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The Economic Impact of Fiscal Policy Uncertainty:

Evidence from a New Cross-Country Database

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ABSTRACT: Fiscal policy uncertainty (FPU)—ambiguity in government spending and tax plans, as well as in public debt valuation—is widely regarded as a source of economic and financial disruptions. However, assessing its impact has so far been limited to a few large economies. In this paper, we construct a novel database of news-based fiscal policy uncertainty for 189 countries. Importantly, we track fiscal uncertainty events that generate global attention that we refer to as the “global fiscal policy uncertainty." This uncertainty has contractionary effects, reducing industrial production in both advanced and emerging market economies, with impacts greater than country-specific fiscal policy uncertainty. Additionally, global fiscal policy uncertainty raises sovereign borrowing costs and generates synchronous movements in the global financial variables, even after accounting for US monetary policy shocks.

JEL Classification Numbers:	E61, E62, E65
Keywords:	Fiscal policy uncertainty; news-based uncertainty; propagation of global shocks; VAR
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WORKING PAPERS

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Evidence from a New Cross-Country Database

Prepared by Gee Hee Hong, Shikun (Barry) Ke, Anh D. M. Nguyen[1]

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1 Introduction

"...waiting until the last minute to suspend or increase the debt limit can cause serious harm to business and consumer confidence, raise short-term borrowing costs for taxpayers and negatively impact the credit rating of the United States." (Secretary Janet Yellen, May 2023)

Record-high levels of public debt, coupled with constrained fiscal space to address rising spending needs such as green and digital transitions, raise concerns about policymakers' ability to forge consensus on fiscal policy amid deepening political divides. The recurrent US debt ceiling crises highlight how fiscal policy uncertainty—characterized by unpredictable fiscal paths—can erode confidence and negatively impact financial markets, even when a resolution is eventually reached. Despite a broad recognition of the detrimental economic effects of fiscal policy uncertainty, research on this topic remains limited, with notable exceptions of Fernández-Villaverde et al. (2015) and Arbatli et al. (2017) focusing primarily on a few large economies. Moreover, existing measures of fiscal policy shocks appear inadequate for capturing the uncertainty associated with events like the US debt ceiling debates. Current measures typically rely on legislated changes (Romer and Romer, 2010) or actual fiscal outcomes (Fernández-Villaverde et al., 2015), neither of which adequately reflect the uncertainty associated with fiscal stress events such as the US debt ceiling events.

This paper aims to bridge this gap by first constructing a novel database of fiscal policy uncertainty. We employ the news-based methodology as in Baker, Bloom, and Davis (2016), drawing from over 47 million news articles archived in the Dow Jones Factiva, a comprehensive news aggregator. By building search keywords related to fiscal policy uncertainty, our database contains monthly fiscal policy uncertainty (FPU) indexes for 189 countries, with the data extending back to January 1995 mainly due to a large number of countries not having good coverage before that.[1] For some large economies, the data can trace back to January 1977. Since the goal of the database is to cover a broad range of countries, the news-based approach is better-suited to achieve this goal, compared to other widely used methodologies to measure the uncertainty such as latent stochastic volatility (Ludvigson, Ma, and Ng, 2021; Fernández-Villaverde et al., 2015).[2]

[1] The list of countries is shown in Appendix A.

[2] Cascaldi-Garcia et al. (2023) provides an in-depth literature survey of existing methodologies that are used to quantify the uncertainty.

Our cross-country database clearly reveals that not all fiscal events are alike and that certain events have global repercussions unlike others. We track these events with worldwide significance and refer to them as the source of the "global fiscal policy uncertainty." To achieve this, we employ a comprehensive approach, conducting keyword searches across a broad spectrum of newspapers without limiting ourselves to any single country, with the data from January 1977. The underlying idea is that events with international repercussions will be reported by various news outlets across different countries. The method allows us to remain impartial and capture a truly global perspective. We have also explored alternative methodologies, such as principal component analysis or weighting individual country-level FPU indexes by their respective GDPs. These bottom-up approaches yield results that are strongly correlated with our preferred method.

It is well-identified in the literature that the accuracy of news-based indicators can be influenced by the design of search queries and the choice of news outlets. In this paper, extensive validation processes are employed to minimize false positives. These efforts involve a careful comparison with existing economic policy uncertainty indicators as well as human audits, wherein the narratives of articles corresponding to months with significant index movements are reviewed. For a subset of systemic countries with available data, alternative measures of fiscal policy uncertainty are constructed to confirm the validity of our indicators. These measures utilize latent stochastic volatility of fiscal variables as in Fernández-Villaverde et al. (2015) or large language models.

The resulting global and country-level FPU indexes share some similarities with already-existing economic policy uncertainty indicators, showing spikes at major economic events such as the Global Financial Crisis and the European sovereign debt crisis[3] At the same time, notable differences also emerge. Compared to the economic policy uncertainty indicators, our FPU indexes capture more prominently fiscal stress events, such as the US debt ceiling episodes and the UK mini-budget episode in 2022. Due to these differences, the correlation between the economic policy uncertainty indicator and FPU indexes evolves over time in many countries, depending on the relative importance of fiscal policy as a source of economic policy uncertainty. For instance, Japan shows a consistently strong correlation between the two policy uncertainty indicators throughout the sample period. Greece and Italy exhibit a different pattern: prior to the European sovereign debt crisis, the correlation between the two policy uncertainty indicators was weak in both countries,

[3]The existing global and country-specific economic policy uncertainty indexes used for comparison are available from the "Economic Policy Uncertainty" website: https://www.policyuncertainty.com/

with the economic policy uncertainty showing volatility, contrary to the subdued fiscal policy uncertainty. Since the European sovereign debt crisis, however, the correlation between the indications has strengthened.

Armed with novel measures of fiscal policy uncertainty, we examine its effects on real economic activity and financial conditions through a Bayesian vector autoregression (VAR) analysis. The baseline specification employs a Cholesky decomposition, following the same ordering of variables as in Baker, Bloom, and Davis (2016). Our primary measure of fiscal policy uncertainty is the global fiscal policy uncertainty index. We focus on three groups of countries: the US, advanced economies excluding the US, and emerging market economies. We conduct two separate VAR analyses: one focusing on real economic activity, measured by industrial production, and the other evaluating financial conditions, using sovereign bond yield spreads for advanced economies and EMBI spreads for emerging markets. We find that fiscal policy uncertainty exerts contractionary effects across all income groups on both accounts. Specifically, a one standard deviation increase in the GFPU index leads to a peak decline in industrial production of about 0.5 percent within four months, a magnitude comparable to Baker, Bloom, and Davis (2016). The impact is similar across income groups. Additionally, a surprise increase in the GFPU index of the same magnitude tightens financial conditions for both advanced and emerging market economies, with a more pronounced effect on the latter. These results remain robust to various VAR identification strategies, including sign restrictions combined with narrative restrictions as in Antolín-Díaz and Rubio-Ramírez (2018). Different sample periods, lag structures, and variable orderings do not alter the results.

Following the baseline empirical exercise, we examine whether the contractionary effects of country-level fiscal policy uncertainty are greater than those resulting from global fiscal policy uncertainty, probing for possible cross-country spillover channels. To address this question, we conduct the experiment in three different layers. First, as a reference case, we restrict the analysis to only country-level variables and country-level FPU indexes. Next, we expand the scope by allowing global transmission channels. We first introduce global variables interacting with country-level variables and subsequently replace the country-level FPU index with GFPU. Despite the fact that most country-level FPU has limited correlations with GFPU, we find that GFPU has a more adverse impact on economic activity than country-level FPU. Specifically, an increase in GFPU leads to a 0.3 percent decline in domestic industrial production, while increases in country-level FPU result in a decline of 0.2 percent. The contractionary effects are amplified when the additional

feedbacks with the US financial and real variables are allowed: in this scenario, domestic industrial production declines by about 0.6 percent, highlighting the substantial impact of US-related fiscal policy uncertainty on global economic activity.

Finally, we explore the broader effects of GFPU on financial markets, extending beyond its impact on sovereign borrowing costs as previously discussed. Our analysis reveals that a surprise increase in the GFPU index leads to higher financial risks, evidenced by an increase in US VIX and excess bond premium. We conclude our analysis by investigating the impact of GFPU on the global financial cycle. Using the identical specification and variables as the seminal paper by Miranda-Agrippino and Rey (2020), but by inserting the GFPU index as the primary exogenous shock, we find that even after controlling for US monetary policy shocks, an increase in the GFPU index leads to a tightening the global financial conditions. Specifically, within four months of a GFPU shock, the global financial cycle and the global risk aversion indicators, both created by Miranda-Agrippino and Rey (2020), decreases by 10 percent and increases by 5 percent respectively. In terms of magnitude, a 10 percent decline in the global financial cycle is equivalent to a US contractionary monetary policy shock of about 25 basis points.

Literature Review

Our work contributes to a rapidly growing body of literature that applies textual methods for quantifying economic uncertainty. Pioneered by the seminal paper by Baker, Bloom, and Davis (2016), the news-based approach to construct uncertainty indicators has been applied to various topics beyond economic uncertainty such as geopolitical risks (Caldara and Iacoviello, 2022; Jung, Lee, and Lee, 2021) and social unrest (Barrett et al., 2020). Ahir, Bloom, and Furceri (2022) expanded the application of the uncertainty indicators on a global scale by using a quarterly economic report published by the Economic Intelligence Unit. However, to our knowledge, there have been few attempts to construct uncertainty indicators dedicated to fiscal policy. Notable exceptions include Baker, Bloom, and Davis (2016) which address fiscal policy uncertainty in the United States as well as Arbatli et al. (2017), focusing on Japan.

Beyond the general economic-wide uncertainty, several studies focus on the uncertainty related to fiscal policy and its economic impact. (Sims, 2011) demonstrates the potential role of fiscal policy uncertainty, driven by its dramatic shifts in 1970s, and its interactions with monetary policy.

Fernández-Villaverde et al. (2015) and Born and Pfeifer (2014) use the estimated volatility of government spending and tax policy shocks for the US to study the real effects of short-run fiscal interventions, finding that fiscal volatility shocks are contractionary. Mumtaz and Surico (2018) shows that fiscal policy uncertainty related to public debt trajectory has the largest adverse impact on real activity, compared to tax and spending-related uncertainty. Finally, the paper is linked to the strain of literature on the identification of fiscal policy shocks, pioneered by Ramey and Shapiro (1998) and Blanchard (1984), which have been more recently extended with the adoption of new methodologies such as the narrative approach by Romer and Romer (2010) and by a movel econometric analysis as in Auerbach and Gorodnichenko (2012).

Section 2 describes the methodology used to construct the fiscal policy uncertainty indicator at the country-level and at the global level. Section 3 presents the results on the impact of fiscal policy uncertainty on real economic activity using vector autoregression models (VAR). Section 4 explores the extent to which the impact of fiscal policy uncertainty is amplified through cross-country spillover channels. Section 5 focuses on the impact of the fiscal policy uncertainty on financial conditions and the global financial cycle, extending the work of Miranda-Agrippino and Rey (2020). Section 6 concludes.

2 News-Based Fiscal Policy Uncertainty Index

In this section, we detail the construction of 189 country-level and global FPU indexes and the validation processes that were conducted to improve their accuracy.[4] Then, we discuss a set of stylized facts regarding our indexes.

2.1 Construction of News-Based Fiscal Policy Uncertainty Index

The news articles are from Dow Jones Factiva, a comprehensive news aggregator that includes more than 30,000 news sources around the globe. We restrict our sample to printed articles published by 43 major English-language news outlets in the US, Canada, and the UK.[5]While the list of news sources is mostly similar to Caldara and Iacoviello (2022) and Barrett et al. (2020), we also

[4]See Appendix A for the list of countries.
[5]The full list of publishers are in Appendix C.

include the outlets that specialize in international news coverage such as "ABC News: World News Saturday", International BBC network that includes regional BBC monitoring news, and Reuters.

The selection of sources is guided by several key considerations. First, by drawing from major news outlets as opposed to local newspapers, it allows us to create an extensive dataset spanning from January 1977 to July 2024, encompassing over 47 million articles. Second, we include news outlets that specialize in international coverage to enhance the accuracy of our country-level FPU indexes, particularly for small emerging markets and low-income countries. Our indexes are designed in such a way that the size of the denominators used in frequency calculations can affect the index. In other words, when the denominators, or the total number of articles for a given month, are small–which is often the case for these countries as they typically receive limited attention in foreign media– the frequency can be significantly overstated. Incorporating international news sources, hence, is critical to increase the representation of these countries [6]

To select the articles that mention fiscal policy uncertainty, we construct a list of keywords built around three main layers that correspond to "fiscal", "policy" and "uncertainty," namely:

- One of the fiscal topic terms in tax, government expenditure, public debt, or others.
- Policy authority identifier (like "congress", "parliament", "minister")
- An uncertainty identifier (like "uncertainty", "ambiguous", "unpredictable")

The full list of keywords are presented in Table 1. In constructing country-level FPU indexes, we overlay to these conditions a country identifier such as the "US" or "China." To enhance the accuracy of the searches, we further restrict our searches to articles where a country name appears either in the title, snippet, or the main paragraph identified by Factiva. The choice of keywords corresponding to a fiscal policy is understandably subjective, as fiscal policy is a broad concept that covers wide-ranging tools and topics. The perimeter of fiscal policy considered in this paper is based on the components that underpin a typical government budget constraint, comprising of public debt, tax revenues, and government spending as follows:

[6] Appendix E reports the number of publications by news outlets, as well as the geographical coverage. The Reuters and BBC networks are particularly important in terms of including news articles on developing economies from non-US and non-European countries.

$$B_{t+1} = R_t B_t + G_{t+1} - T_{t+1} \tag{1}$$

where B_t denotes the end-of-period total outstanding public debt, R_t denotes the gross interest rate on the public debt, G_t denotes the government spending and T_t denotes tax revenues. The exact queries used are used for country-specific FPU can be found in Appendix D.

2.2 Validation of the Index

To avoid the well-known concerns regarding false positives related to the methodology, we elaborate on the validation exercises conducted to address them.

First, we conduct human audits by reading newspaper articles from selected dates that show particularly high values based on our indexes. For each country, we manually review newspaper articles corresponding to the dates and confirm whether narratives can be built to corroborate the high values of the index. While this is not a full-scale audit of all newspaper articles, this exercise shows that our index picks up relevant events associated with fiscal policy.

Second, for a time series comparison, we compare the movements of our indexes with a set of already-available economic policy uncertainty indicators. Additionally, we construct two alternative fiscal policy uncertainty indicators for selected countries and compare them with our news-based indicators. The two alternative methodologies include (i) a stochastic volatility approach as in Fernández-Villaverde et al. (2015) and Jurado, Ludvigson, and Ng (2015); and (ii) a textual analysis using LLM on Financial Times articles. The subsequent subsections present the outcomes of the validation processes.

2.3 Country-Level and Global Fiscal Policy Uncertainty Indexes

Figure 1 plots seven selected country-specific FPU indexes covering the United States, the United Kingdom, France, Italy, Japan, Greece, and Argentina, along with the narratives identified in our news searches, corresponding to the months shown in our indexes as key events relating to fiscal policy uncertainty. Narratives for a sample of selected emerging economies including Brazil,

Table 1. *Search keywords for each category in fiscal uncertainty index construction*

Category identifier	Keywords
I. Policy authority	government *or* parliament *or* congress* *or* regulat* *or* policy *or* policies *or* legislat* *or* minister *or* ministry *or* national assembly
II. Uncertainty	uncertain* *or* ambiguous *or* dubious *or* precarious *or* unpredictable *or* undecided *or* undertermined *or* unresolved *or* unsettled *or* risk *or* doubt *or* doubtful *or* volatilit*
III. Fiscal Topics	
1. Tax	taxation *or* taxes *or* taxed *or* tax
2. Government expenditure	government spending *or* federal spending *or* public spending *or* government expenditure *or* federal expenditure *or* public expenditure *or* defense spending *or* military spending *or* pension reform* *or* pension expenditure *or* healthcare expenditure *or* medical care expenditure *or* social securities expenditure *or* social safety net* *or* public investment* *or* social protection *or* subsidies *or* subsidy *or* entitlement spending *or* social security
3. Public debt	federal debt *or* government debt *or* national debt *or* public debt *or* debt ceiling *or* sovereign debt *or* debt burden *or* debt repay* *or* debt sustainability *or* government borrowing *or* sovereign borrowing *or* debt consolidation *or* sovereign risk *or* sovereign default *or* debt default *or* debt restructure *or* foreign debt *or* external debt *or* government bond *or* sovereign bond *or* sovereign yield
4. Others	public sector *or* public finance *or* sublementary budet *or* government deficit *or* national deficit *or* federal deficit *or* fiscal policy *or* fiscal *or* budget deficit* *or* budget gap* *or* national budget *or* government budget *or* fiscal stimulus *or* balanced budget *or* balance the budget

Notes: The truncation character (*) indicates any possible ending for a term, e.g. "govern*" includes "government" or "governor". The general fiscal search keyword is the union of tax, government expenditure, public debt and other keywords.

