Economic policy uncertainty and cross-border bank flows prior to and during the pandemic†

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Abstract

As a result of the global COVID-19 pandemic, we aim to examine the impact of infectious disease outbreaks and related uncertainty on the growth of cross-border bank flows in a sample of 46 countries over the period 2005—2020. Using panel regressions with quarterly country-level data, we argue that the US infectious disease equity market volatility (EMV) tracker appears to be one of the most important global push factors that drives exposures of bank flows. We also find that global economic policy uncertainty (GEPU_current and GEPU_ppp) indexes are associated with a significant reduction in the growth of cross-border bank flows. We provide novel empirical evidence that the global economic policy uncertainty (GEPU_current) index has risen more than twice during the period with the COVID-19 outbreak compared to the prior pandemic times. Focusing on the European Union (EU) member countries, we show that the Greek economic policy uncertainty (EPU) index, Greek banking uncertainty (EPUB) index, and Greek monetary policy uncertainty (EPUM) index drive the largest reduction in bank flows emphasizing the importance of surveillance of economic conditions in Greece. This is compounded by evidence that US global push factors, namely a variety of US economic policy uncertainty (EPU) indexes are also significantly connected with exposures of bank flows. We further discuss the implications of COVID-19 restrictions imposed in different countries and show that Oxford COVID-19 government response indexes exhibit a similar effect, leading to a reduction in the growth of cross-border bank flows.

(242 words)

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Keywords: COVID-19 pandemic outbreak, US infectious disease equity market volatility (EMV) tracker, global economic policy uncertainty (GEPU_current and GEPU_ppp) indexes, Oxford COVID-19 government response indexes.

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1. Introduction

The COVID-19 pandemic outbreak and related unprecedented uncertainty have adversely impacted the global banking system. The spread of coronavirus has resulted in the worst economic recession of the world economy since the Great Depression. The pandemic has affected every aspect of the world economy from international financial intermediaries and supply networks to a high rate of unemployment and corporate bankruptcy (Al-Thaqeb et al., 2020; Beck 2020; Beirne et al., 2020; ElFayoumi and Hengge 2021; Mann 2020; Ozili 2021).

We define uncertainty as a risk factor in which state regulations and economic policies across different countries are undetermined and unclear in the nearest period of time (Al-Thaqeb and Algharabali 2019; Al-Thaqeb, Algharabali and Alabdulghafour 2020; Baker et al., 2016; Danisman et al, 2020, 2021; Ng et al., 2020). This factor may cause domestic households and corporate firms to behave more conservatively and postpone expenditures and other investment decisions due to a high level of uncertainty in the economies. Economic policy uncertainty (EPU) also damages the cost of funding (Colak et al., 2017; Jens 2017; Kelly et al., 2016; Pastor and Veronesi, 2012, 2013).

The paper examines the negative impact of infectious disease outbreaks and economic policy uncertainty (EPU) indexes on the growth of cross-border bank flows prior to and during the pandemic using a sample of 46 countries around the world. We aim to concentrate on the main determinants of cross-border bank flows, measured using BIS data, because this type of capital flows is at the forefront of the economic turmoil and uncertainty caused by the COVID-19 pandemic outbreak.[1] Banks could appear to be the main loop through which a variety of economic policy uncertainty (EPU) is disseminated to the real economy of different countries, especially during the COVID-19 outbreak (Beck 2020; Bruno and Shin, 2015; Cecchetti and Schoenholtz 2020; Cerutti 2015; Choi and Furceri 2019; Correa et al., 2021; OECD 2021; OECD Economic Outlook, 2021; Phan et al., 2021). This can be exacerbated even more in the Euro Area where corporate funding is increasingly dependent on financial intermediaries (Cerutti et al., 2014, 2017; Cerutti and Osorio-Buitron 2020; Kaya 2018).

Using panel regressions with quarterly country-level data, we find that the US infectious disease equity market volatility (EMV) tracker appears to be significant and leads to a substantial reduction in bank flows in a sample of 46 countries over the period 2005—2020. Our empirical results have important economic interpretations. If the US infectious disease equity market volatility (EMV) tracker increases by 10% in a given year, the countries receive on average 0.386 % less cross-border bank flows. Moving from the 25th to the 75th percentile on the US infectious disease equity market volatility (EMV) tracker reduces the growth of cross-border bank flows by about 0.965–2.895%, respectively. Therefore, the negative impact of infectious disease outbreaks on cross-border bank flows is not only statistically significant, but it is also economically meaningful. This highlights that the most urgent uncertainties during infectious disease outbreaks are connected to the public health sector and restraint of the spread of the virus because in the long term this might help countries to overcome economic recession.

Previous research documents that high economic policy uncertainty (EPU) adversely affects the global banking system through the enlargement of nonperforming credits, the decline in credit supply, and subsequent credit re-pricing, causing a decrease in the overall bank performance (Ashraf and Shen 2019; Bordo et al., 2016; Caglayan and Xu 2019; Chi and Li 2017; Demir and Danisman 2021; Gilchrist et al., 2014; Gissler et al., 2016; Hammoudeh and McAleer 2015; He and Niu 2018; Hu and Gong 2018; Lee et al., 2017; Ozili 2021; Phan et al., 2021). More specifically, this paper contributes to a growing number of studies that examine the link between economic policy uncertainty (EPU) and capital flow dynamics

[1] Growth of cross-border bank flows is measured using adjusted BIS Locational Cross-Border Claims on Banks data series.

(Beirne et al., 2020; Belke and Volz 2018, 2019; Choi and Furceri 2019; Gauvin et al., 2014; Gourio et al., 2015; Julio and Yook, 2016). Unlike previous studies, our results are more nuanced and include the period of the COVID-19 pandemic outbreak.

We further argue that global economic policy uncertainty (GEPU_current and GEPU_ppp) indexes have a significant negative association with the growth of cross-border bank flows. Additionally, we find that the global economic policy uncertainty (GEPU_current) index has increased more than twice during the period with the COVID-19 outbreak compared to the prior pandemic times. This confirms that the Covid-19 pandemic triggers a huge surge in different dimensions of uncertainty about the global future e.g., economic uncertainty, non-economic uncertainty, and policy-related uncertainty. Therefore, this is vitally important to explore the negative effect of different dimensions of economic policy uncertainty (EPU) on bank flows because this might help us to be more prepared for recent challenges and risks brought by the pandemic.

The empirical results show that a variety of US economic policy uncertainty (EPU) indexes and Greek economic policy uncertainty (EPU) indexes are significantly connected to the exposures of bank flows dynamics.[2] The latter finding is in line with the dominant role of European banks in mediating cross-border lending, comprising dollar-denominated loans (Cerutti et al., 2014, 2017; Cerutti and Osorio-Buitron 2020).

With regard to Euro Area, we provide evidence that the Greek economic policy uncertainty (EPU) index, Greek banking uncertainty (EPUB) index, and Greek monetary policy uncertainty (EPUM) index remain the main determinants of cross-border bank flows. This reveals that surveillance of economic policy uncertainty (EPU) in Greece is essential for the financial stability of the whole European Union (EU). Furthermore, we corroborate previous empirical evidence that US global push factors, namely US economic policy uncertainty (EPU) index (EPU), US economic policy uncertainty (EPU): sovereign debt index, and US economic policy uncertainty (EPU): financial regulation index are also associated with a significant reduction in the growth of cross-border bank flows.

We further contribute to measure the impact of COVID-19 government restriction measures on bank flows dynamics.[3] We argue that a variety of Oxford COVID-19 government response indexes (lockdown stringency index, containment health index, and COVID-19 government response index) show a similar effect causing a constrain in the growth of cross-border bank flows.

Taken together, our results suggest that economic policy uncertainty (EPU) is an economically important determinant of cross-border bank flows and this raises the need for innovation to address its negative effects. The paper provides novel empirical evidence and suggests insights for policymakers, financial analysts, researchers, and investors, aimed at better understanding and design of workable strategies to tackle different dimensions of economic policy uncertainty (EPU), which was reinforced even more by the COVID-19 pandemic outbreak.

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[2] Economic Policy Uncertainty (EPU) Indexes are taken from the Economic Policy Uncertainty Website. Available at: https://www.policyuncertainty.com/index.html. Therefore, we employ the latest data to measure the effect of economic policy uncertainty on the growth of cross-border bank flows.

[3] The lockdown restrictions and social distancing measures are public health policies and measures implemented during the COVID-19 pandemic, all of these may raise health-related uncertainty connected with the expectations about the end of lockdown, progress in finding reliable vaccines, speed of vaccination campaign, the effectiveness of the COVID-19 vaccines against new variants and strengthening the capacity of the health sector to withstand potential future infectious disease outbreaks.

2. Literature review

At the end of 2019, the world faced a new dangerous infectious disease called coronavirus (COVID-19), which has originated in the Chinese city Wuhan (China) and quickly spread to other countries (Al-Thaqeb et al., 2020). The COVID-19 pandemic outbreak affected not only the healthcare and public health sector, but also the global economy and financial stability, finishing an eleven-year “bull market” trend in the financial markets. The world had not experienced anything like this pandemic outbreak since the 1918 "Spanish Flu" pandemic, the impacts of which have been inferred by its uncertainty (Al-Thaqeb et al., 2020; Baker et al., 2020a, 2020b; Beach et al., 2020).

2.1 Economic policy uncertainty (EPU) as a risk factor

This section provides an overview of the literature on economic policy uncertainty (EPU) as an important risk factor of the global economy. Economic policy uncertainty (EPU) can be determined as unexpected changes that impact the global economy and could cause transformation in government laws, policies and regulations. In particular, it shows the swings in the economy due to lack of predictability in tax and fiscal policy, public policy, macroeconomic and monetary policies, regulatory instruments, etc. (Abel, 1983; Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020; Baker et al., 2016; Danisman et al., 2021; Ng et al., 2020). The uncertainty is usually caused and amplified by pandemics, global financial crises e.g., 2008, or even wars (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb, et al., 2020). Balcilar, Gupta, and Segnon (2016) find that a high level of economic policy uncertainty happens at times of downturn, while low uncertainty happens at times of rapid economic expansion (Bloom, 2014).

The lack of predictability in the financial and economic decision-making under greater uncertainty (EPU) could cause the delay in important investment decisions (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020; Chu and Fang, 2020; Baker et al., 2016; Bloom, 2009, 2014; Caggiano, et al., 2017; Gulen and Ion, 2016; Kahle and Stulz, 2013). Therefore, a high level of uncertainty triggers an adverse, long-lasting impact on the total level of capital flows as well as economic growth and development in the international dimension (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb, et al., 2020; Barrero, et al., 2017; Bernanke, 1983; Bloom, 2009; Dong et al., 2019; Sahinoz and Erdogan Cosar, 2018). This emphasizes why it is essential for policymakers to work out effective strategies that would alleviate EPU's negative consequences.

Economic policy uncertainty (EPU) may also impact the overall lending growth of banks by rising the restraints on funding (Kahle and Stulz, 2013). Mishkin (1999) argues that increased uncertainty raises information asymmetry, creating conditions under which profiles of borrowers become opaque. At times of uncertainty, creditors experience difficulties in discerning high from low credit risks. Therefore, creditors may not want to grant loans, triggering a decrease in investment, and as a result, reduction in economic activities. Bordo, Duca, and Koch (2016) uncover an adverse link between banks' lending growth and uncertainty, pointing out that different levels of economic policy uncertainty (EPU) can impact the banking system and financing channel (Danisman et al., 2020). The authors argue that such bank determinants as liquidity of assets and total capital-to-assets ratio, as well as other lending supply indicators, can help to measure the impact of uncertainty. Ashraf and Shen (2019) provide empirical evidence that economic policy uncertainty (EPU) is significantly connected to lending interest rates of financial intermediaries and has the expected positive sign. The authors suppose that economic policy uncertainty (EPU) amplifies the lending prices of financial intermediaries by escalating the default risks of borrowers. Therefore, economic policy uncertainty (EPU) is an economically significant determinant that should be considered as a risk factor for the lending pricing of financial intermediaries.

Berger et al. (2020b) examine the link through which economic policy uncertainty (EPU) impacts the US economy, namely hoarding and formation of bank liquidity. Using quarterly data from the U.S. banks over the period from the second quarter of 1985 to the fourth quarter of 2016, researchers point out that economic policy uncertainty (EPU) indexes reduce asset and off-balance sheet parts of bank liquidity formation, and, in contrast, rise liability-part of liquidity formation by only a smaller amount, giving lower aggregated liquidity formation. Therefore, economic policy uncertainty (EPU) adversely affects the economy because it impedes banks' abilities to fulfill their main activities connected with the mediation of liquid funds for achieving productive goals. Phan et al. (2021) shows the adverse impact of economic policy uncertainty (EPU) on financial stability in an international dimension, with the latter gauged in terms of soundness and flexibility of the banking system. The effect of economic policy uncertainty (EPU) on financial stability is more pronounced in economies with more severe competition, smaller regulatory capital for banks, and small-size financial sector. Ozili (2021) also documents that economic policy uncertainty (EPU) impacts financial intermediaries through a decrease in lending supply and re-pricing of loans (Hu and Gong, 2019).

The literature on the link between economic policy uncertainty (EPU) and capital flow dynamics is, generally, scarce. Chen and Funke (2003) explore the effect of uncertainty on foreign direct investment (FDI) decisions and reveal that political uncertainty is harmful to FDI flows and triggers adverse economic outcomes.

Belke and Volz (2018, 2019) provide empirical evidence that global liquidity and economic policy uncertainty (EPU) as well as some other push factors from major financial centres (i.e., US) appear to be the most significant determinants of foreign direct investment (FDI), portfolio flows and other investment flows (e.g., comprising loans) in a sample of 32 emerging and developing countries through the period from 2009 to 2017 (Bruno and Shin, 2012, 2013, 2014, 2015; Cerutti et al., 2014, 2017; Osina, 2019). The authors corroborate previous empirical evidence that the US remains the safe harbour for cross-border capital flows in periods of unprecedented economic policy uncertainty (EPU) (Gauvin et al., 2014), and this creates difficulties for emerging/developing countries in pulling foreign funding at times of higher level of uncertainty. This highlights the importance for researchers to explore different types of capital inflows to determine exposures connected with external funding and ensure financial stability in the world (Belke and Goecke, 2005; Belke and Volz, 2018, 2019; Bloom, 2014; Koepke, 2019).

Choi and Furceri (2019) explore uncertainty as a determinant of international bank flows (Papaioannou, 2009; Cerutti, Claessens, and Puy, 2015). The authors focus only on one type of uncertainty, namely country-specific uncertainty, and investigate its effects on cross-border bank flows dynamics employing bilateral data from the BIS Locational Banking Statistics. The empirical results show that uncertainty in a domestic country pertains to both pull and push determinants and leads to a decline in cross-border crediting (outflows) and cross-border borrowing (inflows). Another finding is that the decrease in borrowing across countries is greater than the decrease in crediting across countries — meaning that, the total cross-border position of the banking system rises. Regardless of a decrease in bank crediting across borders in total figures, the proportion of bank crediting across borders in aggregated bank crediting rises, indicating a rebalancing of the portfolio. However, portfolio rebalancing happens only when banks are granting loans to those who borrow in developed countries, but not to those in developing/emerging countries.

