your payment. They're paying for you and then you pay this loan back at the end of the month when you pay off the credit card company. Now the question is whether this reduces the demand for money or not. It does make it easier on the credit cardholder. He doesn't have to carry currency around with him as he used to. And he may be able to keep his bank balance a little bit lower by...by synchronizing the time when he pays the credit card company to come just after he's paid by his employer. So in that sense the individual cardholder doesn't have to hold as much money, so why doesn't it, while it doesn't influence the money supply, it does influence the money demand. But it's a little bit more complicated than that because we have to ask, "well, how much money does the credit card company then have to hold?" They have to, in a sense, have the money that the individual is using, but by combining many households together into one company, they may be able to synchronize payments better. So my guess is that the use of credit cards probably reduces the demand for money below the level that it would otherwise be. But so far we haven't seen any strong evidence of that in our equations that try to describe money demand. So it just seems to be a complicated mechanism for the public to borrow money in order to make it more convenient for them to make their payments. But it doesn't show up as any major change in the way the monetary system operates.

Stasio: There have been many revisions in the original theories of both the Kantians and the monetarists. Despite crucial differences that remain those changes have acted to

bring the two sides closer together in their models of the forces that drive the economy.

Let's review some of the main points in our program on Monetary Policy and the Relationship Between Money, Interest Rates and Economic Activity. Great disparities in the U.S. economy have been accompanied by fluctuations in the money supply. The Kantian model of this relationship holds that an increase in the money supply initially forces interest rates lower, encouraging investment and raising output. Another factor that must be considered in formulating monetary policy is changes in velocity. Velocity is the rate at which money supply is used to make transactions of final goods and services. Classical economists base their crude or original quantity theory on the assumption that velocity held constant the original quantity theory holds that prices will be proportional to the money supply. That is increases in the money supply will result in the proportional increase in prices. This theory assumes the economy is running at full employment. There's been a long debate over whether the Federal Reserve should focus on interest rates or the money supply to judge the tightness or ease of the money supply. The Kantian view is that interest rates are the best indicator for formulating monetary policy. Monetarists led by Milton Friedman criticized this approach. They point out the importance of distinguishing the real interest rate from the nominal rate. During periods of high inflation, it's difficult to determine the real rate. Friedman has also shown the long lead time needed to predict economic cycles. He and other monetarists argue that economists are not able to make accurate adjustments with such long lag times.

Monetarists believe the Federal Reserve System should not try to change the money supply to balance the economy. Instead they argue the Feds should set a single monetary growth target and use monetary policy to keep the money supply at the intended rate.

This feat was criticized by economists who believe the Feds should keep the discretion it has over the money supply so it can adjust for sharp destabilizing swings in the economy. Keynesian and Monetarists' theories have changed over time, but most of those changes have acted to bring the two sides closer together. There are still some important issues, however, that divide the two camps. We'll have a closer examination of those differences in future editions of Economics U\$A.

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Stasio: You've been listening to Economics U\$A, one of a series of programs on micro and macro economic principle. Our guest has been Philip Kagen, Professor of Economics at Columbia University and a visiting scholar at the American Enterprise Institute. Economics U\$A has been produced by the Educational Film Center in Annandale, Virginia. I'm Frank Stasio.

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