Money and Inflation 101: Class Is in Session

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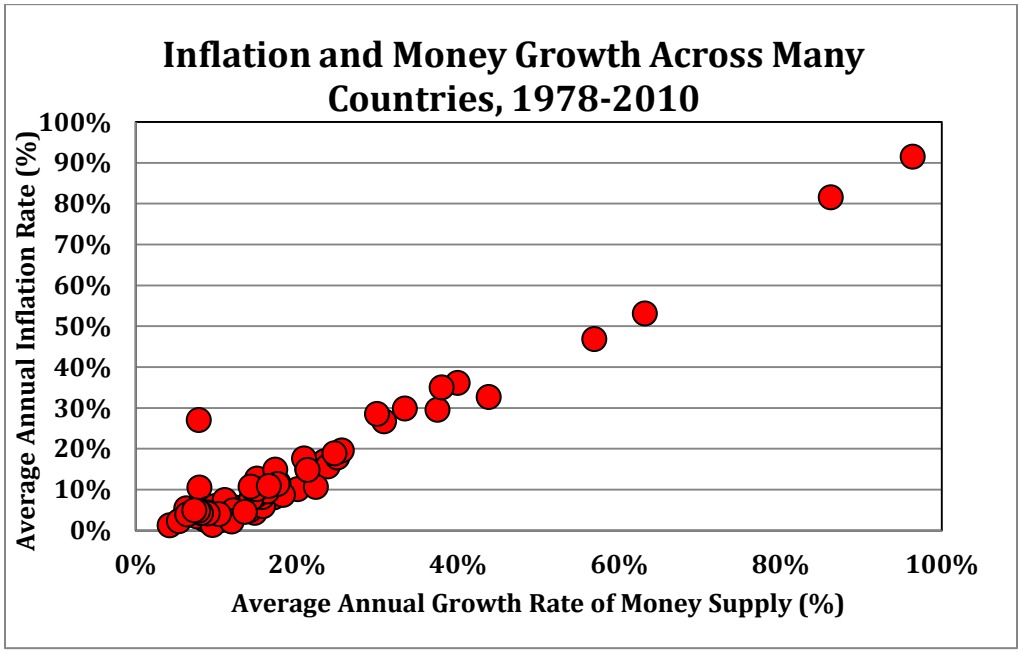
My students are often puzzled about the causes of inflation, the relationship between it and "money", and the concerns over very low inflation. These questions also arise in current public debate. So here are a few pointers on these central macroeconomic topics.

One of my favourite charts shows the long-run relationship between inflation and money growth across countries. Suppose you collect data from a large group of countries over thirty years. For each country, you measure the average annual inflation rate and the average annual growth rate of the "money supply", which includes the physical currency in circulation and the total value of bank deposits. You then have a single data point for each country, showing that country's inflation-money growth combination. If you plot these data, you'll get the closest thing to a straight line that economic data ever generate. Countries with high long-run rates of money growth are also countries with high long-run rates of inflation, and vice versa.



(Source: based on author's calculations using data from the World Bank: www.worldbank.org.)

What explains such a strong relationship? The actions of central bankers, who influence the rate of monetary expansion, have profound effects on the economy's level of output and employment. But money is a funny thing. Printing it faster does not ultimately create "real" wealth, and one of the most important lessons in macroeconomics – and it is a difficult one to learn in detail – is that the short-run influence that central banks have on output and employment disappears over time, to be replaced by an influence mostly on the rate of

inflation. Over periods of many years, the single most important cause of inflation is the rate of money growth, and this comes mostly from monetary policy.

This long-run focus begs the obvious question about the short run. If money growth's primacy in driving inflation is a long-run phenomenon, what are the things that matter over the course of the typical business cycle, say 5-7 years? There are many answers, from spikes in energy prices and reductions in fruit and vegetable prices to temporary fluctuations in the exchange rate and policy actions that alter tax rates. Such economic "shocks" lead to temporary bumps and wiggles in a country's inflation rate – but they don't have lasting effects.

Probably the most important short-run influence on inflation is the amount of excess capacity in the economy. The Bank of Canada estimates that Canadian GDP is currently 1 percent below our productive capacity, and this "output gap" is even larger in the United States. Excess productive capacity and the associated unemployment tend to moderate wage and price pressures, reducing inflation.

Many people wonder, especially given the strong long-run link between inflation and money growth, why the massive monetary expansions in the United States and the United Kingdom since 2009 have not led to run-away inflation. There are two central reasons. First, the massive expansions in the "monetary base" engineered by the U.S. Federal Reserve and the Bank of England have not been successful in stimulating the same rapid growth in the broader "money supply" (including bank deposits) because commercial-bank lending has been slow to recover – which is typical in the wake of a financial crisis. Second, the large amount of excess capacity in these economies is keeping a lid on both wage growth and inflation. The hysteria about impending "hyperinflation" in these countries should be ignored; a serious rise in inflation will not be a real danger until the economies have recovered much more.

The final pointer relates to the often-heard concern about the problem of low inflation, but many observers appear to be confused between cause and effect. If the economy were operating at its productive capacity, a reduction in inflation should be viewed as a good thing, as it means less erosion in the value of our money and a more efficiently operating price system. The overall benefits of low inflation explain why the Bank of Canada and many other central banks choose to target a *low* rate of inflation rather than a high one.

The very low inflation rate we have today – well below the Bank's 2-percent target – is not a major problem – it is a symptom. The major problem is the significant amount of excess capacity that is showing few signs of shrinking. When the world economy eventually gets onto a solid recovery path, and this increases the pace of our own recovery, our excess capacity will disappear and our inflation rate will naturally rise back toward 2 percent.

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