Policymakers' clarity and their ability to prevent biases in policies could decrease the level of policy uncertainty (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020; Berger et al., 2020a; Foresti, 2018; Mian, Sufi and Khoshkhou, 2021). Foresti (2018) highlights the importance of adopting effective monetary and fiscal regulations that could help to lower market asymmetries and uncertainty-related risks (Bekaert et al., 2013). This means that under high uncertainty,

monetary policies can be employed as a risk management instrument to avoid systemic financial distress (Hayford and Malliaris, 2005).

We would like to conclude that the literature on the effects of the COVID-19 pandemic outbreak and related policy uncertainty is still unfolding and opens many unanswered questions. We also argue that the best approach to safeguard against economic policy uncertainty (EPU) is to raise awareness about it around the world (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020; Ozili, 2021).

2.2 COVID-19 pandemic, infectious disease outbreaks, and capital flow dynamics

This section provides a synthesis of the wide range of studies devoted to the analysis of the economic impacts of the COVID-19 pandemic outbreak as well as other infectious disease outbreaks on financial markets and cross-border capital flows.

McKibbin and Sidorenko (2006) point out that a pandemic influenza outbreak tends to drive the flow of capital in the opposite direction, namely from the more to the less impacted countries. Verikios et al. (2011, 2016) provide evidence that the global economy can be more gravely impacted by a highly infectious pandemic rather than a highly virulent pandemic (i.e., how detrimental the virus can be to the owner). The authors argue that the more integrated a country to the global economy is, the more likely it will be adversely impacted by disease outbreaks.

As a rule, infectious disease outbreaks influence the global economy through both the supply and demand factors and can be transferred through financial markets, international trade, and the travel and tourism chain of distribution (Al-Thaqeb et al., 2020; Beirne et al., 2020). This is in line with Correia et al. (2020) who argue that the recession in the US during the 1918 influenza pandemic ("Spanish Flu") happened due to the supply and demand sides of the economy. Using the data from the Spanish Flu of 1918, the authors point out that infectious disease outbreaks can cause a downturn in the economy but public health interventions including government restriction measures aimed to mitigate the spread of the virus in the medium term do not. However, in the short term, Demirgüç-Kunt et al. (2020) show that these non-pharmaceutical interventions have a significant economic effect and caused a decrease of around 10% in economic activities and operations across European countries and Central Asia in 2020.

Jordà et al. (2020) point out that pandemic outbreaks have quite a distinct economic effect as opposed to wars because pandemic outbreaks do not carry the capital destruction while wars do. Therefore, an infectious disease outbreak can subsequently lead to a lasting period of excess capital per employee who survived the outbreak and increasing net earnings if the death rate among the working-age population group is high, namely as it was during the Black Death (bubonic plague) in the 14th Century and the Spanish Flu of 1918 (Garrett, 2008). The authors argue that infectious disease outbreaks have long-term adverse implications on the neutral rate of interest and this corresponds to the secular stagnation hypothesis (Hansen, 1939; Summers, 2014). One way to overcome this is to offer safe government debt which might help to prevent the ongoing tendency to low real interest rates.

Baker et al. (2020a) show that the effect of the COVID-19 pandemic outbreak on the volatility of the US stock market is much higher than that of previous infectious disease outbreaks that happened after and including the 1918 influenza pandemic ("Spanish Flu"), notably due to the economic consequences of COVID-19 government restriction measures (Alfaro et al., 2020; Landier and Thesmar, 2020; Zhang et al., 2020). Alfaro et al. (2020) argue that sudden variations in the trend of COVID-19 infections can forecast the stock returns in the US, at present time. Estimated coefficients show that a sudden doubling of forecasted infectious disease predicts the following-day falls (rises) in total US market value of 4 to 11 %, pointing out that equity markets may start to bounce back even as infectious disease continue to increase if the trend of the infections appears to be less serious than at first expected. Therefore, the surge in the COVID-19 cases is

connected with massive and adverse fluctuations in equity prices. The authors employ the same changes in forecasted infectious disease cases, to show that damage caused by COVID-19 pandemic in market value at the company level increase with leverage and capital intensity, and is more severe in industries with higher exposures to infectious disease outbreaks, hinting towards an explanation for the current high unemployment rate.

Beirne et al. (2020) examine the impact of the COVID-19 pandemic outbreak on both financial markets (bond yields, stock prices, and exchange rates) and bond flows employing daily frequency data from 2010 to 2020. Using a fixed-effects panel and a structural VAR method, the authors argue that emerging economies have been more impacted by the COVID-19 pandemic than advanced markets. They provide empirical evidence that emerging markets in Europe and Asia have been exposed to the highest impact on financial markets as a result of the COVID-19 pandemic, as well as sudden and large capital outflows. However, effective fiscal stimulus programmes offered to address consequences of the COVID-19 outbreak, and unconventional monetary policies (e.g., quantitative easing or QE) implemented by central banks, have assisted in maintaining investor confidence in financial markets through lowering bond yields and rising stock markets (Benigno et. al., 2020). Notably, quantitative easing (QE) implemented by central banks to cope with the adverse effects of the COVID-19 pandemic in developed economies, expanded to emerging markets and helped to maintain the pattern of capital flows. Hofmann et al. (2020) examine emerging market economies and argue that borrowing using domestic currency bonds did not make these countries more protected from financial strains. In particular, domestic currency bond spreads in the majority of emerging markets increased sharply amid the rapid depreciation of domestic currencies and subsequent capital outflows. The authors point out that emerging market economies with monetary policies that take into account the feedback loop between depreciation of exchange rate and capital outflows dynamics have higher chances to alleviate the adverse effects of the COVID-19 pandemic outbreak (Gelos et al., 2020; IMF, 2021; Mühleisen et al., 2020). Central banks in emerging markets may be required to employ a function of a "lender of last resort" to withstand numerous stock adjustments in internal bond markets (Beck, Bruno, and Carletti, 2021; Beck, Carletti, and Bruno, 2021).

Gounopoulos et al. (2021) provide empirical results on how financial intermediaries can manage their liquidity and supply of credit at times of the COVID-19 pandemic outbreak (Acharya and Mora, 2015). The COVID-19 infectious outbreak has triggered a rise in the deposits of domestic households and a liquidity infusion by the Federal Reserve System (the Fed) in the USA. The authors propose empirical results pointing out that domestic households started to accumulate savings as a safeguard measure against potential forthcoming reduction in their income. Financial intermediaries with greater susceptibility to liquidity risks were exposed to the outflow of deposits and raised their dependence on the Federal Reserve's liquidity facilities considerably more than financial intermediaries with low commitments.

Beck, Carletti, and Bruno (2021) argue that the aggregate impact of the actions undertaken to support banks' ability to offer loans during the coronavirus pandemic was to make a virtuous network between corporations, financial intermediaries, and governments, preventing a financial crisis for either and having low-risk premiums. But this also raises the possibility of systemic distress in the forthcoming future due to increased interconnectedness. Therefore, the termination decisions related to the different support packages must be well thought and coordinated, as well as provided promptly and in an understandable manner (Beck, Bruno, and Carletti, 2021). To address considerable COVID-related adjustments in the financial markets, central banks in different countries may need to implement such an instrument as a "lender of last resort" and many of them are already trying to do this (Beck, Bruno, and Carletti, 2021; Hofmann et al., 2020).

ElFayoumi and Hengge (2021) argue that the COVID-19 outbreak and related policy measures caused a massive surge of capital allocation across capital markets of countries as well as different types of asset classes (Davis et al., 2019, 2021;

Forbes and Warnock, 2011; Fratzscher, 2012; Milesi-Ferretti and Tille, 2011; Sarno et al., 2016). The authors provide empirical evidence that such pull factors as the number of confirmed coronavirus (COVID-19) cases, the stringency of COVID-19 lockdown measures, the fiscal stimulus, and monetary policy instruments were essential drivers of portfolio flow dynamics. They also show that interest rate contractions led to a decrease in portfolio flows because economic agents who are doing investments looked for a greater yield. Additionally, ElFayoumi and Hengge (2020, 2021) point out that COVID-19 related lockdown restrictions had a different effect on economic functioning across industries, due to their heterogeneous susceptibilities to the corresponding demand and supply determinants, namely the division of produced goods or services into essential and nonessential, and the openness of industry to supply chains around the world. The authors identify that the impact of COVID-19 lockdown restrictions followed a similar pattern for three sectors of the economy, namely retail, services, and financial sectors. These three sectors of the economy experienced a decline in aggregate portfolio flows as a result of more stringent lockdown restrictions introduced by the government. However, the aggregate flows in the manufacturing industry, on the contrary, raised substantially as the lockdown measures were enforced stricter. The authors also find that fiscal stimulus and monetary policy instruments were essential in mitigating the adverse impact of the COVID-19 related global shock both in developed and developing/emerging countries. On the other hand, the authors conclude that COVID-19 policy measures implemented by governments around the world also impacted countries' vulnerabilities to the sudden global shock and that the stance of economies prior to the COVID-19 pandemic outbreak, in particular smaller sovereign credit risk, and larger trade openness, triggered substantial capital flows throughout the COVID-19 crisis.

In summary, the main effects of policy restrictions associated with COVID-19 as well as policy uncertainty (EPU) will continue to be essential research questions in the coming years. These government restriction measures, which have been different both in terms of objectives and realization, are anticipated to carry out a deep economic and social effect **(**Brodeur et al., 2021). This paper tried to convey consistency to these questions by exploring the adverse influence of different dimensions of economic policy uncertainty (EPU) and non-pharmaceutical interventions (NPIs) on cross-border bank flows.

3. Research questions and hypotheses development

The global COVID-19 pandemic and related uncertainty emphasize the need for immediate action to protect the nation's health and alleviate adverse economic effects posed by the outbreak, safeguard vulnerable layers of society, and set the scene for a long-lasting economic recovery.

This paper examines the negative impacts of economic policy uncertainty indices (EPU) and COVID-19 government restriction measures on cross-border bank flows prior to and during the pandemic using a sample of 46 countries around the world. The synthesis of related literature reveals that the analysis of the main effects of economic policy uncertainty (EPU) on capital flows is dynamic and evolves and changes very rapidly, especially this is evident at times of global health emergency (Baker et al., 2016; Al-Thaqeb and Algharabali, 2019; Choi and Furceri, 2019; Al-Thaqeb et al., 2020; Beirne et al., 2020).

This is crucial to study the effects of different dimensions of economic policy uncertainty (EPU) e.g., economic uncertainty, non-economic uncertainty, and policy-related uncertainty because it can amplify negative externalities for the economic sector as a whole. This is due to the fact that a variety of economic policy uncertainty (EPU) exhibits a negative correlation with the economic cycle (economic expansions and contractions) (Baker et al., 2016; Kaya, 2018; Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020). It is inclined to increase the effect of recessions and lead to the amplification of risks at times of favourable economic conditions. Our empirical findings are in line with results provided

in previous literature (Julio and Yook, 2012; Cerutti, 2015; Bordo et al., 2016; Berger et al., 2017; Choi and Furceri, 2019; Osina, 2019, 2021; Beirne et al., 2020; Berger et al., 2020b; ElFayoumi and Hengge, 2021) and make a valuable contribution to the existing research by looking at two main research questions:

1) *Do economic policy uncertainty (EPU) indexes generally reduce the growth of cross-border bank flows?*
2) *Do Oxford COVID-19 government response indexes related to a variety of restrictions imposed in different countries*[4] *lead to a reduction in the growth of cross-border bank flows?*

We propose two testable hypotheses regarding the effects of different dimensions of economic policy uncertainty (EPU) indexes and a variety of COVID-19 government response indexes on cross-border bank flows:

Empirical Hypothesis 1. *Oxford COVID-19 government response indexes reduce the growth of cross-border bank flows, ceteris paribus.*

Empirical Hypothesis 2. *Economic policy uncertainty (EPU) indexes decrease the growth of cross-border bank flows, ceteris paribus.*

It is essential to explore the main determinants of cross-border banking exposures prior to and during the COVID-19 pandemic, especially the effect of different dimensions of economic policy uncertainty (EPU) to uncover how to mitigate their impact (Cerutti, 2015; Baker et al., 2016; Al-Thaqeb and Algharabali, 2019; Choi and Furceri, 2019; Al-Thaqeb et al., 2020; Beirne et al., 2020). The primary aim here is to show that different dimensions of economic policy uncertainty (EPU) and COVID-19 government response measures are significantly connected with the growth of cross-border bank flows and carry real economic consequences.

Unlike most prior studies focusing on only some economic policy uncertainty indexes as a global push factor of capital flows (Choi and Furceri, 2019; Beirne et al., 2020; ElFayoumi and Hengge, 2021), we use the exchange rate adjusted BIS LBS data and identify the role of different dimensions of uncertainty (both country-specific and global drivers) in explaining the growth of cross-border bank flows among a large sample of countries compounded with a focus on Euro Area member counties. Moreover, we are among the first to examine the negative effect of COVID-19 government response measures and other health-related indexes from the EPU database on cross-border bank flows.

Our results confirm that policymakers should proceed with the implementation of expansionary policies to mitigate considerable contraction in economic activities caused by uncertainty while continuing to adhere to health safeguarding measures e.g., vaccination campaigns to prevent the spread of COVID-19 around the world (Iyke, 2020; Beirne et al., 2020; ElFayoumi and Hengge, 2021).

4. Data and research methodology

We use quantitative research methods to examine the effect of economic policy uncertainty (EPU) and COVID-19 government restriction measures on the growth of cross-border bank flows. We employ such estimation methods in our research as panel regressions with country fixed effects and clustered standard errors at the country level, two-step robust system generalized method of moments (GMM) dynamic panel data estimation, and maximum likelihood estimation (MLE).

4.1 Data and summary statistics

We use quarterly data over the period of 2005Q1 to 2020Q4, to examine the relationship between economic policy uncertainty (EPU), or COVID-19 government response measures, and growth of cross-border bank flows across countries.

[4] Oxford COVID-19 government response indexes are related to 'lockdown' restrictions and COVID-19 health-safeguarding policies and procedures.

Our main dependent variable is the quarterly growth rate (in percent) of cross-border bank flows. To measure cross-border bank flows, we collect data for cross-border claims on banks (exchange rate adjusted) from BIS Locational Statistics (BIS LBS) and come with a sample of 46 counties across borders. Claims represent cross-border transactions between financial institutions (banks) and counterparties (BIS international banking statistics). We would like to emphasize the importance to use an exchange rate adjusted data series from the Bank for International Settlements (BIS) Locational Statistics.

