

*The Pakistan Development Review*  
45 : 2 (Summer 2006) pp. 179–183

## **Inflation Everywhere is a Monetary Phenomenon: An Introductory Note**

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Ever since the 1970s, when inflation became a virtually global phenomenon, controlling inflation has become a high priority for policy-makers. Given the well-known costs of inflation, policy now in all countries is inflation-averse. Perhaps one of the more important adverse consequences of inflation may be that high and persistent inflation is a regressive tax<sup>1</sup> which adversely impacts the poor.<sup>2</sup> The poor are extremely limited in their options to protect themselves against inflation; they are normally asset-poor, while most of their saving is in the form of cash. Inflation erodes cash savings and protects the rich who hold real assets.<sup>3</sup> It is not surprising that inflation may be politically costly for the government.

Studies have also found that high and volatile inflation has been detrimental to growth and financial sector development. Resource allocation is inhibited as inflation obscures relative price changes and thus inhibits optimal resource allocation.

For policy to control inflation, it is important to understand the factors that drive inflation. Unquestionably, empirical evidence points to “inflation being always and everywhere a monetary phenomenon” [Friedman (1963)]. However, there still remains some debate on whether supply-side factors could cause inflation without monetary accommodation.<sup>4</sup> The structuralist school of thought holds that supply constraints that drive up prices of specific goods can have wider repercussions on the overall price level. Similarly, there are a number of possible sources of rising costs such as wages, profits, imported inflation-exchange rate, commodity prices, external shocks, exhaustion of natural resources, and taxes. For example, in Pakistan, increases in the wheat support price have frequently been blamed for increasing inflation.<sup>5</sup>

Consensus among economists has also been reached that price stability is the prime objective of monetary policy.<sup>6</sup> Maintaining price stability is the responsibility of a central bank and it is accountable for achieving it.<sup>7</sup> In keeping with this consensus, the State Bank of Pakistan was also explicitly mandated to ensure price stability in the SBP

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<sup>1</sup>Baily (1956), Fisher and Modigliani (1978a, 1978b).

<sup>2</sup>Cecchetti (2000).

<sup>3</sup>Fisher and Modigliani (1978a).

<sup>4</sup>Bernanke (2005).

<sup>5</sup>*Pakistan Economic Survey* (Various Issues).

<sup>6</sup>King (1999) and Blejer, *et al.* (2000).

<sup>7</sup>Goodfriend (2000), King (1999), and Blejer and Leon (2000).

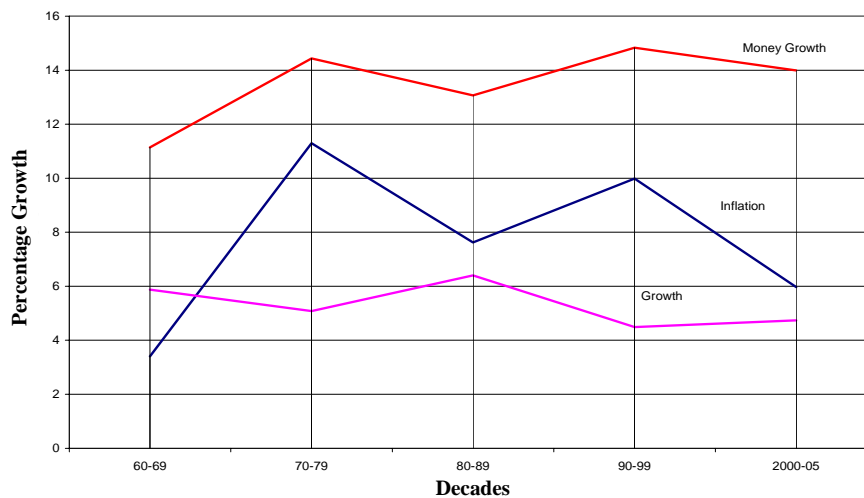
law of 1997. However, in the period 2001–2005, monetary policy of the SBP was biased towards supporting growth because of its expectation that inflation could be maintained at low levels while giving the economy a monetary stimulus. In keeping with monetary experience, inflation started accelerating in 2005, forcing a reversal.<sup>8</sup>

To control inflation, monetary authorities in Pakistan use M2 as an intermediate target.<sup>9</sup> Growth of this monetary aggregate is fixed annually, and was maintained within target till 2001. From 2001 to the actual money supply growth was overshoot by 69 percent on average from the targeted money supply growth.

The recent rise in inflation has once again triggered a debate on the causes of inflation. Even policy-makers are divided on the issues of causes of inflation. Policymakers on one side have contended that the current inflation was caused by cost push factors such as wheat procurement price and oil price increases<sup>10</sup> and on the other side they think that it is accommodative monetary policy that is responsible for current surge in inflation.<sup>11</sup> Commentators pointed to the monetary overhang as a cause of inflation.<sup>12</sup> It is not surprising that policy-makers should point to factors beyond their control as the cause of inflation and for commentators to point to a policy failure the inability to control money supply growth. Interestingly enough a similar debate also took place in the nineties.<sup>13</sup>

Figure 1 shows ten year averages of inflation, money growth and GDP growth. The chart shows that inflation and money growth to be positively correlated while GDP growth appears to be negatively impacted by inflation. This is in keeping with economic theory and experience of other countries.

