Is Noninflationary Growth an Oxymoron?

by David Altig, Terry Fitzgerald, and Peter Rupert

Just before the Federal Open Market Committee’s (FOMC) May 20 meeting, popular opinion about the near-term future of U.S. monetary policy was summarized by John O. Wilson, chief economist at Bank America Corp.:

Mr. Wilson views the economy as continuing to expand too fast for the Fed’s comfort and anticipates that a series of central bank moves will be needed to bring the economy back onto what economists call the sustainable non-inflationary growth path.1

The FOMC did not choose to alter the average level of the federal funds rate at its May meeting. A typical interpretation of this decision appeared in the May 21 Los Angeles Times:

The decision by the ... Federal Open Market Committee was designed to provide time for analysts to determine whether the economy is slowing down on its own ... or will require additional reining in.2

These observations underline one of the most widely held and persistent beliefs about the “theory” of inflation; that is, inflationary pressures will inevitably result from high levels of economic activity, defined as real GDP growth that exceeds some “natural,” or normal, rate. The obvious consequence of such a belief—duly expressed in the quotations above—is that if the Fed desires to contain inflation, it must also contain economic growth.

This is indeed a predicament for a central bank that by its own pronouncements desires to conduct monetary policy to maximize the well-being of the average citizen. There is, of course, a distinction between a policy aimed at stabilizing output growth near its long-term trend and one designed to “fight growth” more generally. But the distinction is a subtle one, and the casual observer might be forgiven for not understanding why the goal of long-term economic growth appears to require periodic policy actions that seem aimed at slowing growth.

This confusion is unnecessary and unproductive, because much of the popular commentary about monetary policy, inflation, and the pace of real economic activity is based on a none-too-accurate portrayal of economic theory and evidence. Economic growth is not the enemy of low inflation, and expanding employment and income do not, in and of themselves, threaten the Federal Reserve’s legitimate role in protecting the purchasing power of money.

The contrary perception is, at least in part, due to a failure to communicate (for which those of us in the business of central banking are not blameless). In particular, the long-established and widely held theory of money, prices, and income does not suggest an obvious linkage between high levels of economic activity and high rates of inflation (or, more specifically, between accelerating inflation and growth in excess of “potential”).3

Just the opposite, in fact: Higher GDP growth should put downward, not upward, pressure on prices.

This Economic Commentary reviews the theoretical and empirical case for disinflationary economic growth. The basic story line is as follows: Rising prices follow from nominal money supply growth in “excess” of its demand.4 More rapid GDP growth, however, implies an increase in the growth of money demand. This leads to inflation, not rising inflation.

Thus, everything else being equal, an uptick in GDP growth should lead to disinflation, not rising inflation.

The tricky step between theory and reality, of course, is that all else is rarely equal. Inflation and above-trend growth have tended to coincide in the past. But it is important to recognize that this can arise because growth is sometimes associated with other changes that exert upward pressure on prices, not because growth per se is inflationary. This message has been lost as the correlation between “excessive” output growth and changes in the inflation rate has become enshrined in the “Phillips curve” (discussed below). However, the stability of this relationship and the statistical regularities that underlie it are as much apparent as real. Appreciating this goes a long way toward explaining why the U.S. economy can safely buck the conventional wisdom and experience substantial noninflationary economic growth.

One question on the minds of policymakers and economic analysts alike is, “When will the bill come due for the robust economic growth the United States has been enjoying?” That is, when will inflation begin to pick up? But a better question might be, “Just because inflation and above-trend growth have coincided in the past, does that mean that they must do so in the future?” Contrary to popular wisdom, it is quite possible to have a booming economy without an acceleration in the price level.
What, then, determines money demand? Part of the answer is income, which for spending, and money is held precisely (all else equal). Thus, the simple theory of money, growth rate of money demand.7 Temporary accelerations of output growth, and inflation yields the following syllogism.7

1. The price level rises less rapidly (inflation falls) when the demand for money rises more rapidly than its supply.
2. Money demand rises when GDP rises, all else equal.
3. Thus, holding the growth rate of money fixed, inflation falls when GDP rises.

Inflation that persists when output is growing at its long-run average rate is thus attributable to monetary growth in excess of its demand, which, as an empirical matter, also increases at about the long-run average rate of GDP growth. Temporary accelerations of output growth beyond the normal rate will therefore cause inflation to deviate from its trend. However, holding all else constant, prices in this circumstance should grow more slowly than normal, not more quickly, as is often asserted.

Is Everyone Crazy? If theory speaks so clearly on the relationship between growth and inflation, why do so many people think that rapidly rising GDP is inflationary? Part of the answer can be found by expanding on the simple theory developed thus far. In addition to income, the theory on the determination of money demand identifies a second key variable: "the" nominal interest rate.

The nominal interest rate determines the opportunity cost of holding monetary assets. The higher the interest rate, the greater is the loss from holding wealth in the form of money instead of alternative, higher-yielding nonmonetary assets.8 Thus, an increase in market interest rates will tend to reduce the demand for money which, all else equal, will put upward pressure on prices.

