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“WOULD LOWER INFLATION REDUCE GROWTH?”

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Introduction

The notion that reducing inflation would also choke off economic growth pervades much of the rhetoric surrounding monetary policy. The current performance of the U.S. economy, however, belies this mistaken notion. The economy grew by 3.3 percent in 1996 and at a 4.1 percent rate in the first half of this year. The unemployment rate has been below 5 percent for much of 1997. Meanwhile, consumer price inflation has been falling and ran at annual rate of only 2.2 percent for the 12 months ended in August.

In fact, the economic story since the early 1980s has essentially been one of falling inflation and steady, stable growth, as the Federal Reserve has gradually restrained the growth of the money supply. That the economy is clicking nicely today leads me to believe that the Fed's low-inflation policies of the past 15 years have provided a sound foundation for a dynamic U.S. economy. Moving to relatively low and stable inflation has not hurt the real economy; indeed, the standing of the American economy relative to other major countries appears as strong as ever. Since 1987, for example, job growth in the United States has led to a 14 percent increase in civilian employment, whereas employment in major industrial countries in Europe has been stagnant. At the risk of oversimplifying the situation, American companies are now concentrating on turning out good products at low cost, instead of trying to turn a profit by pushing through price increases ahead of inflation.

Today I want to address the misconception that economic growth and price stability are somehow incompatible and to set the record straight regarding what we have learned about monetary policymaking in recent times. First, I want to stress that economic growth does not cause inflation. A country can grow rapidly based on real

factors without any consequences for inflation. Second, and closely related, I want to point out that the Fed is not against jobs and growth; on the contrary, we are following policies intended to allow the maximum sustainable levels of real activity and employment. And finally, I want to discuss ways in which we can work to keep inflation low by maintaining a credible monetary policy. By credibility, I mean that the Fed sets and announces clearly defined goals and takes action, when necessary, to achieve those goals.

Economic growth does not cause inflation.

Let me repeat a simple idea I mentioned a moment ago: Economic growth does not cause inflation. If all we know about a particular economy is that it is growing rapidly, we really do not know anything about its rate of inflation. The main determinants of economic growth are real factors like the growth rate of productivity and the growth rate of the labor force. In times of rapid technological change, for instance, we tend to see productivity improvements that allow greater output per worker. This can lead to rapid growth in real output in an economy regardless of the inflation rate. In the late 19th century, for example, the U.S. was rapidly industrializing and, indeed, was on the road to world power status. Yet the average rate of inflation during that time was negative--about a 1 percent rate of *deflation*. If growth caused inflation, we would have observed sharply rising prices during this era. Instead, rapid economic growth was associated with deflation because money growth was constrained by the gold standard.

Of course, the 19th century is far in the past; but the idea that growth does not cause inflation is borne out in modern economies as well. If you look around the world,

you will see that since World War II, high-inflation countries have grown no faster than low-inflation countries. If anything, they have grown more slowly on average. And even a slightly slower average rate of economic growth can have a large effect on living standards. Suppose, for example, that every 3 percentage points of additional inflation reduces the average growth rate of the economy by .075 percentage points, a rule of thumb consistent with recent empirical estimates. Let's imagine two economies, one with zero inflation growing at 3 percent per year, and an identical second economy with 3 percent inflation, which, by our rule of thumb, grows at only 2.925 percent per year because of the higher inflation. It doesn't sound like these economies are very different. But if we follow them for 30 years, we find that living standards in the economy with higher inflation have been eroded by more than 2 percent. Is this a large number? I think it is. In terms of national income in the U.S. economy today, it would be about \$170 billion, or just under \$1,250 for every worker currently in the civilian labor force.

In fact, the idea that growth does not cause inflation has been widely recognized in economics since 18th century economist and philosopher David Hume wrote "Of Money" more than 200 years ago. Hume's reasoning was fairly straightforward. All of economic theory is based on relative prices: People trade off apples against oranges and computers against cars. The decisions that they make are based on the nature of these tradeoffs. Prices are expressed in the relative form: How much chicken do I have to give up to buy a steak?

