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Can Central Banks Successfully Lean against Global Headwinds?

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Can central banks successfully lean against global headwinds?

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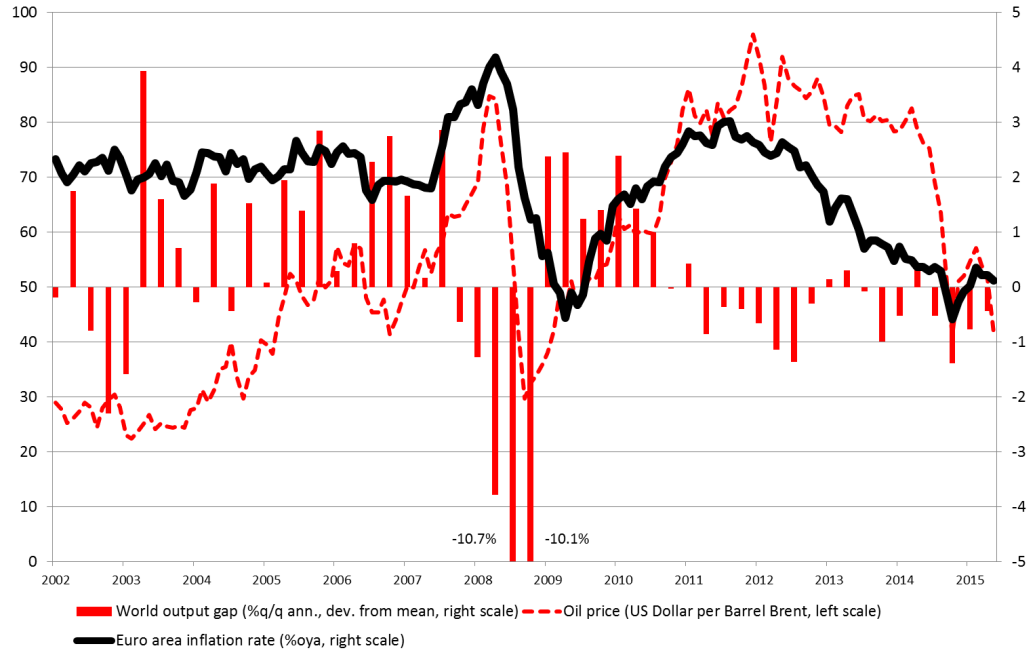
Despite expansionary central bank action, inflation remains low in the euro area. How much can we expect from the additional stimulus in face of anaemic global growth and declining oil prices? More generally, have central banks lost the ability to steer inflation in a globalised world where external factors have powerful effects on domestic inflation? This roundup summarises the evidence in the literature and concludes that central banks retain influence on domestic inflation.

According to a standard Phillips curve model the determinants of inflation include inflation expectations, pressure from the demand side captured by the domestic output gap, and oil prices. Monetary policy in principle affects the first two factors. The latter is determined in global markets. In recent years, however, globalization could have changed the conditions under which economies operate. Due to the integration of product and financial markets, the importance of the global output gap may have increased and the role of domestic factors declined. Intensified trade with low cost countries can lead to a decline of inflation through lower import prices. Driven by advances in information and communication technologies, production can be organized in highly fragmented stages, thereby exploiting relative cost advantages of different locations. Additionally, the growing importance of emerging economies in world markets was accompanied by large swings in oil prices. Did monetary policy lose its ability to control inflation? The Figure shows the evolution of euro area inflation, the oil price and the global output gap. While a relationship between inflation and oil prices seems evident, a link to global output gaps is not immediately visible. This roundup summarizes the literature on the impact of globalization and the role of commodity price shifts on inflation.

Euro area inflation, global output gaps, and oil prices



Source: Datastream, own calculations.

The role of global output gaps

The empirical evidence on the impact of globalization on domestic inflation is ambiguous. On the one hand, many papers fail to detect a significant influence of global factors on domestic inflation. Tootell (1998) explores a Phillips curve and adds trade-weighted measures of capacity utilization for the US major trading partners. The author shows that the foreign variables are not significant. Based on panel regressions for the industrial countries, Ball (2006) finds that the role of the foreign output gap for inflation is smaller than that of the domestic output gap and significant only at the margin. Calza (2009) replicates the Tootell analysis for the euro area, finding only weak evidence that global capacity constraints have explanatory power for domestic inflation. Similarly, López-Villavicencio and Saglio (2014) find no support for the relevance of globalization in making inflation less responsive to domestic output expansions in the main industrial countries. Finally, using multivariate vector autoregressions (VAR), Bianchi and Civelli (2015) show that the impact of the foreign output gap on domestic inflation did not increase.