Thailand, Indonesia, and Hungary can be found in Appendix G. For comparison, we plot both fiscal policy uncertainty and economic policy indicators in Figure 2 for a set of countries whose economic policy uncertainty indicators are readily available from the Economic Policy Uncertainty Website.[7] Several observations can be made.

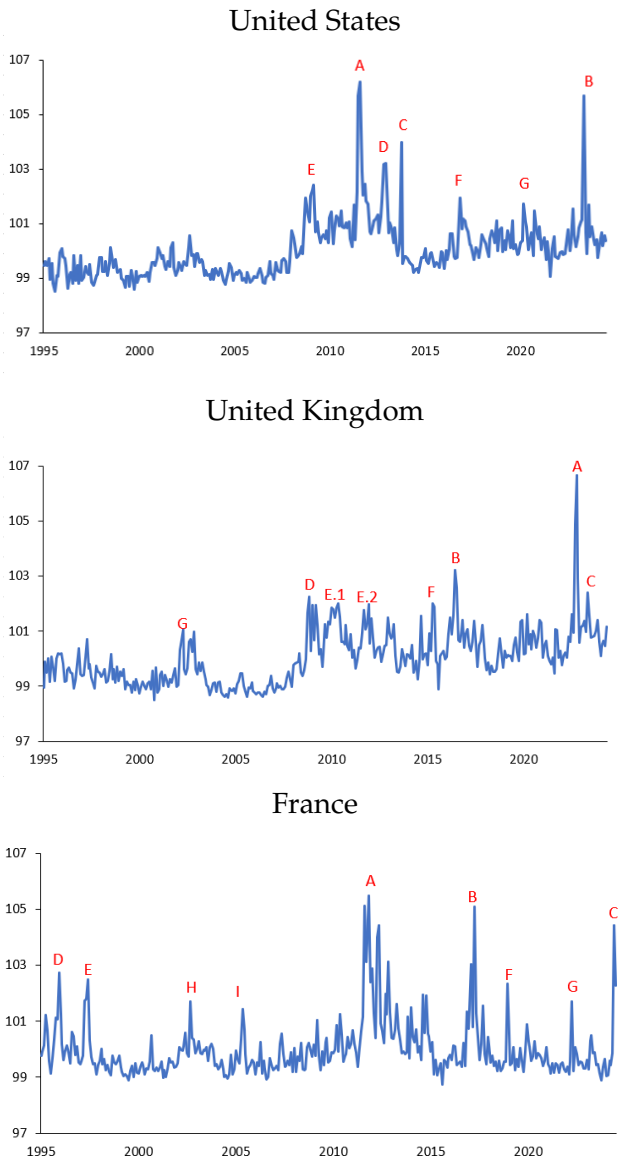
First, our FPU indexes exhibit dramatic spikes during fiscal stress events. Notable examples include the debt ceiling gridlocks and government shutdowns in the United States. Fiscal policy uncertainty tends to escalate during elections, especially when the potential fiscal policy trajectories diverge significantly depending on the outcome. For instance, our index for France shows a sharp increase in June and July 2024, coinciding with the political turbulence surrounding an unexpected outcome of the snap election. In a similar vein, Italy's struggles to form stable governments have consistently emerged as a major driver of fiscal policy uncertainty.

Second, some fiscal stress events are only detected by the fiscal policy uncertainty indicator. Examples include the UK's mini-budget incident and a number of debt-ceiling episodes in the United States. Due to Brexit-related events, the economic policy uncertainty indicator increased the most in 2016 for the UK. On the other hand, the highest spike observed in the fiscal policy uncertainty index occurs in the "mini-budget" episode in 2022, which appears as a more muted leap when using the economic policy uncertainty indicator. The two indicators behave very differently in response to the US debt ceiling deadlock, as well.

Third, comovements between fiscal policy and economic policy uncertainty indicators change over time in some countries, indicating the changing importance of fiscal policy as a factor in overall economic policy uncertainty. Throughout the sample period in Japan, the movements of FPU and EPU have been fairly consistent. However, in other countries, the link between FPU and EPU varies over time. Consider the case of Greece. Prior to the European sovereign debt crisis, fiscal policy uncertainty was generally low, although economic policy uncertainty was high and erratic during the same period. The poor link between these two indicators in the pre-crisis is reflected in a low correlation of 0.2. This correlation rose to 0.6 in the post-crisis sample, which may suggest a pattern of fiscal factors becoming a major source of general economy-wide policy uncertainty in Greece. To some extent, a similar finding can be observed for Italy: the disconnect between EPU and FPU weakened after the European sovereign debt crisis.

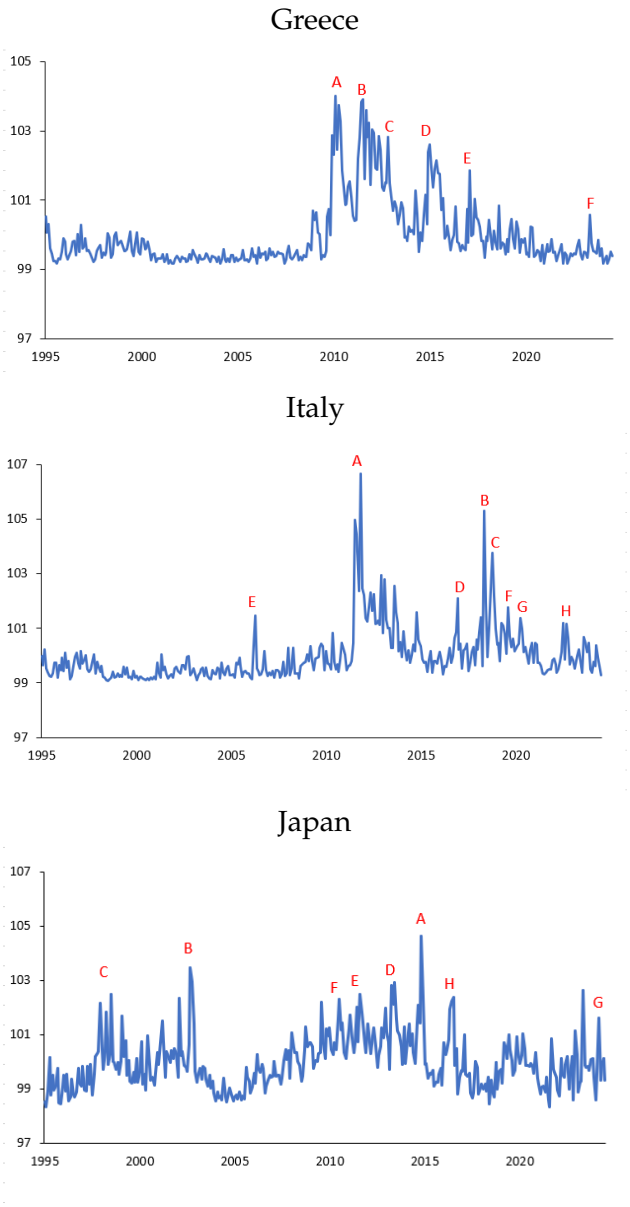
[7] Source: Economic Policy Uncertainty website (https://www.policyuncertainty.com/*all_country_data.html*)

Figure 1. *Country-Level Fiscal Policy Uncertainty for Selected Countries*



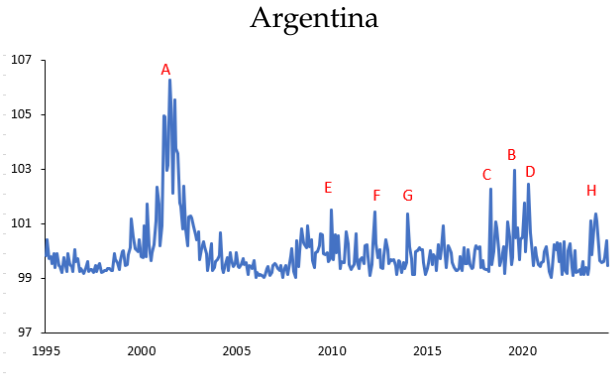
Note: **United States**: A. July-August 2011. 2011 Debt ceiling crisis. B. May 2023. 2023 Debt ceiling crisis. C. October 2013. Government shutdown. D. November-December 2012. Fiscal cliff, with tax creases and spending cuts effective from December 2012. E. March 2009. First large-scale asset purchase by the Fed. F. November 2016. Presidential election, Trump elected. G. March 2020. COVID-19 pandemic.
United Kingdom: A. September-November 2022. Mini Budget, policy uncertainty related to the mini budget, energy crisis. B. June-July 2016. Brexit vote. C. March-May 2023. Cost-of-living crisis, debt costs rise. D. November 2008 - March 2009. GFC. E. 2010-12. Spillovers from Eurozone debt crisis. E.1. January-May 2010. General Election. George Osborne Government. Spending cuts in the budget. E.2. September-December 2012. Eurozone debt crisis woes. Weak sterling. F. April 2015. Month Before the General Election, issues including a potential UK Brexit referendum. G. 2002. Budget concerns combined with discussion to join the single currency.
France: A. 2011-2012. Eurozone debt crisis. B. April-May 2017. Presidential election. C. June-July 2024. Snap Election. D. December 1995. Nationwide protests provoked by delayed tax cuts and pay freezes. E. April-June 1997. EMU entry. F. December 2018. Yellow vests protests. G. April 2022. War in Ukraine. H. September 2002. Concerns for breaching EU's SGP. I. May 2005. French referendums on EU constitution.

Figure 1. *Country-Level Fiscal Policy Uncertainty for Selected Countries (Continued)*



Note: **Greece**: A. January-May 2010. First bailout for Greece. B. June-July 2011. Intensification of Eurozone debt crisis. Spain downgrades. C. January-February 2012. EU agrees to new bailout. D. December 2014-January 2015. Legislative election. Disagreement over bailout. E. February 2017. IMF warns debt unsustainable, tensions with creditors. F.May 2023. Election.
Italy: A. 2011-2012. Eurozone debt crisis. B. May 2018. Political crisis, no absolute majority. C. September-November 2018. Budget woes. EC rejection of the draft budget. D. December 2016. Bailout talks of Monte dei Paschi. E. April 2006. Close election, defeat of Berlusconi. F. August 2019. Coalition formation between PD and 5-star movement. G. April 2020. COVID-19. H. July-October 2022. General election, Meloni government.
Japan: A. November 2014. Prime Minister calls for snap election. "Japan PM seeks verdict on 'Abenomics' in snap election (Reuters, November 21, 2014)" B. September 2002. Deepning recession, bank reforms discussion. "JGBs end lower on uncertainty over bank reforms (Reuters, September 23, 2002)." C. December 1997-July 1998. Asian Financial Crisis. D. April-June 2013. US Taper Tantrum, JGB 10-year yields increase. E. August 2011. Appointment of PM Noda in a divided parliament. Moody's ratings downgrade. F. July 2010. Ruling party defeated in election, controversial sales tax hikes. G. May 2024. Bank of Japan's first rate hike in 17 years.

Figure 1. *Country-Level Fiscal Policy Uncertainty for Selected Countries (Continued)*

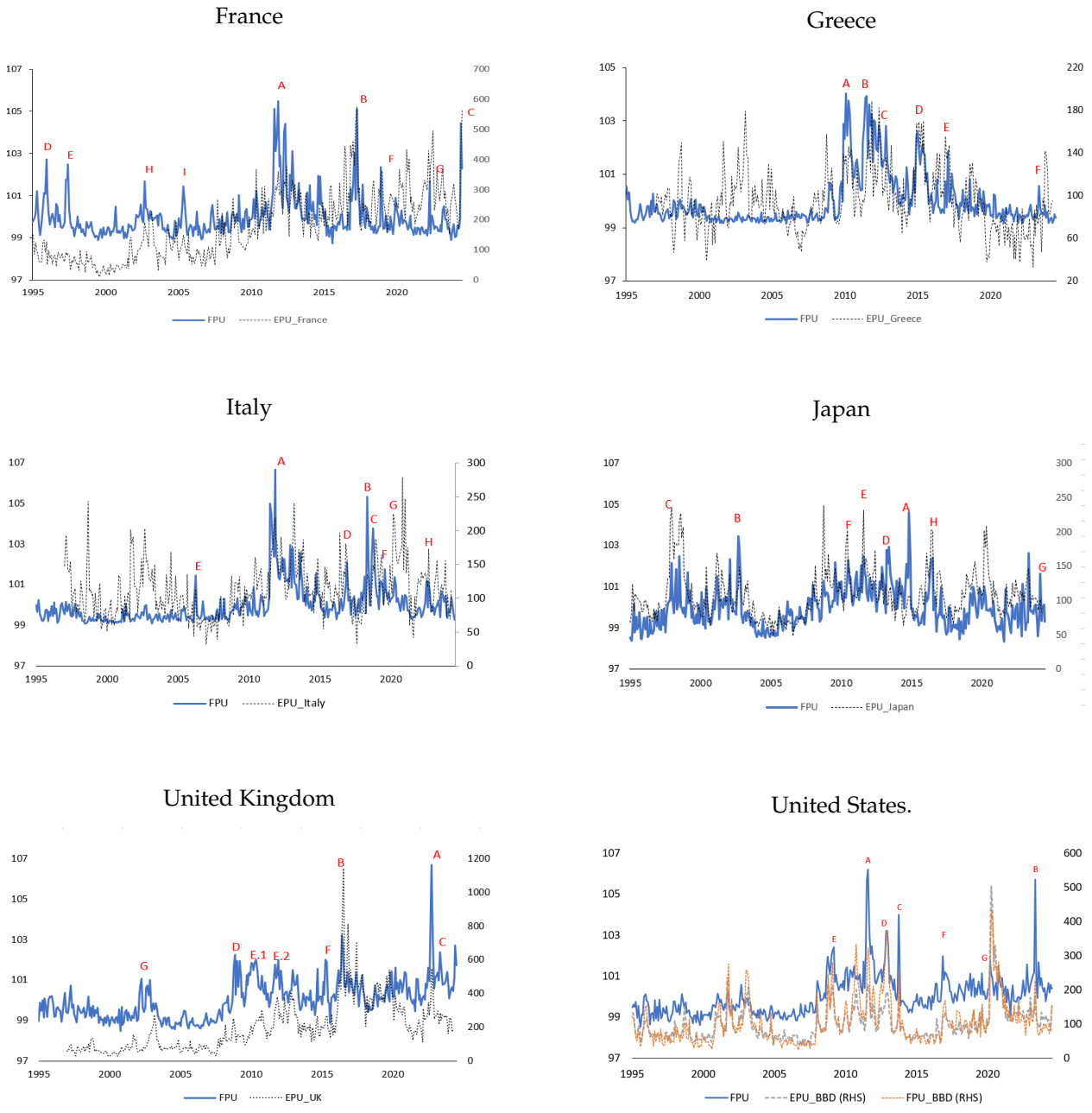


Argentina: A. 2001. Argentina Crisis. B. August 2019. President Macri's poor performance in primary election. C. May 2018. President Macri seeks IMF bailout. D. May 2020. Sovereign debt default. E. January 2010. Sovereign debt payment using FX reserves. F. April 2012. Mounting concerns over unorthodox policies including the seize of energy company YPF, S&P rating downgrade. G. January 2014. Sharpest Peso devaluation since 2002. H. November-December 2023. President Milei elected.

As a next step, we develop a global fiscal policy uncertainty (GFPU) index to capture fiscal policy uncertainty with potential global impact. Our baseline GFPU index is constructed by conducting a global keyword search across newspapers for all countries for each month (Figure 3, Panel 1). Notably, significant fluctuations in the baseline GFPU index align well with the well-recognized global financial crises, such as the Eurozone debt crisis and the Global Financial Crisis. Moreover, major fiscal stress events in systemically important economies, including the US debt ceiling impasses and the UK's mini-budget episode, trigger substantial spikes in the GFPU index. Furthermore, we observe that the overall level of fiscal policy uncertainty has trended upward since the European Sovereign debt crisis, consistent with the observations in Baker et al. (2014). As a robustness check, we also propose two alternative GFPU indicators using a bottom-up approach (Figure 3, Panel 2): (i) a principal component analysis; and (ii) the GDP-weighted average of the 189 country-level FPUs. The strong correlations, exceeding 0.9, between our baseline GFPU and these altnerative indicators validate that our baseline index captures key FPU events affecting numerous countries, as evidenced by the principal component analysis, and those originating from systemically important economies, as reflected in the weighted average.