In fact, the idea of inflation, a general rise in the level of prices, does not even enter into the standard theory. Why? Because relative prices cannot all increase at the same time. It is only the introduction of money, a common medium of transactions, that

creates the possibility of inflation. If, for convenience, all prices are expressed in terms of a paper currency as they are today, then the money prices of goods and services can all rise at once if the amount of currency in circulation is expanded enough. Thus, monetary systems can produce inflation. This is the basis for the assertion that inflation is a monetary phenomenon. Not surprisingly, the low-inflation regime since the early 1980s has required a commensurate reduction in money growth. Growth in the M2 monetary aggregate averaged 9.8 percent from 1968 to 1983, and only 4.6 percent from 1984 to 1997. The connection between high money growth and inflation, which has been re-examined by generations of economists, seems to me to be ironclad.

But ironclad logic does not always translate into simple policy prescriptions. The exact connections between money growth and inflation are hard to trace. There are numerous problems in measuring what we mean by money, and for that matter what we mean by inflation. In part because of these measurement problems, we do not fully understand how short-term monetary growth rates get translated into short-term price movements. For longer-run price movements, however, the evidence across countries is clear: Persistently high rates of money growth, however you define them, translate into persistently high rates of inflation. This longer-run evidence is comforting in that it helps validate the monetary theory of inflation, but it is not that helpful in deciding what monetary policy actions should be taken this month or the next. Still, problems in identifying exact connections between money growth and inflation over relatively short periods of time should not cause us to neglect the fundamentals of inflation.

It follows from my discussion that any effects of the real economy on inflation must be temporary. But temporary inflation is by its very definition less of a concern

to monetary policymakers--if it is temporary, it will dissipate of its own accord and requires no policy action. It is *monetary* inflation that policymakers must worry about, because it is monetary inflation that is caused by the central bank and can be eliminated only by the central bank.

Certainly many countries around the world have had serious problems with monetary inflation, quite independent of anything occurring on the real side of their economies. Some countries in Latin America have had average inflation rates in the postwar era well in excess of 50 percent per year; many countries in Europe and elsewhere have struggled with double-digit inflation for decades. These persistent inflation rates are no accident. They are a matter of a fairly simple policy choice by policymakers in these countries--the choice to tolerate a high inflation rate. In contrast to these countries, we in the U.S. are lucky: We have had inflation of around 3 percent for nearly the whole of the current expansion. But this 3 percent is an entrenched, monetarily-induced inflation which is not going to go away unless the Fed takes specific action to eliminate it.

A credible disinflation is not against jobs and growth.

Of course, taking action to move the monetary inflation rate lower is controversial. Many are concerned that we will restrain the economy from its full growth potential if we move to a lower inflation rate. Indeed, a surprise attack on inflation--a "slam-on-the-brakes" disinflation policy--might well have such an effect. But an organized, well-publicized and fully expected policy move toward a stable price environment should pose no danger to the real economy. Such a change would allow

markets, consumers and businesses to plan for the new environment well in advance. In fact, planning ahead and announcing intentions allows markets to act in ways that *reinforce* the announced plans. For instance, a credible policy announcement today that we plan to lower inflation by a certain amount over a certain time period might enter into tomorrow's labor negotiations or government budgetary planning, allowing those processes themselves to help bring about the lower inflation. Most macroeconomists agree with this position: It is the unanticipated or surprise component of a change in policy that causes economic turmoil, not the deliberate, well-publicized effort I have in mind.

Far from being against jobs and growth, the Fed's inflation-fighting policy maximizes our living standards over the long run. What I am suggesting is that the Fed do its utmost to provide a stable price backdrop for the economy, allowing the price system to work as efficiently as possible. After all, we want the prices in the economy to reflect fundamental economic value. This allows people and businesses to accurately assess the economic opportunities they face and make the best economic decisions. There is no reason to confound the purpose of the price system by introducing inflation. Otherwise, price changes in goods and services always have to be examined from two sides: "How much of the price change is due to inflation, and how much is a real signal about a change in economic value?" Inflation merely complicates the signals sent by the price system.