We aim to measure the economic policy uncertainty using a variety of EPU indexes from the database offered by Baker, Bloom, and Davis (2016) (Bloom, 2009, 2014). The economic policy uncertainty (EPU) index is considered to be one of the most commonly used gauges for uncertainty in economics (Baker, Bloom, and Davis, 2016). The authors constructed the EPU index using three various components to gauge the level of uncertainty: a content analysis of newspaper coverage, volatility in the stock (shares) markets, and anticipations about macroeconomic conditions obtained from business surveys. Simultaneously, Davis (2016) follows the studies of Baker, Bloom, and Davis (2016) to construct a global economic policy uncertainty (GEPU) index employing weighted average data from twenty-one countries, which show major global output. With the development of the economic policy uncertainty (EPU) database, the novel uncertainty indices for a great number of countries have become available, and we approach to examine their effect on the bank flows dynamics.

Additionally, we employ Oxford COVID-19 government response indexes to examine how a variety of COVID-19 restrictions imposed across different countries is associated with the growth of cross-border bank flows. In our research, we use the Oxford lockdown stringency index, Oxford containment health index, and Oxford coronavirus government response index from the Oxford COVID-19 government response tracker (OxCGRT) database. We aim to assess how harmful COVID-19 government restrictions can be to the growth of cross-border bank flows.

Apart from the economic policy uncertainty (EPU) indexes and Oxford COVID-19 government response indexes, other conventional determinants that affect cross-border bank flows, such as macroeconomic determinants and global push drivers are used in the modelling benchmark.

We have thoroughly cleaned our data to eliminate outliers, with determinants to be winsorized at the 2.5% percentile (Bruno and Shin, 2013, 2015). We show descriptive statistics which illustrates detailed information on each of the determinants employed in our research in Table 1. Table 2 shows the list of countries involved in the empirical research. Table 3 shows pairwise correlations between determinants included in empirical research. As indicated, the most of determinants don't have very large correlation coefficients between each other meaning that the possibility of multicollinearity in regression analysis is smaller (Ashraf and Shen, 2019).

We use a variety of data sources in our research, such as Refinitiv Comparable Economics (TRICE dataset), Refinitiv Datastream, Bloomberg, Oxford COVID-19 Government Response Tracker (OxCGRT), Economic Policy Uncertainty Website (Baker, et al., 2016; Baker, et al., 2019; Baker, et al., 2020b).

4.2 Empirical specification of the base model

We conduct our empirical analysis on a quarterly basis in a sample of 46 countries reported in BIS Locational statistics (BIS LBS) throughout the period from 2005Q1–2020Q4. We use a panel regression model with country fixed effects and clustered standard errors at the country level as the main estimation method.

To analyze the exposures of cross-border bank flows to uncertainty, infectious disease outbreaks, and COVID-19 government restriction measures, controlling for various country-specific and global determinants, we estimate the following regression model:

$$GrRateBankFlows_{j,t} = \alpha_0 + \beta_1\, GEPU_t/orEPU_t/orCOVID19GovResponceIndex_{j,t} + \beta_2\, LogCountryspecificdrivers_{j,t-1} + \beta_3\, Globaldrivers_{t-1} + \beta_4\, USGlobaldrivers_t + + \beta_5\, Countryspecificcontrols_{j,t} + \gamma_j + \varepsilon_{jt} \quad (1)$$

Dependent variable:

GrRateBankFlows – the growth rate of cross-border bank flows, which is measured as the quarterly growth rate (in percent) of the adjusted BIS locational cross-border claims on banks (exchange rate adjusted), taken from BIS Locational Statistics (Table A6). The growth rate (%) of the claims on banks is calculated by using the formula (100×Xafter)/(Xbefore-100) (Cerutti, 2015; Avdjiev, 2020).[5]

Explanatory variables:

GEPU/ EPU/or COVID19GovResponceIndex is either – global economic policy uncertainty indexes (GEPU), or a variety of economic policy uncertainty indexes (EPU), or Oxford COVID-19 government response indexes. We aim to explore different dimensions of economic policy uncertainty (EPU) including uncertainty related to regulations, sovereign debt, banking, monetary policy, etc. using the economic policy uncertainty database proposed by Baker, Bloom, and Davis (2016). We also record the effect of COVID-19 government restriction measures (lockdown stringency, containment health indicators, coronavirus government responses, etc.) from the Oxford COVID-19 government response tracker (OxCGRT) database.

LogCountryspecificdrivers – includes log real gross domestic product, real GDP (seasonally adjusted), as well as log consumer core price index, CPI (seasonally adjusted); *Globaldrivers* – includes percent change in the Chicago Board Options Exchange (CBOE) market volatility index, VIX CBOE*; USGlobaldrivers* – includes percent change in 3-month US TED spread (LIBOR-Treasury bill), percent change in US effective federal funds rate, EFFR, as well as the growth rate of US real effective exchange rate, REER; *Countryspecificcontrols* – include log money supply M2 (seasonally adjusted) and percent change in current account balance (seasonally adjusted); j – denotes the country, t – denotes the time i.e. quarter of the year; α_0 – intercept; γ_j – are country fixed effects, and ε_{jt} – error term.

Our model is motivated by the previous studies on the main determinants of cross-border bank flows (Bruno and Shin, 2013, 2015; Cerutti, 2015; Cerutti et al., 2014, 2017; Choi and Furceri, 2019; Correa et al., 2021; Herrmann and Mihaljek 2010, 2013; Phan et al., 2021). Meanwhile, we show a bespoke approach to the construction of variables for our benchmark framework. We conclude that all our variables are cleaned and calculated by using either a logarithm, percent change or growth rate and do not contain a unit root (Augmented Dickey–Fuller (ADF) test). All determinants used in this research paper follow a stationary process or in other words, integrated of order 0, I(0) (Belke and Volz, 2018, 2019; Phan et al., 2021). We also consider the potential influence of seasonal effects on our empirical results by using seasonally adjusted time series data.

[5] Cerutti (2015) argues that the lag of the dependent variable in GMM during the crises can go with a minus sign.

4.3 Two-step robust system GMM dynamic panel data estimation

We perform robustness checks to eliminate endogeneity concerns. We employ a two-step system generalized method of moments (GMM) estimation to test the null hypothesis that a variety of economic policy uncertainty (EPU) indexes negatively impacts the growth of cross-border bank flows (Arellano and Bover, 1995; Blundell and Bond, 1998). Our regression model looks as follows:

$$GrRateBankFlows_{j,t} = \alpha_0 + \beta_1\, GEPU_{t-1}/orEPU_{t-1} + \beta_2 GrRateBankFlows_{j,t-1} + \beta_3\, LogCountryspecificdrivers_{j,t-1} + \beta_4\, Globaldrivers_{t-1} + \beta_5\, USGlobaldrivers_{t} + \beta_6\, Countryspecificcontrols_{j,t} + \gamma_j + \varepsilon_{jt} \quad (2)$$

In Equation (2) we employ the two-step robust system GMM dynamic panel data estimation as a robustness test to control for potential endogeneity. In our GMM estimation, we report the Arellano-Bond (AB) test to check for serial correlation AR(1) and AR(2) (Arellano and Bover, 1995). We also provide the Sargan and Hansen J tests for verifying the validity of the overidentifying restrictions. Overall, the Arellano–Bond (AB) test, Hansen, diff-in-Hansen and Sargan tests confirm that the potential issues of endogeneity do not undermine our main inferences and bring the validity of the instruments in the two-step robust system GMM estimation. We provide empirical evidence that controlling for endogeneity with the help of dynamic panel GMM, our results remain robust and support our benchmark conclusions from panel regressions with country fixed effects.

5. Empirical results

In this section, we provide the results of the empirical tests for the effect of the economic policy uncertainty (EPU), the US infectious disease outbreaks, as well as COVID-19 government restriction measures on the growth of cross-border bank flows.

5.1 Economic policy uncertainty (EPU) and cross-border bank flows

The economic policy uncertainty (EPU) brought by COVID-19 has resulted in reduced economic growth and development, a great number of insolvency cases, and increased unemployment statistics (Al-Thaqeb and Algharabali 2019; Al-Thaqeb, Algharabali and Alabdulghafour 2020; Baker et al., 2020a, 2020b; Bernanke 1983; Bloom, 2009, 2014; Levy Yeyati and Filippini, 2021a, 2021b; Ozili, 2021). The high level of uncertainty can impede companies' activities, in that it can force companies to delay the decision to undertake their investment activities (Chu and Fang, 2021; Gulen and Ion 2016) and conjecture lower debt (Dong, Liu, and Chang, 2019), which could trigger a more serious financial distress; as a result, smaller amount of cash is brought into the global economy (Kahle and Stulz, 2013).

This paper contributes to address one of the main research questions on how uncertainty (EPU) could impact the economy and more precisely cross-border bank flows. Earlier studies demonstrate the adverse effect of economic policy uncertainty (EPU) on the growth of bank lending, especially in the European Union (Alessandri and Bottero, 2017; Ashraf and Shen, 2019; Barraza and Civelli, 2019; Bordo et al., 2016; Danisman et al., 2020; Demir and Danisman, 2021; Huang et al., 2019; Kahle and Stulz, 2013; Lee et al., 2017). Banks especially in Europe can be regarded as one of the main ways for transmission of economic policy uncertainty to the real sector of the global economy, which can impede the process of economic recovery (Beck, 2020; Beck, Carletti, and Bruno, 2021; Danisman et al., 2020; Demir and Danisman, 2021; Kaya, 2018; Phan et al., 2021). However, these studies do not explore the relationship between economic policy uncertainty (EPU) and cross-border bank flows.

Using panel data fixed effects methodology and controlling for endogeneity using two-step difference GMM estimators, our findings point out that global economic policy uncertainty hampers the growth of cross-border bank flows in a sample of 46 countries throughout the period from 2005 to 2020. Tables 4 and 5 report the adverse effects of global economic policy uncertainty (GEPU_ppp and GEPU_current) indexes on bank flows dynamics. We can interpret our empirical results as follows: a percentage point change of the global economic policy uncertainty (GEPU_ppp) index may decrease the growth of bank flows by 0.0130%; a percentage point change of the global economic policy uncertainty (GEPU_current) index may induce 0.0124 % lower cross-border bank flows. Moving from the 25th to the 75th percentile on the global economic policy uncertainty (GEPU_ppp) index reduces cross-border bank flows by about 0.32-0.97%, respectively (Table 4). Similarly, moving from the 25th to the 75th percentile on the global economic policy uncertainty (GEPU_current) index reduces the growth of cross-border bank flows by about 0.31–0.93%, respectively (Table 5). Both GEPU indexes are statistically significant at 1% and have the expected negative sign. The results point out that the economic and statistical significance of these GEPU indexes is quite similar and they could lead to a significant reduction in flows.

Table 5 presents empirical results for the effect of the global economic policy uncertainty (GEPU_current) index on cross-border bank flows for the period before (2005-2019) and during the pandemic (2005-2020) in the overall sample of 46 countries.[6] Table 5 reports that prior to the COVID-19 pandemic a percentage point change of the global economic policy uncertainty (GEPU_current) index may induce only 0.0052 % lower cross-border bank flows, compared with 0.0124 % for the full period with the COVID-19 pandemic. Moving from the 25th to the 75th percentile on global economic policy uncertainty (GEPU_current) index prior to pandemic decreases cross-border bank flows by only about 0.13-0.39%, compared to 0.31–0.93% for the full period. We show that the global economic policy uncertainty (GEPU_current) index has increased more than twice during the period with the coronavirus outbreak compared to the prior COVID-19 pandemic times (Table 5). The results confirm that the Covid-19 pandemic outbreak triggers a huge surge in economic policy uncertainty across different countries.

Results reported in Table 6 indicate that a variety of US economic policy uncertainty (EPU) indexes has a negative and statistically significant impact on the growth of cross-border bank flows, which is consistent with our expectations. This means that we find that an increase in different dimensions of US EPU may lead to a decrease in bank flows across the 46 countries during the period from 2005 to 2020. In particular, we provide empirical evidence that the US economic policy uncertainty (EPU) index, US economic policy uncertainty financial regulation (EPU) index, US economic policy uncertainty sovereign debt (EPU) index are statistically significant at the 1% significance level on bank flows. These US EPU indexes have the following coefficients 0.0055, 0.0023, and 0.0016, respectively. In contrast, we find that the US economic policy uncertainty regulation index is significant at only 5 % with an estimated coefficient of 0.0033. We next discuss the economic significance of our findings. Overall, the effect of these US EPU indexes on the growth of cross-border bank flows is economically meaningful. One interpretation is that a 10% increase in the US economic policy uncertainty (EPU) index decreases banks' cross-border lending by 0.055% on average (Table 6). Moving from the 25th to the 75th percentile of the US economic policy uncertainty (EPU) index is associated with about 0.1375–0.4125% lower cross-border bank flows, accordingly.

Results reported in Tables 7, and 8 show that a variety of Greek economic policy uncertainty (EPU) indexes are also significantly connected to cross-border bank flows dynamics in a sample of 46 countries from 2005 to 2020. We would like to highlight that the magnitude of reported coefficients for Greek EPU indexes is much higher than that of coefficients

[6] We also divide our sample into two periods: before pandemic (2005-2019) and full period (2005-2020) which comprises COVID-19 pandemic outbreak.

for US EPU indexes. This might be due to the prevalent role of European banks in intermediating cross-border bank flows, including dollar-denominated lending (Cerutti et al., 2014, 2017; Cerutti and Osorio-Buitron 2020). We find that the Greek banking uncertainty (EPUB) index, Greek debt uncertainty (EPUD) index, and Greek monetary policy uncertainty (EPUM) index have the expected negative sign and are statistically significant at the 1% on bank flows. We argue that our results have an economic interpretation. Table 7 shows that moving from the 25th to the 75th percentile on the Greek banking uncertainty (EPUB) index reduces cross-border bank flows by about 0.245-0.735%, respectively. Similarly, Table 8 shows that moving from the 25th to the 75th percentile on the Greek debt uncertainty (EPUD) index reduces cross-border bank flows by about 0.2325-0.6975%, respectively. Table 8 provides that moving from the 25th to the 75th percentile on the Greek monetary policy uncertainty (EPUM) index decreases cross-border bank flows by some 0.4075-1.2225%, respectively. These empirical results highlight the importance of monetary policy regulations across countries (Lee et al., 2019; Mueller, Tahbaz-Salehi, and Vedolin 2017; Park et al., 2019). In contrast, Table 8 indicates that the Greek economic policy uncertainty (EPU) index has the expected negative sign and is statistically significant only at the 5% level on cross-border bank flows. Moving from the 25th to the 75th percentile on the Greek economic policy uncertainty (EPU) index decreases cross-border bank flows by about 0.4125-1.2375%, respectively.

