

# Political Ties and the Global Financial Cycle <sup>\*</sup>

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*Preliminary, Please Do Not Circulate*

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## Abstract

We study the implications of forging stronger political ties with the US on the sensitivities of stock returns around the world to a global common factor - the global financial cycle. Using voting patterns at the United Nations as a measure of political ties with the US along with various measures of the global financial cycle, we document evidence indicating that stronger political ties with the US amplify the sensitivities of stock returns to the global financial cycle. We explore several channels and find that a deepening of trade and financial linkages with US is an important factor for developing countries.

**Keywords:** Political Ties, Global Financial Cycle, International Spillovers, Stock returns

**JEL Codes:** E44, F30, F50, G15

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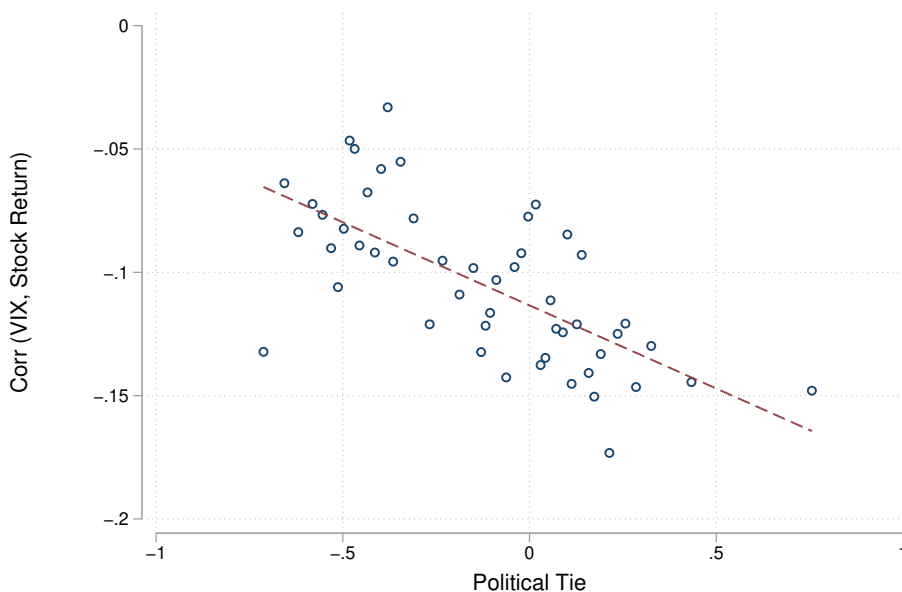
# 1 Introduction

Standard asset pricing theory suggests that asset returns are driven by compensation for non-diversifiable risk. Globally, recent evidence in Rey (2015) and Miranda-Agrippino and Rey (2020, 2022) point towards the significant influence of a common global factor - the Global Financial Cycle (henceforth GFCy) - on various financial variables including equity returns. Further, their findings indicate that the economy of the United States of America (US) is a major driver of this common factor. The sensitivities or *loadings* of foreign assets on this common factor would in turn affect the relative value that foreign assets have on global portfolios.

What determines how sensitive foreign equities are to the GFCy? State level geopolitical ties may be one factor. Recent developments such as the Russo-Ukrainian conflict, Brexit, and the US-China trade war have highlighted the role of geopolitical tensions in international financial markets. One way for countries to mitigate geopolitical risk is to forge stronger geopolitical ties. Having strong relations with other countries reduces the likelihood that the pursuit of national interests would erupt and escalate into serious conflict in favor of diplomatic resolutions. On the other hand, political ties also binds nations closer towards one another, potentially increasing co-movement in economic variables including asset prices. In this paper, we study the effects of political ties between foreign governments and the US - arguably the foremost global power and whose economy has the strongest impact on the GFCy - on foreign equity prices.

As a motivating exercise, we assess how the correlation between a measure for the GFCy, the volatility of the US stock market S&P 500 index (VIX), and returns of stock indices in other countries is affected by political ties with the US. The GFCy literature predicts a negative correlation as higher US stock-market volatility induces negative spillover effects to the price of risky assets in other countries, and a larger magnitude in the correlation indicates a stronger spillover. Figure 1 shows a bin scatter plot of these correlations (vertical axis), which is calculated as the correlation coefficient between daily

VIX and stock return for each country-year, against political ties with the US (horizontal axis), the measurement of which will be explained in full detail later on. We plot the average correlation coefficients along the 50 equal-sized bins of political ties. First, and consistent with the GFCy literature, the correlation coefficients between VIX and stock market return are all negative. Second, and most importantly, the correlation becomes more pronounced under stronger political ties with the US. That is, the more politically connected to the US the country is, the stronger the spillover from US financial markets are. Moreover, the slope of the fitted line is  $-0.07$ , which is statistically significant at the 1% confidence level and quite substantial given that the correlations vary between  $-0.2$  to  $0$  and political ties vary between  $-1$  to  $1$ . This cursory analysis provides some initial evidence that political ties with the US could play a role in the sensitivity of stock returns to the GFCy.



**Figure 1:** Bin Scatter: Political Tie and Spillover Effect

Notes: The vertical axis reports the correlation between stock returns and the VIX for 50 equal-sized groups defined in terms of the strength of political ties with the US on the horizontal axis. The correlation coefficient between stock returns and the VIX is calculated based on daily data for each country-year. Political ties with the US are defined in terms of relative voting similarities with the US at the United Nations General Assembly.

In the rest of the paper, we conduct more rigorous analysis to show that stronger

political ties with the US amplifies the sensitivities of foreign stock returns to the GFCy. Using a country-year panel of stock index returns and voting patterns at the United Nations General Assembly (UNGA) as our measure of state-level political ties, we find that having a stronger political ties with the US leads to a stronger sensitivity of foreign stock returns to several measures for the GFCy. In response to a one standard deviation deterioration of global financial conditions as indicated by various measures of the GFCy, we find that stock returns in countries with a one standard deviation stronger political ties with the US fall by 1.3 to 2.1 percentage points more. We also find that this result is mainly driven by stock returns in developing countries who are not members of the OECD where the equivalent differential effects on stock returns are now between 2.9 to 3.8 percentage points.

We find evidence indicating that these effects are unique to political ties specifically with the US. When we include political ties with the rest of the G7 countries or China, only political ties with the US has the amplification effect on stock return loadings to the GFCy. Further, we show that the amplification effect of political ties with the US on sensitivities of stock returns to the GFCy is not a substitute for other factors such as trade and financial openness policy, exchange rate regime, macroprudential interventions, and other macroeconomic conditions. Moreover, we explore the role of political ties with US across different levels of global geopolitical risk and show that the amplification effect becomes stronger when geopolitical risk intensifies. However, the effect becomes insignificant when geopolitical risk reaches extremely high levels.

We also run several additional exercises to verify the robustness of our findings. For instance, we show that the results remain when we use alternative definitions of our political ties and GFCy measures as well as when we restrict the sample periods to before and after the global financial crisis. Our findings also persist when we additionally account for differences in institutional quality and the ideological distance between the ruling parties of a country and the US.

We then explore potential mechanisms through which political ties with the US could

affect the sensitivity of foreign stock returns to the GFCy. An intensification of trade and financial linkages seem to be an important channel. Moreover, we find that the deepening of these linkages following an increase in political ties with the US tend to be asymmetric. Specifically, and focusing on developing countries, stronger political ties with the US is associated with increased imports of US goods, and increased holdings of US equities. At the same time, we find evidence of reduced foreign equity holdings by US residents for developing countries with stronger political ties with the US. On the other hand, for developed countries, we find no indication of enhanced trade connections or decreased security holdings by US residents.

Overall, our results indicate that stronger political ties with the US increases the sensitivities of stock returns to the GFCy. This holds particularly for developing countries, those who are not members of the OECD. An asymmetric deepening of trade and financial linkages with the US appears to be an important channel.

