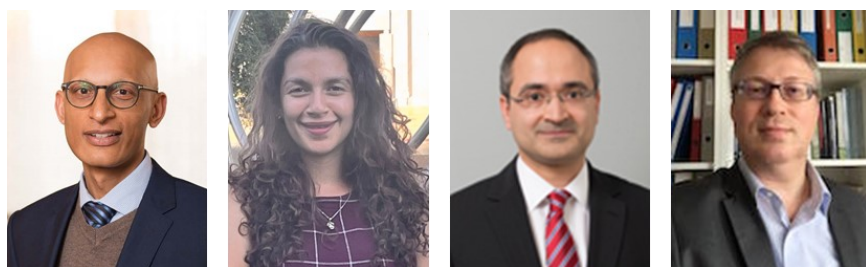


Fiscal deficits and inflation risks: the role of fiscal and monetary policy regimes*



By Ryan Banerjee (BIS), Valerie Boctor (UC Berkeley), Aaron Mehrotra (BIS) and Fabrizio Zampolli (BIS)

Keywords: Fiscal deficit, inflation, fiscal policy regime, monetary policy regime, monetary policy independence
JEL codes: E31; E52; E62; E63.

Using data from a panel of advanced economies over four decades, we show that the inflationary effect of fiscal deficits crucially depends on the prevailing fiscal-monetary policy regime. Under fiscal dominance, defined as a regime in which the government does not adjust the primary balance to stabilise debt and the central bank is less independent, the average effect of higher deficits on inflation is found to be up to five times larger than under monetary dominance. Moreover, both the mean and the variance of future inflation are higher under fiscal dominance compared to monetary dominance. Based on forecasts from our model, the high inflation experienced by many countries during the recovery from the Covid-19 pandemic appears more consistent with a regime of fiscal dominance than monetary dominance.

* Disclaimer: This Policy Brief summarises the key results from BIS Working Paper no. 1028. All views are those of the authors and not necessarily those of the BIS.

Introduction

Governments unleashed a massive wave of fiscal stimulus in the wake of the Covid-19 pandemic, leading to increases in government debt of around 15 percentage points of global GDP between 2019 and 2021. These developments have triggered an intense debate about the inflationary consequences of current fiscal policies (eg Krugman (2021), Summers (2021)). Is higher inflation after the pandemic a fiscal phenomenon? Will the need to manage high public debt levels result in fiscal dominance over monetary policy, posing a risk to price stability?

Contribution

To investigate the contribution of fiscal deficits to the recent rise in inflation, in Banerjee, Boctor, Mehrotra and Zampolli (2022) we carefully consider how the fiscal and monetary policy regimes affect inflation outcomes. To do so, we estimate an open-economy Phillips curve augmented with the fiscal balance using data from 21 advanced economies over four decades and examine how the Phillips curve depends on the prevailing fiscal and monetary policy regime. Besides analysing the average effect on inflation, we also examine how fiscal deficits affect the entire inflation forecast distribution, following the inflation-at-risk framework developed in Banerjee et al (2020).

Related literature

Several streams of research suggest that the fiscal-monetary policy regime is key to macroeconomic outcomes. The literature on fiscal multipliers shows that the strength of the macroeconomic effects of fiscal policy crucially depends on how a fiscal expansion is financed and how monetary policy responds (see eg Leeper (1991); Woodford (2011); Erceg and Lindé (2014); Ramey (2019)). A related literature examines how the interaction of fiscal and monetary policy regimes affect inflation. The “unpleasant monetarist arithmetic” of Sargent and Wallace (1981) shows that when a country runs large fiscal deficits for a prolonged period, any attempt by the monetary authority to control inflation by tightening monetary policy may eventually lead to higher future inflation. Similarly, the fiscal theory of the price level posits that the price level increases when the fiscal position of a country deteriorates. For example, Leeper (1991), and more recently Leeper et al (2017), show that macroeconomic equilibria crucially depend on the fiscal-monetary policy regime in place.