The results for the Euro Area, provided in Tables 9 and 10, confirm our hypothesis on the effect of both a variety of Greek EPU and US EPU indexes on the growth of cross-border bank flows. We find the coefficients of different dimensions of Greek EPU and US EPU indexes to be negative and statistically significant in a sample of 22 countries over the period from 2005 to 2020. In particular, we find that the Greek economic policy uncertainty (EPU) index and Greek banking uncertainty (EPUB) index are statistically significant at 1% on cross-border bank flows, while the Greek monetary policy uncertainty (EPUM) index is statistically significant at 5%. These Greek EPU indexes have the following estimated coefficients: a percentage point change in the Greek economic policy uncertainty (EPU) index may induce 0.0333% lower capital flows; a percentage point change in the Greek banking uncertainty (EPUB) index may induce 0.0266% lower capital flows; while a percentage point change in the Greek monetary policy uncertainty (EPUM) index may induce 0.0230% lower cross-border capital flows. We have the following economic interpretation of these coefficients. Moving from the 25th to the 75th percentile on the Greek economic policy uncertainty (EPU) index decreases cross-border bank flows by some 0.8325-2.4975%, respectively.[7] Moving from the 25th to the 75th percentile on the Greek banking uncertainty (EPUB) index reduces cross-border bank flows by about 0.665-1.995%, while a median of the index is associated with about a 1.33% reduction. Additionally, moving from the 25th to the 75th percentile on the Greek monetary policy uncertainty (EPUM) index decreases cross-border bank flows by around 0.575-1.725%, respectively. These results highlight the significance of monitoring the Greek economic policy uncertainty (EPU) for achieving and sustaining financial stability in the European Union (EU).

We support previous empirical evidence that US global push factors remain the most important determinants of cross-border bank flows (Bruno and Shin, 2013, 2015; Cerutti et al., 2014, 2017). In particular, US economic policy uncertainty (EPU): sovereign debt index and US economic policy uncertainty (EPU): financial regulation index are statistically significant at 1% and have the expected negative sign on cross-border bank flows in a sample of 22 EU member countries.[8] The economic interpretation of these US EPU indexes sounds as follows: percentage point change in the US economic

[7] This is in line with Phan et al., (2021) who reported similar economic significance with regards to the effect of the EPU index on financial stability.

[8] We conducted a sample sensitivity analysis and changed the number of countries in a sample starting with 149 and up to 153. Our results remain the same when we add or deduct countries and results remain robust when we exclude the USA, G3, and G7.

policy uncertainty (EPU): the sovereign debt index may reduce the flows by about 0.0154%; while a percentage point change in the US economic policy uncertainty (EPU): the financial regulation index is on average associated with a 0.0082% reduction in cross-border lending. Moving from the 25th to the 75th percentile on the US economic policy uncertainty (EPU): sovereign debt index decreases cross-border bank flows by about 0.385-1.155%, respectively. While moving from the 25th to the 75th percentile in the US economic policy uncertainty (EPU): financial regulation index reduces cross-border bank flows by about 0.205-0.615%, respectively. In contrast, the US economic policy uncertainty (EPU) index (EPU) is statistically significant at 5% and has a negative association with cross-border bank flows in a sample of euro area countries. Moving from the median to the 75th percentile of the US economic policy uncertainty (EPU) index (EPU) decreases bank flows by, on average, about 0.775% to 1.1625%, respectively.

Overall, our findings suggest that economic policy uncertainty (EPU) is negatively associated with the growth of cross-border bank flows, especially at times of elevated uncertainty. This calls for the necessity to design and implement the appropriate monetary and macroprudential regulations to alleviate the adverse effects of uncertainty in capital flows. Our empirical results shed more light on important insights that can help both policymakers and market players to grasp and develop workable strategies aimed to address different dimensions of economic policy uncertainty (EPU). Therefore, policymakers should design transparent, easy, and manageable policies and regulations to reduce the level of uncertainty and mitigate its negative repercussions (Al-Thaqeb and Algharabali 2019; Al-Thaqeb et al., 2020; Mian, Sufi, and Khoshkhou, 2015).

5.2 COVID-19 pandemic, infectious disease outbreaks, and bank flows dynamics

The COVID-19 pandemic and high levels of uncertainty urge for action from policymakers and corporations to adjust to rapidly changing financial conditions around the world (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb, Algharabali, and Alabdulghafour, 2020; Baker et al., 2020a; De Bock et al., 2020; Ozili, 2021).

We argue that one of the most related indexes to the COVID-19 pandemic outbreak from the EPU database is the US infectious disease equity market volatility index. This index is constructed using newspaper coverage and traces the impacts of news related to various infectious diseases on the stock (i.e., equity) markets (Baker et al., 2019). In Table 11 we provide empirical evidence that the US infectious disease equity market volatility (EMV) tracker reduces the growth of cross-border bank flows in a sample of 46 countries throughout the period 2005—2020, and this effect is both economically and statistically significant. For example, an increase in the level of the US infectious disease equity market volatility (EMV) tracker by 10% in a given year, is associated with a reduction in cross-border bank claims of around 0.386 %. Moving from the 25th to the 75th percentile on the US infectious disease equity market volatility (EMV) tracker reduces the growth of international bank flows by about 0.965–2.895%, accordingly. Additionally, the US infectious disease equity market volatility (EMV) tracker is statistically significant at 1% and has the expected negative sign. At times of infectious disease outbreaks e.g., COVID-19 pandemic, we need to immediately address the issues in the public health sector and stop the spread of the virus across countries because, in the long run, this will help economies to come out of the economic downturn. Table 12 provides consolidated results for cross-border claims to banks and three US economic policy uncertainty (EPU) indexes, namely the US infectious disease equity market volatility (EMV) tracker, US equity-related economic uncertainty index, and US economic policy uncertainty health care index. We compare the magnitude of reported results and conclude that the US infectious disease equity market volatility (EMV) tracker shows the highest coefficient and statistical significance among the other two indexes. This highlights the importance of the effect of infectious disease outbreaks on the growth of cross-border bank flows.

Further, we examine the impact of COVID-19 government restrictions measured using Oxford COVID-19 government response indexes on the growth of cross-border bank flows in a sample of 46 countries over the period from 2005 to 2020. Levy Yeyati and Filippini (2021b) identify that public policy measures are aimed to address two main objectives: 1) mitigate the spread of the coronavirus and bolster the public health sector; 2) provide financial aid to domestic households and companies that suffered from unexpected income or earnings losses caused by supply and demand contractions, as well as support the entire financial and banking sectors to prevent a rise in bad debts and bankruptcies (Busso and Messina, 2020; Levy Yeyati and Filippini, 2021a, 2021b). Governments addressed the first objective by implementing such measures as lockdown restrictions, quarantine for citizens and travelers, social and physical distancing. These measures were crucial in preventing the spread of the coronavirus and alleviating pressure on the public health care system, especially in less developed economies with weak and at times scarce health care sectors. The public health policies also involved higher costs related to the health care sector to provide sufficient capacity and health care resources and facilities. Moreover, in the short and medium-term, these COVID-19 non-pharmaceutical interventions (NPIs) may have an adverse effect on economic activities leading to a reduction in capital flows (Demirgüç-Kunt et al., 2020). We provide empirical evidence that the lockdown stringency index, containment health index, and coronavirus government response index exhibit a similar effect in reducing the growth of cross-border bank flows. Tables 13 and 14 show that Oxford COVID-19 government response indexes are statistically significant at 5% and negatively correlated with bank flows. These coronavirus restriction measures have the estimated coefficients varying between 0.0122 and 0.0126. For example, Table 13 presents that moving from the 25th to the 75th percentile in the lockdown stringency index reduces cross-border bank flows by about 0.315% to 0.945%, respectively. However, we argue that in the long run, these COVID-19 non-pharmaceutical interventions (NPIs) could help countries to overcome economic recession. Because they are aimed to alleviate the spread of coronavirus across countries and return the stance of economies back to "normal" or prior pandemic levels. Taken together, our panel regression and two-step robust system GMM results help to understand the developments in the global banking system in particular due to the COVID-19 pandemic outbreak.

6. Conclusion

This paper conveys consistency and explores the adverse influence of infectious disease outbreaks, a variety of economic policy uncertainty (EPU), and COVID-19 non-pharmaceutical interventions (NPIs) on the growth of cross-border bank flows.

The COVID-19 pandemic outbreak amplified the unprecedented uncertainty in the world economy due to certain factors (Alfaro et al., 2020; Al-Thaqeb, Algharabali, and Alabdulghafour, 2020; Caggiano, Castelnuovo, and Kima, 2020; De Bock et al., 2020; Iyke and Ho, 2020; Jordà et al., 2020; Reinhart and Reinhart, 2020). These factors might comprise the following questions: how long the uncertainty related to the COVID-19 pandemic will last, how severe will be the impact on the world economy, what are the chances for another pandemic outbreak, and whether it would affect the global financial system, etc. These unanswered questions may raise the level of uncertainty for both lawmakers and multinational corporations. As a result, COVID-19 related uncertainty will increase the severity of aggregated negative effects on the global economy.

Theory suggests that a high level of economic policy uncertainty (EPU) drives a negative impact on domestic households, financial corporations, and states, which are inclined to postpone many essential financial operations and policies under such circumstances, and this, in turn, can lead to a lower level of consumption, a smaller number of granted loans and investments, and greater percent of unemployment (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020; Baker et al., 2016; Beck, 2020; Bloom, 2014; Bordo et al., 2016; Brunnermeier, 2009; Djiofack et al., 2020; Gulen and

Ion, 2016; Kahle and Stulz, 2013; Levy Yeyati and Filippini, 2021a, 2021b; Ozili, 2021). Taken together, high uncertainty causes a decline in economic growth and development, a drop-in capital investment, and lower spending by individuals around the world. We argue that economic policy uncertainty (EPU) should be perceived as an important risk factor (Al-Thaqeb and Algharabali, 2019; Al-Thaqeb et al., 2020; Colak et al., 2017; Hoque and Zaidi, 2019; Jens, 2017; Kelly et al., 2016; Pástor and Veronesi, 2012, 2013).

Using panel data analysis with country fixed effects, we show that the US infectious disease equity market volatility (EMV) tracker is one of the most important global push factors of cross-border bank flows in a sample of 46 countries throughout the period 2005—2020. We show that our finding has economic interpretations. Moving from the 25th to the 75th percentile on the US infectious disease equity market volatility (EMV) tracker reduces the growth of international bank flows by about 0.965–2.895%, accordingly.

To date, there is no direct test of the association between different dimensions of economic policy uncertainty (EPU) and exposures of bank flows. We contribute by identifying the adverse effects of global economic policy uncertainty (GEPU_current and GEPU_ppp) indexes on the growth of cross-border bank flows. In particular, we show that the global economic policy uncertainty (GEPU_current) Index has increased more than twice during the period with the COVID-19 outbreak compared to the prior pandemic period.

We provide empirical results for the Euro Area and examine different dimensions of Greek and US policy uncertainty (EPU) i.e., uncertainty related to regulations, sovereign debt, banking, monetary policy on cross-border bank flows. We confirm the importance of different dimensions of Greek and US economic policy uncertainty (EPU) indexes as the main determinants of bank flows.

We review the effect of COVID-19 government restriction measures including lockdown stringency, containment health indicators as well as coronavirus government responses on bank flows dynamics. We summarize by highlighting that a variety of Oxford COVID-19 government response indexes show a similar effect in reducing the growth of cross-border bank flows.

Overall, our paper aims to raise awareness about the adverse effects of different dimensions of economic policy uncertainty (EPU) on the global economy. We argue that policymakers should create effective regulatory environments, including macroprudential and monetary policies, for better capital flows management and sustaining the global financial safety net.

References

Abel, A., (1983). Optimal investment under uncertainty. American Economic Review, vol. 73, 228–233.

Acharya, V., and Mora, N., (2015). A crisis of banks as liquidity providers. Journal of Finance 70(1), 1–43.

Alessandri, P., and Bottero, M., (2020). Bank lending in uncertain times. European Economic Review, vol. 128, 103503, 1–19.

Alfaro, L., Chari, A., Greenland, A., Schott, P., (2020). Aggregate and firm-level stock returns during pandemics, in real time. NBER working paper 26950, National Bureau of Economic Research, 1–33.

Al-Thaqeb, S.A., and Algharabali, B.G., (2019). Economic policy uncertainty: a literature review. The Journal of Economic Asymmetries, 20, e00133, 1–11.

Al-Thaqeb, S.A., Algharabali, B.G., Alabdulghafour, K.T., (2020). The pandemic and economic policy uncertainty. International Journal of Finance and Economics, 1–11.

Ansell, R., and Mullins, J.P., (2021). COVID-19 ends longest employment recovery and expansion in CES history, causing unprecedented job losses in 2020. Bureau of Labor Statistics BLS, Monthly Labor Review, 1–49.

Arellano, M., and Bover, O., (1995). Another look at the instrumental variable estimation of error-components models. Journal of Econometrics, vol. 68, 29–52.

Ashraf, B.N., and Shen, Y., (2019). Economic policy uncertainty and banks' loan pricing. Journal of Financial Stability, 44, 100695, 1–12.

Avdjiev, S., Gambacorta, L., Goldberg, L.S., Schiaffi, S., (2020). The shifting drivers of global liquidity. Journal of International Economics, vol. 125, 103324, 1–17.

Baker, S.R., Bloom, N., and Davis, S.J., (2016). Measuring economic policy uncertainty. The Quarterly Journal of Economics, 131(4), 1593–1636.

Baker, S.R., Bloom, N., Davis, S.J., and Kost, K., (2019). Policy news and equity market volatility. NBER Working Paper 25720, National Bureau of Economic Research, 1–53.

Baker, S.R., Bloom, N., Davis, S.J., Kost, K., Sammon, M., and Viratyosin, T., (2020a). The unprecedented stock market reaction to COVID-19. The Review of Asset Pricing Studies, vol. 10, 742–758.

Baker, S.R., Bloom, N., Davis, S.J., and Terry, S.J., (2020b). Covid-induced economic uncertainty. NBER Working Paper No. w26983, National Bureau of Economic Research, 1–17.

Balcilar, M., Gupta, R., and Segnon, M., (2016). The role of economic policy uncertainty in predicting US recessions: a mixed-frequency Markov-switching vector autoregressive approach. Economics, Open-Assessment E-Journal, 10 (27), 1–20.

Barraza, S., and Civelli, A., (2020). Economic policy uncertainty and the supply of business loans. Journal of Banking and Finance, vol. 121, 105983, 1–13.

Barrero, J.M., Bloom, N., and Wright, I.J., (2017). Short and long run uncertainty. NBER Working Paper 23676, 1–46.

Barrett, P., Das, S., Magistretti, G., Pugacheva, E., Wingender, P., (2021). After-effects of the COVID-19 pandemic: prospects for medium-term economic damage. IMF Working Paper, WP/21/203, 1–23.

Beach, B., Clay, K., and Saavedra, M.H., (2021). The 1918 influenza pandemic and its lessons for COVID-19. Journal of Economic Literature (Forthcoming).

Beck, T., (2020). Finance in the times of coronavirus. Economics in the time of COVID-19, 73-76.

Beck, T., Bruno, B., and Carletti, E., (2021). When and how to unwind COVID-support measures to the banking system? Requested by the ECON Committee of the European Parliament, PE 659.646, 1–26.

Beck, T., Carletti, E., and Bruno, B., (2021). Unwinding COVID support measures for banks. VoxEU.org, 17 March.