Our work builds on the literature regarding common factors to global equity pricing. A strand of this literature focus on global financial risk. Engle and Campos-Martins (2023) provide a measure of global financial risk in terms of common volatility and show that it has a substantial impact on global financial assets. Caldara and Iacoviello (2022) provide a text-based measure of geopolitical risk which predicts lower investment, employment, and stock prices. More generally, Miranda-Agrippino and Rey (2020, 2022) develop a measure of the Global Financial Cycle which is associated with global risk appetite and developments in the US. Our paper complements this strand of the literature by looking at geopolitical ties. The two are related in that stronger political ties may mitigate the likelihood of significant effects from higher geopolitical risk, i.e., geopolitical ties may be seen as an insurance against geopolitical risk. On the other hand, stronger geopolitical ties may also bind economies closer together effectively, increasing foreign asset price sensitivities to global common factors. The evidence we present in this paper provides evidence suggestive of the latter.

Our analysis on the effects of state political ties on the global pricing of foreign equity

returns complements the strand of the literature which have documented the role of domestic political connections on firm value.<sup>1</sup> More closely related to our work are those who focus on cross-border relations such as Fink and Stahl (2020) who show that foreign firm campaign contributions to US elections help them obtain higher abnormal returns. Similarly, Biguri and Stahl (2022) find that US firms' visits to European Commission officials generate positive abnormal equity returns. Relative to these contributions to the literature, our results suggest that state-level political ties also have an impact on stock markets as a whole.

Our main result that state political ties matter for the pricing of foreign equities expands the literature on the far-reaching effects of geopolitical ties. The use of voting at the UNGA as a measure of political ties draws from the broader literature on state-level political connections (see e.g., Alesina and Dollar 2000, Barro and Lee 2005, Faye and Niehaus 2012, Garmaise and Natividad 2013, IMF 2023). Specifically related to our findings, Fisman et al. (2022) has recently shown that political ties affect exports by Russian firms. Aleksanyan et al. (2021) show that state visits have a strong influence on cross-border mergers and acquisitions. Qian and Yanagizawa-Drott (2017) find that political alliance with the US affects media reporting of human rights violations and similarly Ruf et al. (2021) show that US foreign relations affect the tone of US media coverage for firms. Kempf et al. (2023) find that the alignment of foreign governments' political ideologies with US investors' own views play a role in their foreign investment decisions.

The rest of the paper is organized as follows. The data is described in Section 2 while Section 3 presents our main results. Section 4 looks into the possible channels through which state-level political ties affects equity returns. Finally, section 5 concludes with some remarks regarding the implications of our findings and avenues for future work.

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<sup>1</sup>See e.g., Fisman (2001), Faccio (2006), Goldman et al. (2009), Boubakri et al. (2012) and Acemoglu et al. (2016).

## 2 Data and Variable Descriptions

To measure each country’s political ties with the US, we first obtain data on voting patterns at the UNGA from Voeten (2013) and Bailey et al. (2017). We construct indices of political ties by calculating bilateral voting similarities relative to how the US voted at the UNGA (Signorino and Ritter 1999). This approach follows Alesina and Dollar (2000), Barro and Lee (2005), Faye and Niehaus (2012), Garmaise and Natividad (2013) and Ambrocio and Hasan (2021) among others. Our primary measure S3UN uses a three-category scale to compare voting patterns relative to the US (*Yes-No-Abstain*), and we use alternative definitions in our robustness checks which use two-category scales (*Yes-No*, S2UN) and/or only votes on issues which the US state department has deemed of importance to the US (S3UN imp and S2UN imp). A higher value indicates more similar voting patterns relative to the US which we interpret as a proxy for stronger political ties. We present the time series for each country in the appendix Figure A1.

Figure 2 plots the average values of the political ties measure over the sample period 1991-2019 when split between OECD and non-OECD member countries. We observe that OECD countries’ voting patterns are more similar with the US when compared against those of non-OECD countries. Moreover, for both groups of countries, we see a similar trend over the past three decades.

Our measure of political ties with the US were strongest in the early 1990s following the fall of the Soviet Union and the reunification of Germany, essentially signaling the end of the Cold War. US foreign policy achievements continued on in the mid 1990s with the signing of the North American Free Trade Agreement, the Kremlin Accords, and the establishment of the World Trade Organization. We then see a continued decline from the mid 1990s to the mid 2000s partly due to the focus on domestic rather than foreign issues by the Clinton administration followed by the globally unpopular US-led Iraq invasion during the Bush administration, a move which faced vocal opposition at the UNGA.<sup>2</sup> The US’ average political ties with the rest of the world did not improve

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<sup>2</sup>Clearly, many other factors played a role such as the limited and delayed intervention by the US and

until the late 2000s at the start of the Obama administration.<sup>3</sup>



**Figure 2: Political Tie**

Notes: The political tie is measured as the voting similarities relative to US at UNGA. We use a three-category scale (*Yes-No-Abstain*) to compare voting patterns in the baseline analysis.

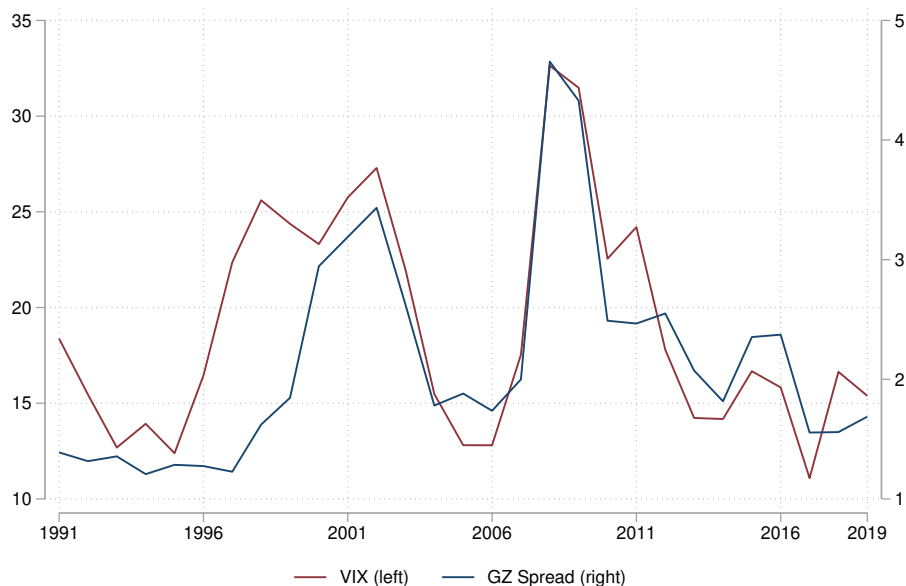
We augment these political ties measures with measures of the GFCy. First, we use the stock market’s expectation of volatility based on SP 500 index options, VIX, as a measure of global risk appetite. Second, we use the GZ spread proposed by Gilchrist and Zakrajšek (2012) and extended in Gilchrist et al. (2022). The GZ spread is the average US bond credit spreads which is defined as the difference between the yield of corporate bonds and the hypothetical risk-free Treasury securities of the same cash flows and maturities. It is an indicator of financial distress and captures the risk attitude of US financial intermediaries. In the robustness check, we also use the excess bond premium (EBP) which is the component of the GZ spread net of expected defaults.

Figure 3 plots the two GFCy measures. The correlation coefficients between VIX and most Western countries during the Asian Financial Crisis in the late 1990s, the bursting of the dot-com bubble in the US, the accession of China to the WTO as well as the initiation of the ill-fated Doha round of trade negotiations in 2001, or even the significant change in US foreign policy under the War on Terror following the September 11, 2001 terrorist attacks. We do not attempt to provide a complete account of US foreign policy in this paper.

<sup>3</sup>The start of the Obama administration reversed the declining global image of the US, at least among the Western world. See results from Pew Research surveys (hyperlinked).



GZ spread is 0.78 and statistically significant at the 1% level. We observe substantial fluctuations over the years. Both measures indicate adverse global financial conditions during the mid 1990s and the global financial crisis episodes, and better global conditions in early 2000s and post-crisis periods.



**Figure 3:** Global Financial Cycle Variables

Finally, we also collect data on standard macroeconomic conditions and policy indicators as control variables. Specifically, we use GDP growth, inflation, currency appreciation, foreign reserves, exchange rate regime, exchange rate stability, monetary policy independence, *de jure* capital account openness, *de facto* financial integration, trade openness, and macro prudential policy. These are obtained from various sources including the World Development Indicators (WDI) of the World Bank, International Monetary Fund (IMF), and other existing studies. Detailed definitions of each variable can be found in the appendix in Table A2.