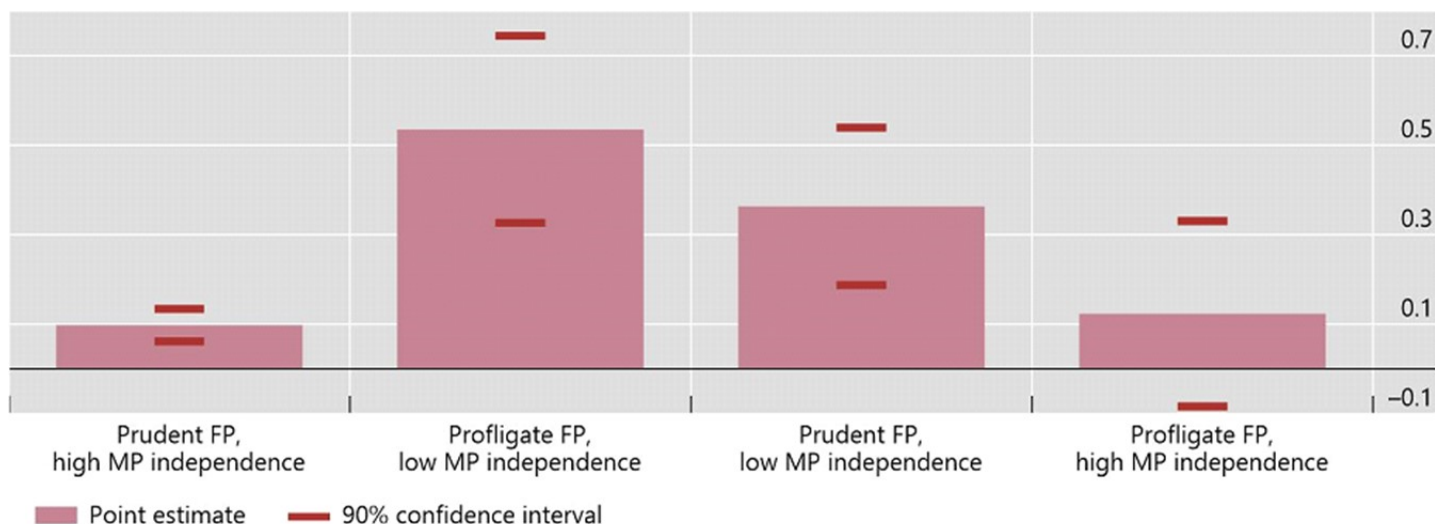
Key results

The first step in our analysis is to define the fiscal-monetary regime. We define the fiscal regime as either profligate or prudent, depending on the extent to which governments stabilise public debt levels, and the monetary regime as highly or weakly independent, depending on the degree of central bank independence. We then study the influence of various combinations of these regimes on inflation outcomes.

We find that the policy regime matters a great deal for the impact of fiscal deficits on inflation. A rise in the fiscal deficit has the smallest effect on inflation under “monetary dominance”, defined as the regime in which the fiscal authority acts prudently to stabilise public debt and the central bank is highly independent (and faces strong legal limitations on its ability to lend to the public sector). As shown in Figure 1, first bar, under monetary dominance, a one percentage point increase in the fiscal deficit results in a 10 basis point increase in the average inflation rate over the next two years.

By contrast, the strongest inflationary effect is found in the regime of “fiscal dominance”, defined as a regime in which fiscal policy is profligate and the central bank is constrained only in a limited way from lending to the public sector. In this regime, as shown in the second bar of Figure 1, a one percentage point increase in the deficit raises the inflation rate by around 50 basis points, over five times more than in the “monetary dominance” regime. In the other two combinations of regimes (third and fourth bars), the effects fall in between the fiscal and monetary dominance regimes.