Beirne, J., and Gieck, J., (2014). Interdependence and contagion in global asset markets. Review of International Economics, vol., 22(4), 639–659.

Beirne, J., Renzhi, N., Sugandi, E., and Volz, U., (2020). Financial market and capital flow dynamics during the COVID-19 pandemic. Asian Development Bank Institute Working Paper, No. 1158, 1–40.

Bekaert, G., Hoerova, M., and Lo Duca, M., (2013). Risk, uncertainty and monetary policy. Journal of Monetary Policy, vol., 60(7), 771–788.

Belke, A., and Göcke, M., (2005). Real options effects on employment: Does exchange rate uncertainty matter for aggregation? German Economic Review, vol. 62, 185–203.

Belke, A., and Volz, U., (2018). Capital flows to emerging market and developing economies. Global liquidity and uncertainty versus country-specific pull factors. German Development Institute, Discussion Paper No. 23/2018, 1–66.

Belke, A., and Volz, U., (2019). Capital flows to developing and emerging market economies: global liquidity and uncertainty versus push factors. Review of Development Finance, vol. 9(1), 32–50.

Benigno, G., Hartley, J., García-Herrero, A., Rebucci, A., and Ribakova, E., (2020). Credible emerging market central banks could embrace quantitative easing to fight COVID-19. VoxEU.org, 29 June.

Berger, T., Grabert, S., and Kempa, B., (2017). Global macroeconomic uncertainty. Journal of Macroeconomics, vol. 53, 42–56.

Berger, D., and Dew-Becker, I., and Giglio, S., (2020a). Uncertainty shocks as second-moment news shocks. Review of Economic Studies, vol. 87(1), 40–76.

Berger, A.N., Guedhami, O., Kim, H.H., and Li, X., (2020b). Economic policy uncertainty and bank liquidity hoarding. Journal of Financial Intermediation, 100893, 1–15.
Bernanke, B.S., (1983). Irreversibility, uncertainty, and cyclical investment. The Quarterly Journal of Economics, vol. 98(1), 85–106.
Bharati T., and Fakir, A.M.S., (2020). Pandemic catch-22: how effective are mobility restrictions in halting the spread of COVID-19? COVID Economics Vetted and Real-Time Papers, CEPR, vol. 26, 107–136.
Bloom, N., (2009). The impact of uncertainty shocks. Econometrica, vol. 77(3), 623–685.
Bloom, N., (2014). Fluctuations in uncertainty. Journal of Economic Perspectives, vol. 28(2), 153–176.
Blundell, R., and Bond, S., (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, vol. 87, 115–143.
Boissay, F., and Rungcharoenkitkul, P., (2020). Macroeconomic effects of Covid-19: an early review. BIS Bulletin No. 7. Basel: Bank for International Settlements, 1–9.
Bordo, M.D., Duca, J.V., and Koch, C., (2016). Economic policy uncertainty and the credit channel: aggregate and bank level US evidence over several decades. Journal of Financial Stability, 26, 90–106.
Brodeur, A., Gray, D., Islam, A., Bhuiyan, S., (2021). A literature review of the economics of COVID-19. Journal of Economic Surveys, 1–38.
Brunnermeier, M.K., (2009). Deciphering the liquidity and credit crunch 2007-2008. Journal of Economic Perspectives, vol. 23(1), 77–100.
Bruno, V., and Shin, H.S., (2012). Capital flows and the risk-taking channel of monetary policy. BIS Working Papers, No. 400, Monetary and Economic Department, 1–57.
Bruno, V., and Shin H.S., (2013). Capital flows and the risk-taking chanel of monetary policy, cross-border banking and global liquidity. National Bureau of Economic Research, No. w18942, 1–44.
Bruno, V., and Shin H.S., (2014). Cross-border banking and global liquidity. Bank for International Settlements BIS Working Papers, No. 458, 1–45.
Bruno, V., and Shin H.S., (2015). Cross-border banking and global liquidity. Review of Economic Studies, Oxford University Press, vol. 82(2), 535–564.
Bureau of Labor Statistics BLS, (2020) Employment Situation Summary. December 2020.
Bureau of Labor Statistics BLS, (2021) Employment Situation Summary. August 2021.
Busso, M., and Messina, J., (2020). The inequality crisis: Latin America and the Caribbean at the crossroads. Inter-American Development Bank, IDB, 1–385.
Caggiano, G., Castelnuovo, E., and Figueres, J.M., (2017). Economic policy uncertainty and unemployment in the United States: a nonlinear approach. Economics Letters, vol. 151, 31–34.
Caggiano, G., Castelnuovo, E., and Kima, R., (2020). The global effects of Covid-19-induced uncertainty. Economics Letters, 194, [109392], 1–5.
Caglayan, M., and Xu, B., (2019). Economic policy uncertainty effects on credit and stability of financial institutions. Bulletin of Economic Research, vol. 71(3), 342–347.
Cecchetti, S.G., and Schoenholtz, K.L., (2020). Contagion: bank runs and COVID-19. Economics in the time of COVID-19, 77–79.
Cerutti, E., (2015). Drivers of cross-border banking exposures during the crisis. Journal of Banking and Finance, vol. 55, 340–357.
Cerutti, E., Claessens, S., and Puy, D., (2015). Push factors and capital flows to emerging markets: why knowing your lender matters more than fundamentals. IMF Working Paper 15/127, 1–43.
Cerutti, E., Claessens, S., and Ratnovski, L., (2014). Global liquidity and drivers of cross-border bank flows. IMF, Working Paper, WP/14/69, 1–27.
Cerutti, E., Claessens, S., and Ratnovski, L., (2017). Global liquidity and cross-border bank flows. Economic Policy, vol. 32(89), 81–125.
Cerutti, E., and Osorio-Buitron, C., (2020). US vs. euro area: Who drives cross-border bank lending to EMs? Journal of the Japanese and International Economies, vol. 57, 101090, 1–18.
Chen, Y.F., and Funke, M., (2003). Option value, policy uncertainty, and the foreign direct investment decision. HWWA Discussion Paper No. 234, 1–23.
Chi, Q., and Li, W., (2017). Economic policy uncertainty, credit risks and banks' lending decisions: evidence from Chinese commercial banks. China journal of accounting research, 10(1), 33–50.
Choi, S., and Furceri, D., (2019). Uncertainty and cross-border banking flows. Journal of International Money and Finance, vol. 93(C), 260–274.
Chu, J., and Fang, J., (2021). Economic policy uncertainty and firms' labor investment decision. China Finance Review International, vol. 11(1), 73–91.
Coibion, O., Gorodnichenko, Y., and Weber, M., (2020). Labor markets during the covid-19 crisis: a preliminary view. National Bureau of Economic Research, Working Paper No. w27017, 1–22.
Colak, G., Durnev, A., and Qian, Y. (2017). Political uncertainty and IPO activity: evidence from US gubernatorial elections. Journal of Financial and Quantitative Analysis, 52(6), 2523– 2564.

Colombo, V., (2013). Economic policy uncertainty in the US: Does it matter for the euro area? Economics Letters, vol. 121(1), 39–42.
Cordella, T., Ricci, L.A., and Ruiz-Arranz, M., (2005). Debt overhang or debt irrelevance? Revisiting the debt-growth link. International Monetary Fund, IMF Working Paper, WP/05/223, 1–55.
Correa, R., Paligorova, T., Sapriza, H., Zlate, A., (2021). Cross-border bank flows and monetary policy. The Review of Financial Studies, 1–44.
Correia, S., Luck, S., and Verner, E., (2020). Pandemics depress the economy, public health interventions do not: evidence from the 1918 Flu. SSRN Working Paper, 1–56.
Danisman, G.O., Ersan, O., and Demir, E. (2020). Economic policy uncertainty and bank credit growth: evidence from European banks. Journal of Multinational Financial Management, vol. 57–58, 100653, 1–14.
Danisman, G.O., Demir, E., and Ozili, P., (2021). Loan loss provisioning of US banks: economic policy uncertainty and discretionary behavior. International Review of Economics and Finance, vol. 71, 923–935.
Davis, S.J., (2016). An index of global economic policy uncertainty. NBER Working Paper No. w22740, National Bureau of Economic Research, 1–13.
Davis, J.S., Valente, G., and van Wincoop, E., (2019). Global capital flows cycle: impact on gross and net flows. NBER Working Paper 25721, National Bureau of Economic Research, 1–50.
Davis, J.S, Valente, G., and van Wincoop, E., (2021). Global drivers of gross and net capital flows. Journal of International Economics, vol 128, 103397, 1–21.
De Bock, R., Drakopoulos, D., Goel, R., Gornicka, L., Papageorgiou, E., Schneider, P., and Sever, C., (2020). Managing volatile capital flows in emerging and frontier markets. VoxEU.org.
Demir, E., and Danisman, G.O., (2021). Banking sector reactions to the COVID-19: the role of bank-specific factors and government policy responses. SSRN Working Paper, 1–30.
Demirguc-Kunt, A., Lokshin, M., Torre, I., (2020). The sooner, the better: the early economic impact of non-pharmaceutical interventions during the COVID-19 pandemic. Policy Research Working Paper 9257, World Bank, 1–95.
Dew-Becker, I., Giglio, S., and Kelly, B., (2021). Hedging macroeconomic and financial uncertainty and volatility. Journal of Financial Economics, 1–23.
Djiofack, C., Dudu, H., and Zeufack, A., (2020). Assessing COVID-19's economic impact in sub-Saharan Africa: insights from a CGE model. Vox eBook Chapters, in: S. Djankov and U. Panizza (ed.), COVID-19 in Developing Economies, CEPR, ed. 1, vol. 1, 53–68.
Dong, H., Liu, Y., and Chang, J., (2019). The heterogeneous linkage of economic policy uncertainty and oil return risks. Green Finance, vol. 1, 46–66.
ElFayoumi, K., and Hengge, M., (2020). Capital markets, COVID-19 and policy measures. VoxEU.org, 14 September.
ElFayoumi, K., and Hengge, M., (2021). Capital markets, COVID-19 and policy measures. IMF Working Paper No. 2021/033, 1–36.
Ferraresi, M., Kotsogiannis, C., Rizzo, L., and Secomandi, R., (2020a). COVID-19: 'lockdown' and institutions. Working papers 89, Società Italiana di Economia Pubblica, 1–16.
Ferraresi, M., Kotsogiannis, C., Rizzo, L., and Secomandi, R., (2020b). The 'Great Lockdown' and its determinants. Economics Letters, vol. 197, 109628, 1–5.
Forbes, K., and Warnock, F., (2011). Capital flow waves: surges, stops, flight and retrenchment. Journal of International Economics, vol. 88(2), 235–251.
Foresti, P., (2018). Monetary and fiscal policies interaction in monetary unions. Journal of Economic Surveys, vol. 32(1), 226–248.
Fratzscher, M., (2012). Capital flows, push versus pull factors and the global financial crisis. Journal of International Economics, vol. 88(2), 341–356.
Garrett, T.A., (2008). Economic effects of the 1918 influenza pandemic: implications for a modern-day pandemic. Federal Reserve Bank of St. Louis Review, vol. 90(2), 75–93.
Gauvin, L., McLoughlin, C., and Reinhardt, D., (2014). Policy uncertainty spillovers to emerging markets: evidence from capital flows. Bank of England Working Paper 512, 1–50.
Gelos, G., Rawat, U., and Ye, H., (2020). COVID-19 in emerging markets: escaping the monetary policy procyclicality trap. VoxEU.org, 20 August.
Gilchrist, S., Sim, J.W., and Zakrajšek, E., (2014). Uncertainty, financial frictions, and investment dynamics. National Bureau of Economic Research (No. w20038), 1–60.
Gissler, S., Oldfather, J., and Ruffino, D., (2016). Lending on hold: regulatory uncertainty and bank lending standards. Journal Monetary Economics, vol. 81, 89–101.
Gounopoulos, D., Luo, K., Nicolae, A., and Paltalidis, N., (2021). Banks' liquidity management during the COVID-19 pandemic. COVID Economics Vetted and Real-Time Papers, CEPR, vol. 80, 94–154.
Gourio, F., Siemer, M., and Verdelhan A., (2015). Uncertainty and international capital flows. SSRN Working paper, 1–60.
Gulen, H., and Ion, M., (2016). Policy uncertainty and corporate investment. The Review of Financial Studies, 29(3), 523–564.

Hale, T., Anania, J., Angrist, N., Boby, T., Cameron-Blake, E., Di Folco, M., Ellen, L., Goldszmidt, R., Hallas, L., Kira, B., Luciano, M., Majumdar, S., Nagesh, R., Petherick, A., Phillips, T., Tatlow, H., Webster, S., Wood, A., and Zhang, Y., (2021a). Variation in government responses to COVID-19. Blavatnik School of Government, BSG Working Paper Series, BSG-WP-2020/032, version 12.0, 1–40.
Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., and Tatlow, H., (2021b). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). Nature Human Behaviour, vol 5, 529–538.
Hale, T., Angrist, N., Kira, B., Goldszmidt, R., Petherick, A., Phillips, T., (2020). Pandemic governance requires understanding socioeconomic variation in government and citizen responses to COVID-19. SSRN Working Paper, 1–20.
Hammoudeh, S., and McAleer, M., (2015). Advances in financial risk management and economic policy uncertainty: an overview. International Review of Economics and Finance, vol. 40, 1–7.
Handwerker E.W., Meyer, P.B., Piacentini, J., Schultz, M., Sveikauskas, L., (2020). Employment recovery in the wake of the COVID-19 pandemic. Bureau of Labor Statistics BLS, Monthly Labor Review, 1–24.
Hansen, A.H., (1939). Economic progress and declining population growth. American Economic Review, vol. 29 (1), 1–15.
Hayford, M.D., and Malliaris, A.G., (2005). Recent monetary policy in the U.S.: risk management of asset bubbles. The Journal of Economic Asymmetries, vol. 2(1), 25–39.
He, Z., and Niu, J., (2018). The effect of economic policy uncertainty on bank valuations. Applied Economics Letters, vol. 25(5), 345–347.
Hermes, N., and Lensink, R., (2001). Capital flight and the uncertainty of government policies. Economics letters, vol. 71(3), 377–381.
Herrmann, S., and Mihaljek, D., (2010). The determinants of cross-border bank flows to emerging markets: new empirical evidence on the spread of financial crises. BIS Working Papers, No. 315, Monetary and Economic Department, 1–38.
Herrmann, S., and Mihaljek, D., (2013). The determinants of cross-border bank flows to emerging markets: new empirical evidence on the spread of financial crises. Economics of Transition, vol. 21(3), 479–508.
Hofmann, B., Shim, I., and Shin, H.S., (2020). Emerging market economy exchange rates and local currency bond markets amid the Covid-19 pandemic. BIS Bulletin No. 5. Basel: Bank for International Settlements, 1–9.
Hoque, M.E., and Zaidi, M.A.S., (2019). The impacts of global economic policy uncertainty on stock market returns in regime switching environment: evidence from sectoral perspectives. International Journal of Finance and Economics, vol. 24(2), 991–1016.
Huang, Y., Ji, Y., Ni, X., Tan, Y., and Wang, X., (2019). Economic policy uncertainty, state ownership, and credit allocation, Working Paper, 1–42.
Hu, S., and Gong, D., (2019). Economic policy uncertainty, prudential regulation and bank lending. Finance Research Letters, vol. 29, 373–378.
International Monetary Fund IMF, (2021). Policy responses to Covid-19: policy tracker. International Monetary Fund, July 2021.
International Monetary Fund World Economic Outlook, IMF WEO, (2021a). Managing divergent recoveries. April 2021, 1–192.
International Monetary Fund World Economic Outlook, IMF WEO, (2021b). Fault lines widen in the global recovery, July, 2021, 1–21.
Iyke, B.N., (2020). Economic policy uncertainty in times of COVID-19 pandemic. Asian Economics Letters, vol. 1(2), 1–4.
Iyke, B.N., and Ho, S.Y., (2020). Consumption and exchange rate uncertainty: evidence from selected Asian countries. The World Economy, vol. 43(9), 2437-2462.
Jens, C.E., (2017). Political uncertainty and investment: causal evidence from US gubernatorial elections. Journal of Financial Economics, 124(3), 563–579.
Jeong, B., (2002). Policy uncertainty and long-run investment and output across countries. International Economic Review, vol. 43(2), 363–392.
Jorda, O., Singh, S.R., and Taylor, A.M., (2020). Longer-run economic consequences of pandemics, Federal Reserve Bank of San Francisco Working Paper 2020-09, 1–22.
Julio, B., and Yook, Y., (2012). Political uncertainty and corporate investment cycles. Journal of Finance, vol. 67(1), 45–83.
Julio, B., and Yook, Y., (2016). Policy uncertainty, irreversibility, and cross-border flows of capital. Journal of International Economics, vol. 103, 13–26.
Kahle, K.M., and Stulz, R.M., (2013). Access to capital, investment, and the financial crisis. Journal of Financial Economics, 110(2), 280–299.
Kang, W., Lee, K., and Ratti, R.A., (2014). Economic policy uncertainty and firm-level investment. Journal of Macroeconomics, vol. 39, 42–53.
Kaya, O., (2018). Economic policy uncertainty in Europe: detrimental to capital markets and bank lending. Deutsche Bank Research.

