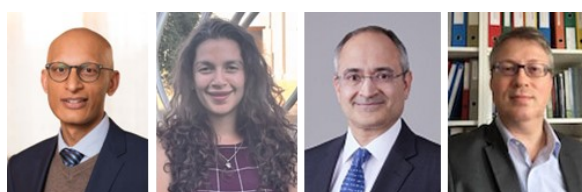


Fiscal sources of inflation risk in EMDEs: the role of the external channel*



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In a panel of emerging market and developing economies (EMDEs) we find that an increase in the fiscal deficit has highly non-linear effects on inflation – that is, a larger impact on upside tail risks than on average inflation. Unlike in advanced economies (AEs), the external channel in EMDEs is particularly important: fiscal stimulus is associated with an increase in sovereign risk and exchange rate depreciation which magnifies the initial inflation response. Moreover, risks to inflation tend to be greater in countries that have a relative high share of foreign currency or non-resident debt. Monetary policy can make a difference as inflation risks are smaller in countries that have adopted inflation targeting.

*Disclaimer: This Policy Brief summarises the key results from Banerjee et al (2023) published as BIS Working Paper no. 1110. All views are those of the authors and not necessarily those of the BIS.

Background

Many emerging market and developing economies (EMDEs) have seen inflation spike after the Covid-19 pandemic following large fiscal stimulus. Understanding the channels through which fiscal policy might impact on inflation has therefore gained greater prominence of late.

A first channel is through domestic aggregate demand. For example, stronger fiscally-induced spending reduces economic slack and thus tends to push up inflation through a standard Phillips curve. Moreover, the anticipation of smaller economic slack in the future may also contribute to higher inflation today through the inflation expectation channel.

Another potentially relevant channel is the exchange rate. In textbook models, a fiscal expansion typically leads to a currency appreciation (e.g. Auerbach and Gorodnichenko (2016)), which then partly offsets the inflationary impact of smaller economic slack. However, if a fiscal expansion is expected to significantly worsen the fiscal accounts, it might lead to an erosion of investors' confidence and a currency depreciation, which then magnifies the initial inflation response (e.g. Ghosh et al. (2013)).

Contribution

In Banerjee et al (2023), we investigate how higher fiscal deficits can increase inflation risks by estimating an open economy Phillips curve augmented with the fiscal balance using annual data over six decades from 26 emerging market and developing economies (EMDEs). We also explore how the exchange rate may amplify the inflation response to a fiscal stimulus and what factors can exacerbate or mitigate such a response. We pay special attention to the extent of the “original sin” (i.e. the share of FX denominated debt) and the “original sin redux” (i.e. the share of foreign investors)¹ as well as the monetary policy regime.

Our paper is related to the literature that studies the effects of fiscal policy on inflation (e.g. Fischer et al. (2002); Catao and Terrones (2005); Lin and Chu (2013); Bordo and Levy (2021)), the response of exchange rates to fiscal policy in AEs (e.g. Kim and Roubini (2008); Monacelli and Perotti (2010); Benetrix and Lane (2013)) and both advanced and developing economies (e.g. Ilzetzki et al. (2013), Alberola-Illa et al. (2021)) as well as the non-linearities in the Phillips curve (including recent studies that show what factors drive the shape of conditional inflation forecast distribution: e.g. Cecchetti (2008); López-Salido and Loria (2020); Busetti et al. (2021); Banerjee et al. (2020)).

Our main contribution to this literature is to examine the effect of fiscal deficits on the entire forecast distribution of inflation as well as on the entire distribution of exchange rate changes. Furthermore, we highlight important differences in the exchange rate effects between economies with different degrees of macro-financial vulnerabilities. To the best of our knowledge, both these aspects have not been examined in previous literature.

¹ On the “original sin” see Eichengreen and Hausmann (1999) and Hausmann and Panizza (2003) and on the “original sin redux” see Carstens and Shin (2019).