We take additional steps to ensure the validity of our indicators. First, at monthly frequency, our indicator shows a reasonable correlation with the global economic policy uncertainty constructed by Baker, Bloom, and Davis (2016) with a correlation of 0.45 (Figure 4, Panel 1). As mentioned

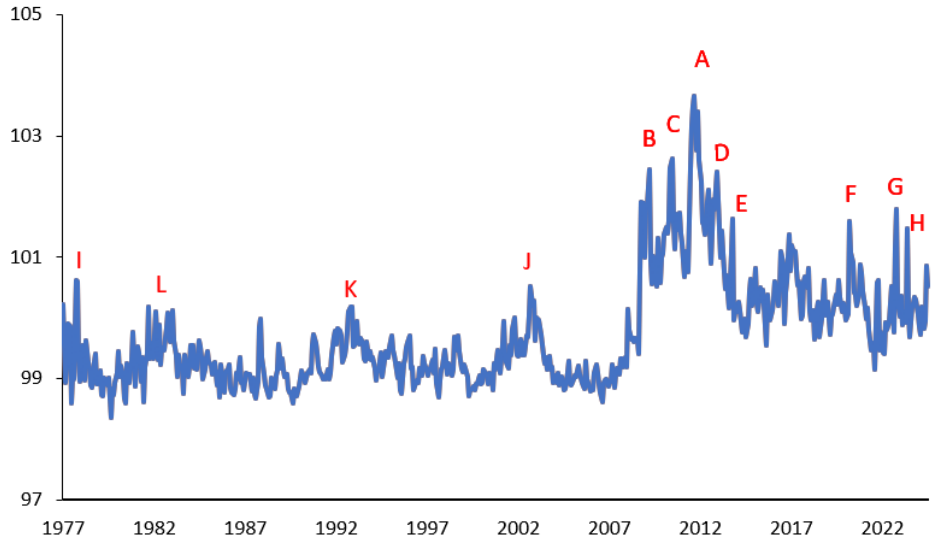
Figure 2. *Comparison between FPU and EPU*



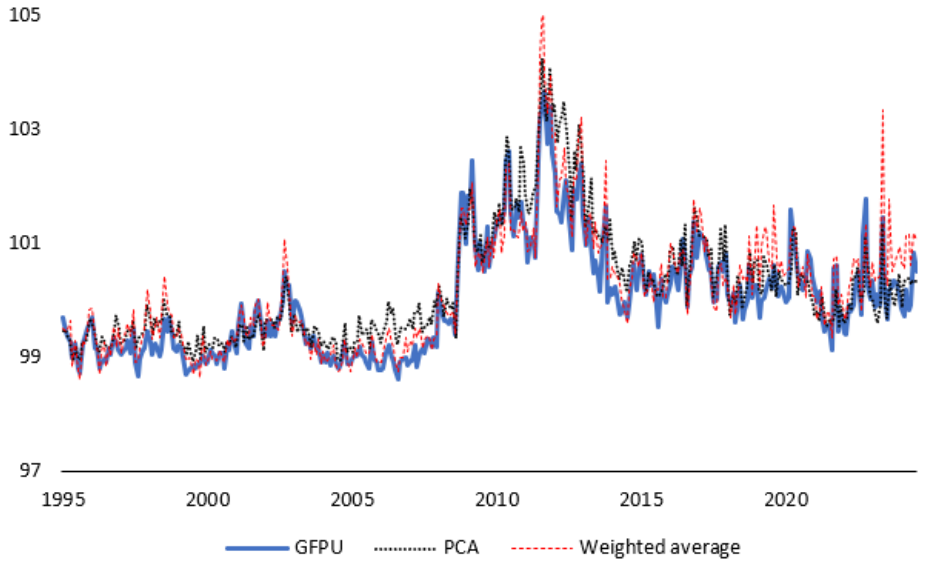
Note: Blue solid lines represent the fiscal policy uncertainty (or FPU) indicators - LHS axis. Grey dotted lines show the economic policy uncertainty (or EPU) indicators for the six countries (RHS axis)whose economic policy indicators are available from the Economic Policy Uncertainty website.

Figure 3. *Global Fiscal Policy Uncertainty*

Panel 1. Global Fiscal Policy Uncertainty Index with Key Events



Panel 2. Alternative Global Fiscal Policy Uncertainty Indexes: Common Factor and GDP-Weighted

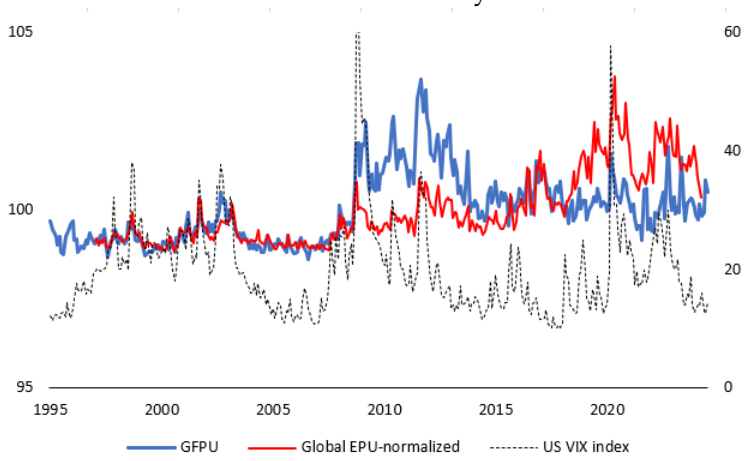


Note: Panel 1. Global fiscal policy uncertainty (GFPU) is constructed using the search results from all countries. A. July-November 2011. Eurozone debt crisis, US debt ceiling. B. October 2008-March 2009. Global Financial Crisis. C. May-June 2010. First Greece Bailout. D. 2012. Sovereign debt crisis. US fiscal cliff (expiration of tax cuts and spending increases). E. October 2013. US government shutdown. F. March 2020. COVID-19 pandemic. G. October 2022. Ongoing cost-of-living crisis. UK's mini-budget episode. H. May 2023. US debt ceiling episode. I. September 1977. Carter's tax plan. J. Sepetember 2002. Iraq war fears, EU Stability and Growth Pact. K. February 1993. Clinton's tax plan. L. 1982. Reagan's economic plan.

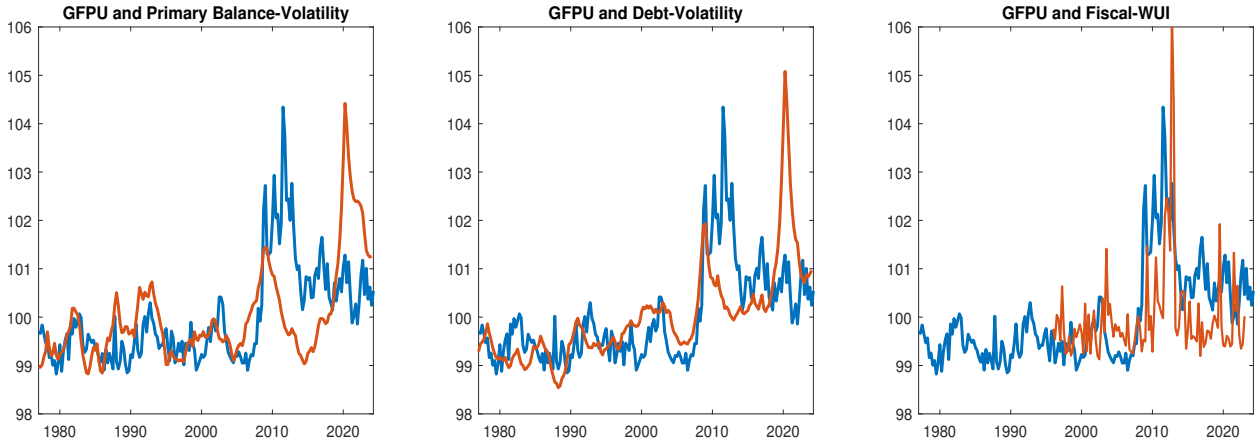
Panel 2. The line "PCA" is constructed using the principal component analysis across 189 country-level FPU indexes. The line "Weighted average" shows the GDP-weighted country-level FPU indexes.

Figure 4. *Global Fiscal Policy Uncertainty vs. Other Indicators of Uncertainty*

Panel 1. Monthly



Panel 2. Quarterly



Source: Panel 1. Global fiscal policy uncertainty (GFPU) is constructed using the search results from all countries. Global economic policy uncertainty indicator (PPP-adjusted) is from Baker, Bloom, and Davis (2016) and has been normalized. The CBOE volatility index (VIX) is from FRED, Federal Reserve Bank of St. Louis.

Panel 2. The volatility of primary balance-to-GDP (left chart) and changes in debt-to-GDP ratio (center chart) is the PPPGDP-weighted average of log of time-varying standard deviation of innovations to primary balance-to-GDP and changes in deb-to-GDP at country level, obtained from an AR(3) process, allowing for stochastic volatility. The right chart is the fiscal policy uncertainty components from World Uncertainty Index by Ahir, Bloom, and Furceri (2022).

before, some notable differences emerge in terms of how the two indicators evaluate the uncertainty associated with the Brexit, the US debt ceiling events and the UK's mini-budget episode. Similarities to the CBOE VIX index are less apparent with a correlation of 0.28, as the VIX index coincides with financial stress events, such as the Global Financial Crisis or the onset of the COVID-19 pandemic.

Second, we also aggregate our monthly index to a quarterly series to compare with other uncertainty indicators available only at a quarterly frequency. The first comparison is made to our own-constructed fiscal policy volatility by estimating the dynamics of primary balance (as percent of GDP) and changes in public debt-to-GDP ratios. The approach adopts an autoregressive model that allows for stochastic volatility, similar to the approaches in Fernández-Villaverde et al. (2015) (Figure 4). [8] We then aggregate the country-level log of time-varying standard deviation of innovations to primary balance-to-GDP and changes in debt-to-GDP by using PPPGDP-weighted average.[9] These estimates are shown in Panel 2 (left and middle charts). The correlations between the GFPU index and the volatility indexes for the pre-COVID sample are robust at around 0.4 in the case of the volatility using the primary balance and about 0.6 for the indicator using public debt ratios (first two columns in Table 2). The reduction in correlations observed with the full sample may be attributed to the fact that these indicators rely on realized fiscal outcomes, which reflect backward-looking and objective uncertainty. Additionally, a potential factor contributing to the discrepancy during the COVID-19 pandemic is that our estimated stochastic volatility indicators do not account for the response of fiscal variables to the economic shocks (automatic stabilizers) as well as the response to debt (in the case of primary balance), leading to significant residuals which are to some extent predictable conditional on the COVID shocks. Including this factor would likely enhance the correlation. An additional comparison is made to a fiscal policy uncertainty series, extracted from a textual analysis on the Economic Intelligence Unit reports used by Ahir, Bloom, and Furceri (2022), focusing on fiscal policy uncertainty related terms.[10] The two indexes show similar patterns, with a significant increase in the respective policy uncertainty around the Eurozone debt crisis and a relatively muted increase during the COVID-19 pandemic. The

[8] The PB-volatility is calculated for 19 countries Argentina, Brazil, China, Colombia, France, Germany, Greece, India, Indonesia, Italy, Japan, Mexico, Poland, South Africa, Spain, Thailand, Turkiye, United Kingdom, and United States. The debt-volatility is calculated for these countries, excluding China

[9] The sample is different across countries, depending on data availability. Given the unbalanced panel, the weight is adjusted so that the weight for country without data is zero while keeping the total weight of one.

[10] We are grateful to the authors of Ahir, Bloom, and Furceri (2022) for generously running the search with fiscal policy terms and sharing the index.

Table 2. *Correlations between GFPU and Various Quarterly Indicators*

	PB-SV	Debt-SV	Fiscal-WUI
Pre-COVID	0.40	0.60	0.45
Full sample	0.38	0.52	0.41

Note: Pre-COVID sample runs from January 1977 to February 2020. The full sample runs from January 1977 to July 2024.

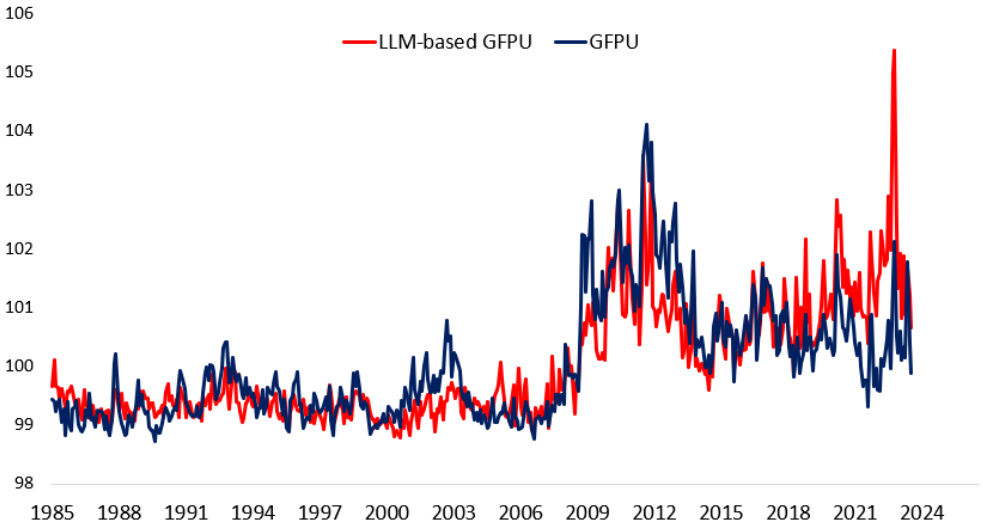
correlations are robust at around 0.4 (last column in Table 2), despite a possible timing discrepancy that may arise from aggregating our monthly series to match a series at a quarterly frequency.

Finally, the LLM-based fiscal policy uncertainty indicators show significant correlations with our news-based indicators. We conduct the LLM-based textual analysis using the Financial Times articles from January 1985 to July 2023. Using an open AI source, prompts are designed to assess whether a specific fiscal policy mentioned in a specific article is likely to increase uncertainty or not (see Appendix F for specific prompt used). We first run the global search without restricting ourselves to any single country, similar to the approach conducted for the news-based approach. The resulting GFPU from the LLM, referred to as the "LLM-based GFPU", shows a remarkable similarity to the news-based GFPU (Panel 1, Figure 5). Additionally, we conduct a country-specific comparison. As the geographical coverage of the Financial Times is heavily skewed towards the UK and the US, our validation checks are also conducted for the UK and the US indicators. Panel 2 of Figure 5 plots the LLM-based series of fiscal policy uncertainty related to taxes, government spending, and public debt for the US.[11] The overall fiscal policy is constructed using the fiscal policy as a search term. The correlation between our FPU and LLM-based FPU shows a correlation of 0.78 (upper left panel). Subcategories of fiscal policy uncertainty reveal diverging patterns pertaining to different aspect of fiscal policy. In particular, the government spending-related policy uncertainty is on a clear upward trajectory with clear spikes during the COVID-19 pandemic. Public debt-related policy uncertainty clearly spikes in the years corresponding to the US debt ceiling episode. This also explains the difference between our FPU index for the US and the one constructed by Baker, Bloom, and Davis (2016) as shown in the panel on the United States in Figure 2. The latter includes only tax and government expenditure-related terms, while our index also capture uncertainty regarding government debt.

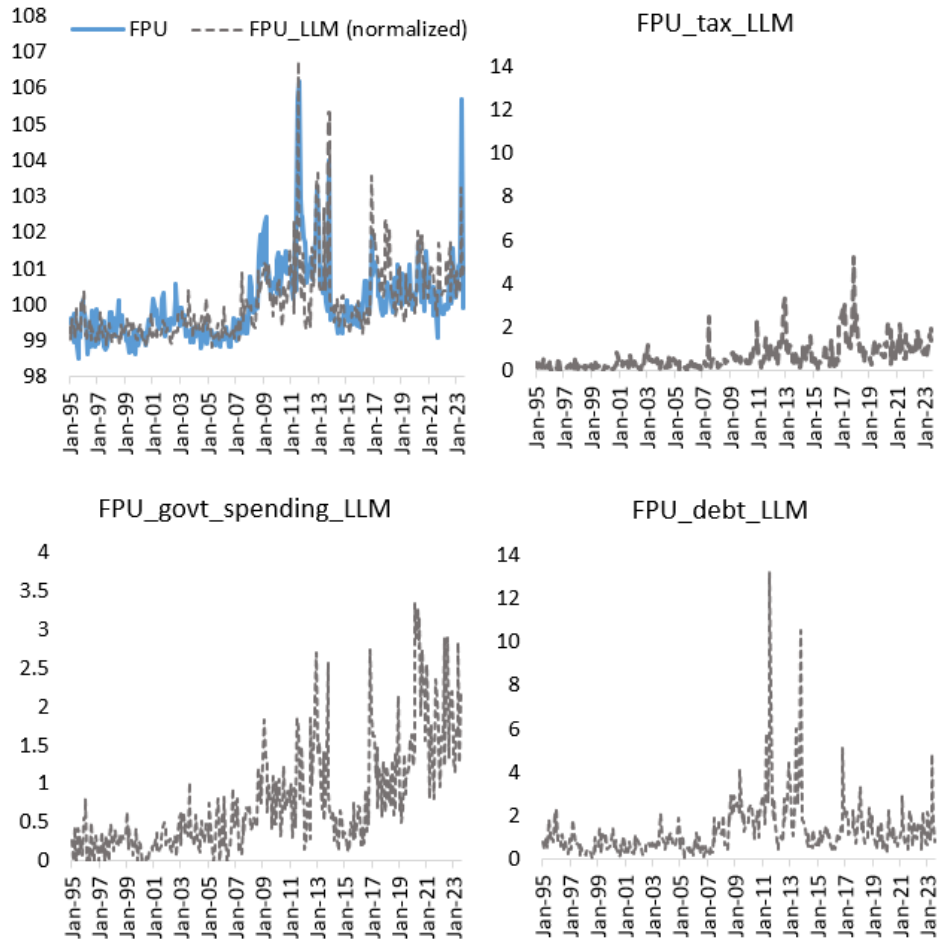
[11] Appendix F.1 shows the comparison for the UK.