Kelly, B., Pástor, L., and Veronesi, P., (2016). The price of political uncertainty: theory and evidence from the option market. The Journal of Finance, 71(5), 2417–2480.
Koepke, R., (2019). What drives capital flows to emerging markets? A survey of the empirical literature. Journal of Economic Surveys, vol., 33(2), 516–540.
Landier, A., and Thesmar, D., (2020). Earnings expectations in the COVID crisis. NBER Working Paper No. 27160, National Bureau of Economic Research, 1–28.
Lee, C.C., Lee, C.C., Zeng, J.H., and Hsu, Y.L., (2017). Peer bank behavior, economic policy uncertainty, and leverage decision of financial institutions. Journal of Financial Stability, vol., 30, 79–91.
Lee Y.J., and Kim, S., and Park, K.Y., (2019). Deciphering monetary policy board minutes with text mining: the case of South Korea. Korean Economic Review, Korean Economic Association, vol. 35(2), 471–511.
Levy Yeyati, E., and Filippini, F., (2021a). Pandemic divergence: A short note on COVID-19 and global income inequality. Red Nacional de Investigadores en Economía (RedNIE), Working Papers 68, 1–16.
Levy Yeyati, E., and Filippini, F., (2021b). The social and economic impact of Covid-19. Brookings Global Working Paper 158, June 2021, 1–46.
Maliszewska, M., Mattoo, A., and van der Mensbrugghe, D., (2020). The potential impact of COVID-19 on GDP and Trade: a preliminary assessment. World Bank Policy Research Working Paper No. 9211, 1–26.
Mann, C.L., (2020). Real and financial lenses to assess the economic consequences of COVID-19. Economics in the time of COVID-19, 81–84.
McCauley, R.N., McGuire, P., and Sushko, V., (2015). US monetary policy, leverage and offshore dollar credit. Economic Policy, vol. 82, 187–229.
McKibbin, W., and Sidorenko, A.A., (2006). Global macroeconomic consequences of pandemic influenza. CAMA Miscellaneous Publications. Canberra: Centre for Applied Macroeconomic Analysis, Crawford School of Public Policy, Australian National University, 1–81.
Mian, A., and Sufi, A., (2010). The great recession: lessons from microeconomic data. American Economic Review, vol. 100(2), 51–56.
Mian, A.R., and Sufi, A., and Khoshkhou, N., (2015). Government economic policy, sentiments, and consumption. NBER Working Paper No. w21316, National Bureau of Economic Research, 1–52.
Mian, A., Sufi, A., and Khoshkhou, N., (2021). Partisan bias, economic expectations, and household spending. Chicago Booth Research Paper, Fama-Miller Working Paper, 1–46.
Milesi-Ferretti, G.M., and Tille, C., (2011). The great retrenchment: international capital flows during the global financial crisis. Economic Policy, vol. 26(66), 289–346.
Mishkin, F.S., (1999). Global financial instability: framework, events, issues. Journal of Economic Perspectives, vol. 13 (1999), 3–20.
Mueller, P., Tahbaz-Salehi, A., and Vedolin, A., (2017). Exchange rates and monetary policy uncertainty. The Journal of Finance, vol. 72(3), 1213–1252.
Mühleisen, M., Gudmundsson, T., and Poirson Ward, H., (2020). COVID-19 response in emerging market economies: conventional policies and beyond. IMF Blog.
Ng, J., Saffar, W., and Zhang, J.J., (2020). Policy uncertainty and loan loss provisions in the banking industry. Review of Accounting Studies, vol. 25, 726–777.
Organisation for Economic Co-operation and Development, OECD (2021). The COVID-19 crisis and banking system resilience: Simulation of losses on non-performing loans and policy implications, OECD Paris, 1–52.
Organisation for Economic Co-operation and Development, OECD Economic Outlook (2021). No ordinary recovery: navigating the transition. OECD, May 2021.
Osina, N., (2020). Global liquidity, market sentiment and financial stability indices. Journal of Multinational Financial Management, vol., 52-53, 100606, 1–16.
Osina, N., (2021). Global liquidity and capital flow regulations. Journal of Banking Regulation (JBR), vol. 22, 52–72.
Ozili, P.K., (2021). Economic policy uncertainty in banking: a literature review. Handbook of Research on Financial Management During Economic Downturn and Recovery, 1–23.
Papaioannou, E., (2009). What drives international financial flows? Politics, institutions and other determinants. Journal of Development Economics, vol. 88(2), 269–281.
Park, K.Y., Lee, Y.J., and Kim, S., (2019). Deciphering monetary policy board minutes through text mining approach: the case of Korea. Bank of Korea Working Paper, 1–62.
Pástor, L., and Veronesi, P., (2012). Uncertainty about government policy and stock prices. Journal of Finance, 67(4), 1219–1264.
Pástor, L., and Veronesi, P., (2013). Political uncertainty and risk premia. Journal of Financial Economics, 110(3), 520–545.
Phan, D.H.B., Iyke, B.N., Sharma, S.S., and Affandi, Y., (2021). Economic policy uncertainty and the financial stability–is there a relation? Economic Modelling, vol. 94, 1018–1029.
Verikios, G., and Sullivan, M., Stojanovski, P., and Giesecke, J., and Woo, G., (2011). The global economic effects of pandemic influenza. Centre of Policy Studies/IMPACT Centre Working Papers g-224, Victoria University, 1–46.

Verikios, G., and Sullivan, M., and Stojanovski, P., and Giesecke, J., and Woo, G., (2016). Assessing regional risks from pandemic influenza: a scenario analysis. The World Economy, vol. 39(8), 1225-1255.
Reinhart, C., and Reinhart, V., (2020). The pandemic depression: the global economy will never be the same. Foreign Affairs, 99.
Rodrik, D., (1991). Policy uncertainty and private investment in developing countries. Journal of Development Economics, vol. 36(2), 229–242.
Sahinoz, S., and Erdogan Cosar, E., (2018). Economic policy uncertainty and economic activity in Turkey. Applied Economics Letters, 25(21), 1517–1520.
Sarno, L., Tsiakas, I., and Ulloa, B., (2016). What drives international portfolio flows? Journal of International Money and Finance, vol. 60, 53–72.
Summers, L., (2014). U.S. economic prospects: secular stagnation, hysteresis, and the zero-lower bound. Business Economics, vol. 49(2), National Association for Business Economics, 65–73.
World Health Organization, WHO (2019). Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza. Geneva: World Health Organization, 1–91.
World Health Organization, WHO (2020). Calibrating long-term non-pharmaceutical interventions for COVID-19. Principles and facilitation tools. WHO Western Pacific Region, December 2020, 1–39.
Wang, Y., Chen, C.R., and Huang, Y.S., (2014). Economic policy uncertainty and corporate investment: evidence from China. Pacific-Basin Finance Journal, vol. 26, 227–243.
Xu, Z., (2020). Economic policy uncertainty, cost of capital, and corporate innovation. Journal of Banking and Finance, vol. 111, 105698, 1–15.
Zhang, D., Hu, M. and Ji, Q., (2020). Financial markets under the global pandemic of COVID-19. Finance Research Letters, vol. 36, 101528, 1–6.

APPENDIX: Descriptive Statistics and Benchmark Regression results

Table 1 Descriptive statistics

This table summarizes the key variables grouped into global factors, financial market factors and country-specific factors. I provide their names, number of observations, mean, standard deviation, minimum and maximum. Additionally, the Table provides summary of Economic Policy Uncertainty (EPU) indices and other indices.

Variable	Obs	Mean	Std. Dev.	Min	Max
Growth rate (in percent) of the adjusted BIS Locational Cross-Border Claims on Banks (exchange rate adjusted) (100×Xafter)/ (Xbefore-100)	**2944**	0.7326285	3.531898	-3.394444	4.959056
ΔVIX CBOE Lag (logged VIX_t)	**2944**	16.79688	2.530239	13.95	19.97
Log real GDP (seasonally adjusted) Lag	**2944**	0.8912608	0.4446616	0.3435897	1.391282
Log Consumer Core Price Index (CPI) (seasonally adjusted) Lag	**2944**	2.156316	0.8319373	1.237	3.19
Log Money Supply M2 (seasonally adjusted)	**2944**	1.710277	0.891737	0.5423243	2.643121
Δ Current account balance (seasonally adjusted)	**2944**	0.0517527	1.97751	-2.18	2.54
Δ US TED Spread	**2944**	33.44152	8.158846	24.015	42.77062
Δ US Effective Federal Funds Rate	**2944**	0.8248438	0.7635615	0.14	1.82
US REER (growth rate) (100×Xafter)/ (Xbefore-100)	**2944**	-0.1028074	1.189939	-1.55976	1.186029
Oxford lockdown stringency index (0 to 100)	**2944**	43.5	32.1	0	95
Oxford containment health index (0 to 100)	**2944**	47.0	36.2	0	98

Oxford coronavirus government response index (0 to 100)	**2944**	44.3	35.5	0	96
US Infectious Disease Equity Market Volatility (EMV) Tracker	**2944**	0.4246875	0.5219363	0	1.45
US Equity Related Economic Uncertainty	**2944**	24.51547	12.70638	11.86	41.16
US Economic Policy Uncertainty Health Care	**2944**	142.6043	47.356	87.81695	196.8765
US Economic Policy Uncertainty Index - Overall (NADJ)	**2944**	121.5172	16.52928	102.7158	141.4255
US Economic Policy Uncertainty Index - Categorical, Regulation	**2944**	114.2224	20.74971	91.61799	139.1016
US Economic Policy Uncertainty Index - Categorical, Financial Regulation	**2944**	97.02874	34.10523	58.55834	137.3866
US Economic Policy Uncertainty Index - Categorical, Sovereign Debt	**2944**	54.30896	21.83695	31.39162	81.24308
US Economic Policy Uncertainty Index - Categorical, Trade Policy	**2944**	65.00002	31.0483	33.37372	106.4083
Global Economic Policy Uncertainty Index (EPU), Current Prices GDP (GEPU_current), meaning global EPU at current prices	**2944**	134.1389	24.89027	107.2718	164.828
Global Economic Policy Uncertainty Index (EPU), PPP-Adjusted GDP (GEPU_ppp), meaning global EPU at constant prices	**2944**	135.3548	25.56508	107.7422	166.7814
US EPU Entitlement programs	**2944**	105.9087	33.22474	69.53561	145.1276
US EPU National security	**2944**	73.35216	22.78773	50.64901	103.3532

US EPU Government spending	**2944**	68.90554	26.54306	40.77333	102.91
US EPU Taxes	**2944**	101.8029	25.79009	71.33884	131.9799
US EPU Fiscal Policy (Taxes OR Spending)	**2944**	97.99149	26.74651	66.26235	129.3727
US Economic Policy Uncertainty Index (EPU), Overall	**2944**	90.77994	16.89994	71.14457	110.6823
Monetary Policy Uncertainty (MPU) - Baker-Bloom-Davis MPU Indices for the United States - (BBD MPU Index Based on 10 Major Papers)	**2944**	130.2952	27.06555	101.2427	164.9493
Greek Banking Uncertainty (EPUB) Index	**2944**	95.96871	13.188	79.751	110.2782
Greek Debt Uncertainty (EPUD) Index	**2944**	98.58863	15.05477	82.5897	116.5813
Greek Monetary Policy Uncertainty (EPUM) Index	**2944**	87.87794	12.45791	73.64203	102.2589
Greek Currency Uncertainty (EPUC) Index	**2944**	81.57511	14.08113	64.59362	97.45461
Greek Economic Policy Uncertainty (EPU) Index	**2944**	97.05092	12.31545	82.58692	111.47
Greek Fiscal Policy Uncertainty (EPUF) Index	**2944**	101.4922	10.87459	89.42584	114.8871
Greek Tax Uncertainty (EPUT) Index	**2944**	101.4138	9.602982	89.83349	113.0506
Greek Pension Uncertainty (EPUP) Index	**2944**	96.51656	14.9976	80.07283	114.6891
Citi Macro Risk Index	**2944**	0.4440938	0.1421427	0.292	0.623

Table 2 List of Countries

This table summarizes the list of countries included in panel regression analysis with country fixed effects.