Key results

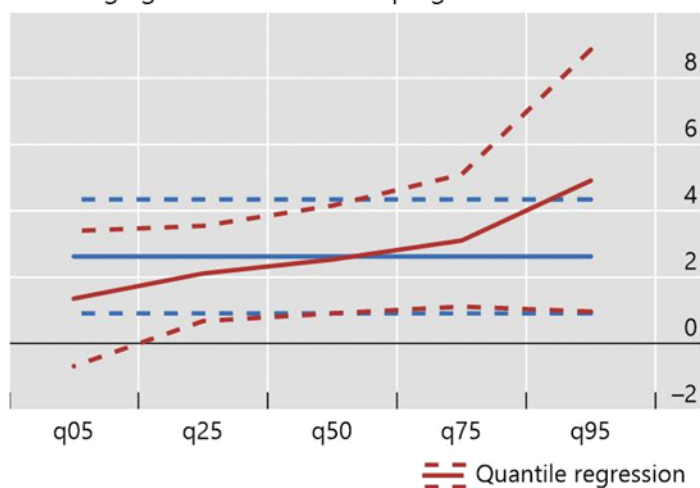
Our paper has four main findings.

First, an increase in fiscal deficits in EMDEs have large and non-linear effects on inflation. Graph 1.A shows that, on average, a one percentage point increase in the deficit is associated with a 2.5 percentage point rise in inflation one year down the road in EMDEs. The upward slope of the red line in Graph 1.A shows that an increase in fiscal deficits has larger effects on the right tail of the inflation forecast distribution compared to the left tail. At the right tail, i.e. the 95th percentile, the effect is 4.9 percentage points. By contrast, at the left tail, i.e. the 5th percentile, the effect is not statistically significant at the 90% level. These effects are much larger than those in advanced economies (Graph 1.B).

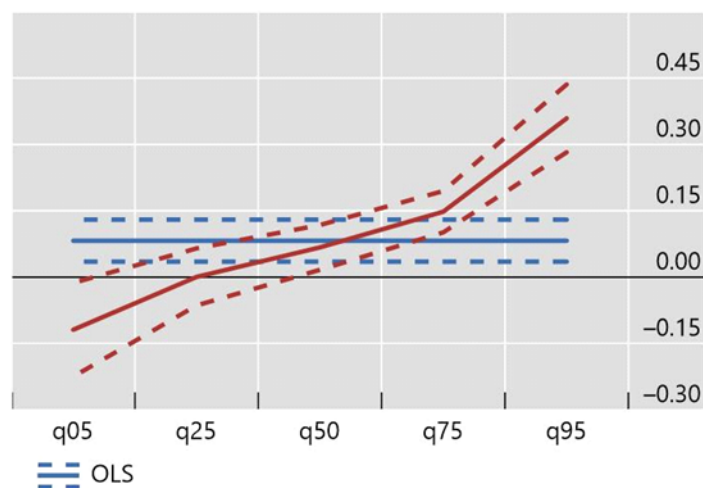
Quantile regression estimates of fiscal deficit on inflation¹

Graph 1

A. Emerging market and developing economies



B. Advanced economies



¹ Estimated coefficients in quantile regression of inflation rate over the next year $t+1$ on changes in the fiscal-deficit-to-GDP ratio in year t . Coefficients are shown by the $q\%$ quantile (x-axis); e.g. q50 denotes the 50% quantile. Quantiles are shown with 90% confidence bands using a clock bootstrap clustered by country. OLS estimates are shown with 90% confidence bands clustered by country.

Source authors' calculations.

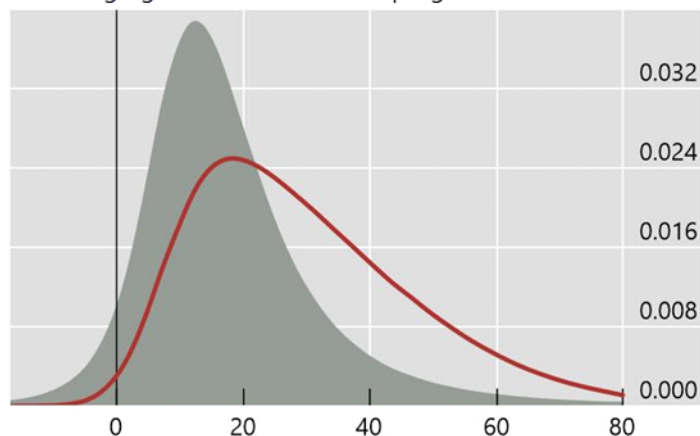
Graph 2 provides a more intuitive illustration of the effects of fiscal stimulus. It shows how the one-year-ahead inflation forecast distribution shifts (from grey to red) in response to a two standard deviation increase in the fiscal deficit assuming that other variables remain constant at their sample average. In EMDEs, the fiscal stimulus has a stronger effect on modal inflation and upside tail risks – it visibly shifts the right tail to the right (Graph 2.A). By contrast, in advanced economies, both the impact on the level and on the right tail are much weaker (Graph 2.B).