Figure 5. *LLM-Based Fiscal Policy Uncertainty*

(a) Panel 1. Global Fiscal Policy Uncertainty



(b) Panel 2. US



Source: Financial Times for LLM-based index.

3 Economic Impact of Fiscal Policy Uncertainty: VAR-based Analysis

Armed with the novel indexes of fiscal policy uncertainty, we turn to the vector autoregression (VAR) models to quantify the economic impact of fiscal policy uncertainty. Our baseline specification includes six endogenous variables:

$$Y_t = [gfpu_t,\ sp500_t,\ i_t,\ ipUS_t,\ ipAEexUS_t,\ ipEM_t] \tag{2}$$

the global FPU index ($gfpu_t$), the log of the S&P 500 ($sp500_t$), the US shadow interest rate (i_t), log of US industrial production ($ipUS_t$), log industrial production for advanced economies excluding the US ($ipAEexUS_t$), and log of industrial production for emerging market economies ($ipEM_t$). Our data is at monthly frequency and runs from January 1987 to April 2023.[12]. Our baseline specification includes three lags, but is also robust to different lag structure. To avoid a possible impact of extreme observations associated with the COVID-19 pandemic, we use dummy variables for the first five months of 2020 in the analysis.[13] This ad hoc strategy works well for our analysis as our primary focus lies in the parameter estimation and impulse response analyses, rather than forecasting the future evolution of the economy (see also the discussion in Lenza and Primiceri, 2022).[14]

3.1 Baseline results

To identify the shock to GFPU, our baseline model uses a Cholesky decomposition following the variable ordering outlined in (2), by putting the GFPU index as the most exogenous shock, similar to Baker, Bloom, and Davis (2016). This assumes that a shock to GFPU can affect other endogenous variables contemporaneously, whereas shocks to other variables affect the GFPU index with a lag. Given the critical role that this assumption may play in driving the results, Section 3.2 provides an extensive discussion on alternative approaches to verify our baseline results.

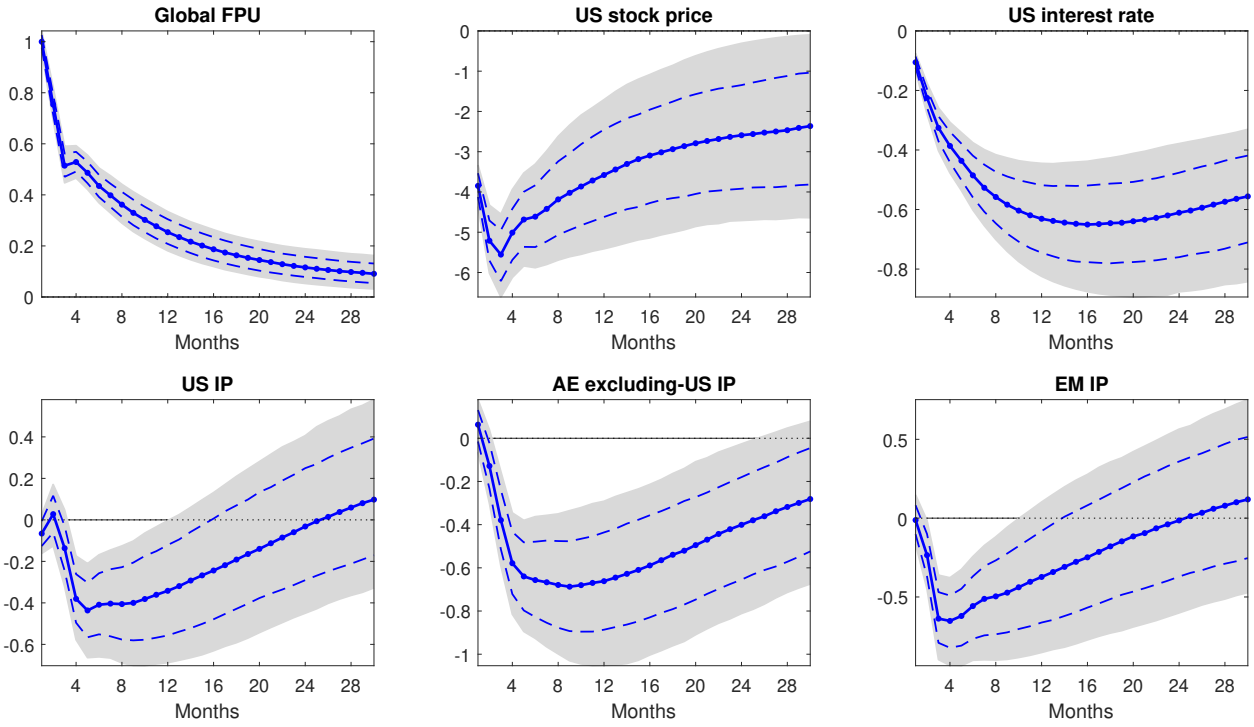
[12] See Appendix B for data description. The starting point is the first available data of industrial production for emerging market economies

[13] China's industrial production dropped by 13.5 percent year-on-year in the first two month of 2020, while other economies' data variations were abnormal between March to May 2020.

[14] As will be shown in Section 3.3, we also conduct a robustness check with the pre-COVID sample.

Our analysis shows that a one-standard deviation shock to the GFPU index has contractionary effects across all income groups, with statistical significance across (Figure 6). First, looking at the US economy, a GFPU shock leads to a persistent decline in stock prices. At impact, stock prices drop by 4 percent, reaching their trough 3 months after the shock. The US monetary policy reacts in an accommodative manner, indicated by a reduction of the shadow interest rates. Beyond the financial impact on stock market, the GFPU shock has contractionary effects on real activity at the global level across income groups, indicating the GFPU's potential role in driving the global economy. The contractionary effects are comparable across income groups, reaching their peak impacts about five months following the shock. A one standard deviation shock to the GFPU lowers the industrial production as much as 0.5 percent, a magnitude consistent with the contractionary effects of the economic policy uncertainty in Baker, Bloom, and Davis (2016). The impact is also shown to be persistent, with the negative impact lingering 6 months and even 20 quarters after the shock for advanced economies excluding the US.

Figure 6. *Economic impact of GFPU: Baseline results*



Notes: January 1987 to April 2023. Figure presents the economic impact of a shock to the global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

3.2 Alternative identifications

In this subsection, we explore numerous alternative specifications as a part of robustness checks.

3.2.1 Alternative Cholesky decomposition

An alternative Cholesky decomposition with different variable orderings is explored, ranking the GFPU index after a set of slow-moving macroeconomic variables such as industrial production, but before market measures such as the stock market index and the shadow interest rate, which typically react to news instantaneously, as shown in Husted, Rogers, and Sun (2020). Specifically, the ordering of the variable is as follows:

$$Y_t = [ipUS_t,\ ipAEexUS_t,\ ipEM_t,\ gfpu_t,\ sp500_t,\ i_t].$$

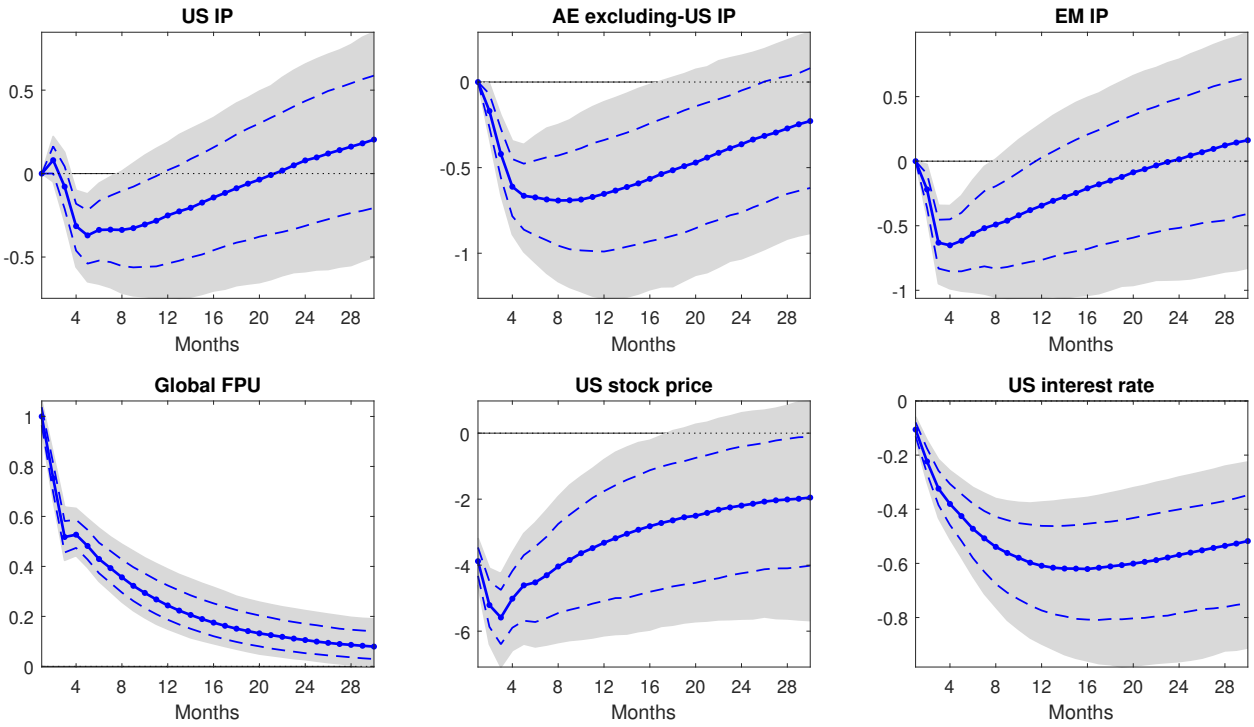
We obtain similar results using this alternative Cholesky decomposition as in the baseline, both in terms of the magnitude and the persistence of the impact, as shown in Figure 7.

3.2.2 Sign Restrictions

Furthermore, we consider a different identification strategy based on sign restrictions, moving away from recursive identifications. Several studies have pointed to potential issues that could arise from using sign restrictions only (see, for instance, (Wolf, 2022)). Others have argued that applying sign restrictions could risk retaining a set of structural parameters with implausible implications (Antolín-Díaz and Rubio-Ramírez, 2018). To alleviate these potential shortcomings, we extend a standard sign restrictions by imposing a narrative restriction as in Antolín-Díaz and Rubio-Ramírez (2018) and on forecast error variance decomposition (FEVD) as in Barsky and Sims (2011) and Volpicella (2022). The combined restrictions on the sign of coefficients, restrictions based on narrative evidence as well as restrictions on the variance decomposition are summarized as follows:

- *Sign restriction*: A positive GFPU shock leads to a contemporaneous increase in GFPU.

Figure 7. *Economic impact of GFPU: Alternative Cholesky decomposition*



Notes: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

- *Sign restriction*: The responses of U.S. stock prices, U.S. industrial production (IP), U.S. interest rates, advanced economies (excluding U.S.) industrial production, and emerging markets industrial production are negative at least once in any month within the first six months following the occurrence of the shock (Table 3).
- *Narrative restriction*: The shock is positive in the August 2011 US debt ceiling crisis.
- *Variance decomposition restriction*: The GFPU shock causes the largest forecast error variance decomposition of GFPU in the first forecast horizon.

Table 3. *Sign restrictions of GFPU shock*

GFPU	US Stock price	US Interest rate	US IP	AE excluding-US IP	EM IP
> 0	< 0	< 0	< 0	< 0	< 0

Note: The table lists signs of responses of endogenous variables (in the first column) to an unexpected increase in the global fiscal policy uncertainty.

Several points can be considered. First, it is important to note that we do not impose restrictions on the timing of the impact of the shock, as is commonly assumed in the literature, such as a contemporaneous impact or an impact in a specific month following the shock. Instead, we allow the data to reveal the magnitude and timing profile of the impact of the GFPU shock, including if the impact is contemporaneous or short-lived. Second, we ensure that the identified shocks are positive (i.e., increasing the GFPU) during the US debt ceiling crisis in August 2011, which is picked up with an unambiguously significant spike in our GFPU index. To substantiate our finding, it is worth noting that Standard & Poor's downgraded the US long-term credit rating in August 2011 for the first time (from AAA to AA+) due to the deteriorating outlooks on the US public debt valuations and an increasingly uncertain policy trajectory (Swann, Chambers, and Beers, 2011). Third, we add the restriction on the FEVD using the max share identification as in Barsky and Sims (2011), reflecting the assumption that the GFPU shock best explains variations of the one-period-ahead GFPU. In Appendix H, we consider an alternative restriction by imposing a bound restriction on FEVD, in the spirit of Volpicella (2022), that the global fiscal policy uncertainty shock explain at least 50 percent of FEVD of GFPU in the first month of the shock.

The results with sign restrictions are qualitatively similar to the baseline results, as illustrated in Figure 8. The US stock price reaches its lowest point three months after the shock. The responses of industrial production are larger and more persistent compared to the baseline case, with the largest decline occurring between 4 and 6 months after the shock. Specifically, the US stock price declines by more than 6 percent, US industrial production by about 1 percent, industrial production of advanced economies excluding the US and in emerging markets by approximately 1.4 percent, respectively. We find similar results when applying the bounded restrictions, as shown in Appendix H. These findings confirm the contractionary effects of global fiscal policy uncertainty shocks on the US stock market as well as the real economic activity across income groups.

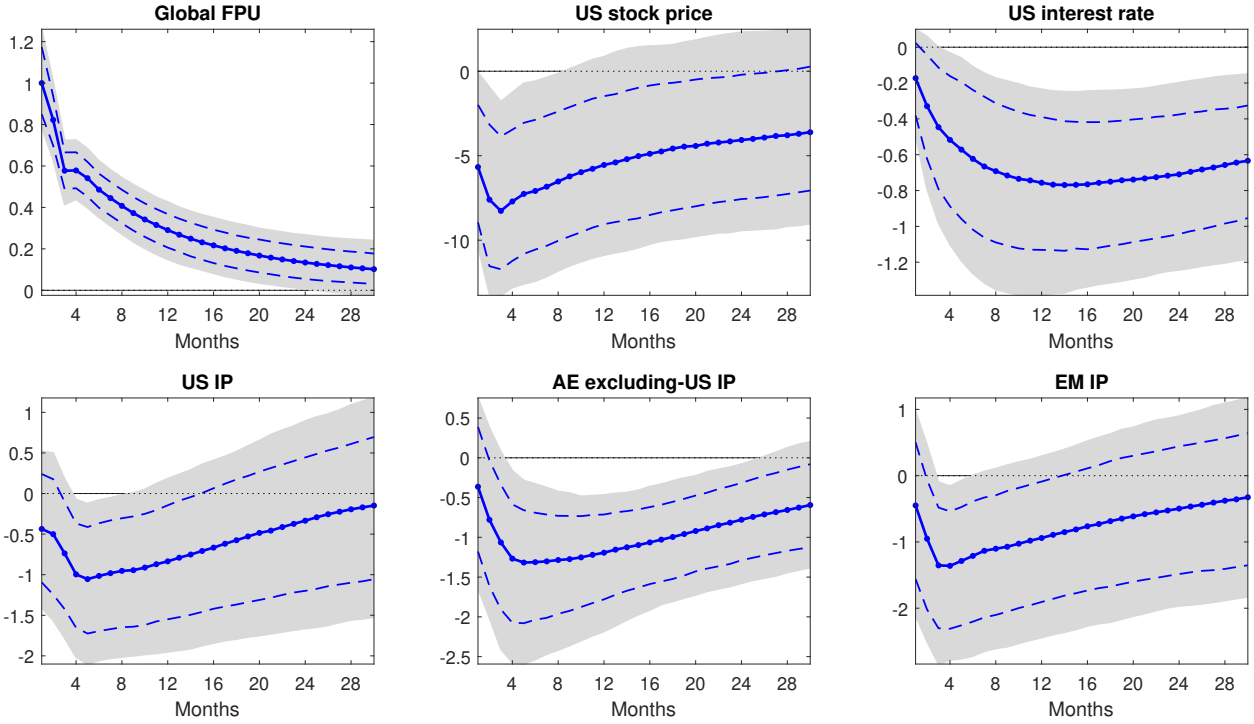
3.3 Extensions

Here, we provide a list of additional robustness checks to substantiate the baseline findings.[15].

Excluding the observations since the COVID-19 pandemic: As indicated above, our baseline specification uses the dummy variables to treat the extreme observations due to the COVID pandemic.

[15]The sample varies in these exercises depending on the data availability

Figure 8. *Economic impact of GFPU: Sign restriction with narrative and max share*



Notes: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

Additionally, we check whether the results would change without such a treatment by comparing the baseline IRFs with those using only the pre-COVID episode sample (1987M1-2019M12). We find that the IRFs using the pre-COVID sample leads to similar result with the baseline (Appendix Figure 14). This is also expected as already documented in Lenza and Primiceri (2022). Morever, we run an additional exercise, estimating the baseline Cholesky model using the full sample without introducing the dummies. Under this scenario, we find a larger decline in the industrial production of US as well as other country groups (Appendix Figure 15), indicating the need to take these abnormal variation into account.

