



Inflation dynamics in Asia: Causes, changes, and spillovers from China[☆]

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ABSTRACT

The perception that Asia's inflation dynamics are driven by idiosyncratic supply shocks implies, as a corollary, a limited scope for policy responses to inflationary pressures. However, Asia's fast growth and integration with the global economy in the last couple of decades suggest that the drivers of inflation may have changed. This paper presents a quantitative analysis of inflation dynamics in Asia using a Global VAR (GVAR) model, which explicitly incorporates trade and financial linkages among economies, as well as the role of regional and global inflationary spillovers. Our results suggest that over the past two decades, the main drivers of inflation in Asia have been monetary and supply shocks; but that, in recent years, the contribution of these shocks to the region's inflation has fallen. Domestic demand pressures, however, have played a larger role in driving inflation in Asia over the last decade. Moreover, economies in the region are exposed to notable inflation spillovers from China, both directly from higher imported goods prices and indirectly through higher commodity prices.

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1. Introduction

Managing inflation pressures is traditionally one of the macroeconomic challenges Asian economies have been facing, particularly in recent years. Inflation, as measured by consumer price indices, gathered momentum throughout 2007 and accelerated sharply in the first half of 2008.² Inflationary pressures started receding towards the end of 2008 as a result of the global financial and economic crisis, but they have started to build up in some Asian countries as early as late 2009 (Fig. 1). Inflation accelerated even further towards the end of October, owing mainly to still accommodative monetary conditions and higher oil and food prices. In fact, changes in global commodity prices tend to translate into headline inflation rather sizably due to high commodities' weights on the CPI baskets of a number of Asian economies.³

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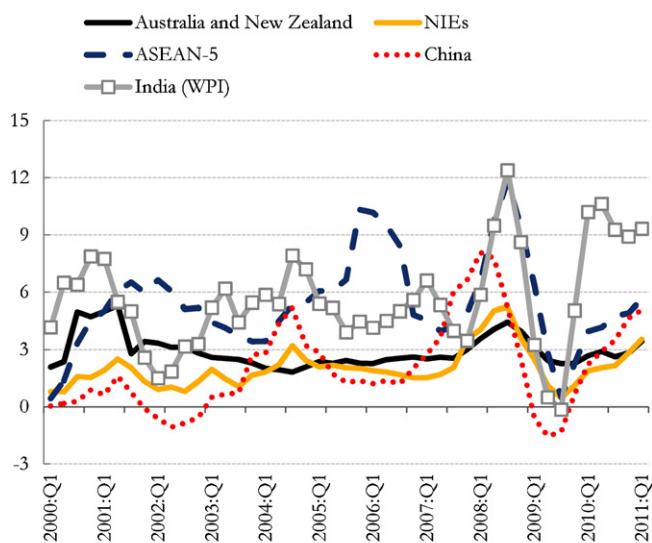
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² By the end of 2007, headline inflation in emerging East Asia reached 5.3 percent, double the rate at the start of the year, and 6.9 percent by May 2008.

³ The shares of food and energy in the average emerging Asian CPI basket are nearly 40 percent and 10 percent, respectively, both of which are higher than the average of 27 percent and 6 percent for emerging economies worldwide. In India and Indonesia, the CPI shares of food and energy are above the Asian average.



Source: CEIC Data Company Ltd., and authors' calculations.

Fig. 1. Selected Asia: Headline consumer price index (year-on-year percentage change).

Source: CEIC Data Company Ltd., and authors' calculations.

However, core inflation has been on the move as well, reflecting overheating and potentially second-round effects (Fig. 2).⁴

Against this background, an important consideration for policymakers is what forces drive inflation dynamics across the region. In order to assess inflation prospects, and determine the appropriate monetary policy response, it is important to determine the extent to which inflation in Asia is driven by supply and demand pressures as well as the extent to which these pressures are caused by foreign versus domestic sources. Central banks in Asia have been rather passive in episodes of rising inflation on the premise that inflationary pressures derive largely from temporary supply problems and/or from imported sources. It is implicit in these arguments that policymakers can clearly identify the forces that drive inflation, in terms of both the nature and the impact of shocks, or so called inflation dynamics.

However, identifying the relative contributions of different factors to inflation is complicated by the fact that these factors usually coexist. For example, the run-up in Asian inflation before the global crisis, to nearly 8 percent in 2008, coincided with both surging world commodity prices and strong Asian growth. Moreover, given the importance of regions' demand for the global commodity prices, and the region's integration with the world economy, it is important to consider also international trade and financial channels in the transmission of different shocks.⁵ In fact, inflation spillovers are likely to result from the multiple transmission mechanisms through which shocks can impact the local, regional, and global economy. These channels can be mapped into groups of common observed factors (such as commodity prices), unobserved global factors (such as technological progress spillovers), or specific national or regional factors emerging from trade relationships or financial linkages.

To determine the relative contributions of various factors to inflation it is thus necessary to conduct an empirical analysis which explicitly incorporates domestic, regional, and global factors, and their interactions. This paper examines the relative impacts of supply shocks and demand shocks, as well as their origins in terms of foreign and domestic sources. In our framework, supply factors comprise commodity prices and producer prices, while demand factors comprise monetary shocks (to money supply, interest rates, and exchange rates) and output gaps. To our best knowledge, this is the first paper in the literature on inflation dynamics in Asia that explicitly accounts for trade and financial linkages among economies such that impacts of regional and global shocks on domestic economies, as well as for those of individual economies to conditions overseas are considered. Therefore it improves upon other studies on the issue, such as Jongwanich and Park (2009).

We present a two-step empirical analysis of inflation dynamics in Asia. First, we identify the nature and origin of inflationary pressures for the economies of the Asia and Pacific region using the Global VAR (GVAR) framework proposed by Pesaran, Schuermann, and Weiner (2004). We estimate the GVAR model for 33 countries, including 12 Asian countries, from

⁴ Over the last decade in Asia, simple contemporaneous correlations between headline inflation and core inflation as well as between core inflation and food and energy prices have been quite high at 0.8 and 0.4, respectively. This suggests that changes in food and energy prices feed through quickly to core inflation, possibly through inflation expectations, wages, and other input costs.

⁵ For example, emerging Asia's share in world demand of oil has increased from 7 percent to 23 percent over the last 3 decades. Similarly, the demand share of emerging Asia for metals (aluminum and copper) in 2010 was above 50 percent, up from 20 percent in mid 90s.

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