**Fig. 1. Historical Trends of Money Growth, Inflation and Real GDP Growth**



<sup>8</sup>SBP-MPS (2006).

<sup>9</sup>Akhtar (2006).

<sup>10</sup>*Pakistan Economic Survey* (2005-2006).

<sup>11</sup>Akhtar (2006).

<sup>12</sup>Sherani (2005).

<sup>13</sup>See, for example, Khan and Qasim (1996).

In this symposium, we have collected three papers to understand and examine the determinants of inflation and to see which side the data support. All of them seem to reprove what is now well accepted in the world that “inflation is everywhere a monetary phenomenon”. Consequently, policy cannot escape responsibility for the rekindling of inflation.

The first paper in this symposium is on “Inflation in Pakistan” written by Mohsan S. Khan and A. Schimmelpfennig. The main objective of the paper is to examine the factors that explain and help forecast inflation in Pakistan during the recent decade. In their analysis they use two monetary variables (money supply and/or credit to the private sector), an activity variable, the interest rate(s), the exchange rate, and the wheat support price (as a supply-side factor).

The study reveals that a long-run relationship between inflation and private sector credit exists. The loading coefficient in the equation for the CPI indicates that 23 percent of a deviation from the long-run relationship is adjusted in the next period. In response to an innovation in private sector credit, the CPI initially falls, but after 4 months steadily increases. When broad money was used as monetary variable they found that there no long run relationship exists among the variables. The reason may be the ongoing changes in macroeconomic stabilisation and financial sector reforms.

In order to search for an appropriate leading indicator of inflation, the study uses a different specification. It concludes that private sector credit growth and broad money growth are leading indicators of inflation. The results are consistent with a monetary transmission mechanism that works through the credit channel.

Overall, the paper concludes that monetary factors are the main drivers of recent surge in inflation in Pakistan, whereas other variables such as real GDP growth, the wheat support price matter, and NEER appreciation play less role. Moreover, the monetary growth affects inflation with a lag of around 12 months. The study also concludes that the State Bank of Pakistan is fully capable of implementing its own independent monetary policy consistent with the needs of the domestic economy. Finally, it is recommended that monetary policy has to be forward-looking to achieve its inflation target.

The prime objective of the second paper “Money, Inflation, and Growth” by Abdul Qayyum, is to test the validity of the monetarist stance that inflation is a monetary phenomenon, i.e., the money supply growth (excess) causes inflation in Pakistan.

The study shows that money (M2) growth remains above the target level since 2001 and inflation exceeds its target during 2005 and 2006. The velocity of money shows a decreasing trend over the period from 1973 to 2005. During 2005, inflation tax on money holder is estimated to be 0.98 percent of GDP. The results from the correlation analysis indicate that there is a positive association between the money growth and inflation. It is concluded that money supply growth at first round affects real GDP growth, and at second round, inflation.

The results indicates that in the long run, there is a one-to-one relationship between the rate of inflation and the growth in money supply, growth in real income, and growth in velocity of money. The results also proves that there is one-to-one relationship between the inflation and money growth relative to real income in Pakistan. Finally, the study concludes that there is proportional relationship between the excess money supply

over the output growth and the velocity growth. It implies that excess money supply is the main cause of inflation in Pakistan. The important policy implication is that inflation in Pakistan can be cured by sufficiently tight monetary policy. The formulation of monetary policy must consider development in the real and financial sectors and treat them as constraints on the policy.

Ali Kemal in his paper tests the hypothesis whether the inflation is essentially a monetary phenomenon and investigates the lag length over which the money supply may impact on the inflation rate in Pakistan. The results from the correlation analysis reveal that one-year lagged-level correlation between money growth and inflation rate is higher than the level-level correlation. It is also observed that an increase in the variability in money supply leads to an increase in the variability in inflation and variability in GDP growth.

From the cointegrating analysis, the study concludes that inflation has a positive long-run association with money supply and a negative relationship with income. Kemal therefore concludes that the negative association between inflation and output implies that any increase in output in the short run resulting from demand stimulus results in a decline in the output. The results from the VAR lead to the conclusion that inflation is strongly associated with the short-run movements in the money supply, but it affects with a lag of three quarters. Finally, the results of the impulse response function (IRF) show that both money and output adjust in response to exogenous shocks in inflation, but that inflation does not adjust to its own shock. Further, the equilibrium is not fully restored. Inflation adjusts while output overshoots in response to the money supply shock. GDP adjusts significantly to its own shock and money supply adjusts slightly. Inflation does respond well to the shock in GDP but equilibrium is not stable. His conclusion is that inflation in Pakistan is a monetary phenomenon. It takes three quarters of money growth to affect inflation.

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