Australia	Norway
Austria	Peru
Brazil	Philippines
Canada	Poland
Chile	Portugal
China	Romania
Colombia	Russian Federation
Croatia	Slovakia
Czech Republic	Slovenia
Denmark	South Africa
Egypt	Korea
France	Spain
Germany	Sri Lanka
Greece	Sweden
Hungary	Switzerland
Iceland	Taiwan
Indonesia	Thailand
Ireland	Turkey
Israel	Ukraine
Italy	***United Kingdom***
Japan	***United States***
Kazakhstan	
Mexico	
Netherlands	
New Zealand	

Table 3 Correlation Matrix for variables

	Ln real GDP	Ln Consumer Core Price Index (CPI)	Ln Money Supply M2	Δ Current account balance	Δ US TED Spread	Δ VIX CBOE	Δ US Federal Funds Rate	Growth US REER	GEPU_ppp
Ln real GDP	1								
Ln Consumer Core Price Index (CPI)	0.1809	1							
Ln Money Supply M2	0.3433	0.1302	1						
Δ Current account balance	-0.0575	-0.3533	-0.0345	1					
Δ US TED Spread	0.0198	0.1747	0.1412	-0.0573	1				
Δ VIX CBOE	0.0797	0.0556	0.0139	-0.0209	0.3564	1			
Δ US Federal Funds Rate	0.3397	0.0818	0.2871	-0.0228	0.2534	0.2192	1		
Growth US REER	-0.0412	0.0012	-0.2125	-0.0103	0.1843	0.273	-0.1464	1	
GEPU_ppp	-0.2134	-0.0656	-0.195	0.0404	-0.0637	-0.064	-0.3499	0.1786	1

Benchmark Regression results

Table 4: Regression Results for Cross-Border Claims to Banks and Global Economic Policy Uncertainty Index (EPU), PPP-Adjusted GDP (GEPU_ppp), for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Global Economic Policy Uncertainty Index (EPU), PPP-Adjusted GDP (GEPU_ppp) at constant prices is retrieved from the Economic Policy Uncertainty Website. Notes: Macroeconomic data is taken from Refinitiv Datastream. Refinitiv Comparable Economics/The Thomson Reuters International Comparable Economics dataset – TRICE. The selection of variables in the Base Model is guided by previous literature in macroeconomics, we tried to use standard variables for our model (Herrmann and Mihaljek, 2010, 2013; Bruno and Shin, 2013, 2015; Cerutti et al., 2014, 2015, 2017; Correa et al., 2021; Choi and Furceri, 2019) at the same time we have constructed variables in our own way. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	Panel Regression	Maximum Likelihood	Dynamic panel GMM	Dynamic panel GMM
L1. Ln real GDP	0.6282***	0.6189***	1.3978**	1.0223
	(0.1816)	(0.1327)	(0.5748)	(0.6384)
L1. Ln Consumer Core Price Index (CPI)	0.1197	0.0513	0.7105	0.2240
	(0.1252)	(0.0781)	(0.7807)	(0.7392)
Ln Money Supply M2	0.1603***	0.1635***	0.7369***	0.3750**
	(0.0410)	(0.0426)	(0.1399)	(0.1662)
Δ Current account balance	-0.0555**	-0.0163	0.0122	0.0226
	(0.0232)	(0.0138)	(0.0714)	(0.0545)
Δ US TED Spread	-0.0013	-0.0008	0.0148	0.0224
	(0.0017)	(0.0017)	(0.0194)	(0.0167)
L1. Δ VIX CBOE	-1.2442**	-1.2116*	-1.0289*	-0.8635*
	(0.5960)	(0.6226)	(0.5509)	(0.4686)
Δ US Federal Funds Rate	0.4905***	0.4894***	0.5908***	0.4021***
	(0.0808)	(0.0520)	(0.1736)	(0.1172)
Growth US REER	-0.3814***	-0.3809***	-0.3454***	-0.3940***
	(0.0383)	(0.0310)	(0.0576)	(0.0547)
GEPU_ppp	-0.0130***	-0.0136***		
	(0.0032)	(0.0031)		
L_Growth BankClaims L1. lag (2 2)			-0.6709***	
			(0.0751)	
GEPU_ppp L1. lag (2 2)			-0.0198***	
			(0.0074)	
L_Growth BankClaims L1. lag (4 4)				-0.1712***
				(0.0640)
GEPU_ppp L1. lag (4 4)				-0.0195***
				(0.0061)
Constant	1.0867*	1.2582**		
	(0.5534)	(0.4988)		
Country Fixed Effect	**Y**			
AR(1) Test			**0.000**	**0.000**
AR(2) Test			**0.192**	**0.383**
Observations	**2943**	**2943**	**2806**	**2806**
R-squared/Hansen/Sargan Test	**0.1576**		**1.000**	**1.000**
Number of countries	**46**	**46**	**46**	**46**

Table 5: Comparative Results for Cross-Border Claims to Banks and Global Economic Policy Uncertainty Index (EPU), Current Prices GDP (GEPU_current), for the full period 2005-2020 and prior to COVID-19 Pandemic period 2005-2019

The table reports comparative regression results for Cross-Border Claims to Banks and Global Economic Policy Uncertainty Index (EPU), Current Prices GDP (GEPU_current), for the full period 2005-2020 and prior to COVID-19 Pandemic period 2005-2019. Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Global Economic Policy Uncertainty Index (EPU), Current Prices GDP (GEPU_current) is retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	Full period 2005-2020		Prior to COVID-19 Pandemic 2005-2019	
	Panel Regression	**Dynamic panel GMM**	**Panel Regression**	**Dynamic panel GMM**
L1. Ln real GDP	0.6305***	1.4267**	0.5618***	1.8077***
	(0.1820)	(0.5801)	(0.2012)	(0.6526)
L1. Ln Consumer Core Price Index (CPI)	0.1205	0.7129	0.1348	0.7411
	(0.1255)	(0.7800)	(0.1335)	(0.8219)
Ln Money Supply M2	0.1609***	0.7375***	0.1633***	0.6474***
	(0.0412)	(0.1429)	(0.0466)	(0.1579)
Δ Current account balance	-0.0563**	0.0075	-0.0708**	-0.0048
	(0.0231)	(0.0718)	(0.0269)	(0.0784)
Δ US TED Spread	-0.0015	0.0142	-0.0048***	-0.0064
	(0.0017)	(0.0194)	(0.0017)	(0.0195)
L1. Δ VIX CBOE	-1.2224**	-1.0548*	-0.2308	-1.1197*
	(0.5935)	(0.5492)	(0.6763)	(0.5779)
Δ US Federal Funds Rate	0.4947***	0.5974***	0.5013***	0.6117***
	(0.0808)	(0.1742)	(0.0827)	(0.1586)
Growth US REER	-0.3844***	-0.3502***	-0.4257***	-0.4232***
	(0.0382)	(0.0574)	(0.0373)	(0.0602)
GEPU_current	-0.0124***		-0.0052***	
	(0.0033)		(0.0015)	
L_Growth BankClaims L1. lag (2 2)		-0.6699***		0.6845***
		(0.0745)		(0.0701)
GEPU_current L1. lag (2 2)		-0.0211***		-0.0188**
		(0.0078)		(0.0081)
Constant	0.9828*		0.2136	
	(0.5611)		(0.3802)	
Country Fixed Effect	**Y**		**Y**	
AR(1) Test		**0.000**		**0.000**
AR(2) Test		**0.188**		**0.187**
Observations	**2943**	**2806**	**2759**	**2622**
R-squared/Hansen/Sargan Test	**0.1567**	**1.000**	**0.1697**	**1.000**
Number of countries	**46**	**46**	**46**	**46**

Table 6: Regression Results for Cross-Border Claims to Banks and a variety of US Economic Policy Uncertainty Indexes, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: US Economic Policy Uncertainty Index - Overall (NADJ), US Economic Policy Uncertainty Financial Regulation Index (Categorical), US Economic Policy Uncertainty Sovereign Debt Index (Categorical) and US Economic Policy Uncertainty Regulation Index (Categorical) are retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	(1)	(2)	(3)	(4)
	Panel Regression	**Panel Regression**	**Panel Regression**	**Panel Regression**
L1. Ln real GDP	0.5741***	0.6108***	0.6822***	0.6216***
	(0.1886)	(0.1866)	(0.1838)	(0.1858)
L1. Ln Consumer Core Price Index (CPI)	0.1601	0.1897	0.1816	0.1649
	(0.1253)	(0.1286)	(0.1296)	(0.1267)
Ln Money Supply M2	0.1685***	0.1574***	0.1620***	0.1665***
	(0.0433)	(0.0434)	(0.0428)	(0.0428)
Δ Current account balance	-0.0615***	-0.0672***	-0.0673***	-0.0652***
	(0.0228)	(0.0229)	(0.0236)	(0.0231)
Δ US TED Spread	-0.0008	0.0009	-0.0019	-0.0007
	(0.0017)	(0.0019)	(0.0017)	(0.0017)
L1. Δ VIX CBOE	-1.2251**	-1.0222*	-1.2329**	-1.1597*
	(0.5937)	(0.6072)	(0.5966)	(0.5912)
Δ US Federal Funds Rate	0.4677***	0.4739***	0.5022***	0.4754***
	(0.0805)	(0.0780)	(0.0781)	(0.0810)
Growth US REER	-0.4158***	-0.4040***	-0.3925***	-0.4076***
	(0.0386)	(0.0387)	(0.0381)	(0.0390)
US EPU Index: Overall (NADJ)	-0.0055***			
	(0.0019)			
US EPU: Financial Regulation Index (Categorical)		-0.0023***		
		(0.0007)		
US EPU: Sovereign Debt Index (Categorical)			-0.0016***	
			(0.0005)	
US EPU: Regulation Index				-0.0033**
				(0.0014)
Constant	-0.0238	-0.5931*	-0.6854**	-0.3628
	(0.4468)	(0.2969)	(0.2819)	(0.3624)
Country Fixed Effect	**Y**	**Y**	**Y**	**Y**
Observations	**2943**	**2943**	**2943**	**2943**
R-squared/Hansen/Sargan Test	**0.1530**	**0.1510**	**0.1515**	**0.1513**
Number of countries	**46**	**46**	**46**	**46**

Table 7: Regression Results for Cross-Border Claims to Banks and Greek Banking Uncertainty (EPUB) Index, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Greek Banking Uncertainty (EPUB) Index is retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	Panel Regression	Maximum Likelihood	Dynamic panel GMM	Dynamic panel GMM
L1. Ln real GDP	0.7194***	0.6861***	1.8127***	1.4740**
	(0.1874)	(0.1350)	(0.6246)	(0.5914)
L1. Ln Consumer Core Price Index (CPI)	0.1646	0.0624	1.1918	0.6711
	(0.1321)	(0.0788)	(1.0580)	(0.7499)
Ln Money Supply M2	0.1319***	0.1363***	0.6101***	0.3291*
	(0.0443)	(0.0437)	(0.1458)	(0.1918)
Δ Current account balance	-0.0696***	-0.0202	-0.0814	-0.0463
	(0.0232)	(0.0140)	(0.0866)	(0.0742)
Δ US TED Spread	-0.0008	-0.0002	-0.0020	0.0100
	(0.0017)	(0.0017)	(0.0189)	(0.0160)
L1. Δ VIX CBOE	-1.1740*	-1.1416*	-0.9595*	-0.8470*
	(0.6033)	(0.6247)	(0.5531)	(0.4974)
Δ US Federal Funds Rate	0.4691***	0.4819***	0.5840***	0.3036*
	(0.0815)	(0.0570)	(0.1588)	(0.1738)
Growth US REER	-0.3624***	-0.3665***	-0.3315***	-0.3727***
	(0.0398)	(0.0331)	(0.0580)	(0.0577)
Greek Banking Uncertainty (EPUB) Index	-0.0098***	-0.0088***		
	(0.0031)	(0.0032)		
L_Growth BankClaims L1. lag (2 2)			-0.6846***	
			(0.0680)	
Greek Banking Uncertainty (EPUB) Index L1. lag (2 2)			-0.0264***	
			(0.0090)	
L_Growth BankClaims L1. lag (4 4)				-0.1728**
				(0.0715)
Greek Banking Uncertainty (EPUB) Index L1. lag (4 4)				-0.0213**
				(0.0091)
Constant	0.1528	0.2096		
	(0.3342)	(0.4017)		
Country Fixed Effect	**Y**			
AR(1) Test			**0.000**	**0.000**
AR(2) Test			**0.183**	**0.342**
Observations	**2943**	**2943**	**2806**	**2806**
R-squared/Hansen/Sargan Test	**0.1517**		**1.000**	**1.000**
Number of countries	**46**	**46**	**46**	**46**

Table 8: Consolidated Results for Cross-Border Claims to Banks and a variety of Greek Economic Policy Uncertainty (EPU) Indices, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Greek Banking Uncertainty (EPUB) Index, Greek Debt Uncertainty (EPUD) Index, Greek Monetary Policy Uncertainty (EPUM) Index, and Greek Economic Policy Uncertainty (EPU) Index are retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

	(1)	(2)	(3)	(4)
Variables	**Panel Regression**	**Panel Regression**	**Panel Regression**	**Panel Regression**
L1. Ln real GDP	0.7194***	0.6468***	0.6569***	0.6780***
	(0.1874)	(0.1830)	(0.1847)	(0.1854)
L1. Ln Consumer Core Price Index (CPI)	0.1646	0.1776	0.1361	0.1464
	(0.1321)	(0.1327)	(0.1287)	(0.1293)
Ln Money Supply M2	0.1319***	0.1563***	0.1581***	0.1452***
	(0.0443)	(0.0426)	(0.0422)	(0.0446)
Δ Current account balance	-0.0696***	-0.0696***	-0.0665***	-0.0677***
	(0.0232)	(0.0231)	(0.0232)	(0.0232)
Δ US TED Spread	-0.0008	-0.0021	-0.0004	-0.0012
	(0.0017)	(0.0017)	(0.0017)	(0.0017)
L1. Δ VIX CBOE	-1.1740*	-1.4395**	-1.3237**	-1.3199**
	(0.6033)	(0.6000)	(0.5966)	(0.5986)
Δ US Federal Funds Rate	0.4691***	0.4531***	0.5724***	0.4954***
	(0.0815)	(0.0754)	(0.0821)	(0.0799)
Growth US REER	-0.3624***	-0.3797***	-0.3782***	-0.3752***
	(0.0398)	(0.0375)	(0.0371)	(0.0376)
Greek Banking Uncertainty (EPUB) Index	-0.0098***			
	(0.0031)			
Greek Debt Uncertainty (EPUD) Index		-0.0093***		
		(0.0028)		
Greek Monetary Policy Uncertainty (EPUM) Index			-0.0163***	
			(0.0059)	
Greek Economic Policy Uncertainty (EPU) Index				-0.0165**
				(0.0080)
Constant	0.1528	0.2266	0.5454	0.8362
	(0.3342)	(0.3796)	(0.4949)	(0.7696)
Country Fixed Effect	**Y**	**Y**	**Y**	**Y**
Observations	**2943**	**2943**	**2943**	**2943**
R-squared/Hansen/Sargan Test	**0.1517**	**0.1533**	**0.1522**	**0.1513**
Number of countries	**46**	**46**	**46**	**46**

Table 9: Regression Results for Cross-Border Claims to Banks and Economic Policy Uncertainty Indices (EPU) for Greece and the USA focusing on the Euro Area countries, for period 2005-2020

