

INFLATION

Inflation has moved steadily lower and become more stable globally over the past four to five decades, with average year-over-year G7 headline consumer price inflation down from 8.3% in the 1970s to just 1.5% in the 2010s. A wide range of factors have been linked to the low-inflation environment, including: globalization, demographics, technological change, declining worker power, and more resilient policy frameworks.

The COVID-19 pandemic has been deeply deflationary—annual CPI fell to 0.2% in the United States earlier this year and -0.2% in the euro area—but there is considerable uncertainty about whether the pandemic will be deflationary or inflationary over the medium term. Some investors are concerned inflation could spike once the current recovery takes hold given unprecedented stimulus and monetary policy frameworks that are more tolerant of inflation, while others see depressed labor markets, limited central banks, and persistent structural forces and anticipate another decade of disinflation, pointing to the experience of Japan as a blueprint.

In light of these concerns, this edition of Research Digest features three papers covering a range of views on inflation:

- The first paper examines the balance of supply and demand dynamics within various US consumer industries in the wake of the COVID-19 pandemic and concludes that the risk of a spike in inflation remains low;
- the second paper shows that the availability of cheap credit to distressed firms has had a disinflationary impact in Europe; and
- the final paper explores the extent to which global and group-specific factors have driven movements in national inflation rates in advanced economies and emerging and developing economies over time.

A PERSPECTIVE ON INFLATION FROM THE BOTTOM UP

Aram Rubinson and Wes Sap, Empirical Research Partners, June 2020.

Changes in consumer behavior tied to the COVID-19 pandemic have made it more difficult to understand its impact on inflation. In this report, the authors take a bottom-up approach to identify the underlying trend in US inflation. They find that the initial deflationary forces that emerged in the wake of the pandemic were almost completely driven by a handful of “inac-

cessible” industries; and, inflation has been relatively stable after adjusting for changes in consumer behavior. Despite these findings, the authors see little scope for a spike in inflation given supply and demand imbalances within various industries and the acceleration of the secular trend toward e-commerce.

COVID-19 caused a sharp decline in consumer demand and inflation, but changes in consumer behavior tied to the pandemic have made it more difficult than normal to identify their underlying trend. To better gauge these trends, the authors sort consumer items into five broad buckets based on their level of accessibility—essential, necessary, buyable, hard-to-get, and inaccessible. They find that while demand remained stable for essential items during the pandemic (e.g., food-at-home, pharmaceuticals), items deemed hard-to-buy, such as clothing, or inaccessible (e.g., hotels, movies) saw the largest drop in demand. Similarly, hard-to-buy and inaccessible items account for the entire decline in prices during the pandemic. The authors show that inflation remained quite stable after adjusting consumer basket weights to reflect what consumers were able to buy during the pandemic.

Looking ahead, the authors believe that supply/demand dynamics within industries will drive the path of inflation. Housing is the largest consumption category and should help support stable inflation. Older individuals own most of America’s housing stock, and they rarely move, which should help constrain supply, while the millions of millennials who wish to but do not yet own homes should help support demand. The balance of supply/demand across other industries is a mixed bag. Food prices have surged, driven by a spike in food-at-home prices, and though restaurant prices have also experienced some modest upward pressure, it is still unclear how they will contend with higher input costs and reduced seating capacity. Some inaccessible industries such as leisure, travel, and hospitality have significantly cut capital expenditures—a proxy for supply—but high-frequency data show that activity and occupancy at hotels have only improved modestly from very depressed levels. In the retail industry, some will fare better than others. Apparel retailers will likely have to sell their oversupply of inventory at discounted prices, while general merchandise retailers like Costco, Target, and Wal-Mart have seen their inventories decline amid a pick-up in demand. The pandemic has also accelerated the secular shift toward e-commerce, which has been highly deflationary. Amazon has accelerated its pace of capacity growth to keep up with the surge in demand it saw during the crisis.

The authors conclude that to identify underlying trends in inflation, it is best to examine inflation from the bottom up. Aggregate measures of economic activity have been more misleading than normal because of the pandemic, and the authors show that only a handful of less accessible consumer items drove the initial price weakness. But, they believe the odds of higher-than-expected inflation remain low with so many industries still facing considerable supply/demand imbalances.

ZOMBIE CREDIT AND (DIS-)INFLATION: EVIDENCE FROM EUROPE

Viral V. Acharya, Matteo Crosignani, Tim Eisert, and Christian Eufinger, Centre for Economic Policy Research, June 2020.

Inflation in Europe has been muted since the sovereign debt crisis in 2010. The authors propose that the availability of cheap debt financing to impaired firms (i.e., “zombie credit”) has had a disinflationary impact in Europe, as excess capacity in the economy lowered price inflation. Their model implies that without a rise in zombie credit, average annualized consumer price growth in Europe would have been 0.4 percentage points higher between 2012 and 2016.

Economic growth and inflation in Europe moved lower during the past decade despite the European Central Bank's accommodative monetary policies. Drawing from Japan's so-called lost decades in the 1990s, during which cheap bank lending was available to impaired firms, the authors examined the impact of cheap credit on consumer price inflation in Europe. The authors propose that cheap credit impacts inflation through the “zombie credit channel.” This process makes cheap credit available to distressed firms reduces their financial constraints and allows them to avoid default, which in turn artificially inflates the aggregate production capacity in the economy and puts downward pressure on inflation. The authors define these “zombie firms” as companies with low profitability and high leverage that incur lower borrowing costs than their most creditworthy peers.