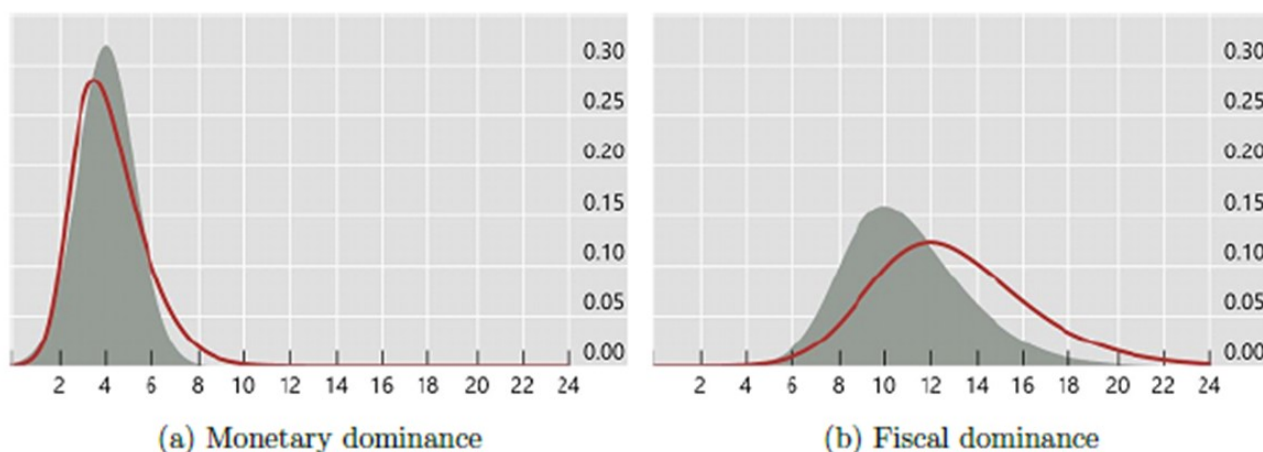
Figure 1: The inflationary impact of fiscal stimulus across fiscal and monetary regimes



Note: The figure shows the estimated average impact of a one percentage point increase in the fiscal deficit on inflation over the next two years (in percentage points) across different combinations of fiscal and monetary regimes. Fiscal regimes are classified as prudent or profligate based on Mauro et al (2015). Monetary regimes are defined as being high or low independence based on legal limitations on central bank lending to the public sector in Romelli (2022).

We also find that the differences in inflation behaviour between the regimes go beyond the relationship between deficits and inflation. Figure 2 highlights key differences in terms of the first two moments of the inflation forecast distribution. Setting all variables at their regime-dependent averages, the grey distributions show that inflation is on average lower and its variance is considerably smaller in the “monetary dominance” regime (left panel) compared to the “fiscal dominance” regime (right panel). In addition, in both regimes, an increase in the deficit raises upside inflation risks – that is, it shifts the right tail of the inflation distribution further to the right (red distributions).

Figure 2: Inflation forecast distributions, monetary and fiscal dominance regimes



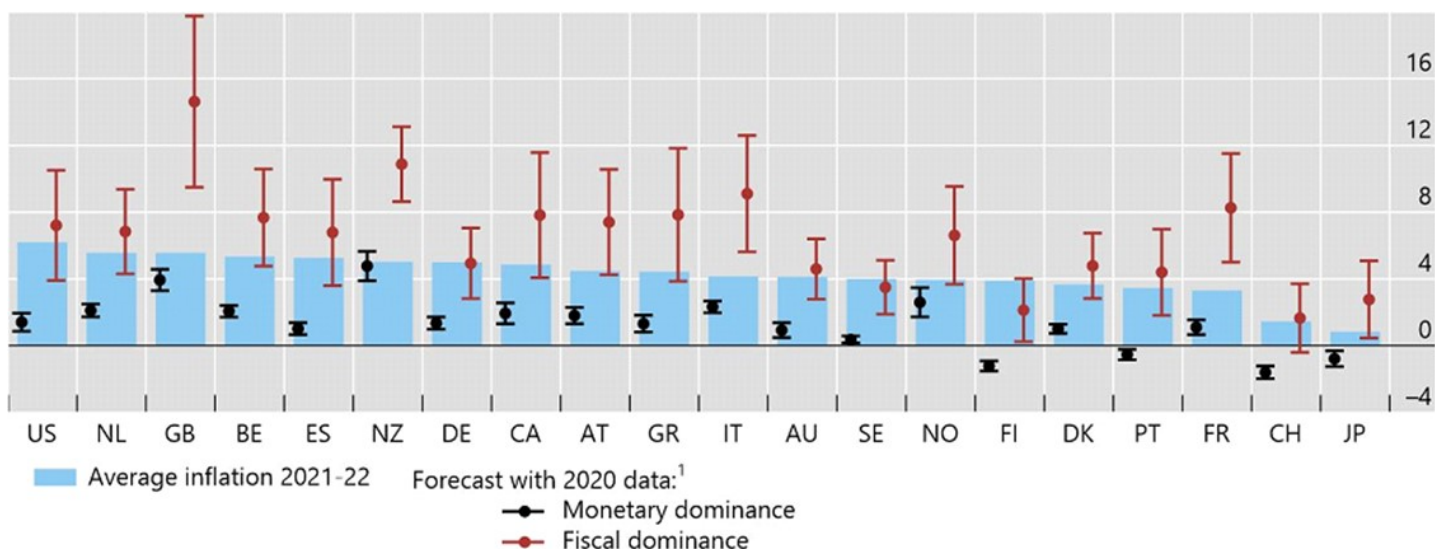
Note: The grey shaded density shows the conditional inflation forecast distribution over the next two years, evaluated at the sample means of all variables, in the “monetary dominance” regime (left panel) and in the “fiscal dominance” regime (right panel). The red density shows the conditional distribution evaluated at a two standard deviation increase in the change in the fiscal deficit, with other control variables at their means. The x-axis shows the inflation rate (in %) and y-axis the density.