There is one more piece to the puzzle. If, at a time of expanding output, the demand for goods and services grows even faster — as might happen if businesses and consumers expect times to be better in the future — interest rates will rise. Holding monetary policy (money growth) constant, inflation will tend to increase (at least in the short run) if the negative impact on money demand from rising interest rates dominates the positive influence of more rapid GDP growth. Rising prices in this event are not the result of growth per se, but rather of demand-driven interest rate pressures that are correlated with expanding economic activity, which in turn reduces the demand for money relative to its supply.9

Two related and important lessons are suggested by this discussion. First, the "fact" that a high level of economic activity causes inflation is not a fact at all. To the extent that price pressures and accelerations of short-run growth are positively correlated, this relationship results from the tendency for goods and services demand and market interest rates to accelerate along with output, and for money demand to decline as a consequence.

Second, the "inevitability" of inflationary pressures when GDP growth rises substantially above trend is critically dependent on the stability of these historical correlations. In other words, the prediction that growth "causes" inflation can rest securely only on the presumption that the impulse for growth in the final demand for goods and services will always outpace that for supply in periods of rapidly expanding GDP.

This scenario, however, suggests a different perspective than the one offered by the conventional wisdom. Although it may be appropriate to "tighten" monetary policy in periods of high demand, this need not be construed as an attempt to rein in output growth. An equally plausible interpretation is that the intent of such a policy is to slow money growth to match the realities of the changing demand for monetary assets.

The Phillips Curve: A Reliable Rule of Thumb? "So what?" might be a reasonable response to the discussion above. As long as there is a stable and predictable relationship between changes in the inflation rate and GDP growth in excess of its long-run average, theoretical niceties are...
Okun's law, named after the late economist Arthur Okun, is a rule-of-thumb relationship between output and unemployment. It is a widely used tool for thinking about economic policy, and is co=on now to hear the "normal" GDP and inflationary pressures was always contingent on the presumption that demand pressures inevitably arise as a normal characteristic of the rapid expansion phases of a business cycle. The operationalization of this presumption has traditionally come from reportedly reliable and stable relationships between changes in inflation and measures of real activity. But the reliability and stability of these relationships are sufficiently suspect to draw into question their usefulness in thinking about policy today.

The recent economic environment of rapid growth and nonaccelerating inflation has left many people puzzled. But such a scenario is clearly possible from a theoretical standpoint: If accelerating inflation and presumed output gaps went together in the past, that is certainly no guarantee they must do so now or in the future. Furthermore, the simple statistical framework underlying the conclusion that an acceleration of price-level growth must follow from an acceleration of output growth "beyond capacity" is not as compelling as is often assumed.

It is an opportune time to reevaluate the language of monetary policy discussions. As with the inflationary episode in the 1970s, conventional rules of thumb have been hard-pressed to account for recent events. Perhaps the information revolution brought on by rapid advances in computer technology has broken down many of the traditional macroeconomic regularities that have informed our thinking about economic policy, resulting in a lack of coherent thinking about policy.

In any event, it is incumbent upon economists and policymakers alike to strive to communicate a deeper understanding of how various shocks to our economy affect output, unemployment, and inflation. Rules of thumb that equate rapid output growth with accelerating inflation do more than create bad advertising for monetary policies aimed at pursuing price stability. They ensnare as theory statistical connections that are, at best, indirectly connected to the ultimate determinant of price-level growth, which is to say the demand and supply of money. As such, they retard a more informed public discussion of monetary policy and the job of the policymaker that much more difficult.
Footnotes


3. “Potential” GDP growth is typically taken to be synonymous with “long-run average” GDP growth. Economists often refer to this as the “steady-state” rate.

4. In equilibrium, supply equals demand. More specifically, we are describing a condition in which prices rise precisely because money would be in excess supply if they didn’t.

5. More detailed accounts of the simple, and thoroughly standard, theory discussed in this section can be found in almost any introductory economics textbook. See, for example, Alan Stockman, Introduction to Economics, Fort Worth: Dryden Press, 1996, chapter 27.

6. A simple example clarifies the distinction between nominal and real variables. Suppose that the money supply consists solely of dollar bills. The nominal supply of money would then just be the number of dollar bills in circulation. The real money supply would be the nominal stock expressed in terms of “purchasing power”: How many units of goods and services can be purchased with the stock of money? For example, suppose that the stock of money, $M$, is $5$ million, and the price level, $P$, is 2. Because the price level is the number of units of money required to purchase one unit of output, the real stock of money (in units of output) is $5/2 = 2.5$.

7. This statement—which implicitly invokes the economist’s standard “all-else-equal” clause—is not meant to minimize the difficulties inherent in controlling the money supply.

8. To be a bit more precise, opportunity cost is typically measured as the difference between the return on short-term Treasury securities and a measure of the return on a particular monetary aggregate, such as $M_2$. For a recent discussion of the operational relationship between money and opportunity cost, see John B. Carlson and Benjamin D. Keen, “$M_2$ Growth in 1995: A Return to Normalcy?” Federal Reserve Bank of Cleveland, Economic Commentary, December 1995.

9. There is another possible source for rising interest rates: rising expectations of inflation. The role of inflation expectations can significantly complicate the simple theory presented here and make things difficult indeed for monetary policymakers.


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