To avoid the impact of the COVID-19 pandemic disruptions, we have restricted the sample to years preceding 2020. The final sample consists of 50 countries, of which 28 are OECD and 22 are non-OECD countries, covering 1991-2019. We report the sample period covered for each country in the appendix in Table A3. Table 1 presents the summary

statistics for all countries, and for the two groups of non-OECD and OECD countries, separately.

**Table 1:** Summary Statistics

	All		Non-OECD		OECD	
	Mean	SD	Mean	SD	Mean	SD
Stock Market Return	10.197	(25.686)	12.193	(28.231)	8.572	(23.304)
VIX	19.228	(5.886)	19.234	(5.932)	19.222	(5.853)
GZ Spread	2.221	(0.865)	2.240	(0.870)	2.206	(0.861)
Political Tie-S3UN	-0.133	(0.325)	-0.387	(0.220)	0.075	(0.237)
Political Tie-S3UN imp	0.122	(0.412)	-0.175	(0.360)	0.368	(0.263)
Political Tie-S2UN	-0.172	(0.355)	-0.448	(0.234)	0.053	(0.268)
Political Tie-S2UN imp	0.162	(0.529)	-0.228	(0.464)	0.484	(0.322)
GDP Growth	3.376	(3.328)	4.340	(3.429)	2.591	(3.026)
Inflation	5.407	(9.659)	7.105	(9.446)	4.024	(9.616)
Appreciation	-3.489	(12.715)	-4.033	(12.380)	-3.039	(12.978)
Foreign Reserve	16.249	(15.747)	22.055	(17.231)	11.528	(12.600)
Peg	0.383	(0.486)	0.352	(0.478)	0.409	(0.492)
Exchange Rate Stability	0.551	(0.295)	0.538	(0.267)	0.561	(0.315)
Monetary Policy Independence	0.352	(0.230)	0.434	(0.190)	0.286	(0.239)
Capital Account Openness	0.709	(0.331)	0.532	(0.336)	0.854	(0.247)
Financial Integration	3.990	(7.120)	3.579	(8.692)	4.325	(5.503)
Trade Openness	87.148	(58.312)	92.548	(73.748)	82.750	(41.253)
Macro Prudential Policy	0.734	(1.726)	0.798	(1.904)	0.683	(1.565)
Observations	1321		593		728	

### 3 Empirical Analysis

#### 3.1 Baseline Results

For our baseline analysis, we adopt the following specification:

$$Return_{ct} = \alpha_0 + \beta_1 PolTie_{ct-1} + \beta_2 Gficy_t \times PolTie_{ct-1} + \Gamma Control_{ct-1} + \delta_c + \theta_t + \epsilon_{ct} \quad (1)$$

where  $c$  and  $t$  indicate country and year respectively. The dependent variable  $Return_{ct}$  is the annual change of the country's stock market price index.  $PolTie_{ct-1}$  is the political

ties of country  $c$  with the US using the three-category voting similarity measure at the UN General Assembly (S3UN) in the baseline specification. We also make use of other measures of political ties with the US as robustness checks.  $Gfcy_t$  is one of the global financial cycle variables, either the VIX or the GZ spread. For both variables, a higher value indicates a worsened global financial market condition. We control for an array of domestic economic and financial conditions in  $Control_{ct-1}$  as described in the previous section. We use lagged terms of the political tie and other control variables to mitigate concerns about reverse causality.<sup>4</sup> The specification includes both country and year fixed effects in  $\delta_c$  and  $\theta_t$ , which also means that the un-interacted global financial cycle variable (along with any other variables that do not change across countries or over time) is absorbed.<sup>5</sup>

We are mostly interested in the coefficient of the interaction term between global financial cycle and political tie, i.e.,  $\beta_2$ . Since worsened global financial market conditions negatively spill over to the returns of domestic risky assets, a significantly negative (positive)  $\beta_2$  estimate would indicate that stronger political ties with the US are associated with a larger (smaller) spillover effect from the GFCy and a stronger (weaker) global financial co-movement. Standard errors are clustered at the country level throughout the main results.<sup>6</sup>

Table 2 presents the baseline estimates. The first four columns show that closer political ties with the US is significantly associated with a more pronounced spillover effects from the VIX and credit spread measures of the GFCy. The results for the key estimates we are interested in are stable across the odd and even columns which alternate

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<sup>4</sup>As an additional robustness check, we report the results when the political tie and other control variables are not lagged in the appendix in Table A4.

<sup>5</sup>In a separate analysis, we investigate if the factors of the global financial cycle have the anticipated impact on stock returns using our data. Specifically, we regress the returns of the domestic stock market on the global financial cycle variable and other control variables while excluding the political ties variable and year fixed effects. Results reported in Tables A1 in the appendix demonstrate that a weaker global financial condition, as indicated by both GFCy measures, is associated with lower asset returns for the countries in our sample. These findings are in line with the literature, such as Rey (2015) and Miranda-Agrippino and Rey (2020).

<sup>6</sup>In the appendix Tables A5 and A6 we also report estimates using country and year two-way clustered and heteroscedasticity-consistent standard errors and the general findings still hold.

the regression specification between with and without the other control variables. The effects are also economically significant. Using the coefficient estimates in columns (2) and (4), a one standard deviation worsening of global financial conditions in terms of the VIX and the GZ spread will lower stock returns in countries with a one standard deviation stronger political ties with the US by 1.35 and 2.14 percentage points more, respectively.<sup>7</sup>

**Table 2:** Baseline Results: Political Tie and Global Financial Cycle

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX × L.Political Tie	-0.541*	-0.705**			-2.058***	-2.900***			0.391	0.324		
	(0.312)	(0.350)			(0.603)	(0.708)			(0.453)	(0.494)		
GZ Spread × L.Political Tie			-7.740***	-7.628***			-13.717***	-15.391***			1.684	-1.348
			(2.116)	(2.054)			(4.054)	(4.206)			(2.510)	(2.485)
L.Political Tie	-1.381	10.154	6.327	14.800	9.458	47.438*	2.600	27.604	3.306	5.000	6.434	12.786
	(12.412)	(10.252)	(13.364)	(10.724)	(26.186)	(23.364)	(28.814)	(21.885)	(8.503)	(9.128)	(10.923)	(10.160)
L.GDP Growth		0.310		0.288		0.104		0.102		-0.122		-0.094
		(0.316)		(0.315)		(0.373)		(0.391)		(0.384)		(0.388)
L.Inflation		0.049		0.048		-0.231		-0.249		0.384***		0.389***
		(0.168)		(0.169)		(0.178)		(0.194)		(0.105)		(0.109)
L.Appreciation		-0.389***		-0.388***		-0.436**		-0.419**		-0.281***		-0.280***
		(0.090)		(0.089)		(0.158)		(0.161)		(0.096)		(0.095)
L.Foreign Reserve		0.164*		0.149*		-0.163		-0.169		0.219*		0.220*
		(0.089)		(0.085)		(0.274)		(0.274)		(0.114)		(0.114)
L.Peg		3.688		3.726		1.203		2.028		3.157		3.381
		(2.750)		(2.717)		(3.433)		(3.397)		(5.707)		(5.759)
L.Exchange Rate Stability		-10.279*		-9.925*		-7.900		-9.986		-11.737		-12.118
		(5.296)		(5.331)		(6.236)		(5.908)		(12.062)		(12.239)
L.Monetary Policy Independence		-3.344		-3.806		-0.513		-0.319		-2.356		-2.895
		(4.763)		(4.734)		(6.867)		(6.915)		(5.376)		(5.299)
L.Capital Account Openness		-12.017***		-11.754***		-20.732***		-19.449***		1.003		0.680
		(4.257)		(4.171)		(6.943)		(6.873)		(4.178)		(4.165)
L.Financial Integration		-0.035		-0.032		-0.183		-0.160		0.154		0.158
		(0.256)		(0.251)		(0.431)		(0.428)		(0.229)		(0.228)
L.Trade Openness		-0.029		-0.024		-0.055		-0.040		-0.030		-0.031
		(0.055)		(0.053)		(0.078)		(0.076)		(0.109)		(0.107)
L.Macro Prudential Policy		-0.650*		-0.694**		-0.700		-0.623		-0.809		-0.855
		(0.326)		(0.323)		(0.468)		(0.430)		(0.545)		(0.537)
Constant	8.602***	21.312***	8.506***	20.951***	0.539	32.842**	1.029	32.054**	7.820***	10.682	7.869***	11.182
	(1.714)	(6.822)	(1.673)	(6.738)	(10.196)	(12.511)	(10.181)	(12.440)	(0.863)	(11.415)	(0.842)	(11.316)
Observations	1321	1321	1321	1321	593	593	593	593	728	728	728	728
Adjusted R-Square	0.307	0.355	0.312	0.358	0.301	0.349	0.300	0.343	0.405	0.458	0.405	0.457
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES

Columns (5) to (12) show that the spillover-enhancing effect of political ties with the US is particularly strong for non-OECD countries. When splitting the sample into non-OECD member and OECD member countries, we find that the magnitudes of the coefficients of the interaction term reported in columns (5) to (8) corresponding to the non-OECD sample more than double that in the full sample. In comparison, political

<sup>7</sup>Column (2):  $-0.705 \times 0.325 \times 5.886 = -1.35$ ; column (4):  $-7.628 \times 0.325 \times 0.865 = -2.14$ .

connections with the US do not seem to play a significant role for the spillover effects to OECD member countries. Based on the estimates shown in column (6) and (8), when the global financial condition worsens by one standard deviation as captured by the VIX and GZ spread, a developing country whose political connection with the US is stronger than another country by one standard deviation will see a larger decrease in risky assets return by 3.78 and 2.95 percentage points, respectively.<sup>8</sup>

## 3.2 Key Features

We proceed with exploring the key features of our baseline results. Specifically, we first examine the uniqueness of political ties with the US in contrast with political ties with other nations. Next, we evaluate the impact of political ties with the US in comparison with other factors that may also influence sensitivities to the global financial cycle. Third, we assess whether the magnitude of the effects are related to differing levels of global geopolitical risk.

First, we show that it is specifically the political ties with US rather than other countries that generate these spillover effects and matters for the transmission of global financial cycle to stock returns. To this end, we construct measures of political ties between a country and an alternative economy other than the US using the same voting similarities methodology. More specifically, we examine and compare the roles of political ties with the US, political ties with the remaining six nations in the G7 group (namely, Canada, France, Germany, Italy, Japan, and the United Kingdom, referred to as the G6), and political ties with China. Since our measure of political ties with these countries is also correlated with the measure of political ties with the US, we begin by regressing a country's political ties measure with the G6 (China) on the G6's (China's) own political ties measure with the US. Then, we utilize the residual obtained from this regression, which is now orthogonal to the G6's (China's) own political ties with US. We interact this residual with the global financial cycle variables and add this interaction term to our

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<sup>8</sup>Column (6):  $-2.900 \times 0.220 \times 5.932 = -3.78$ ; column (8):  $-15.391 \times 0.220 \times 0.870 = -2.95$ .

baseline specification.

Table 3 reports the results. We first estimate the effects of political ties with the G6 and China in comparison to that with US one at a time. We then run additional regressions which compare the effects of political ties with all three groups all together.

**Table 3: Political Tie with US versus Other Countries**

	Full Sample						Non-OECD						OECD					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
VIX × L.PolTie with US	-0.610*	-0.616	-0.662*				-4.466**	-3.211***	-4.731***				0.269	0.054	-0.196			
	(0.311)	(0.398)	(0.373)				(1.611)	(0.896)	(1.665)				(0.506)	(0.572)	(0.626)			
VIX × L.PolTie with G6 (Residual)	-0.827		-0.822				2.745		3.177				-0.307		-0.645			
	(0.721)		(0.709)				(2.038)		(1.934)				(0.624)		(0.728)			
VIX × L.PolTie with China (Residual)		0.256	-0.571					-0.971	-0.041					-1.818	-2.704			
		(1.149)	(1.020)					(1.625)	(1.893)					(1.685)	(1.938)			
GZ Spread × L.PolTie with US				-6.746***	-6.295**	-6.407**				-18.592*	-14.862**	-18.394*				-2.967*	0.412	-2.482
				(1.800)	(2.516)	(2.431)				(9.788)	(5.623)	(9.833)				(1.572)	(4.367)	(4.025)
GZ Spread × L.PolTie with G6 (Residual)				-6.866		-5.597				5.191		6.216				-12.030**		-11.326**
				(4.975)		(4.847)				(14.513)		(15.140)				(5.444)		(4.580)
GZ Spread × L.PolTie with China (Residual)					6.617	1.567					0.713	1.977					10.750	2.359
					(10.051)	(10.114)					(13.745)	(15.262)					(15.753)	(17.112)
Observations	1321	1321	1321	1321	1321	1321	593	593	593	593	593	593	728	728	728	728	728	728
Adjusted R-Square	0.355	0.355	0.355	0.359	0.358	0.358	0.348	0.350	0.350	0.341	0.344	0.342	0.457	0.457	0.457	0.459	0.457	0.457
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

We find that political ties with US stand out and play a unique role for emerging countries as the coefficients of the interaction term using the political tie with G6 and China are insignificant across different GFCy variables we are using. On the other hand, the coefficients of the interaction term using political ties with the US remain significantly negative, and the magnitudes are similar to or even more pronounced than those in the baseline. These results demonstrate that the global spillover effects to developing countries are indeed enhanced by stronger political ties specifically with the US. Interestingly, for developed countries, the political ties with G6, rather than that with US, significantly amplifies the transmission of GZ spread, but not that of VIX.

Second, we investigate whether our findings on political ties are confounded by the effects arising from other macroeconomic conditions or policy interventions. Specifically, we show that it is political ties with the US that matters for sensitivities of stock returns to the global financial cycle after augmenting the baseline specification by including interaction terms between the global financial condition with each control variable. We are essentially running a horse race between the political ties measure and the other control variables. To ease the interpretation of the relative magnitudes, in this specification we standardize each control variable by subtracting its mean and then divide by its standard deviation.

Table 4 shows the horse race results. For non-OECD countries, columns (3)-(4) show that the role of political ties with the US remains, and it is one of the only three factors that are significant when interacted with the two GFCy measures. The other two factors are the capital account openness, which also significantly increases the transmission of global financial conditions, and exchange rate stability, which tends to reduce the transmission. In other words, when it comes to reinforcing the correlation between a country's stock market and the global financial market, the magnitude of the effect of strengthening political ties with the US is just as significant, if not more so, than the effect of liberalizing a country's capital account or increasing exchange rate flexibility. Trade openness appear to reduce the transmission, but the effect is only marginally significant.



Similar to our baseline analysis, we also observe that there are no statistically significant effects of the interaction between political ties with the US and the GFCy measures for OECD countries. For the other control variables, higher inflation turns out to be a significant factor in strengthening the spillover effects from both global factors. Further, stronger GDP growth tends to reduce the transmission from GZ spread and monetary policy independence seems to amplify the spillover effects of the VIX.

**Table 4:** Horse Race with Non-Political Tie Variables

	Full Sample		Non-OECD		OECD	
	(1) VIX	(2) GZ Spread	(3) VIX	(4) GZ Spread	(5) VIX	(6) GZ Spread
Gfcy $\times$ L.Political Tie	-0.218 (0.210)	-1.700 (1.333)	-0.807** (0.311)	-4.161* (2.272)	-0.058 (0.223)	-0.991 (0.765)
Gfcy $\times$ L.GDP Growth	0.200 (0.233)	0.552 (1.667)	0.178 (0.369)	0.975 (2.100)	0.134 (0.360)	4.548** (2.166)
Gfcy $\times$ L.Inflation	-15.863 (10.550)	-32.042 (64.465)	1.862 (13.940)	111.947 (86.854)	-21.570*** (6.389)	-196.050*** (44.729)
Gfcy $\times$ L.Appreciation	-0.130 (0.327)	2.000 (2.163)	0.310 (0.620)	1.358 (3.906)	-0.499 (0.325)	-0.244 (1.438)
Gfcy $\times$ L.Peg	-0.056 (0.226)	-1.982 (1.380)	-0.142 (0.237)	-2.057 (1.620)	0.245 (0.435)	0.547 (2.941)
Gfcy $\times$ L.Exchange Rate Stability	-0.003 (0.248)	1.289 (1.777)	0.616* (0.335)	5.058** (2.072)	-0.685* (0.398)	-3.320 (3.133)
Gfcy $\times$ L.Monetary Policy Independence	-0.104 (0.113)	0.466 (0.646)	-0.069 (0.165)	-0.438 (1.223)	-0.260** (0.126)	0.352 (0.603)
Gfcy $\times$ L.Capital Account Openness	-0.094 (0.187)	-2.119* (1.155)	-0.395** (0.164)	-3.416*** (1.059)	0.373 (0.290)	-0.870 (1.902)
Gfcy $\times$ L.Financial Integration	0.133 (2.504)	-11.113 (14.519)	-6.002 (3.526)	-38.760 (28.456)	1.815 (2.774)	18.364 (18.031)
Gfcy $\times$ L.Trade Openness	-0.195 (0.168)	1.338 (0.931)	0.407* (0.215)	3.155* (1.596)	-0.354 (0.247)	0.321 (1.241)
Gfcy $\times$ L.Macro Prudential Policy	-0.113 (0.088)	-0.377 (0.528)	-0.079 (0.115)	-0.645 (0.666)	-0.050 (0.221)	0.949 (0.902)
Gfcy $\times$ L.Foreign Reserve	0.456 (0.340)	-1.751 (2.199)	-0.453 (0.445)	-2.559 (2.901)	1.047* (0.526)	-2.904 (3.214)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.356	0.360	0.350	0.348	0.475	0.474
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Third, We examine whether the role of political ties in amplifying the sensitivity of stock returns to the GFCy depends on the level of global geopolitical risk. For this purpose, we obtain the geopolitical risk (GPR) measure from Caldara and Iacoviello (2022)