The effects of higher deficits on the inflation forecast distribution¹

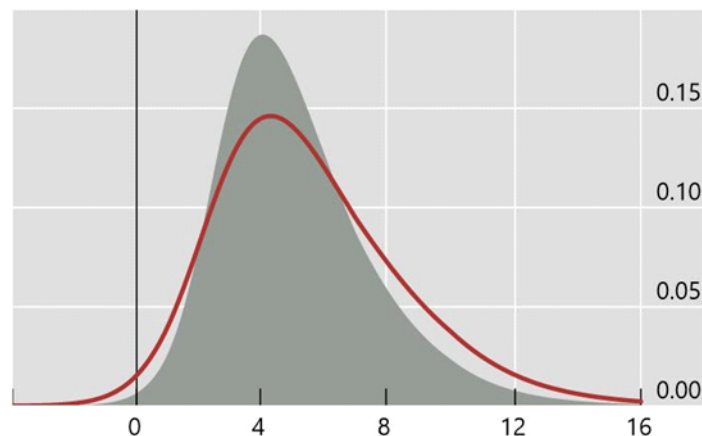
Density

Graph 2

A. Emerging market and developing economies



B. Advanced economies



¹ Conditional forecast distribution of the inflation rate over the next year. The grey shaded density shows the conditional distribution evaluated at the sample means of all variables. The red density shows the conditional distribution evaluated at a two standard deviation increase in the change in the fiscal deficit, with other control variables at their means.

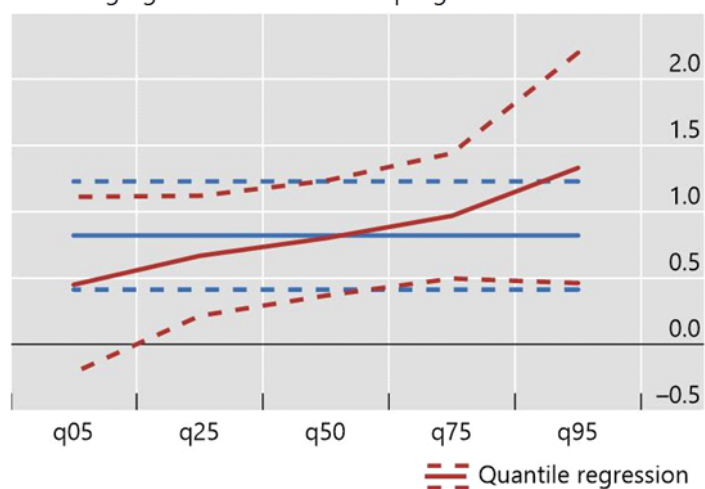
Source: authors' calculations.

Second, the response of the exchange rate tends to be much stronger in EMDEs than in advanced economies and is associated with a deterioration of sovereign creditworthiness. Similar to the non-linearity associated with inflation, an increase in fiscal deficits is found to have larger effects at the right tail of the EMDE exchange rate forecast distribution (red line in Graph 3.A). By contrast, higher deficits in AEs are not associated with subsequent exchange rate depreciations (Graph 3.B). We also document in Banerjee et al (2023) that, in EMDEs, the currency depreciation triggered by the fiscal stimulus goes hand in hand with an increase in sovereign CDS spreads and a worsening of credit ratings.

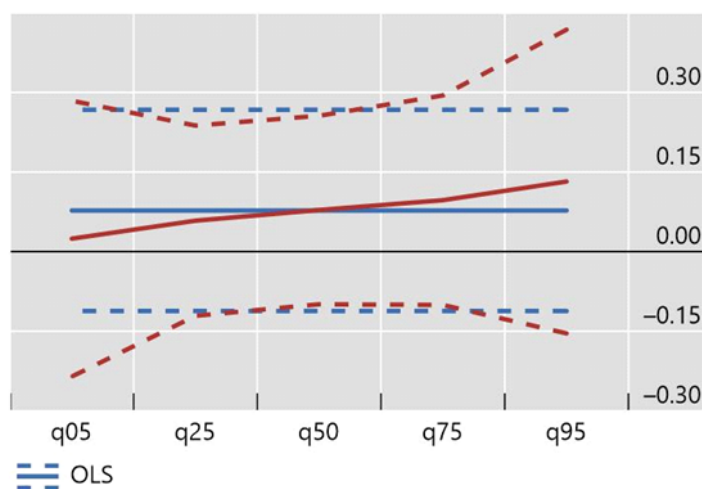
Quantile regression estimates of fiscal deficit on exchange rate¹