Controlling the global economic policy uncertainty: A natural question arises to what extent the global fiscal policy uncertainty adds new components to the existing global economic policy uncertainty. To address this question, we include global economic policy uncertainty (GEPU) into the VAR model. We rank the GEPU in the second position after the GFPU to allow the shocks to GFPU to affect GEPU contemporaneously in line with Husted, Rogers, and Sun (2020). As shown

in Appendix Figure 16, we find that an increase in GFPU leads to an unambiguous increase in the GEPU. Controlling for the GEPU yields quantitatively similar results as in the baseline.

Different lag structures: In addition to the baseline specification that uses three lags, we try alternative specifications using different lags. For instance, the results using two lags, four lags, and six lags can be found in Appendix Figures 17, 18, and 19, respectively. The results are similar across different lag specifications.

4 Cross-Country Spillover Effects: Country-Specific FPU vs. Global FPU

In this section, we compare the economic impact of country-specific fiscal policy uncertainty with those arising from global fiscal policy uncertainty. *A priori*, it is far from clear to what extent the origin of fiscal policy uncertainty matters in determining the magnitude of its contractionary effects. For instance, for systemic countries that can generate potentially sizable global spillovers, country-specific fiscal policy uncertainty is likely to exert large contractionary effects domestically, which could even be greater than when receiving the global fiscal policy uncertainty shock. At the same time, the GFPU shock amplify the domestic fiscal policy uncertainty shock through tighter global financial conditions. In such case, the fallout from domestic fiscal policy uncertainty may be dwarfed by fiscal policy uncertainty shock that originates from elsewhere.

To empirically test this question, we investigate the potential spillover channels of fiscal policy uncertainty by estimating three layers of balanced Panel-VAR models, expanding from domestic-focused variables to fully-fledged feedback channels allowing for the reactions of the US variables.[16] Specifically, three layers can be described as follows:

- Model 1 - *Country FPU*: a Panel-VARX model with two endogenous variables for each country: domestic fiscal policy uncertainty index and domestic industrial production, while including

[16]This analysis includes 26 countries: Argentina, Belgium, Brazil, Canada, China, Colombia, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Mexico, Netherlands, Norway, Peru, Russia, Singapore, South-Africa, South Korea, Spain, Türkiye, and United Kingdom.

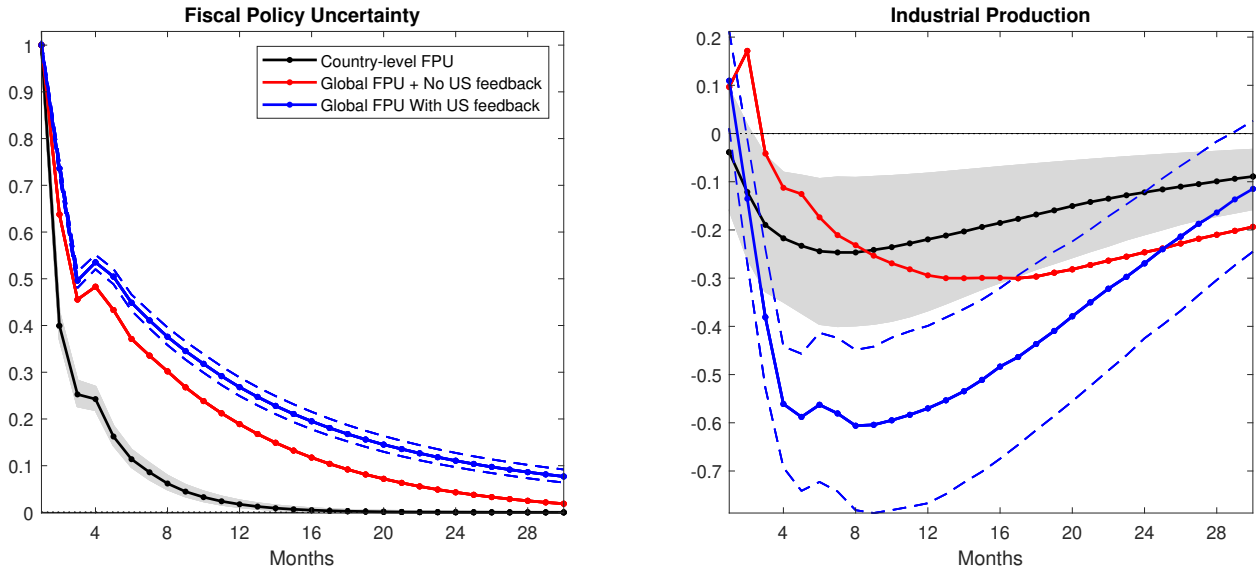
the log of the US stock index, the federal funds rate, and the US industrial production index as exogenous variables.

- Model 2 - *Global FPU*: a Panel-VARX model similar to Model 1 but replacing the domestic fiscal policy uncertainty index by global fiscal policy uncertainty index.
- Model 3 - *Global FPU and US feedback*: a Panel-VAR model including GFPU index first, followed by the US variables (log of US stock, the federal funds rate, the US IP), and then the country-specific industrial production.

The varying VAR assumptions across different models allow us to shut down potential spillover channels. A comparison of the results between Models 1 and 2 allows us to compare the extent of contractionary effects of a country-specific fiscal policy uncertainty shock to that stemming from the global fiscal policy uncertainty. Furthermore, unlike Model 3 that allows the US variables to endogenously react to the global fiscal policy uncertainty, Model 2 shuts down the potential global spillover channels, namely through trade or financial markets. In doing so, we can assess the significance of spillover effects that arise from the GFPU shocks affecting the US's financial market and real economy.

Figure 9 shows the IRFs of country-level industrial production under the three aforementioned models (right panel), as well as their corresponding shocks (left panel). Our findings on industrial production suggest that, on average, the global fiscal policy uncertainty shocks are more contractionary than country-specific fiscal policy shock. Domestic industrial production declines about 0.2 percent in response to a one standard deviation increase in country-level FPU shock. By comparison, the decline in domestic industrial production under Model 2 is larger and more persistently, with the decline reaching as much as 0.3 percent, 12 months following the shock. Lastly, we find that the contractionary effects are even larger under Model 3 when the US variables are allowed to respond to the GFPU. In this model, domestic industrial production contracts by as much as 0.6 percent within four months. The contractionary effects are shown to be persistent, with a decline in domestic industrial production at a broadly similar magnitude even after one year. Furthermore, the response of industrial production from a Panel VAR model (Model 3) is in line with the results obtained from our baseline models, corroborating our estimates.

Figure 9. *IRFs on Industrial Production: Country-level FPU vs. Global FPU*



Note: Model 1- Local FPU (Endogenous: country-FPU, country IP; Exogenous: US stock, US interest rate, US IP); Model 2- *Global FPU* (Endogenous: GFPU, country IP; Exogenous: US stock, US interest rate, US IP); Model 3- *Global FPU spillover + US feedback* (PVAR model include: GFPU, US stock, US interest rate, US IP, country IP) . Median; Dashed line: 68% intervals; Shaded area: 95% intervals.

While understanding the exact mechanism through which global feedbacks amplify the contractionary effects is beyond the scope of our paper, existing studies may offer possible explanations to shed light on the finding. One such explanation may be provided by Gambetti et al. (2023) that highlights the contractionary effects of "agreed" uncertainty. The study categorizes the economic uncertainty into two groups: (i) an "agreed" uncertainty where agents exhibit low levels of disagreements about how uncertain an event is; and (ii) a "disagreed" uncertainty where agents exhibit high levels of disagreement about the same topic. The paper finds that only the uncertainty that belongs to the first group, or "agreed uncertainty", generates large, protracted, contractionary economic effects, while "disagreed" uncertainty shows no discernible economic effects. Viewed from this angle, one can interpret the events that generate sudden increases in the global fiscal policy uncertainty, such as the US debt ceiling deadlocks, may be associated with the "agreed" uncertainty in that more agents agreeing on the ambiguity of future fiscal policy, consistent with their theoretical predictions.

5 Financial Impact of Fiscal Policy Uncertainty

In this section, we explore the financial impact of fiscal policy uncertainty using the same methodological approach as in the previous section. We also document the co-movements of the global financial variables in response to the GFPU shock.

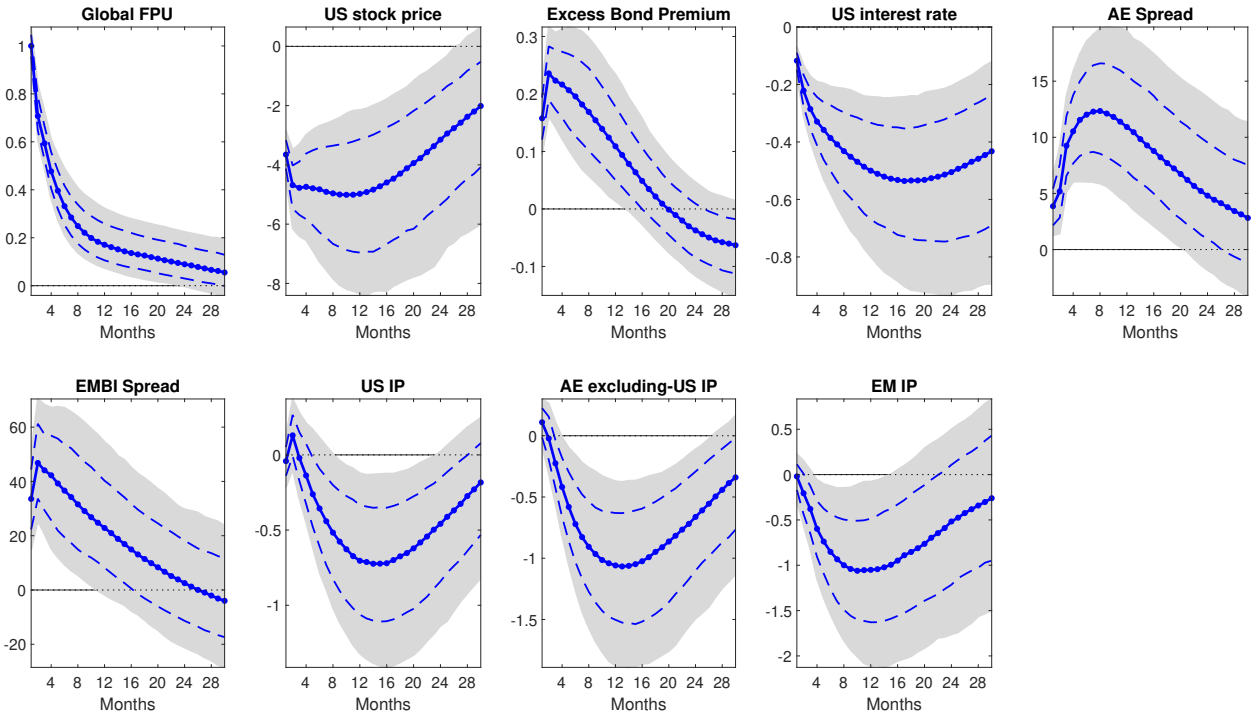
We extend the model by including sovereign bond spreads for advanced and emerging market economies as well as the excess bond premium to capture credit risks of corporate bonds. The sample is from December 1997 to April 2023, shorter than the baseline regression in the previous section, constrained by the time series span of EMBI spread.

In spite of the sample differences, our findings of tighter financial conditions following an increase in GFPU remain robust (Figure 10). If anything, the negative impact of the GFPU on industrial production for different country groups has increased in terms of the magnitude and is shown to be more persistent compared to the baseline case. In terms of the impact on financial variables, the negative impact is more pronounced for emerging markets compared to the rest. In particular, after a one standard deviation increase of GFPU, the spreads in advance economies rise gradually, reaching the peak of 12 basis points five months following the shock. The impact dissipates after a year. On the other hand, for emerging market economies, the impact is larger and more persistent: the spread measured by the EMBI spread rises substantially by 30 basis points at impact, further increasing to about 50 basis points before fading out gradually. The shock also leads to a deterioration of investor sentiment or risk appetite in the corporate bond market, measured by a sharp increase in the excess bond premium instantly following the shock.

The more pronounced response of financial variables for emerging market economies than advanced economies warrants a further analysis. The finding on asymmetric effects of financial shocks on emerging market economies compared to advanced economies is not uncommon in the literature, for example, as in Uribe and Yue (2006) and Fernández and Gulan (2015). However, the specific role played by the uncertainty in amplifying the shocks through financial variables is a field of active research (Alfaro, Bloom, and Lin, 2024).[17]

[17] Another evidence that points to the importance of financial uncertainty can be found in the following exercise: an increase in GFPU not only lowers stock prices as shown in the baseline results, but also leads to a contemporaneous and short-lived increase in stock volatility, reaching a peak in the second month following the shock (Appendix Figure 20). This suggests that the spillover from fiscal uncertainty to financial uncertainty.

Figure 10. *Impact of GFPU on Sovereign Borrowing Costs and Excess Bond Premium*



Note: December 1997 to April 2023. Figure presents the economic impact of a shock to global fiscal policy uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

While we defer the question to future research, the following exercise confirms that the global fiscal policy uncertainty can potentially exert a significant impact on the global financial conditions. We extend the seminal work by Miranda-Agrippino and Rey (2020) on global financial cycle by including our GFPU index. Specifically, we extend an otherwise identical identification of Miranda-Agrippino and Rey (2020) by adding our global fiscal policy uncertainty indicator in their VAR structure. Aside from this addition, we retain the same set of variables and use the same sample period as in the paper, running from 1990M2-2010M12. We include US monetary policy shocks directly into the VAR system and consider it as the most exogenous variable (i.e., ranked first in the VAR system), using the series constructed in Miranda-Agrippino and Ricco (2021). We place our GFPU index after the US monetary policy shock series. Otherwise, we keep a set of indicators that represent various aspects of globl financial conditions, as suggested in the original specification of Miranda-Agrippino and Rey (2020). This will allow us to separate the incremental impact of GFPU on global financial variables from the ones caused by US monetary policy shocks.

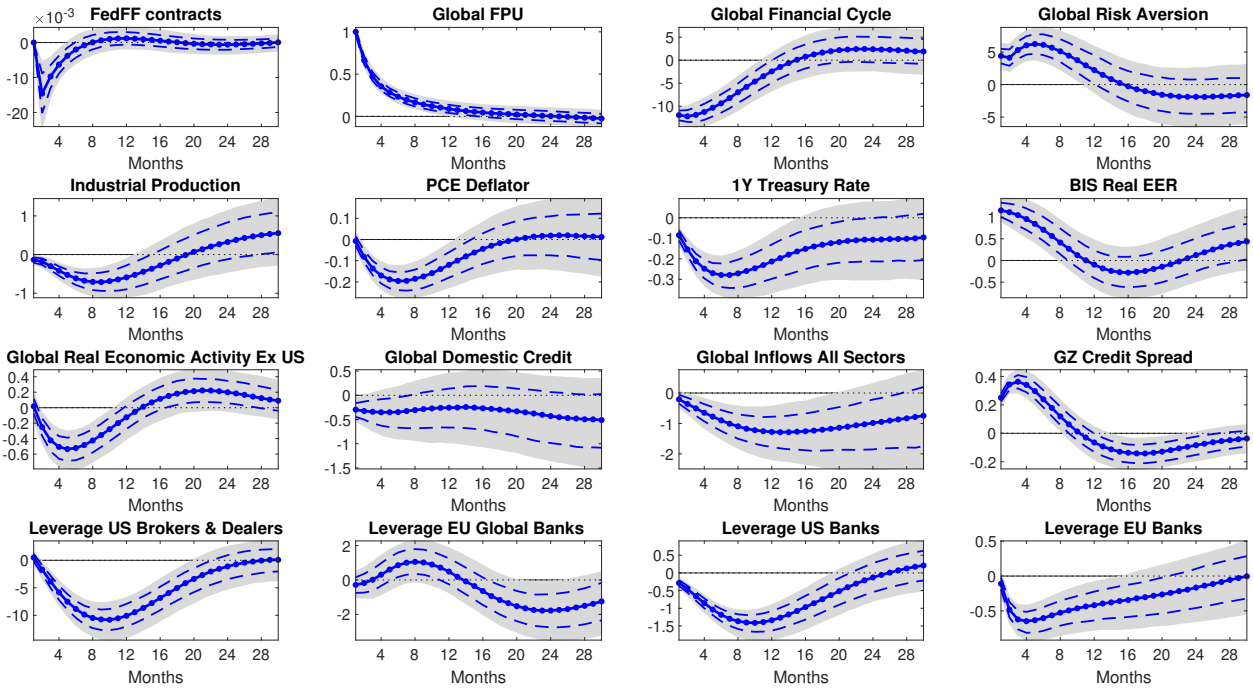
The baseline IRF results are plotted in Figure 11. Similar to the US monetary tightening shocks as documented in Miranda-Agrippino and Rey (2020), we find that a surprise increase of global fiscal policy uncertainty generates co-movements of the global financial variables: at impact, global risky asset prices fall sharply, while the global risk aversion variable jumps. Credit spreads widen, generating a sharp contraction in economic activity at the global level and deleveraging in the US and European banks. When replacing our global fiscal policy uncertainty with the US fiscal policy uncertainty as a robustness check, we find similar results. This suggests that the global and the US fiscal policy uncertainty, in addition to US monetary policy shocks, can generate the global financial cycle. The results are robust, even after controlling for the global EPU (Appendix Fig 21). This finding is consistent with the findings in a recent study by Kim (2022), suggesting the special role that the US fiscal policy plays in the global financial market movements using a deterioration of the US fiscal policy position measured by the ratio of the US budget primary surplus to public debt ratio. Compared to this study, the key difference is the aspect of the US fiscal policy that leads to a tightening of global financial conditions: instead of using a fiscal indicator to measure the health of public finances, we focus on the uncertainty component in the conduct of the US fiscal policy.