and generate four dummy variables indicating the GPR lies in the first to fourth quartile. Then we run a regression which includes a full set of (triple) interaction terms between the global financial cycle, political ties with the US, and the dummy variables of four levels of global geopolitical risk, which helps identifying non-linear effects. Caldara and Iacoviello (2022) build a news-based measure of geopolitical risk by computing the share of articles mentioning adverse geopolitical events in the newspaper, where geopolitical risk is defined as the threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions across the globe that affect the peaceful course of international relations. They find that higher geopolitical risk foreshadows lower investment, employment, and stock prices. We plot the GPR during our sample period in the appendix Figure A2, which shows that the global geopolitical risk also shows fluctuations across years and it peaked in 2001-2003 due to the 9/11 attacks.

**Table 5:** Interaction with Geopolitical Risk

	Full		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
1st Quartile GPR $\times$ VIX $\times$ L.Political Tile	-1.265 (1.286)		<b>-3.311***</b> (1.164)		0.529 (1.237)	
2nd Quartile GPR $\times$ VIX $\times$ L.Political Tile	-0.353 (0.922)		<b>-3.974***</b> (1.076)		-0.177 (0.487)	
3rd Quartile GPR $\times$ VIX $\times$ L.Political Tile	0.515 (1.544)		<b>-9.311*</b> (5.120)		1.922 (2.275)	
4th Quartile GPR $\times$ VIX $\times$ L.Political Tile	-2.175*** (0.564)		0.421 (1.697)		-0.529 (0.921)	
1st Quartile GPR $\times$ GZ Spread $\times$ L.Political Tile		-16.713*** (2.621)		<b>-14.349**</b> (6.915)		-11.795 (6.952)
2nd Quartile GPR $\times$ GZ Spread $\times$ L.Political Tile		0.203 (5.414)		<b>-22.439***</b> (7.175)		-0.391 (3.860)
3rd Quartile GPR $\times$ GZ Spread $\times$ L.Political Tile		4.724 (11.652)		10.577 (27.600)		6.830 (16.634)
4th Quartile GPR $\times$ GZ Spread $\times$ L.Political Tile		-6.832 (8.346)		-0.882 (11.169)		15.499 (11.172)
1st Quartile GPR $\times$ L.Political Tile	34.449 (29.210)	53.525*** (16.774)	50.747 (30.758)	17.468 (24.399)	15.805 (26.726)	57.474* (28.157)
2nd Quartile GPR $\times$ L.Political Tile	-2.490 (23.508)	-5.167 (18.566)	67.121* (35.614)	39.826 (28.440)	13.150 (11.537)	12.200 (12.198)
3rd Quartile GPR $\times$ L.Political Tile	-10.881 (23.422)	-6.976 (24.308)	137.169 (83.961)	-12.648 (60.419)	-15.996 (33.217)	1.333 (32.654)
4th Quartile GPR $\times$ L.Political Tile	28.658** (13.443)	9.345 (25.237)	-3.865 (33.569)	8.772 (28.783)	9.979 (16.746)	-33.311 (28.600)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.364	0.370	0.349	0.342	0.461	0.467
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Focusing on the results shown in Table 5, two observations stand out. First, the role of political ties with US still only matters for developing countries. In the OECD sample, the coefficients of the interaction terms between political ties and GFCy variable are statistically insignificant no matter the level of global geopolitical situation. Second, in developing countries, with the heightened global geopolitical risk, the amplifying effects of stronger political ties with US is also enhanced but in a non-linear pattern. When the GPR is below the median and the world is relatively more peaceful, the impact of political ties with US becomes stronger in enhancing the spillover effect from both the VIX and GZ spread, particularly when the GPR rises from the first to the second quartile. When the global geopolitical risk reaches an extreme level, in the fourth quartile in particular,

however, the spillover effects of global financial market do not vary too much with political ties with US.

### **3.3 Robustness Checks**

We conduct several exercises to verify the robustness of our baseline estimates. We verify that our results persist when we use different measurements of political ties and GFCy. We consider the stability of our results to alternate time frames, specifically before and after the global financial crisis. Finally, we also run regressions which consider and control for other factors such as institutional quality and ideological distance.

First, we show that our baseline findings are robust to alternative measurements of politicalties with the US. Specifically, our results remain even if we focus on a two-category voting similarity classification (S2UN) which omits abstains or absences when calculating voting similarities with the US. Further, we obtain similar results to the baseline when calculating political ties with the US only using averages of voting patterns on issues deemed important by the US State Department. Tables 6 presents the results when we use S2UN, S3UN-imp, and S2UN-imp to measure political ties with the US in panels A, B and C, respectively. The coefficients of the interaction term between various global financial cycle variables and these alternative political tie measures are all significantly negative for the non-OECD sample while statistically insignificant for the OECD sample.

**Table 6:** Robustness Check: Alternative Measurements of Political Tie

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: S2UN</i>						
VIX $\times$ L.Political Tie	-0.627*		-2.620***		0.179	
	(0.324)		(0.701)		(0.390)	
GZ Spread $\times$ L.Political Tie		-6.564***		-13.372***		-1.040
		(1.949)		(3.962)		(2.201)
L.Political Tie	14.062	17.704*	52.502**	34.071	3.878	8.673
	(9.071)	(9.024)	(22.986)	(20.857)	(8.859)	(8.485)
Observations	1318	1318	593	593	725	725
Adjusted R-Square	0.356	0.359	0.348	0.342	0.458	0.458
<i>Panel B: S3UN-imp</i>						
VIX $\times$ L.Political Tie	-0.731***		-2.055***		-0.066	
	(0.263)		(0.427)		(0.464)	
GZ Spread $\times$ L.Political Tie		-5.549***		-12.367***		0.551
		(1.500)		(2.822)		(2.277)
L.Political Tie	8.175	7.952	49.289***	38.747***	-18.601*	-21.128**
	(7.452)	(6.833)	(11.884)	(11.106)	(9.127)	(9.450)
Observations	1267	1267	571	571	696	696
Adjusted R-Square	0.358	0.360	0.352	0.347	0.464	0.464
<i>Panel C: S2UN-imp</i>						
VIX $\times$ L.Political Tie	-0.574***		-1.522***		-0.260	
	(0.198)		(0.329)		(0.394)	
GZ Spread $\times$ L.Political Tie		-4.451***		-9.447***		-0.394
		(1.182)		(2.235)		(2.049)
L.Political Tie	7.420	7.418	35.931***	28.803***	-10.017	-14.130*
	(5.692)	(5.329)	(8.269)	(7.851)	(8.759)	(7.883)
Observations	1267	1267	571	571	696	696
Adjusted R-Square	0.358	0.359	0.350	0.347	0.464	0.464
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Moreover, we also use alternative measurements of GFCy and find robust results. Specifically, we use indicators of excess bond premium (EBP) and economic policy uncertainty (EPU). EBP is calculated as the difference between the average U.S. corporate bond spread and the average expected default risk, which is a component of the GZ spread net of expected defaults (Gilchrist and Zakrajšek 2012, Gilchrist et al. 2022). EPU is the three-component index of US economic policy uncertainty, which include a component of news articles discussing economic policy uncertainty, a component of uncertainty re-

garding the path of the federal tax code, and a component of dispersion of forecasting on policy-related macroeconomic variables. Baker et al. (2016) show that EPU is a significant factor that influences movements in the stock market. We use EBP and EPU to interact with political ties with US and repeat the baseline estimation. Table 7 shows that the coefficients of the interaction terms remain significantly negative, indicating that stronger political connection with US is associated with more pronounced spillover from the risk perception and uncertainty in the US.