Graph 3

A. Emerging market and developing economies



B. Advanced economies



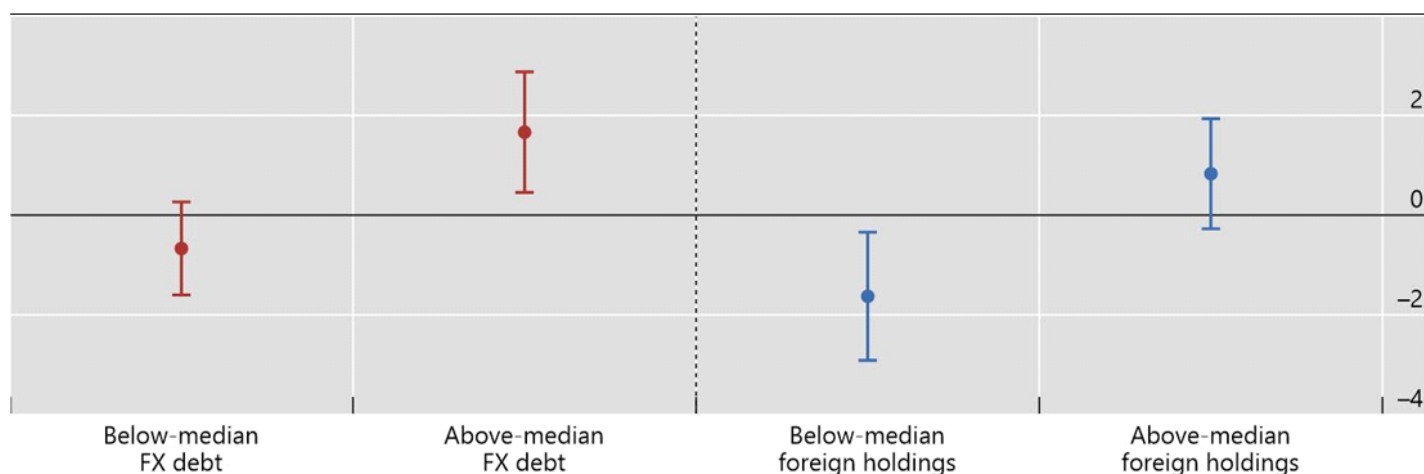
¹ Estimated coefficients in quantile regression of the log change in the exchange rate between year t and $t+1$ on changes in the fiscal-deficit-to-GDP ratio in year t . Coefficients are shown by the $q\%$ quantile (x-axis); e.g. q50 denotes the 50% quantile. Quantiles are shown with 90% confidence bands using a clock bootstrap clustered by country. OLS estimates are shown with 90% confidence bands clustered by country.

Source authors' calculations.

Third, debt composition matters. Larger deficits are followed by exchange rate depreciation and higher inflation when the share of sovereign debt in foreign currency is large (Graph 4, red bars) or when a sizeable share of debt is held by foreign residents (Graph 4, blue-bars.).

EMDE exchange rate effects from higher deficits, by sovereign debt structure¹

Graph 4



¹ Increase denotes an EMDE currency depreciation (expressed in per cent). The graph shows the point estimates and the 90% confidence intervals to a one standard deviation increase in fiscal deficit.

Source: authors' calculations.

Finally, the policy frameworks and constraints on monetary policy matter strongly for the deficit-inflation link and the associated non-linearities. We find that the effect of higher deficits on inflation is considerably weakened in inflation targeting regimes. Under such regimes, the effects of rising deficits on the exchange rate are attenuated, which weakens the external channel. Interestingly, in inflation targeting EMDEs, we find the textbook effect of appreciating exchange rates in response to an increase in fiscal deficits. Moreover, monetary policy constraints faced by open economies have meaningful effects on the relationship between fiscal deficits and inflation. In particular, greater exchange rate stability and capital account openness are both associated with a weaker deficit-inflation link.

Conclusion

Our results indicate that higher fiscal deficits have a greater impact on inflation in EMDEs than in AEs, consistent with a deterioration of sovereign creditworthiness and investors reducing their exposure to the country. That said, our findings also suggest that not all EMDEs are the same. Those that have adopted inflation targeting and are more financially open tend to fare better than their less developed peers and are more akin to the typical advanced economy. Our findings therefore point to the importance of not only running a prudent fiscal policy, which would reduce sovereign risk and currency depreciation, but also to the benefits of a credible monetary policy framework. ■

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