6 Conclusion and Policy Implications

In this paper, we propose a novel database of news-based indicators of fiscal policy uncertainty for 189 countries. The resulting country-level fiscal policy uncertainty indicators capture not only severe economic downturns depicting a generally elevated economic policy uncertainty, but also coincide with fiscal stress events such as the US debt ceiling episodes and the UK's mini-budget episode in 2022, often missed when using various existing economic policy uncertainty indicators. In some countries, there has been an upward trend in the fiscal policy uncertainty in recent years. While speculative, this upward trend may reflect a combination of factors that culminate in a high level of fiscal policy uncertainty, including high levels of public debt with limited fiscal space, polarized political views, and emerging spending pressures.

Our findings confirm the popular narrative that fiscal policy uncertainty adversely affects real economic activity and leads to a deterioration of financial conditions. The contractionary effects of fiscal policy uncertainty on real economic activity are similar across income groups. On the other hand, emerging market economies are more vulnerable, facing a sharper rise of

Figure 11. *Impact of GFPU on Global Financial Variables*



Note: February 1990 to December 2012. Figure shows the responses to 1 standard deviation increase in global fiscal policy uncertainty. We include into the Global VAR(1) of Miranda-Agrippino and Rey (2020) the fourth federal funds futures contracts (FedFF contracts) and the GFPU index (ranked after the FedFF contracts). Solid line: Median; Dashed line: 68% intervals; Shaded area: 95% intervals.

sovereign borrowing costs in response to an increase in the global fiscal poly uncertainty, compared to advanced economies. Our findings also suggest substantial cross-country spillover effects of fiscal policy uncertainty, with the adverse effects amplified when allowing for the global trade and financial channels. Specifically, our findings suggest that key fiscal policy uncertainty events that attract global attention could be an important driver of the global financial cycle, even after controlling for US monetary policy shocks.

There are several fruitful avenues for future research. Given the sharp movements in the fiscal policy uncertainty indicators and that the spikes of the fiscal policy uncertainty indicators tend to coincide with major stress events, an in-depth analysis on a possible non-linear transmission of the fiscal policy uncertainty shock (for instance, high versus low fiscal policy uncertainty periods) would be an important extension of the current analysis. Similarly, a better understanding of the factors that weaken or strengthen the adverse impact of fiscal policy uncertainty is an important next step. Country-level institutional factors (such as the rule of law and the quality of governance)

may contribute, while the macroeconomic environment (for instance, high versus low inflation periods, high versus low unemployment) may also affect the strength of the transmission. A similar extension could be conducted to better understand whether the global spillover effects of US monetary policy depends on the state of global fiscal policy uncertainty.

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Appendices

A List of countries

1. Afghanistan
2. Albania
3. Algeria
4. Andorra
5. Angola
6. Antigua and Barbuda
7. Argentina
8. Armenia
9. Australia
10. Austria
11. Azerbaijan
12. Bahamas
13. Bahrain
14. Bangladesh
15. Barbados
16. Belarus
17. Belgium
18. Belize
19. Benin
20. Bhutan
21. Bolivia
22. Bosnia and Herzegovina
23. Botswana
24. Brazil
25. Brunei
26. Bulgaria
27. Burkina Faso
28. Burundi
29. Cambodia
30. Cameroon
31. Canada
32. Cape Verde
33. Central African Republic
34. Chad
35. Chile
36. China
37. Colombia
38. Comoros
39. Congo Republic
40. Costa Rica
41. Cote d'Ivoire
42. Croatia
43. Cyprus
44. Czech Republic
45. Denmark
46. Democratic Republic of the Congo
47. Djibouti
48. Dominica
49. Dominican Republic
50. Ecuador
51. Egypt
52. El Salvador
53. Equatorial Guinea
54. Eritrea
55. Eswatini
56. Estonia
57. Ethiopia
58. Fiji
59. Finland
60. France
61. Gabon
62. Gambia
63. Georgia
64. Germany
65. Ghana
66. Greece
67. Grenada
68. Guatemala
69. Guinea
70. Guinea-Bissau
71. Guyana
72. Haiti

73. Honduras
74. Hungary
75. Iceland
76. India
77. Indonesia
78. Iran
79. Iraq
80. Ireland
81. Israel
82. Italy
83. Jamaica
84. Japan
85. Jordan
86. Kazakhstan
87. Kenya
88. Kiribati
89. Kosovo
90. Kuwait
91. Kyrgyzstan
92. Laos
93. Latvia
94. Lebanon
95. Lesotho
96. Liberia
97. Libya
98. Lithuania
99. Luxembourg
100. Madagascar
101. Malawi
102. Malaysia
103. Maldives
104. Mali
105. Malta
106. Marshall Islands
107. Mauritania
108. Mauritius
109. Mexico
110. Micronesia
111. Moldova
112. Mongolia
113. Montenegro
114. Morocco
115. Mozambique
116. Myanmar
117. Namibia
118. Nauru
119. Nepal
120. Netherlands
121. New Zealand
122. Nicaragua
123. Niger
124. Nigeria
125. Norway
126. Oman
127. Pakistan
128. Palau
129. Panama
130. Papua New Guinea
131. Paraguay
132. Peru
133. Philippines
134. Poland
135. Portugal
136. Qatar
137. Romania
138. Russia
139. Rwanda
140. Samoa
141. San Marino
142. Sao Tome and Principe
143. Saudi Arabia
144. Senegal
145. Serbia
146. Seychelles
147. Sierra Leone
148. Singapore
149. Slovakia
150. Slovenia
151. Solomon Islands
152. Somalia
153. South Africa
154. South Korea
155. South Sudan
156. Spain
157. Sri Lanka
158. St. Kitts and Nevis
159. Saint Lucia
160. St. Vincent and the Grenadines
161. Sudan

162. Suriname
163. Sweden
164. Switzerland
165. Syria
166. Tajikistan
167. Tanzania
168. Thailand
169. Timor-Leste
170. Togo
171. Tonga
172. Trinidad and Tobago
173. Tunisia
174. Turkey
175. Turkmenistan
176. Tuvalu
177. Uganda
178. Ukraine
179. United Arab Emirates
180. United Kingdom
181. United States
182. Uruguay
183. Uzbekistan
184. Vanuatu
185. Venezuela
186. Vietnam
187. Yemen
188. Zambia
189. Zimbabwe

B Data Description

Table 4. *Data Description*

Variable	Source
Global FPU index	Factiva, see Section 2
US Stock Price Index- S&P's 500 Composite	Haver Analytics
US Federal Funds Effective Rate	Haver Analytics
US Shadow Short Rate	Haver Analytics
US industrial production	Fed Dallas's Global Economic Indicators
Other countries' industrial production	Haver Analytics
Countries' primary balance-to-GDP (quarterly)	Haver Analytics
Countries' debt-to-GDP (quarterly)	Haver Analytics
Advanced economies (ex-US) industrial production	Fed Dallas's Global Economic Indicators
Emerging economies industrial production	Fed Dallas's Global Economic Indicators
US VIX	Haver Analytics
US VXO	Haver Analytics
US Excess Bond Premium	Gilchrist and Zakrajšek (2012) and FEDS
AE (ex-US) Long term interest rate	Fed Dallas's Global Economic Indicators
Emerging Market Bond Index (EMBI) Spread	J.P. Morgan

In addition, for data relating to the analysis on global financial cycle in Section 5, we use the same dataset as in Miranda-Agrippino and Rey (2020) for their global VAR exercise.

C News Sources used in constructing FPU

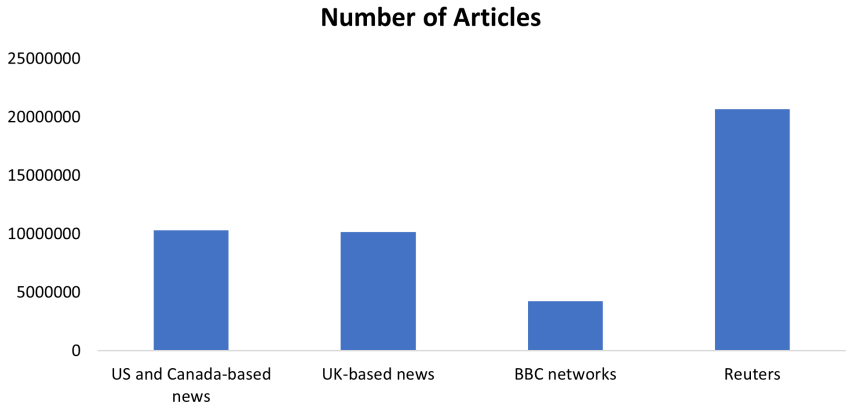
Chicago Tribune Online	The Dallas Morning News
The San Francisco Chronicle	USA Today Online
Wall Street Journal	The Washington Post
ABC News: Good Morning America	ABC News: Nightline
ABC News: Special Report	ABC News: This Week
ABC News: World News Saturday	ABC News: World News Sunday
ABC News: World News Tonight	ABC.AZ Daily News
BBC Monitoring Africa	BBC Monitoring Americas
BBC Monitoring Asia Pacific	BBC Monitoring Caucasus
BBC Monitoring Central Asia	BBC Monitoring Europe
BBC Monitoring Former Soviet Union	BBC Monitoring Media
BBC Monitoring Middle East	BBC Monitoring Newsfile
BBC Monitoring South Asia	BBC Monitoring Ukraine & Baltics
CBS News: 60 Minutes	NBC News: Meet the Press
CBS News: CBS This Morning	CBS News: Evening News
CBS News: Evening News - Saturday	CBS News: Evening News - Sunday
CBS News: Face the Nation	The Daily Telegraph
NBC News: Nightly News	NBC News: Today
The Times	The Globe and Mail
The Guardian	The Economist
Telegraph Magazine	The Sunday Telegraph
Reuters	

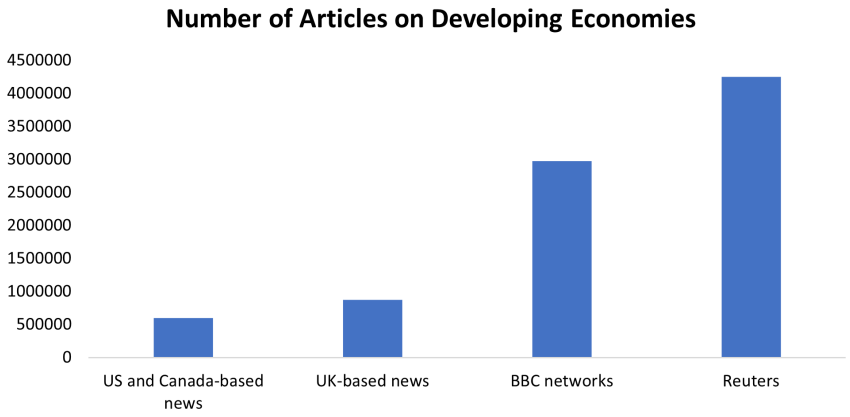
Table 5. *This table lists the 43 Factiva news sources used in constructing FPU.*

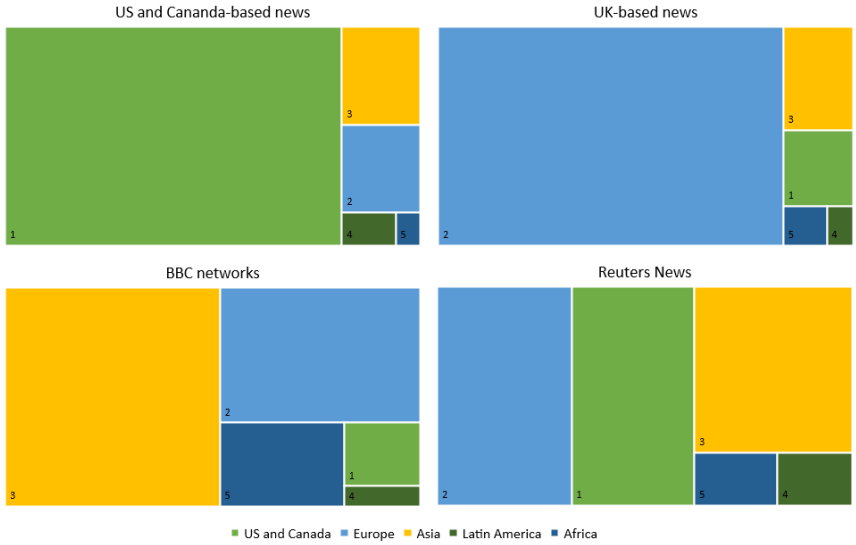
D Search queries

(national assembly or parliament or congress* or government or regulat* or policy or policies or legislat* or minister or ministry) and (uncertain* or ambiguous or precarious or unpredictable or undecided or undetermined or dubious or unsettled or unresolved or risk* or doubt or doubtful or volatilit*) and (taxes or taxation or taxed or tax or government spending or federal spending or public spending or government expenditure or federal expenditure or public expenditure or defense spending or military spending or pension reform* or pension expenditure or healthcare expenditure or medical care expenditure or social expenditure or social safety net* or public investment or social protection subsidies or subsidy or entitlement spending or social security or federal debt or government debt or national debt or public debt or sovereign debt or debt burden or debt repay* or debt sustainability or government borrowing or sovereign borrowing or debt consolidation or sovereign default or debt default or debt restructure or foreign debt or external debt or government bond or sovereign bond or sovereign yield or public sector or public finance or supplementary budget or government deficit* or national deficit or federal deficit or fiscal policy or budget deficit* or budget gap* or national budget or government budget or fiscal stimulus or balanced budget or balance the budget) and (economic or economy) and (hlp=(country name))

E Number of Articles and Geographical Coverage by News Outlets







F Prompt for Large-Language Model to Generate Fiscal Policy Uncertainty Indicator

For the country-specific fiscal policy uncertainty: The following prompts are run to generate the tax policy uncertainty, using the archive of Financial Times articles from January 1985 to July 2023. We used the open-source LLM developed by Meta AI. A similar prompt is run for government debt uncertainty and government spending/expenditure uncertainty.

For any news article,

- Question 1: Is [country name] mentioned in the news article? Answer ”Yes” or ”No”.
- Question 2: If [country name] is mentioned in the news article, is [country name]’s tax policy mentioned in the article? Answer ”Yes” or ”No”.
- Question 3: If [country name]’s tax policy is mentioned in the article, do you think this news reflects that the tax policy in [country name] or its effects in [country name] are more uncertain? Write your answer as ”Yes, more uncertain” or ”No”.
- Question 4: Provide explanation for your answer in Q3. Write your answer in natural language.

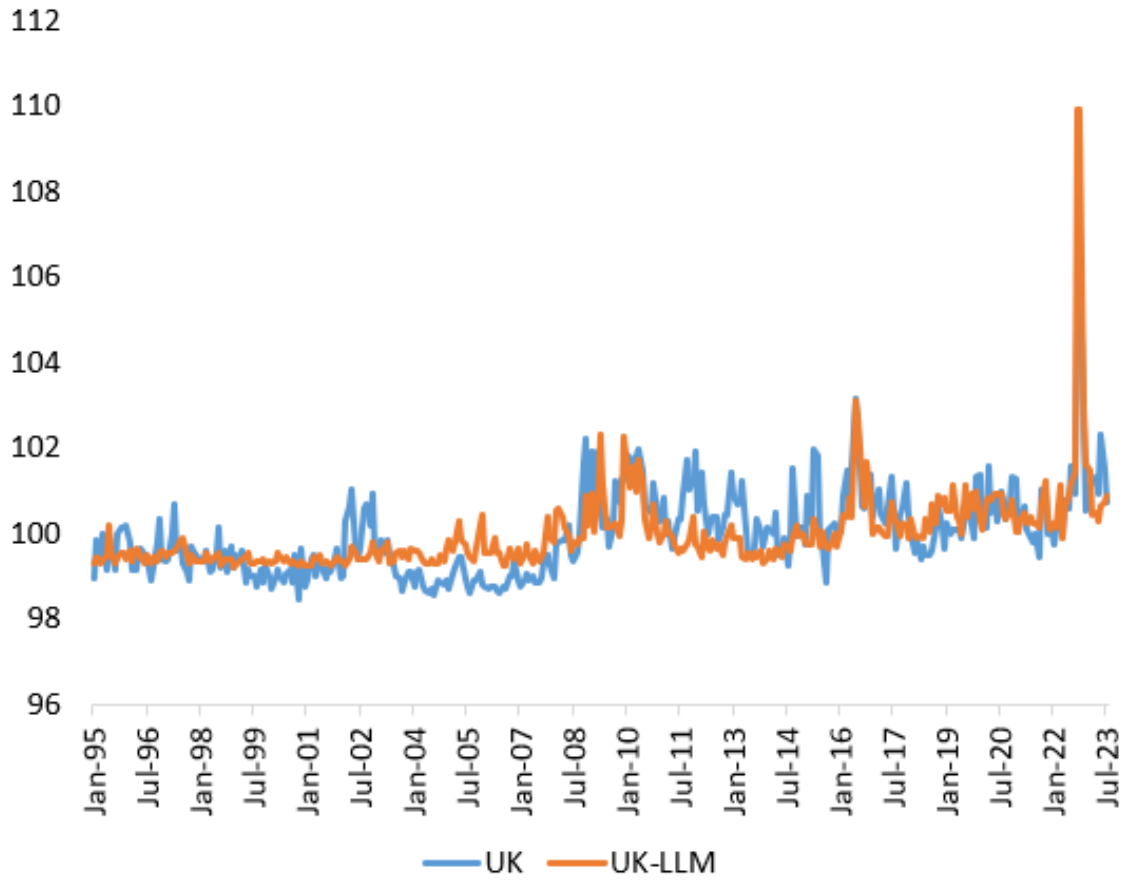
We then obtain a measure of tax uncertainty by dividing the number of articles on tax uncertainty (counts in Question 3) by number of articles on the country (counts in Question 1). We do similarly for government expenditure and government debt.