We use our model to examine the potential contribution of fiscal and monetary regimes to the sudden burst of inflation following the Covid-19 pandemic. The strong macroeconomic stimulus implemented during the Covid-19 pandemic followed a period in which the tenets of sound macroeconomic policy had been questioned. In particular, persistently low inflation and interest rates may have strengthened the belief that economies could sustain higher public debt levels and that countries should not rush to reverse fiscal policy lest they jeopardise the recovery. In addition, with inflation persistently low and nominal policy rates at or close to their effective lower bound before the pandemic, many central banks may have judged that downside risks to employment and inflation had increased. In other words, the recent years may potentially represent a shift towards laxer fiscal and monetary policies.

To assess if changes in fiscal and monetary policy regimes could have influenced inflation outcomes, we forecast inflation outcomes on the basis of our estimated Phillips curves under fiscal and monetary dominance regimes respectively, using data for 2020 as the jumping off point.

The forecasts from our model suggest that the high inflation outcomes following the Covid-19 pandemic appear more consistent with a regime characterised by fiscal rather than by monetary dominance (Figure 3). For three quarters of the sample economies, actual outcomes during 2021-22 (shown as the blue bars) fall within the confidence intervals under the fiscal dominance regime (red lines). By contrast, only for two countries is the inflation outcome consistent with a regime of monetary dominance (black lines). Our results therefore support the hypothesis that the recent burst of inflation owes not only to the strong macroeconomic stimulus but also to a potential change in the regime in which fiscal and monetary policies operate.

Figure 3: Inflation outcomes during Covid-19 compared with forecasts under fiscal and monetary dominance



Note: The figure shows the average inflation outcomes in 2021-22 (blue bars) and the model-implied forecasts under monetary dominance (black line) and fiscal dominance (red line). The dot corresponds to the point forecast and the error bars to the 99% confidence interval. IE not shown; for IE, the average inflation outcome is 4.3%; the forecast under monetary dominance 5.1% (confidence band 3.8-6.4%); and the forecast under fiscal dominance 19.0% (confidence band 13.4-24.6%).

Conclusions

Using data for a panel of 21 advanced economies over four decades, we find that the association between higher deficits and future inflation crucially depends on the underlying fiscal and monetary policy regimes. In particular, the inflationary consequences are significantly stronger under “fiscal dominance” regimes, i.e. when the government places less emphasis on stabilising debt and monetary policy is less independent. Moreover, in the “fiscal dominance” regime inflation is both higher and more volatile. Our model suggests that the surprisingly high levels of inflation observed in the recovery from the Covid-19 pandemic may reflect not only the large fiscal and monetary stimulus implemented by authorities but also a potential change in the perceived regime in which both monetary and fiscal policy operate. If this hypothesis is correct, restoring price stability and maintaining it over the long run may therefore require more than reversing those policies: it would also require policymakers to reaffirm the commitment to policy regimes conducive to low and stable inflation. ■