Taking the risk of higher inflation is not just a matter of confusing price signals. Higher inflation interacts with our nominally based tax system, especially with taxes on capital, to create large distortions. Higher inflation also causes people and businesses

to waste resources trying to economize on their money holdings. A good deal of research suggests that these costs are substantial. The risk of higher inflation creates uncertainty, which also exacts costs, including an inflation risk premium in interest rates. And to make matters worse, the inflation risk premium does not necessarily disappear when inflation is brought down. People must be convinced that inflation will stay down. For this reason, the Fed's credibility with the public is crucial if society is to enjoy all the benefits of reduced inflation.

A simple decomposition of interest rates on government securities will help illustrate the problem. The return on a government debt instrument of a given maturity can be thought of as having three components. First, there is a real component, which compensates investors for the use of their money. Second, there is an expected inflation component, which compensates investors for the expected loss of purchasing power of their money over the time period involved. And finally, there is an inflation risk premium, which compensates investors for taking the risk that inflation might be higher than they expected at the time of purchase.

Attempting to estimate the size of these three components requires sophisticated econometric analysis and, even in the best of circumstances, involves substantial imprecision. But it is useful to consider two periods during the postwar era in the United States when inflation was comparatively low and stable. The first period extended from 1960 through 1965. During these years, the trend rate of inflation was about 1½ percent, and the 10-year Treasury note was trading to yield around 4 percent. Most analysts think monetary policy had considerable credibility at that time, so inflation risk was not a large factor in interest rates. Today we can use the yield on 10-year inflation-

indexed bonds, relative to the yield on conventional bonds, to gauge expected inflation at about 2½ percent. The current yield on ten-year Treasury bonds is around 6 percent. So the difference in expected inflation accounts for only 1 percent of the 2 percent change in bond yields between the early 1960s and today. It would be a stretch to attribute all of the remaining difference to an increase in the required real return, so it appears that a non-trivial inflation risk premium is present in today's interest rates on long-term bonds. I think it is well worth our time to consider ways both to reduce inflation further and to eliminate this risk premium that hits all borrowers, public and private alike.

Much of the inflation risk premium stems from the experience that once inflation is unleashed, the process of bringing it back down is long and painful. The Fed consequently must act to instill the public with confidence regarding its intentions to contain inflation. Reductions in the inflation risk premium are possible if we follow a disciplined policy to move inflation lower and keep it lower in a credible way, especially if this policy has a clear price stability objective.

Keeping inflation low with forward-looking policy.

I think most economists and policymakers agree with the assessment of inflation that I have given so far. Because there has been widespread consensus since the early 1980s that the U.S. inflation rate should not be allowed to accelerate, we have had a fairly successful run of policy. Along with low inflation, the economy in the past 15 years has enjoyed its most cyclically stable growth period in history. I think it is important to remember why it hasn't always been this way.

I am afraid the Fed, and many other central banks, got into a trap in the 1960s and 1970s. Beginning in the late '60s, the Fed sought to encourage a higher level of economic activity by keeping interest rates artificially low. For a time, output rose while inflation stayed low. The money supply, however, began to grow at an accelerating rate, and by 1965 inflation had begun to rise. In response, the Fed tapped on the brake, causing the money supply growth rate to drop sharply and the inflation rate to dip. But tight money increased interest rates and reduced the flow of credit. The Fed responded by releasing the brake and pushing down on the accelerator once more. As a result, the money supply expanded sharply and inflation accelerated. This stop-and-go cycle was repeated several times and became a well-entrenched pattern in the '70s. The economy lurched from recession to recession, and each recession was followed by an expansion with a higher rate of inflation--and a higher rate of unemployment--than the previous one.