Then to calculate the fiscal policy uncertaity index, we add the number of counts on tax uncertainty, government spending/expenditure uncertainty, and government debt uncertainty, which are then divided by the number of articles mentioning the country (in Question 12).

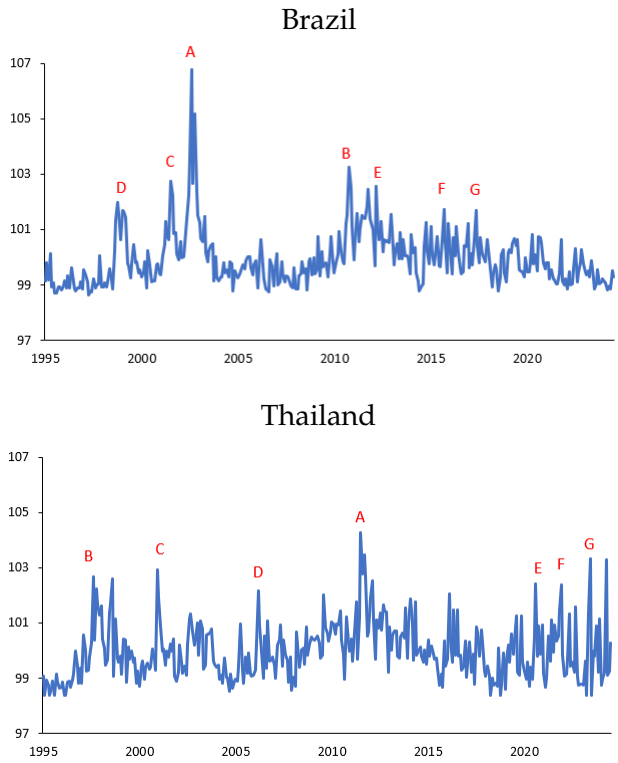
For the global fiscal policy uncertainty: we exclude the country name from the prompt, so the questions include only the last three questions.

F.1 Prompt for Large-Language Model to Generate Fiscal Policy Uncertainty Indicator: United Kingdom

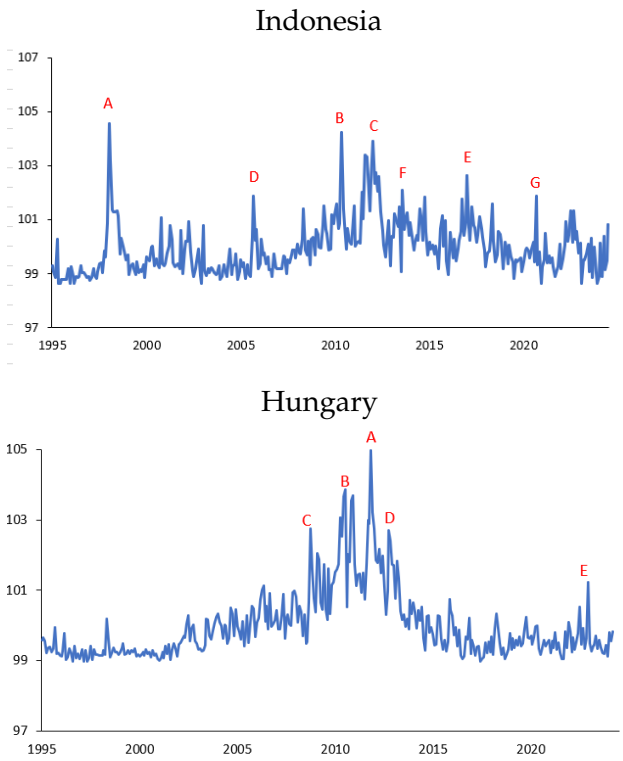
Figure 12. *Fiscal Policy Uncertainty: UK*



G Country-Level FPU examples with narratives



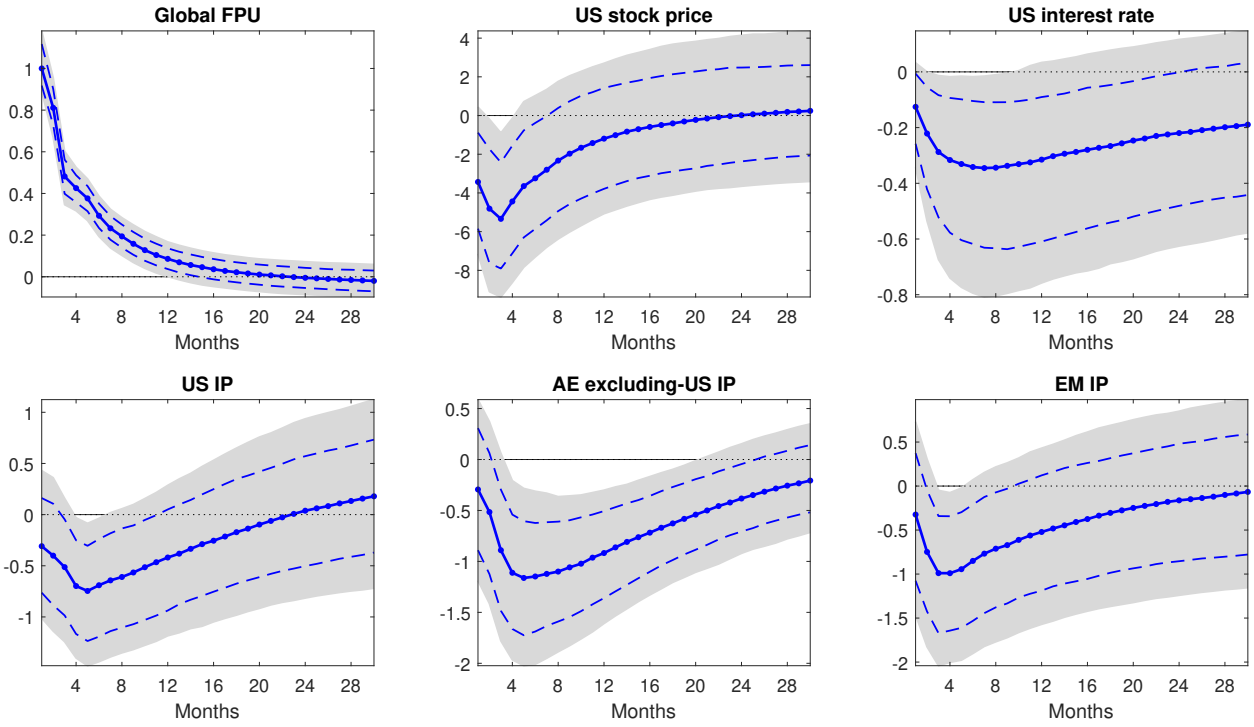
Notes: **Brazil**: A. July-October 2002. Fears of sovereign debt crisis, October election. B. October 2010. General election. C. July 2001. Concerns about Argentina's default. D. January-February 1999. Samba effect, Brazil's financial crisis. E. October 2011. Coalition at risk amid persistent inflation and austerity measures. F. September 2015. President Dilma vetoes a bill to limit fiscal slippage. G. May 2017. Protests urging President Temer to step down.
Thailand: A. July-September 2011. Thai flood, high living costs. "Flood, uncertainty dent Thai consumer confidence (Reuters, September 8, 2011)" B. July-August 1997. Asian Financial Crisis. C. December 2000. Ahead of 2001 election, privatisation stalemate. D. March 2006. Political impasse due to PM Thaksin's scandal. Election called for April. E. August 2020. Mass protests on monarchy reform. F. December 2021. Omicron variants, Thai-baht loss. G. June 2023. Political uncertainty following the election.



Notes: **Indonesia**: A. January-February 1998. Asian Financial Crisis. B. May 2010. Sovereign borrowing costs surge due to Eurozone debt crisis, change of finance minister. C. August 2011-January 2012. Sovereign borrowing costs surge due to Eurozone debt crisis. D. September 2005. Government plans to sharply cut fuel subsidies. E. January 2017. JP Morgan's downgrade of Indonesia's equity market after an outflow of funds after the US 2016 election. F. August 2013. Bond, currency, stock sell-off. G. September 2020. Demand for government bond falling, concerns over monetary financing for public borrowing.
Hungary: A. November 2011. Moody's cut Hungary's rating to junk. B. June-December 2010. Government's reluctance for an IMF program. C. October 2008. IMF program. D. January 2012. Fitch downgrade to junk. E. December 2022. Talks on EU funds and support for Ukraine.

H Sign Restrictions with Narrative and Bounded Share

Figure 13. *Economic impact of GFPU: Sign restriction with narrative and bounded share*

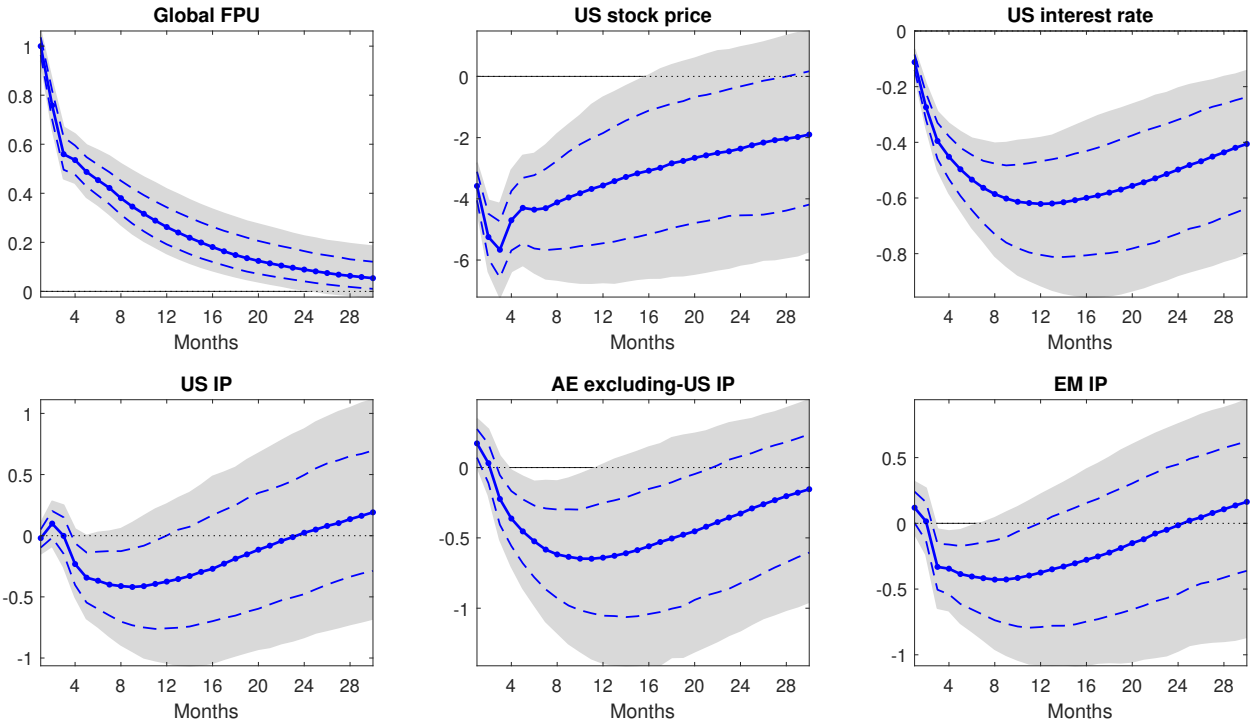


Note: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal policy uncertainty index. The solid line is the median response and the dashed lines are the 68 percent credible intervals.

I Extensions

I.0.1 Pre-COVID sample

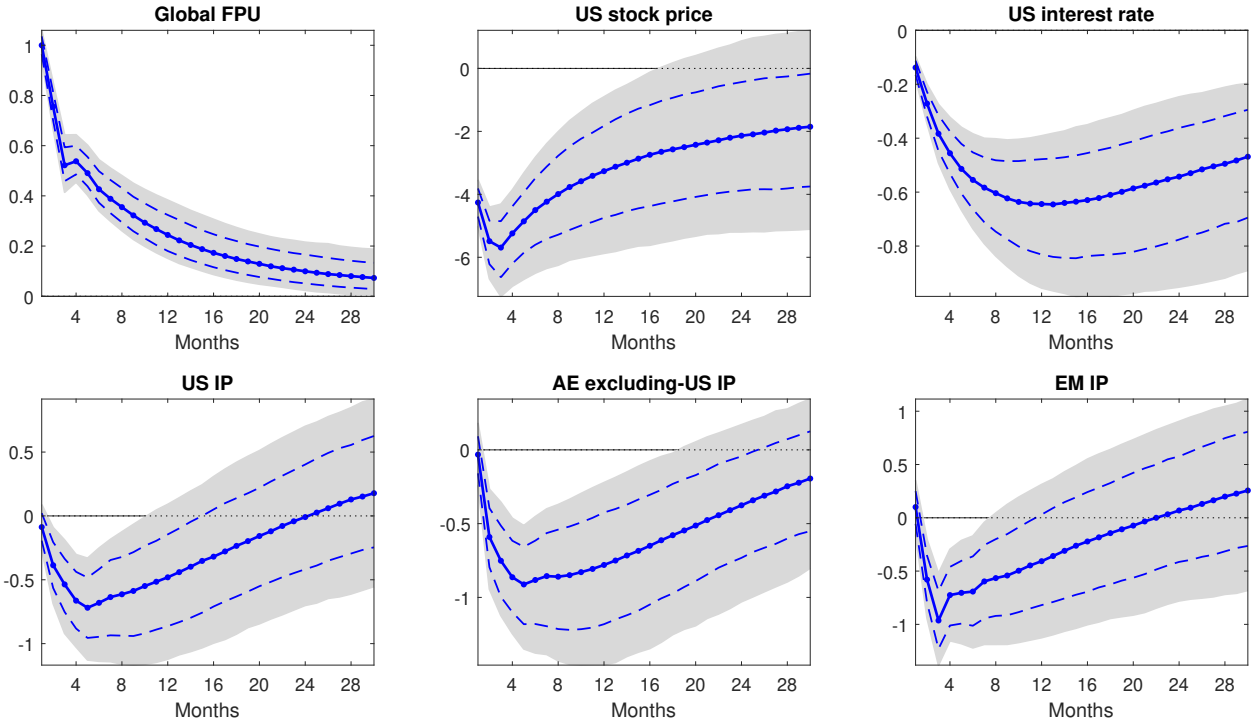
Figure 14. *Economic impact of GFPU: Pre-Covid Sample*



Note: January 1987 to December 2019. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

I.0.2 Full sample without special treatment for the COVID-related extreme observations