**Table 7:** Robustness Check: Alternative Measurements of GFCy

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: EBP</i>						
EBP $\times$ L.Political Tie	-11.778*** (3.823)	-12.150*** (4.265)	-19.081** (7.996)	-23.381** (8.570)	-5.069 (7.672)	-7.000 (7.870)
L.Political Tie	-10.811 (12.738)	-1.956 (9.656)	-26.735 (25.840)	-5.706 (18.749)	9.079 (11.635)	9.685 (9.989)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.311	0.358	0.299	0.343	0.405	0.458
<i>Panel B: EPU</i>						
EPU-US $\times$ L.Political Tie	-0.235*** (0.080)	-0.219*** (0.077)	-0.606*** (0.177)	-0.568*** (0.136)	-0.047 (0.139)	-0.137 (0.126)
L.Political Tie	21.787 (16.658)	27.748* (13.967)	44.688 (37.717)	57.322** (23.976)	15.172 (16.136)	26.648 (15.682)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.313	0.358	0.311	0.348	0.405	0.459
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	NO	YES	NO	YES	NO	YES

Recent research suggests that the global push factors are less significant after the global financial crisis (Fratzscher 2012, Forbes and Warnock 2021), and we confirm in the appendix Tables A1 that this is the case in our data for stock prices in developing countries. We then show that the baseline findings hold for subsample periods before and after the global financial crisis. We repeat the baseline estimations for subsample periods of 1991-2009 and 2010-2019 separately and present the results in Table 8. It shows that the significant amplifying effect of political ties with US remain in both sample periods,

and is relatively stronger after the global financial crisis.

**Table 8:** Robustness Check: Sample Periods Before and After the Global Financial Crisis

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Before the Global Financial Crisis</i>						
VIX $\times$ L.Political Tie	-0.209 (0.472)		-3.530** (1.310)		0.577 (0.421)	
GZ Spread $\times$ L.Political Tie		-6.439*** (2.337)		-20.235*** (6.141)		-2.503 (2.341)
L.Political Tie	4.811 (16.782)	16.200 (15.989)	101.835*** (33.477)	79.201*** (25.048)	-21.208 (19.372)	-5.758 (20.814)
Observations	793	793	355	355	438	438
Adjusted R-Square	0.374	0.378	0.375	0.370	0.498	0.498
<i>Panel B: After the Global Financial Crisis</i>						
VIX $\times$ L.Political Tie	-1.660** (0.795)		-3.576* (1.816)		-0.537 (1.164)	
GZ Spread $\times$ L.Political Tie		-14.297*** (4.430)		-28.454** (11.155)		-14.650 (9.579)
L.Political Tie	15.315 (14.894)	22.950 (15.653)	9.117 (28.653)	20.411 (30.143)	23.307 (19.718)	44.980** (19.246)
Observations	528	528	238	238	290	290
Adjusted R-Square	0.376	0.374	0.354	0.347	0.379	0.387
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Furthermore, we conduct an additional analysis to compare the effects of political connections with the US and institutional quality, while also controlling for other variables and interacting them with global financial cycle variables as in previous analyses. Recent studies such as Ferrero et al. (2022) suggest that the variances in institutional quality play a crucial role in buffering the effects that the global financial cycle variables has on the financial markets of emerging market economies. Specifically, we use the institutional quality measurement from the World Bank Worldwide Governance Indicators (WGI) database, which covers six dimensions of institutional strength, including political stability, rule of law, government effectiveness, corruption control, regulatory quality, and voice and accountability. We use the political stability measurement in Table 9, while

the results using the other five measurements are reported in the appendix Tables A7-A11. This analysis has fewer observations because there is limited data available for the institutional quality measurements.

We observe that political stability is significantly associated with a reduced transmission from global financial cycle, as the coefficients of the interaction terms between political stability and both VIX and GZ spread are significantly positive. This finding is consistent with Ferrero et al. (2022) and indicates the soothing role of stable political environment. More importantly, after accounting for the confounding factor of political stability, the political ties with US still stand out in strengthening the impact of global financial factors on stock returns.

**Table 9:** Robustness Check: Additionally Horse Race with Institutional Quality

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX $\times$ L.Political Tie		-1.232** (0.580)				-4.284*** (0.631)				-0.343 (0.617)		
VIX $\times$ L.Political Stability	-0.095 (0.109)	0.093 (0.164)			0.073 (0.203)	0.418** (0.169)			-0.182 (0.108)	-0.201 (0.126)		
GZ Spread $\times$ L.Political Tie				-10.656** (3.990)				-28.170*** (4.656)				-6.235 (3.955)
GZ Spread $\times$ L.Political Stability			-1.047 (0.640)	0.558 (1.071)			0.689 (1.099)	2.930*** (0.905)			-0.852 (0.760)	-1.093 (0.960)
L.Political Tie		26.115** (12.419)		30.827** (13.009)		71.247** (25.857)		57.097* (28.978)		17.644 (13.574)		24.674* (12.771)
L.Political Stability	-0.212 (3.748)	-3.843 (4.396)	0.475 (3.122)	-3.200 (3.618)	-5.408 (5.441)	-12.773** (5.234)	-5.683 (4.223)	-11.306** (4.071)	8.568* (4.260)	8.674* (4.320)	7.021 (4.335)	7.159* (4.060)
Observations	1002	1002	1002	1002	459	459	459	459	543	543	543	543
Adjusted R-Square	0.419	0.424	0.419	0.429	0.362	0.393	0.362	0.389	0.536	0.535	0.535	0.537
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Lastly, in the same vein, we examine the robustness of our finding by taking into account the impact of the ideological differences between a country and the US. Again, we add an additional interaction term between the ideology distance and global financial factors and test whether the effect of the interaction term between political ties and global financial factors remains significant.

In line with Kempf et al. (2023), we start by acquiring the left-right ideological scores of the winning party or the party with the highest vote share in elections using the Manifesto database. Then, we calculate the absolute difference between this score in



a country and the US. If a country is not holding elections in a particular year, we use the ideology distance from the latest election year. According to their findings, the further a country's ideology is from that of the US, the lower the investment allocation between the two. We are interested in examining the impact of the ideology distance on global financial transmission. The results presented in Table 10 indicate that the ideology distance does not have significant effects on the spillover from VIX and GZ spread, nor does it weaken the role of political connections in amplifying such spillovers.

**Table 10:** Robustness Check: Additionally Horse Race with Ideology Distance

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX $\times$ L.Political Tie		-0.433 (0.740)				-3.802*** (1.127)				0.724 (0.578)		
VIX $\times$ L.Ideology Distance	-0.000 (0.009)	-0.002 (0.010)			0.003 (0.020)	-0.000 (0.023)			0.009 (0.008)	0.010 (0.008)		
GZ Spread $\times$ L.Political Tie				-3.810 (3.909)				-11.766* (6.399)				-0.676 (2.228)
GZ Spread $\times$ L.Ideology Distance			0.029 (0.061)	0.013 (0.061)			0.095 (0.155)	0.124 (0.159)			-0.006 (0.053)	-0.007 (0.052)
L.Political Tie		22.262* (12.856)		22.735** (11.009)		2.109 (40.079)		-36.427 (44.178)		2.521 (12.492)		16.508 (11.195)
L.Ideology Distance	0.013 (0.167)	0.037 (0.173)	-0.058 (0.141)	-0.034 (0.135)	-0.075 (0.542)	-0.000 (0.522)	-0.250 (0.505)	-0.318 (0.462)	-0.192 (0.144)	-0.199 (0.145)	-0.018 (0.125)	-0.019 (0.121)
Observations	861	861	861	861	158	158	158	158	698	698	698	698
Adjusted R-Square	0.412	0.413	0.412	0.413	0.384	0.425	0.385	0.399	0.489	0.491	0.489	0.489
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

## 4 Channels

In this section, we consider the plausibility of two possible channels through which stronger political ties with the US may lead stock returns in foreign countries to be more sensitive to the GFCy. First, we consider deepening trade linkages with the US as a real channel through which stronger political ties with the US could induce stronger co-movement in stock returns. Second, we explore increased cross exposure of foreign investors to US securities and of US investors to foreign securities as a potential channel. As stronger political ties may increase awareness of and reduce information asymmetries

between two countries, possibly also reducing other non-pecuniary barriers or frictions to foreign asset holdings, we investigate whether stronger political ties with the US also leads to tighter financial linkages in this respect.