References

- Banerjee, R, J Contreras, A Mehrotra and F Zampolli (2020): “Inflation at risk in advanced and emerging market economies”, *BIS Working Papers*, no. 825.
- Banerjee, R, V Boctor, A Mehrotra and F Zampolli (2022): “Fiscal deficits and inflation risks: the role of fiscal and monetary policy regimes”, *BIS Working Papers*, no. 1028.
- Erceg, C and J Lindé (2014): “Is there a fiscal free lunch in a liquidity trap?”, *Journal of the European Economic Association*, 12, 73-107.
- Krugman, P (2021): “Fighting Covid is like fighting a war”, *The New York Times*.
- Leeper, E (1991): “Equilibria under 'active' and 'passive' monetary and fiscal policies”, *Journal of Monetary Economics*, 27, 129-147.
- Leeper, E, N Traum, and T Walker (2017): “Clearing up the fiscal multiplier morass”, *American Economic Review*, 107, 2409-54.
- Mauro, P, R Romeu, A Binder and A Zaman (2015): “A modern history of fiscal prudence and profligacy”, *Journal of Monetary Economics*, 76, 55-70.
- Ramey, V (2019): “Ten years after the financial crisis: what have we learned from the renaissance in fiscal research?”, *Journal of Economic Perspectives*, 33, 89-114.
- Romelli, D (2022): “The political economy of reforms in central bank design: evidence from a new dataset”, *Economic Policy*, forthcoming.
- Sargent, T and N Wallace (1981): “Some unpleasant monetarist arithmetic”, *Quarterly Review*, Federal Reserve Bank of Minneapolis, 5.
- Summers, L (2021): “The Biden stimulus is admirably ambitious. But it brings some big risks, too”, *The Washington Post*.
- Woodford, M (2011): “Simple analytics of the government expenditure multiplier”, *American Economic Journal: Macroeconomics*, 3, 1-35.

About the authors

Ryan Banerjee is a Principal Economist in the CGFS Secretariat at the Bank for International Settlements. His research covers corporate finance and monetary policy. Prior to joining the BIS in 2012, Ryan was a senior economist at the Bank of England. Ryan holds a PhD in economics from the University of Maryland, College Park.

Valerie Bactor is a PhD candidate in Economics at the University of California, Berkeley. She was a research fellow at the Bank for International Settlements in Basel in 2021. Her research focuses on the intersection of macroeconomic policy and household finance.

Aaron Mehrotra is a Principal Economist in the Emerging Markets section at the Bank for International Settlements. Prior to joining the BIS, he was adviser in the Bank of Finland Institute for Economies in Transition (BOFIT). Aaron's research areas of interest include monetary policy and economic policy in emerging market economies. He holds a PhD from the European University Institute in Florence, Italy.

Fabrizio Zampolli is Head of Emerging Markets at the Bank for International Settlements. Before joining the BIS in 2009, he worked for the European Central Bank and the Bank of England. He holds a PhD from the University of Warwick and a Laurea in Economia e Commercio from the Catholic University of Milan.

SUERF Publications

Find more **SUERF Policy Briefs** and **Policy Notes** at www.suerf.org/policynotes

SUERF

The European Money
and Finance Forum

SUERF is a network association of central bankers and regulators, academics, and practitioners in the financial sector. The focus of the association is on the analysis, discussion and understanding of financial markets and institutions, the monetary economy, the conduct of regulation, supervision and monetary policy.

SUERF's events and publications provide a unique European network for the analysis and discussion of these and related issues.

SUERF Policy Briefs (SPBs) serve to promote SUERF Members' economic views and research findings as well as economic policy-oriented analyses. They address topical issues and propose solutions to current economic and financial challenges. SPBs serve to increase the international visibility of SUERF Members' analyses and research.

The views expressed are those of the author(s) and not necessarily those of the institution(s) the author(s) is/are affiliated with.

All rights reserved.

Editorial Board

Ernest Gnan
Frank Lierman
David T. Llewellyn
Donato Masciandaro
Natacha Valla

SUERF Secretariat
c/o OeNB
Otto-Wagner-Platz 3
A-1090 Vienna, Austria
Phone: +43-1-40420-7206
www.suerf.org • suerf@oenb.at