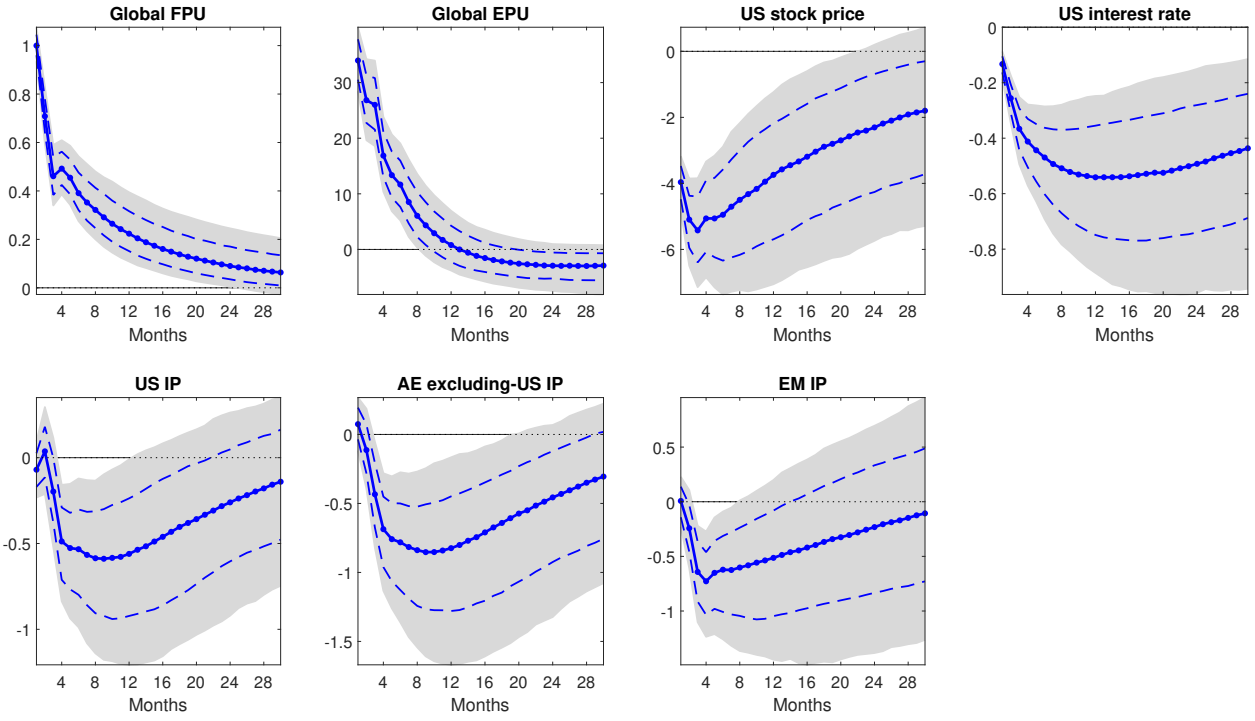
Figure 15. *Economic impact of GFPU: Full Sample without special treatment for COVID*



Note: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

I.0.3 Controlling for the Global Economic Policy Uncertainty

Figure 16. *Economic impact of GFPU: Controlling for GEPU*

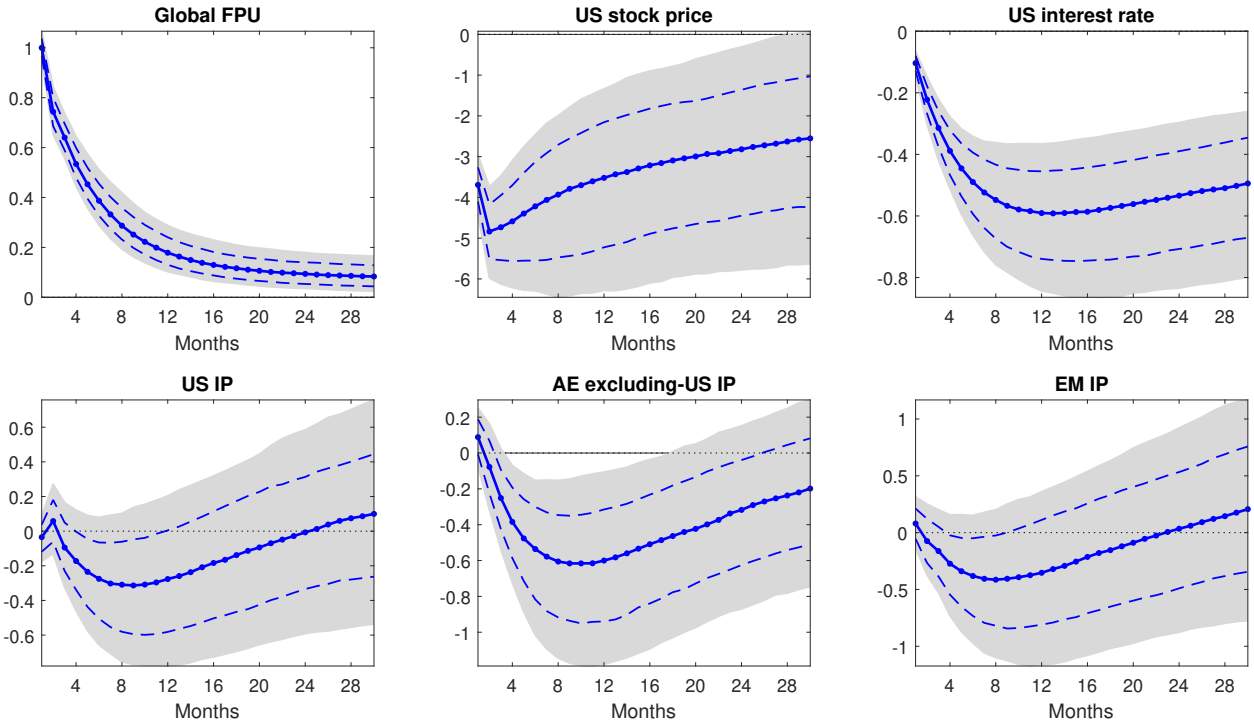


Note: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

J Robustness Checks with Different Lag Structure

J.0.1 Using two lags

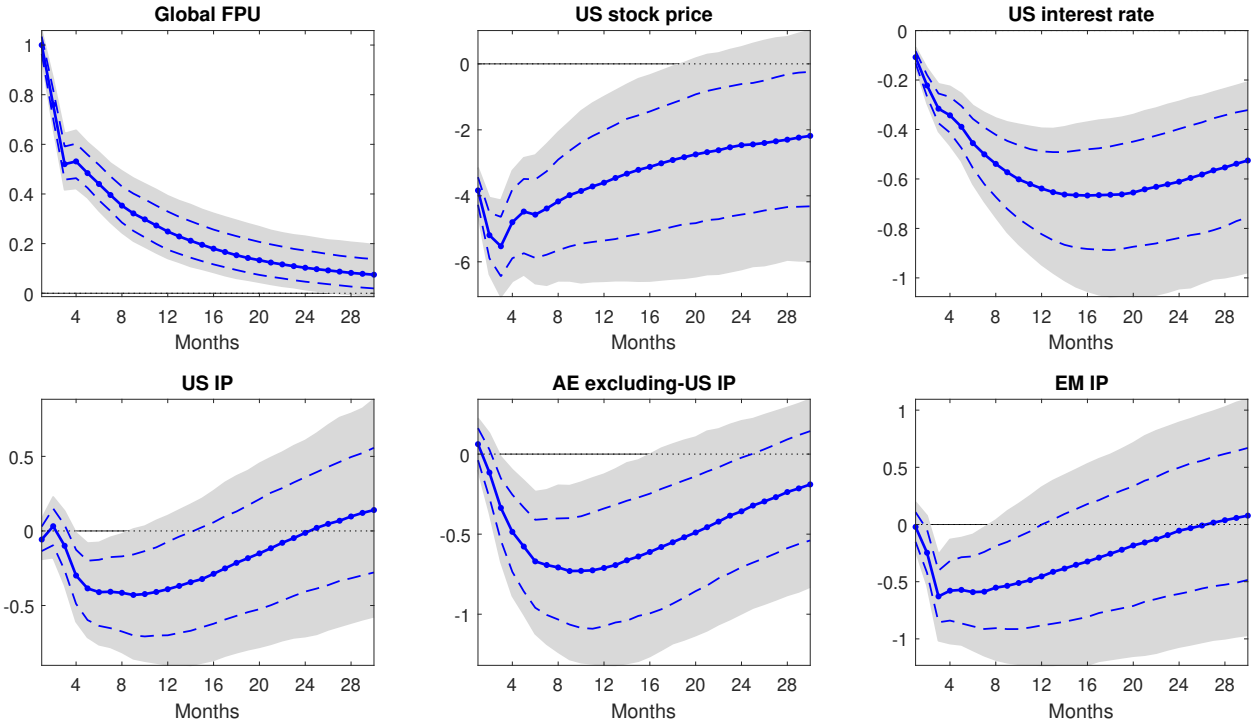
Figure 17. *Economic impact of GFPU: VAR with two lags*



Note: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

J.0.2 Using four lags

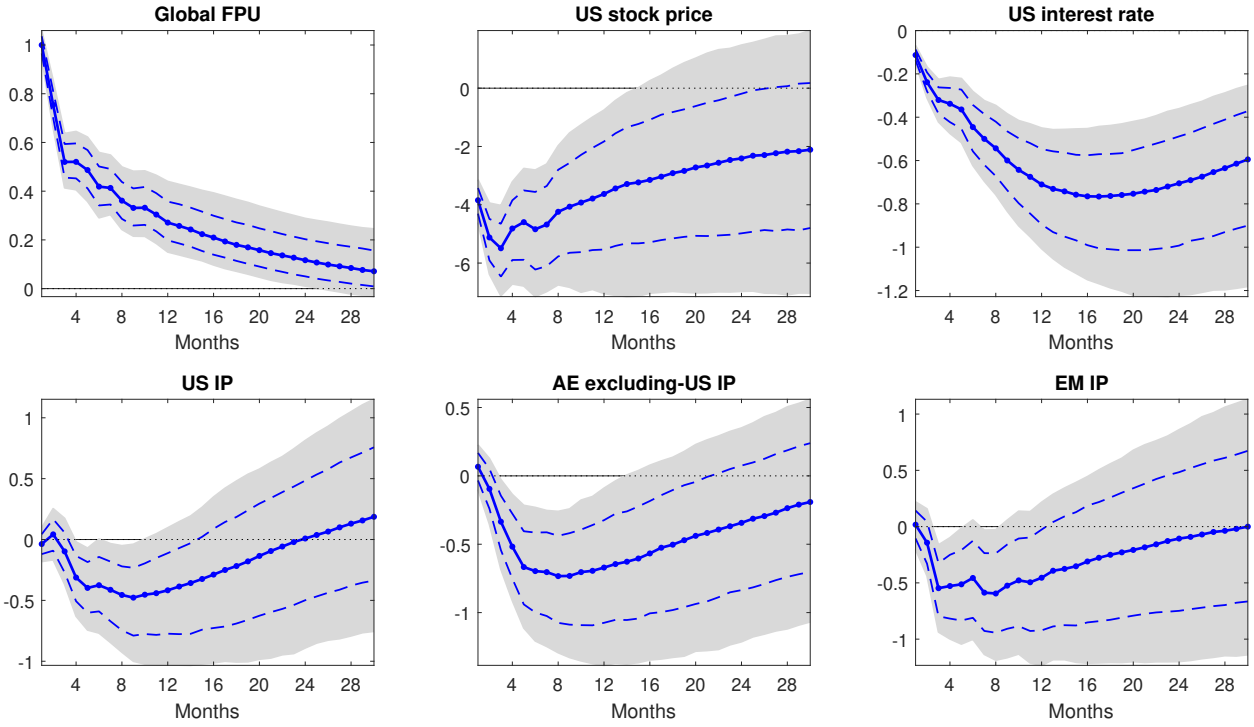
Figure 18. *Economic impact of GFPU: VAR with four lags*



Note: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

J.0.3 Using six lags

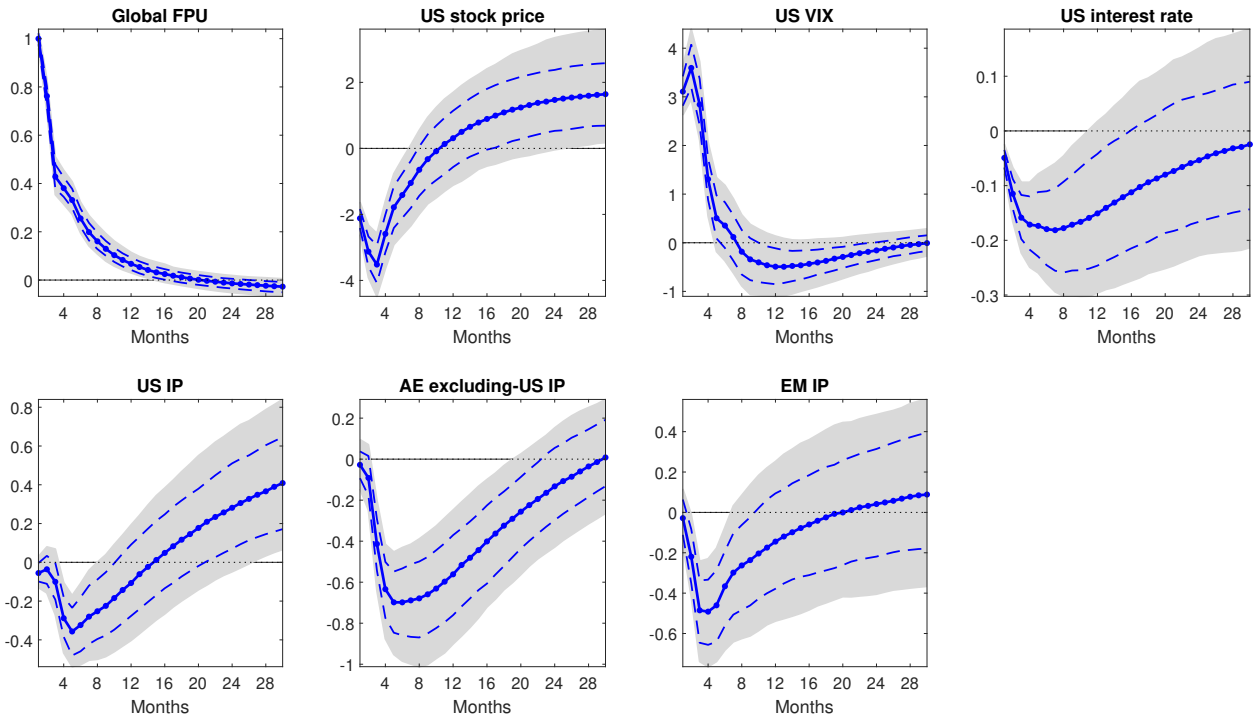
Figure 19. *Economic impact of GFPU: VAR with six lags*



Notes: January 1987 to April 2023. Figure presents the economic impact of a shock to global fiscal uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

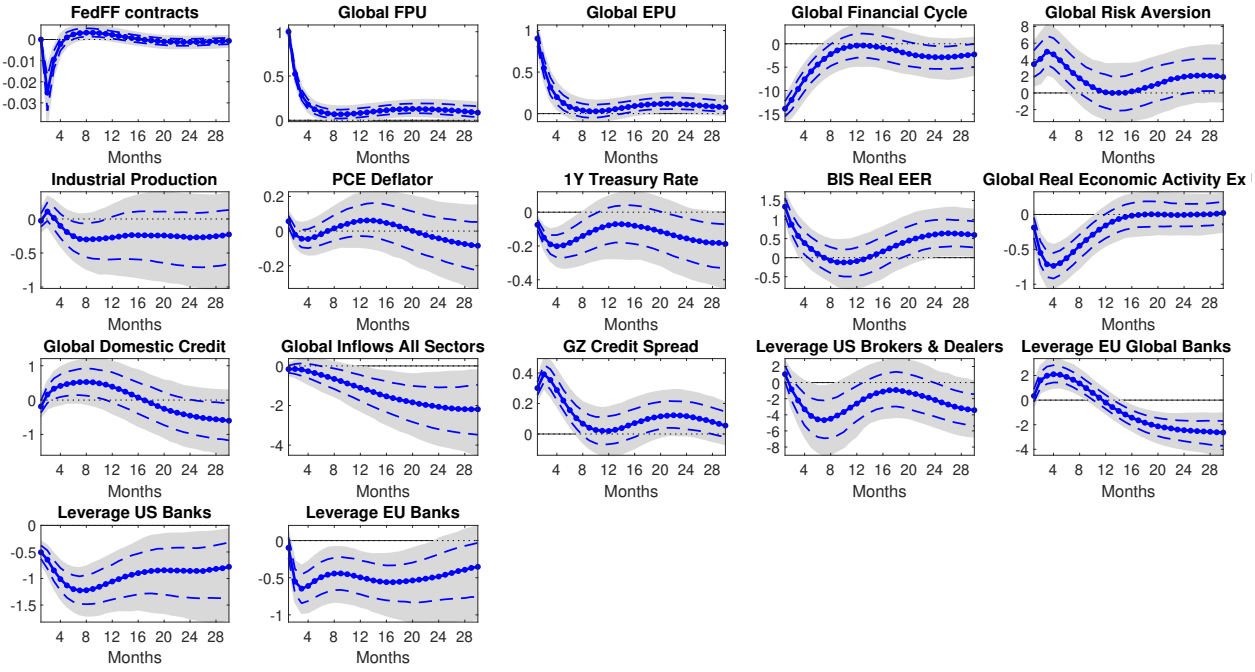
K Financial Markets

Figure 20. *Impact of GFPU: Controlling for financial risks - VIX*



Notes: Figure presents the economic impact of a shock to global fiscal policy uncertainty index. Solid line: Median; Dashed line: 68% intervals; Shaded area: 90% intervals.

Figure 21. *Impact of GFPU on Global Financial Variables: Controlling for GEPU*



Note: February 1990 to December 2010. Figure shows the responses to 1 standard deviation increase in global fiscal policy uncertainty, while controlling for the global economic policy uncertainty. We include into the Global VAR(1) of Miranda-Agrippino and Rey (2020) the fourth federal funds futures contracts (FedFF contracts), the GFPU index, and the GEPU index (with this ordering). Solid line: Median; Dashed line: 68% intervals; Shaded area: 95% intervals.

PUBLICATIONS