I suspect that many of you have painful memories of the late '70s and early '80s. It was a dark period for our economy. High inflation, 20 percent interest rates, and a steep recession bankrupted many farmers and business people and paved the way for the S&L debacle. The experience surely showed the danger of letting inflation get out of hand. The policy failures of the 1970s sprang from the mistaken notion that monetary policy can be used effectively to manipulate growth in output. However, the view that monetary policy could "fine-tune" economic activity turned out to be a mirage. Arguably, such fine-tuning made things worse. An erratic monetary policy--one that steps on the gas today only to brake tomorrow--seems as likely to exacerbate fluctuations in real output as it is to reduce them.

The more successful policy involves watching inflation trends carefully and acting pre-emptively to stave off incipient inflationary pressures. Many of the Fed's critics comment that the Fed has been "excessively" concerned about inflation during the current expansion. But they're missing the point: The success of the FOMC's policy has been that the Fed has moved with enough agility to keep inflation at bay. Low and stable inflation is no accident; indeed, it is the result of good policy. One cannot analyze the inflation outcomes independently of the policy regime that produced those outcomes. In addition, I am happy to report, low and stable inflation has turned out to be perfectly compatible with relatively strong growth in output and low unemployment. I am not saying this can go on forever--I am sure that the business cycle will continue to buffet our economy--but to those who argue that low inflation has been constraining growth or raising unemployment, I beg to differ.

The forward-looking aspect of Fed policymaking, with a focus on inflation, has been essential to the success we have enjoyed. The pre-emptive policy moves we have taken during the current expansion have marked an important departure from the backward-looking policies that got us in hot water in the past. Under backward-looking policies, the criterion was that if policy *had been* too easy and inflation had already been stoked, then policy was put in a "Stop" mode; conversely if policy *had been* too tight and the economy had tipped into recession, then policy was abruptly shifted into a "Go" mode. A forward-looking policy consistently keeps monetary expansion in line with sustainable demand growth to control future inflationary pressures.

Let's keep in mind the lessons of recent history.

I have tried to emphasize some of the hard lessons we have learned about monetary policy over the postwar era: First, inflation is not a road to prosperity. Economic growth is ultimately determined by real factors outside the control of monetary policy. Second, backward-looking, stop-and-go policies cause economic pain without generating any offsetting economic gain. Third, we should recognize where we stand today: The trend rate of inflation is still about 3 percent, so we are not at price stability. As a result, borrowers in the economy face long-term nominal interest rates that remain elevated by inflation expectations and inflation risks. Fourth, and most important, the record shows that disinflation is consistent with sustained economic expansion. So the answer to the question, "Would lower inflation reduce growth?," is a resounding "No."

But perhaps in this era of good times, it is tempting to think of the Fed as excessively worried about inflation. The temptation is to imagine that because inflation is relatively low and stable, it has no potential to rise again, even if we return to the policies of the past. In short, the temptation is to forget which policy regime has been successful in providing the backdrop for our relatively prosperous situation today. In my view these temptations represent dangerous thinking for U.S. monetary policy. A nation cannot inflate its way to prosperity. Creating nominal assets--in effect, printing more money--does nothing to improve living standards or create jobs, and in fact simply feeds inflation, which then must be undone at a later date.

Many of you are aware that last Thursday I announced my resignation as president and chief executive officer of the St. Louis Fed, effective January 1. My decision was not an easy one, because of the fine people with whom I've worked and the

challenging economic, financial and regulatory issues I've been privileged to address at the Fed. But I remain hopeful that the Federal Reserve will stick with the policies that helped bring us to the current point of prosperity. The Fed needs to make careful inflation forecasts and act pre-emptively when necessary to head off inflationary pressures. The benefits of a forward-looking, anti-inflation policy are clear, and such policies will contribute to continued economic success. Indeed, a stable price backdrop is the best contribution monetary policy can make to the U.S. economy.