The Impact of Monetary Policy on Agriculture

by William Poole

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The topic of the impact of monetary policy on agriculture is an old one, and one that is subject to a lot of misinformation. The fundamental forces shaping agricultural prices and output are a consequence of non-monetary forces. My main message is that trying to change these outcomes through monetary policy is an invitation to messing up monetary policy without fixing problems in agriculture. In fact, messing up monetary policy will only make agricultural conditions more difficult.

The fundamental issue confronting agriculture is that, in the long run, the growth of output has exceeded the growth of demand, and this cannot be addressed through monetary policy. Indeed, the last couple of years have been rough for U.S. agriculture and, over time, swings in farm incomes can be, have been and probably will continue to be quite dramatic.

Economic Fundamentals of Agriculture

In terms of sheer producing power per unit of input, American agriculture ranks as an unqualified success. The average U.S. farmer is growing and harvesting more now than at any time in history – and doing it, in the aggregate, with fewer inputs.

That the industry has been able to increase production with fewer farmers and ranchers is testament to the tremendous benefits gleaned from technological innovations. *Doane's Agricultural Report* recently ranked research and education, mechanization, hybrid seed corn, commercial fertilizers and chemical pesticides as the top five innovations that have contributed to agriculture's tremendous productivity advances during the

20th century.

On the other hand, the demand for food products increases about proportionately with population, but, beyond that, it increases more slowly than does per-capita income. In the United States and other high-income countries, we observe the consistent pattern that expenditures on farm commodities grow more slowly than total expenditures. Indeed, U.S. expenditures on food as a share of total consumption expenditures fell from about 25 percent in 1929 to 14 percent by 1999.

Given the limited upside to boosting the domestic demand for farm products, one way to increase sales is to make U.S. farm products available to consumers in other parts of the world. But, as the recent Asian crisis showed, unexpected disturbances from foreign markets are a fact of life.

We can summarize the demand conditions this way: The demand curve for agricultural products is quite steep (inelastic), shifts out only gradually over time and is somewhat volatile because export demand is volatile.

The inevitable outcome of rapid technological advance and slow growth of total demand is that the demand for workers in agriculture declines. In the words of economist Hendrik Houthakker, "The greater the increase in farm productivity, the greater the imbalance between supply and demand of farm products which has to be corrected by an outflow of labor or by lower farm prices."

Moreover, Houthakker notes that "unless the outflow of labor from farming is fast enough, an increase in farm productivity leads only to lower farm prices and lower farm incomes."

How low incomes go depends on how rapidly workers move out of agriculture to industries with better income prospects. Low incomes in agriculture may seem unfair, but the fact is that low incomes are driven by the inexorable economic forces of high productivity growth, slow demand growth and insufficiently rapid exit of workers from agriculture.

Monetary Policy and Agriculture

From time to time, every central bank finds that it must change interest rates to maintain low and steady inflation. Let's take a moment to understand why.

Suppose there were some way for the central bank to achieve low inflation without acting directly on interest rates. For example, suppose the central bank controlled money growth directly – indeed, there is an extensive literature arguing that this policy is the one central banks should pursue. The Federal Reserve might raise and lower money growth as needed to achieve its objective of low and steady inflation. Interest rates would fluctuate freely in the marketplace.

Even when the Fed maintained rock steady money growth, interest rates might rise or fall. In particular, when the economy boomed, rates would tend to rise as households and firms bid for funds to finance spending on new investment, houses, cars and all the other things people commonly finance by borrowing. Similarly, when the economy slowed, interest rates would tend to fall, even if the Fed did nothing but maintain steady money growth.

The Federal Reserve, along with almost all other central banks, conducts monetary policy by adjusting its target for the interest rate on short-term interbank borrowing, known in the United States as the "intended federal funds rate." What the Fed tries to do is to mimic, in broad outline, how the federal funds rate would fluctuate if the Fed could set the rate of inflation directly, or through some other policy tool such as money growth. If the Fed fails to adjust the intended federal funds rate appropriately, it will fail in its mission to achieve low and steady inflation.

When the Fed raises the intended federal funds rate, other interest rates typically follow. In fact, other rates frequently lead the intended rate, as the market anticipates what the Fed is going to do. Because almost everyone in the country has borrowed, is in the process of borrowing or expects to borrow in the future, that means there is almost universal pain when interest rates rise.

But what is the choice? If interest rates don't rise in a timely fashion, then sooner or later inflation will begin to rise. When that happens, investors will put additional upward pressure on interest rates to protect their capital from being eroded by inflation. So a central bank that delays raising rates does not in the end avoid rate increases, but instead imposes both higher inflation and, eventually, even higher interest rates on society.

Sometimes the argument is a bit different. When agriculture, or any other industry, is going through a difficult period, pleas for assistance are understandable. Why can't the Fed lower interest rates a bit to help in such situations? For example, when the Asian economic crisis hit in mid-1997, U.S. agricultural exports were especially hard hit. The crisis deepened in mid-1998 with the Russian default. The Fed did lower interest rates in the fall of 1998 to prevent the financial disruption from spilling over to affect the stability of the U.S. economy. As financial conditions returned to normal last year, the Fed raised the intended federal funds rate, and market rates rose as well. But the effects of the Asian problems on the farm economy lingered, and linger to this day.

Many people do not understand, however, that as powerful as monetary policy is, a central bank has essentially only one policy instrument. I like to think of that instrument as the rate of money growth – or, more generally, the provision of liquidity to the economy – over the long run. In the short run, the Fed implements its control over the growth of liquidity by setting the intended federal funds rate. With only one policy instrument, the central bank can at best achieve only one policy objective, that being a low and stable rate of inflation. If the Fed tries to pursue other objectives, it may lose control over the rate of inflation.

Our experience in the 1970s drove home with stark clarity the consequences of losing control over the rate of inflation. The economy suffered from high and unstable interest rates, rapid swings in the international value of the dollar and increased instability of employment and output. The recessions of 1973-75 and 1981-82 were among the most severe downturns in U.S. history. The instabilities of this period added to the burdens suffered by agriculture, home builders and other industries.

The U.S. economy is dynamic and rapidly changing. At any given time, certain industrial and geographic sectors are bound to lag the overall economy, while others do better than the overall economy. Monetary policy can do little to help the lagging sectors – there are no policy instruments at the Fed's disposal that have sector-specific effects. Our responsibility is to maintain low and stable inflation and, to the extent possible within this basic objective, to smooth temporary disturbances.

A Final Word

Those in agriculture should ask the Fed to keep its eye on the inflation ball. Criticize us when we are going off track, but define "off track" by the economy as a whole and not by conditions in agriculture alone. Do not underestimate the importance to agriculture of a stable overall U.S. economy.

Low inflation, stable inflation expectations, relatively low interest rates on the average, high and stable employment, all contribute to the stability of the agricultural economy. The Fed can do nothing about the fundamental economic forces controlling the destiny of agriculture. But the Fed will do its best to maintain a stable domestic economy. If the Fed can continue to be successful in tempering that important historical source of instability to U.S. agriculture, the Fed will have done its job. **jal**