Using data on 1.1 million firms from 12 European countries across 65 industries, the authors find that between 2012 and 2016, markets that saw a larger increase in the proportion of zombie firms experienced lower average productivity, fewer defaults, more active firms, lower average markups, higher input costs, and lower price inflation. In addition, non-zombie firms in markets with a large proportion of zombie firms had lower levels of markups, sales growth, and profitability, indicating that a rise in zombie credit also had a negative spillover effect on healthy firms' pricing power. Finally, although firms in these markets had higher costs of production due to cost competition, the lower consumer price growth rates indicate that the impact from lower markups outweighed the impact from higher input costs. This last finding helps explain the weakening relationship observed between cost inflation and price inflation in various developed economies. The authors estimate that holding the share of zombie firms in the dataset constant at 2012 levels results in a counterfactual average annualized consumer price growth in Europe that is 0.4 percentage points higher than realized inflation between 2012 and 2016.

Existing literature suggests two alternative mechanisms via which the availability of cheap credit might contribute to lower inflation: (1) less financially constrained firms have less of an incentive to raise prices to generate higher cash flows in the short-term, and (2) lower financing costs could lead to lower marginal production costs and potentially lower product prices. The authors' adjusted model confirmed that while both factors contributed to Europe's disinflationary trend, the zombie credit channel retained its significance in explaining Europe's lower consumer price growth between 2012 and 2016. The authors conclude that while accommodative monetary policies and low interest rates can help boost consumption and investment and drive demand-side

inflation, the presence of financial frictions (e.g., a rise in zombie credit) can reduce the effectiveness of monetary policy transmission to prices in the real economy. They recommend that European countries with enough sovereign debt capacity should use expansionary fiscal measures as a complementary tool to raise inflation.

UNDERSTANDING GLOBAL INFLATION GLOBALIZATION

Jongrim Ha, M. Ayhan Kose, Franziska Ohnsorge, and Filiz Unsal, *Inflation in Emerging and Developing Economies*, World Bank, February 2019.

The authors examine the evolution of global inflation synchronization in advanced and emerging markets and in developing economies. They find that the impact of both global and group-specific factors on domestic inflation have strengthened over time and broadened across different measures of inflation. Countries differ widely in the degree to which these factors impact domestic inflation, but the contribution of certain country-specific factors to global inflation synchronization has dissipated over time. The authors suggest their findings present several challenges for policy makers.

It is well-documented in academic literature that movements in domestic inflation rates have become more synchronized globally over the past several decades. To better understand the extent to which external forces are driving domestic inflation, the authors employ a dynamic factor model to decompose domestic inflation for 25 advanced economies and 74 emerging markets and developing economies (EMDEs) into three distinct inflation factors—a global factor, group-specific factors within both advanced economies and EMDEs, and an idiosyncratic factor unique to each country. They confirm that global inflation synchronization—the share of the variance in domestic inflation attributable to the global factor—has increased in both degree and breadth over time.

Over the full period under analysis (1970–2017), the global inflation factor accounted for a sizable share of domestic inflation variance in the median advanced economy (24%), but the impact in the median EMDE was less pronounced (10%). However, the global factor's importance has increased over time, accounting for 27% of domestic inflation variation in advanced economies and 18% in EMDEs since 2001. Similarly, the contribution of the group-specific factor to domestic inflation variation within advanced economies and EMDEs has also increased over time, and both the global and group-specific factors have become more important drivers of domestic inflation variation in more countries today than they were in the past.

The authors also analyzed the degree of global inflation synchronization across various inflation measures (headline Consumer Price Index, core Consumer Price Index, Producer Price Index, GDP deflator, and import prices). Their main takeaway is that the global inflation factor contributed more to the variation in domestic inflation measures with greater exposure to tradeable goods and services (import prices and Producer Price Index), which seems intuitive given these prices are more exposed to global markets. Yet, the contribution of the global inflation factor to domestic inflation

variation has increased for both tradeable (import prices and Producer Price Index) and non-tradeable (core Consumer Price Index and GDP deflator) inflation measures over time. Since 2001, the contribution of the global inflation factor to domestic inflation variation has increased to about 66% for the Producer Price Index and about 33% for core Consumer Price Index and GDP deflator.

The literature has identified a wide range of factors as possible contributors to global inflation synchronization, including: common shocks (e.g., commodity price shocks), similar policy responses (e.g., inflation targeting monetary policy frameworks), and structural changes (e.g., globalization). There is also evidence that that global inflation factor was significantly more important for domestic inflation variation in countries with higher trade openness, greater commodity import intensity, and lower trade concentration. However, since 2001, differences in the impact of the global inflation factor across countries due to country-specific factors has become less pronounced.

The authors believe global inflation synchronization raises concerns that central banks have less control over domestic inflation and increases the risk of policy mistakes. They suggest that a coordinated global monetary policy response could amplify the impact of policies advanced by an individual country on excessively low or high inflation. ■

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