## 4.1 Trade

Here we explore a possible real channel behind the amplification effect of political ties with the US. Specifically, we investigate whether political ties with the US is associated with an improvement in the country's trade relations with US. We use either the natural logarithm of exports to and imports from the US or the share of the trade with US in the country's total international trade as the dependent variable.

**Table 11:** Bilateral Trade with US

	Full Sample				Non-OECD				OECD			
	Export		Import		Export		Import		Export		Import	
	Ln(Value)	Share	Ln(Value)	Share	Ln(Value)	Share	Ln(Value)	Share	Ln(Value)	Share	Ln(Value)	Share
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
L.Political Tie	-0.206 (0.172)	-3.265*** (1.064)	-0.259** (0.111)	-6.222*** (1.031)	0.520 (0.438)	-4.632** (2.236)	0.543** (0.261)	3.717*** (1.303)	-0.082 (0.122)	-5.106*** (1.230)	-0.190 (0.132)	-11.636*** (1.605)
Observations	1312	1312	1312	1312	590	590	590	590	722	722	722	722
Adjusted R-Square	0.952	0.965	0.974	0.957	0.918	0.822	0.959	0.936	0.983	0.990	0.983	0.966
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Results reported in Table 11 show that stronger political ties with US are significantly associated with less exports and imports using the full sample. However, we find that stronger political ties with the US lead to more imports from the US for developing countries. Specifically, a one standard deviation increase in political ties with the US for a developing country (0.22) is likely to lead to an increase in its import from the US by 11.4% and its share in total imports by 0.82 percentage points.<sup>9</sup> In contrast, for OECD countries, stronger political ties with US is likely to lower the importance of US in the country's trading partners. These results indicate that trade deepening with the US may be an important channel for increased sensitivity of stock returns to the GFCy under stronger political ties with the US for non-OECD countries.

<sup>9</sup> $0.22 \times 0.543 = 0.119$ ;  $0.22 \times 3.717 = 0.818$ .

## 4.2 US Claims and Liabilities of Foreign Securities

As a second potential channel, we explore the extent to which cross-holdings of securities between the US and other countries improve with stronger political ties. We obtain the portfolio holdings of US securities (US liabilities) by foreigners and US residents' portfolio holdings of foreign securities (US assets) from the Department of the Treasury. Specifically, we observe each country's total holding of US securities and each country's securities held by US residents as broken down into its components of equity and debt.

We reports results of regressions of the natural logarithm of the country's holdings of US securities according to different types of securities as indicated in the column titles as dependent variables in panel A of Table 12. The key messages from these regressions are that stronger political ties with US is significantly associated with more holdings of US equity, and this relationship is nearly four times more pronounced for developing countries compared to developed ones. When political ties with the US increase by one standard deviation, the holdings of US equity increases by 52.0% and 15.3% for developing and developed countries, respectively.

Next we regress foreign securities held by US residents on our political ties measure along with controls in panel B of Table 12. Surprisingly, we find an overall reduction in holdings of foreign securities following an increase in political ties and that this effect is mainly driven by a reduction in holdings of US equity. Again, when split into OECD and non-OECD subsamples, we only find significant effects for the non-OECD subsample. When political ties with the US increase by one standard deviation, the US holding of the country's equity decreases by 57.8%.

These results paint an interesting picture particularly for non-OECD countries. Political ties with the US seem to generate an asymmetric effect regarding securities holdings. Stronger political ties with the US increases foreign holdings of US equity securities indicating a strengthening of (one-way) financial linkages. However, this also results in reduced foreign equity holdings of US residents for non-OECD countries. Together with the increased trade linkages - particularly imports of US goods - for non-OECD countries,

our results are suggestive of a shift in the balance of payments for non-OECD countries when political ties with the US are strong.

**Table 12:** Channel: Bilateral Securities Holdings with US

	Full Sample			Non-OECD			OECD		
	(1) Total	(2) Equity	(3) Debt	(4) Total	(5) Equity	(6) Debt	(7) Total	(8) Equity	(9) Debt
<i>Panel A: Holdings of US Securities</i>									
L.Political Tie	-0.430 (0.278)	0.806*** (0.287)	-0.789** (0.373)	-0.564 (0.824)	2.365*** (0.728)	-1.453 (1.103)	-0.060 (0.227)	0.645** (0.277)	-0.220 (0.312)
Observations	919	919	919	423	423	423	496	496	496
Adjusted R-Square	0.961	0.966	0.942	0.930	0.933	0.903	0.982	0.977	0.975
<i>Panel B: Foreign Securities Held by US Residents</i>									
L.Political Tie	-1.103*** (0.365)	-1.870*** (0.437)	-0.172 (0.489)	-0.451 (1.003)	-2.627** (1.235)	1.831 (1.392)	0.035 (0.235)	-0.338 (0.296)	0.466 (0.312)
Observations	893	893	893	405	405	405	488	488	488
Adjusted R-Square	0.954	0.959	0.886	0.913	0.925	0.778	0.977	0.976	0.943
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES

## 5 Conclusion

We study the implications of forging stronger political ties with the US on the sensitivities of stock returns around the world to the global financial cycle - the GFCy. Using voting patterns at the United Nations and various measures of the global financial cycle, we document evidence indicating that stronger political ties with the US amplifies the sensitivities of stock returns to the GFCy. We explore several channels and find that a deepening of trade and financial linkages appears to be an important factor for developing countries.

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# Appendix

## A1 Global Financial Cycle Regressions

Here we report the results of global financial cycle regression specified as the following equation.

$$StockReturn_{ct} = \alpha + \beta_1 Gficy_t + Control_{ct-t} + \theta_c + \epsilon$$

Results show that the global financial cycle applies in general: the estimated coefficient is significantly negative for VIX and GZ spread. A worse financial condition in the core economy or worldwide is associated with a lower asset price in non-core countries.

**Table A1:** Global Financial Cycle Regression

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Whole Period (1991-2019)</i>						
VIX	-1.283*** (0.081)	-1.438*** (0.098)	-1.248*** (0.155)	-1.347*** (0.187)	-1.311*** (0.077)	-1.470*** (0.115)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.107	0.177	0.072	0.134	0.139	0.234
GZ Spread	-10.112*** (0.699)	-10.244*** (0.638)	-7.785*** (0.919)	-8.084*** (0.964)	-12.048*** (0.853)	-12.345*** (0.818)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.136	0.183	0.060	0.115	0.229	0.288
<i>Panel B: Before Global Financial Crisis (1991-2009)</i>						
VIX	-1.973*** (0.126)	-2.009*** (0.147)	-2.109*** (0.215)	-2.205*** (0.272)	-1.858*** (0.145)	-1.735*** (0.127)
Observations	793	793	355	355	438	438
Adjusted R-Square	0.212	0.264	0.192	0.249	0.226	0.301
GZ Spread	-11.855*** (0.810)	-13.138*** (0.889)	-10.054*** (1.242)	-11.132*** (1.498)	-13.355*** (0.948)	-14.699*** (0.964)
Observations	793	793	355	355	438	438
Adjusted R-Square	0.202	0.257	0.115	0.179	0.297	0.367
<i>Panel C: After Global Financial Crisis (2010-2019)</i>						
VIX	-0.070 (0.234)	-0.374 (0.238)	0.437 (0.388)	-0.082 (0.405)	-0.492* (0.264)	-1.077*** (0.322)
Observations	528	528	238	238	290	290
Adjusted R-Square	0.094	0.176	0.141	0.194	0.038	0.202
GZ Spread	-2.234 (1.994)	-6.645*** (2.397)	1.118 (2.988)	-4.670 (2.979)	-4.893* (2.608)	-11.756*** (3.669)
Observations	528	528	238	238	290	290
Adjusted R-Square	0.097	0.191	0.134	0.202	0.039	0.217
Country FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	NO	NO	NO
Controls	No	YES	No	Full	No	YES