On the other hand, various paper find that global factors have increasingly influenced domestic inflation. Gamber and Hung (2001) detect that higher foreign capacity utilization accounts for much of the decline in US inflation. Similarly, Pain, Kospke and Sollie (2006) show that consumer prices in the industrialised countries are driven by import prices and that the sensitivity of inflation to the domestic output gap declined, whereas its sensitivity to foreign conditions increased. Along the same lines, the findings of Borio and Filardo (2007) are heavily in favour of the impact of globalization. While the sensitivity of inflation to domestic output gaps decreased over time, proxies for the global economic slack add explanatory power in a large panel of countries and the presence of the global slack variable reduces the significance of the domestic output gap. But, as noted by Ihrig, Kamin, Lindner and

Marquez (2010), the results likely lack robustness, as they depend highly on the construction of the foreign gap. By applying an IV estimation strategy, Auer and Fisher (2010) and Auer, Degen and Fisher (2012) conclude that import competition from low-wage countries has a pronounced downward effect on prices and long run inflation in the euro area, especially in the labour intensive industries. Finally, employing a global VAR framework as well as large scale macroeconometric models, Dreger and Zhang (2014) provide evidence that the Chinese integration into the global economy reduced inflation in the main industrial countries following the financial crisis, not just in Japan, but also in the US and the euro area. However, the effect does not appear to be very strong.

Oil price shifts and inflation

To assess the effect of oil price shocks on domestic inflation, it is important to distinguish between the underlying forces that trigger oil price changes. Kilian (2009) decomposes oil price movements into three exogenous contributors: shocks to the physical supply of oil (oil supply shocks), shifts in the precautionary demand for oil due to changing expectations about future oil supply or demand conditions (oil-market specific shocks), and changes in global demand for oil driven by global business cycles (aggregate demand shocks). Oil price changes driven by low global aggregate demand, the most likely cause of currently low oil prices, have the strongest effects on the evolution of domestic inflation. A decrease in global growth depresses domestic GDP and hence inflation. Additionally, lower oil prices reduce domestic headline inflation as import prices decline.

Unlike Kilian (2009), Blanchard and Galí (2007) do not distinguish between different sources of oil price shifts but estimate their average effect. Their estimates imply that inflation decreases in response to negative changes in oil prices. This is consistent with the arguments of Kilian that oil price fluctuations are mostly driven by shifts in global demand. Blanchard and Galí then analyse whether there are differences in the effect of oil prices on inflation before and after 1984. Both periods are characterised by high oil price volatility. While high oil prices were associated with weak GDP growth and high inflation in the 1970s and early 1980s, GDP growth and inflation in most advanced economies subsequently stabilised; in particular during the 2000s.

The authors estimate that before 1984 an unexpected oil price increase of ten percent led to an increase of US CPI inflation by about 0.5 percentage points after one year. Post-1984, the effect vanishes quickly, lasting only for about two quarters. In France and the UK, the difference between the pre- and post-1984 period is even more pronounced. This is somewhat different in Germany, where the effect on inflation is very small in both periods. The authors attribute the small effects to the hawkish stance of the German Bundesbank.

To explain the reasons for the changing inflation response before and after 1984, Blanchard and Galí highlight three factors. First, the oil intensity of industrial economies has changed over time. Second, the credibility of monetary policy has increased which contributed to an anchoring of inflation expectations, reducing second-round effects. Third, unionization and wage indexation has decreased, making labour markets and real wages more flexible.

Seemingly in contrast, Baumeister and Peersman (2013) find that the effect oil price movements has increased over time. Further, they estimate that oil supply shifts are

responsible for about one-third of the variability in domestic CPI inflation in recent years, whereas they accounted only for about one-fifth in the period before 2000. This observation, however, can partly be explained by the lower volatility of inflation itself in more recent years. Moreover, the presumably conflicting empirical findings of Blanchard and Galí (2007) and Baumeister and Peersman (2013) can be reconciled in light of the decomposition of the causes of oil price shifts of Kilian (2009). Baumeister and Peersman concentrate only on one of these causes, namely, unexpected changes in oil supply, and find that their effect on domestic inflation has increased over time. Blanchard and Galí instead estimate the average effect of all three causes of oil price shifts on domestic inflation. Given that Kilian (2009) shows that the other two causes, global demand for oil and precautionary oil-market specific demand, which are neglected in the analysis of Baumeister and Peersman, are quantitatively much more important for global oil price determination, the results of Blanchard and Galí imply that the effect of a given change in oil prices due to the other two causes on domestic inflation has actually weakened.

Similar to Baumeister and Peersman, Blanchard and Galí also detect that the share of oil price movements in domestic inflation variability has increased over time. This, however, is rather a symptom of monetary policy success, not failure. As better monetary policy lowered the volatility of inflation rates, while the volatility of oil prices has approximately remained stable, the importance of oil price in inflation fluctuations has simply increased.

Conclusions

The literature on the effects of globalisation and oil price fluctuations on domestic inflation is ambiguous. This indicates that the basic determinants of inflation may have changed, but not by so much that the ECB has lost the ability to influence inflation.

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