The table represents empirical results for the Euro Area countries. Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Greek Monetary Policy Uncertainty (EPUM) Index, Greek Banking Uncertainty (EPUB) Index, Baker-Bloom-Davis Monetary Policy Uncertainty Index (MPU) for the United States (BBD MPU Index), and the US Economic Policy Uncertainty Index (EPU): Overall (NADJ) are retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	**Euro Area**			
L1. Ln real GDP	0.4284*	0.5085*	0.4419*	0.2976
	(0.2422)	(0.2567)	(0.2507)	(0.2436)
L1. Ln Consumer Core Price Index (CPI)	0.1946	0.0509	0.0729	0.2920
	(0.1616)	(0.1627)	(0.1617)	(0.1741)
Ln Money Supply M2	0.0825*	0.0529	0.0910*	0.0867*
	(0.0441)	(0.0544)	(0.0459)	(0.0443)
Δ Current account balance	-0.0628***	-0.0486**	-0.0362	-0.0556**
	(0.0205)	(0.0217)	(0.0222)	(0.0203)
Δ US TED Spread	0.0026	0.0007	0.0006	0.0021
	(0.0020)	(0.0022)	(0.0023)	(0.0019)
L1. Δ VIX CBOE	-0.1173***	-0.9570	-0.6646	-0.1145***
	(0.0358)	(0.6460)	(0.6281)	(0.0374)
Δ US Federal Funds Rate	0.6558***	0.6537***	0.7313***	0.5660***
	(0.1052)	(0.0988)	(0.0973)	(0.1018)
Growth US REER	-0.5392***	-0.4810***	-0.5287***	-0.5833***
	(0.0496)	(0.0542)	(0.0558)	(0.0478)
Greek Monetary Policy Uncertainty (EPUM) Index	-0.0230**			
	(0.0087)			
Greek Banking Uncertainty (EPUB) Index		-0.0266***		
		(0.0089)		
Baker-Bloom-Davis Monetary Policy Uncertainty Index (MPU) for the United States (BBD MPU Index)			-0.0069**	
			(0.0031)	
US EPU Index: Overall (NADJ)				-0.0155**
				(0.0071)
Constant	3.0078***	1.7855**	-0.0169	2.4006***
	(0.8109)	(0.8099)	(0.4436)	(0.7840)
Country Fixed Effect	**Y**	**Y**	**Y**	**Y**
Observations	**1408**	**1408**	**1408**	**1408**
R-squared/Hansen/Sargan Test	**0.2565**	**0.2526**	**0.2507**	**0.2558**
Number of countries	**22**	**22**	**22**	**22**

Table 10: Regression Results for Cross-Border Claims to Banks and Economic Policy Uncertainty Indices (EPU) for Greece and the USA focusing on the Euro Area countries, for period 2005-2020

The table represents empirical results for the Euro Area countries. Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: US Economic Policy Uncertainty (EPU): Sovereign Debt Index (Categorical), US Economic Policy Uncertainty (EPU): Trade Policy Index (Categorical), US Economic Policy Uncertainty (EPU): Financial Regulation Index (Categorical), Greek Economic Policy Uncertainty (EPU) Index: Overall are retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	**Euro Area**			
L1. Ln real GDP	0.4675*	0.5238**	0.2791	0.4887*
	(0.2409)	(0.2375)	(0.2370)	(0.2557)
L1. Ln Consumer Core Price Index (CPI)	0.1736	0.1423	0.2871	0.0568
	(0.1818)	(0.1770)	(0.1784)	(0.1637)
Ln Money Supply M2	0.1037**	0.1221**	0.0878*	0.0537
	(0.0441)	(0.0443)	(0.0456)	(0.0531)
Δ Current account balance	-0.0418*	-0.0338	-0.0647***	-0.0486**
	(0.0209)	(0.0219)	(0.0201)	(0.0216)
Δ US TED Spread	-0.0021	-0.0010	0.0028	0.00004
	(0.0019)	(0.0020)	(0.0019)	(0.0021)
L1. Δ VIX CBOE	-1.0341	-0.8237	-0.1087***	-0.9657
	(0.6357)	(0.6372)	(0.0357)	(0.6478)
Δ US Federal Funds Rate	0.6692***	0.7377***	0.5312***	0.6582***
	(0.0914)	(0.0921)	(0.1064)	(0.0999)
Growth US REER	-0.5267***	-0.5161***	-0.5876***	-0.4717***
	(0.0531)	(0.0531)	(0.0485)	(0.0539)
US EPU: Sovereign Debt Index (Categorical)	-0.0154***			
	(0.0045)			
US EPU: Trade Policy Index (Categorical)		-0.0042**		
		(0.0020)		
US EPU: Financial Regulation Index (Categorical)			-0.0082***	
			(0.0025)	
Greek Economic Policy Uncertainty (EPU) Index				-0.0333***
				(0.01007)
Constant	-0.0754	-0.7890**	1.7606**	2.4668**
	(0.4358)	(0.3095)	(0.6997)	(0.9199)
Country Fixed Effect	**Y**	**Y**	**Y**	**Y**
Observations	**1408**	**1408**	**1408**	**1408**
R-squared/Hansen/Sargan Test	**0.2555**	**0.2531**	**0.2552**	**0.2524**
Number of countries	**22**	**22**	**22**	**22**

Table 11: Regression Results for Cross-Border Claims to Banks and US Infectious Disease Equity Market Volatility (EMV) Tracker, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: US Infectious Disease Equity Market Volatility (EMV) Tracker is retrieved from the Economic Policy Uncertainty Website. Notes: Macroeconomic data is taken from Refinitiv Datastream. Refinitiv Comparable Economics/The Thomson Reuters International Comparable Economics dataset – TRICE. The selection of variables in the Base Model is guided by previous literature in macroeconomics, we tried to use standard variables for our model (Herrmann and Mihaljek, 2010, 2013; Bruno and Shin, 2013, 2015; Cerutti et al., 2014, 2015, 2017; Correa et al., 2021; Choi and Furceri, 2019) at the same time we have constructed variables in our own way. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	(1)	(2)	(3)
	Panel Regression	**Maximum Likelihood**	**Dynamic panel GMM**
L1. Ln real GDP	1.0015***	0.5331***	1.0151**
	(0.2852)	(0.1363)	(0.4219)
L1. Ln Consumer Core Price Index (CPI)	0.1515	0.0590	0.6755
	(0.1191)	(0.0781)	(0.6387)
Ln Money Supply M2	0.1687***	0.1850***	0.5168***
	(0.0431)	(0.0433)	(0.1487)
Δ Current account balance	-0.1991***	-0.0172	-0.0058
	(0.0673)	(0.0138)	(0.0692)
Δ US TED Spread	-0.0008	-0.0011	-0.0028
	(0.0017)	(0.0017)	(0.0149)
L1. Δ VIX CBOE	-1.0435*	-1.1309*	-0.6971
	(0.6107)	(0.6245)	(0.4243)
Δ US Federal Funds Rate	0.5147***	0.5353***	0.5528***
	(0.0823)	(0.0502)	(0.1404)
Growth US REER	-0.4152***	-0.4162***	-0.3008***
	(0.0381)	(0.0313)	(0.0501)
US Infectious Disease EMV Index	-0.0386***	-0.0459***	
	(0.0109)	(0.0148)	
L_Growth BankClaims L1. lag (2 2)			-0.6269***
			(0.1018)
US Infectious Disease EMV Index L1. lag (2 2)			-0.0649**
			(0.0281)
Constant	-1.1820***	-0.5336**	
	(0.3149)	(0.2234)	
Country Fixed Effect	**Y**		
AR(1) Test			**0.000**
AR(2) Test			**0.199**
Observations	**2943**	**2943**	**2806**
R-squared/Hansen/Sargan Test	**0.1573**		**1.000**
Number of countries	**46**	**46**	**46**

Table 12: Consolidated Results for Cross-Border Claims to Banks and US Economic Policy Uncertainty (EPU) Indexes, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: US Infectious Disease Equity Market Volatility (EMV) Tracker, US Equity Related Economic Uncertainty Index, and US Economic Policy Uncertainty Health Care Index (Categorical) are retrieved from the Economic Policy Uncertainty Website. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	(1)	(2)	(3)
	Panel Regression	**Panel Regression**	**Panel Regression**
L1. Ln real GDP	1.0015***	0.5724***	0.5909***
	(0.2852)	(0.1814)	(0.1896)
L1. Ln Consumer Core Price Index (CPI)	0.1515	0.1554	0.1512
	(0.1191)	(0.1264)	(0.1264)
Ln Money Supply M2	0.1687***	0.1537***	0.1735***
	(0.0431)	(0.0427)	(0.0433)
Δ Current account balance	-0.1991***	-0.0624***	-0.0633***
	(0.0673)	(0.0231)	(0.0230)
Δ US TED Spread	-0.0008	-0.0008	-0.0015
	(0.0017)	(0.0017)	(0.0017)
L1. Δ VIX CBOE	-1.0435*	-0.6487	-1.2709**
	(0.6107)	(0.6138)	(0.5978)
Δ US Federal Funds Rate	0.5147***	0.5242***	0.5037***
	(0.0823)	(0.0843)	(0.0791)
Growth US REER	-0.4152***	-0.4082***	-0.4096***
	(0.0381)	(0.0390)	(0.0388)
US Infectious Disease EMV Index	-0.0386***		
	(0.0109)		
US Equity Related Economic Uncertainty Index		-0.0039***	
		(0.0011)	
US EPU: Health Care Index			-0.0013**
			(0.0005)
Constant	-1.1820***	-0.5743*	-0.5074
	(0.3149)	(0.2906)	(0.3463)
Country Fixed Effect	**Y**	**Y**	**Y**
Observations	**2943**	**2943**	**2943**
R-squared/Hansen/Sargan Test	**0.1573**	**0.1541**	**0.1519**
Number of countries	**46**	**46**	**46**

Table 13: Regression Results for Cross-Border Claims to Banks and Oxford COVID-19 Government Response Indexes, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Oxford lockdown stringency index (0 to 100), Oxford containment health index (0 to 100), and Oxford coronavirus government response index (0 to 100) are from Oxford COVID-19 Government Response Tracker (OxCGRT). Notes: Macroeconomic data is taken from Refinitiv Datastream. Refinitiv Comparable Economics/The Thomson Reuters International Comparable Economics dataset – TRICE. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

	(1)	(2)	(3)	(4)
Variables	**Panel Regression**	**Maximum Likelihood**	**Panel Regression**	**Maximum Likelihood**
L1. Ln real GDP	0.5592***	0.5536***	0.5650***	0.5578***
	(0.1887)	(0.1364)	(0.1883)	(0.1367)
L1. Ln Consumer Core Price Index (CPI)	0.1259	0.0594	0.1275	0.0593
	(0.1279)	(0.0781)	(0.1279)	(0.0782)
Ln Money Supply M2	0.1744***	0.1795***	0.1735***	0.1782***
	(0.0440)	(0.0433)	(0.0443)	(0.0434)
Δ Current account balance	-0.0603**	-0.0175	-0.0606**	-0.0174
	(0.0231)	(0.0138)	(0.0232)	(0.0138)
Δ US TED Spread	-0.0014	-0.0009	-0.0014	-0.0009
	(0.0017)	(0.0017)	(0.0017)	(0.0017)
L1. Δ VIX CBOE	-1.2813**	-1.2535**	-1.2962**	-1.2698**
	(0.5983)	(0.6240)	(0.6003)	(0.6243)
Δ US Federal Funds Rate	0.5418***	0.5407***	0.5427***	0.5420***
	(0.0832)	(0.0502)	(0.0834)	(0.0502)
Growth US REER	-0.4089***	-0.4104***	-0.4089***	-0.4106***
	(0.0375)	(0.0312)	(0.0375)	(0.0313)
Stringency Index	-0.0126**	-0.0140**		
	(0.0050)	(0.0058)		
COVID-19 government response Index			-0.0122**	-0.0136**
			(0.0054)	(0.0062)
Constant	-0.6760**	-0.5926***	-0.6869**	-0.5996***
	(0.2971)	(0.2214)	(0.2978)	(0.2218)
Country Fixed Effect	**Y**		**Y**	
Observations	**2943**	**2943**	**2943**	**2943**
R-squared	**0.1532**		**0.1529**	
Number of countries	**46**	**46**	**46**	**46**

Table 14: Regression Results for Cross-Border Claims to Banks and Oxford COVID-19 Government Response Indexes, for period 2005-2020

Dependent Variable: Quarterly growth rate (in percent) of the BIS Locational Cross-Border Claims on Banks (exchange rate adjusted, BIS Table 6). The growth rate of claims on banks is calculated by using the formula (100×Xafter)/ (Xbefore-100). Explanatory variables: Oxford lockdown stringency index (0 to 100), Oxford containment health index (0 to 100), and Oxford coronavirus government response index (0 to 100) are from Oxford COVID-19 Government Response Tracker (OxCGRT). World, Citi Long Term Macro Risk Index is retrieved from Refinitiv Datastream. Robust standard errors are reported in parentheses and indicate significance at the 1 percent *** p<0.01, at the 5 percent ** p<0.05, and at the 10 percent * p<0.1, respectively.

Variables	(1)	(2)	(3)	(4)
	Panel Regression	**Maximum Likelihood**	**Panel Regression**	**Maximum Likelihood**
L1. Ln real GDP	0.5638***	0.5580***	0.6598***	0.6480***
	(0.1888)	(0.1366)	(0.1889)	(0.1333)
L1. Ln Consumer Core Price Index (CPI)	0.1250	0.0569	0.1405	0.0585
	(0.1276)	(0.0781)	(0.1279)	(0.0785)
Ln Money Supply M2	0.1768***	0.1814***	0.1349***	0.1381***
	(0.0447)	(0.0434)	(0.0411)	(0.0437)
Δ Current account balance	-0.0611**	-0.0176	-0.0627***	-0.0184
	(0.0231)	(0.0138)	(0.0234)	(0.0139)
Δ US TED Spread	-0.0014	-0.0009	0.0008	0.0006
	(0.0017)	(0.0017)	(0.0017)	(0.0018)
L1. Δ VIX CBOE	-1.2979**	-1.2777**	-0.5464	-0.5052
	(0.6007)	(0.6243)	(0.7123)	(0.6843)
Δ US Federal Funds Rate	0.5411***	0.5410***	0.5303***	0.5325***
	(0.0836)	(0.0503)	(0.0891)	(0.0506)
Growth US REER	-0.4071***	-0.4085***	-0.3912***	-0.3914***
	(0.0381)	(0.0312)	(0.0394)	(0.0309)
Containment health Index	-0.0124**	-0.0139**		
	(0.0054)	(0.0062)		
Citi Macro Risk Index			-0.9634*	-0.9695***
			(0.5041)	(0.3739)
Constant	-0.6786**	-0.5935***	-0.3975	-0.2846
	(0.2977)	(0.2213)	(0.3303)	(0.2703)
Country Fixed Effect	**Y**		**Y**	
Observations	**2943**	**2943**	**2943**	**2943**
R-squared	**0.1529**		**0.1529**	
Number of countries	**46**	**46**	**46**	**46**