## A2 Additional Figures and Tables

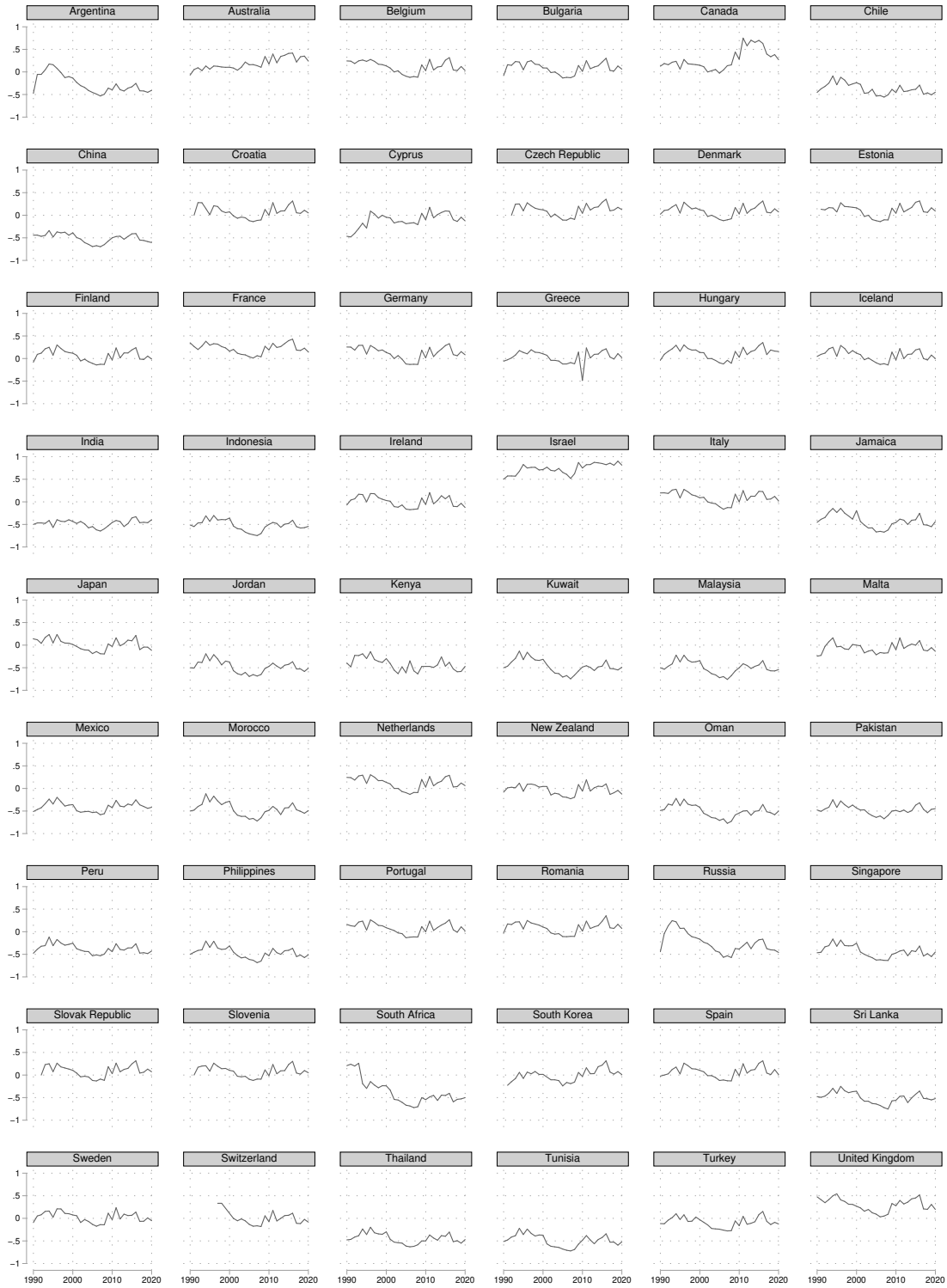
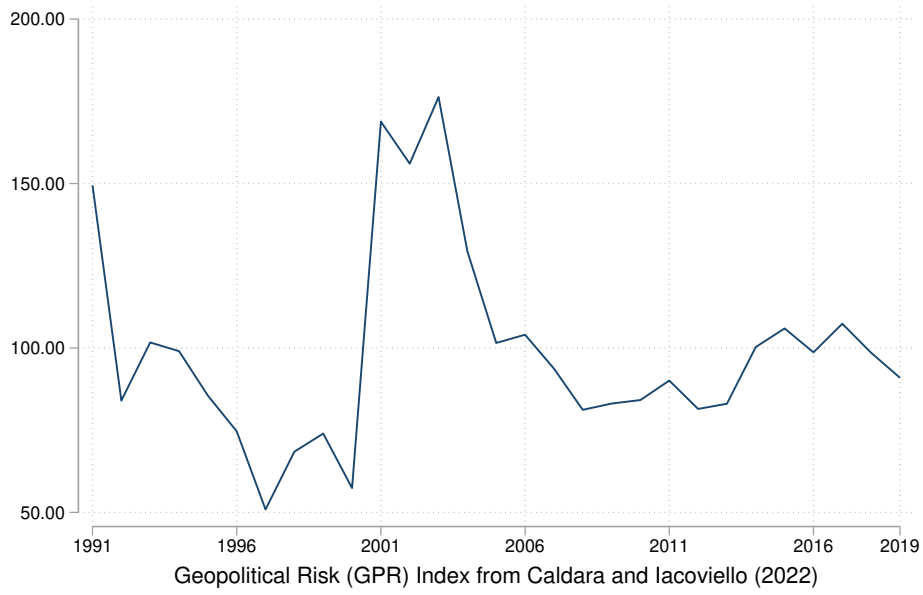


Figure A1: Political Ties with US: by Country



**Figure A2:** Geopolitical Risk Index

**Table A2: Variable Definition**

Variable	Definition	Source
Stock Market Return	Growth rate of domestic stock market indices.	Datastream
VIX	CBOE S&P 500 volatility index. An increase in the index is interpreted as an increase in market volatility.	WRDS, CBOE
GZ Spread	The average US bond credit spreads defined as the difference between the yield of corporate bonds and the hypothetical risk-free Treasury securities of the same cash flows and maturities.	Gilchrist and Zakrajšek (2012), Gilchrist et al. (2022)
Political Tie-S3UN	Voting similarities between the country and US using a three-category scale ( <i>Yes-No-Abstain</i> ).	Voeten (2013), Bailey et al. (2017)
Political Tie-S3UN imp	Voting similarities between the country and US using a three-category scale ( <i>Yes-No-Abstain</i> ), only considering votes on issues that the US state department has deemed of importance to US.	Voeten (2013), Bailey et al. (2017)
Political Tie-S2UN	Voting similarities between the country and US using a two-category scale ( <i>Yes-No</i> ).	Voeten (2013), Bailey et al. (2017)
Political Tie-S2UN imp	Voting similarities between the country and US using a two-category scale ( <i>Yes-No</i> ), only considering votes on issues that the US state department has deemed of importance to US.	Voeten (2013), Bailey et al. (2017)
GDP Growth	Growth rate of gross domestic products.	WDI
Inflation	Growth rate of consumer price index.	WDI
Appreciation	Growth rate of the official exchange rate expressed as US dollars per unit of local currency.	WDI
Foreign Reserve	The ratio of total reserves to GDP.	WDI
Peg	A dummy variable indicating that the country has a fixed exchange rate, following the classification in Shambaugh (2004).	Shambaugh (2004)
Exchange Rate Stability	Taken from the trilemma indexes by Aizenman et al. (2008). It is the annual standard deviations of the monthly exchange rate between the home country and the base country normalized between zero and one.	Aizenman et al. (2008)
Monetary Policy Independence	Taken from the trilemma indexes by Aizenman et al. (2008). It is the reciprocal of the annual correlation of the monthly interest rates between the home country and the base country.	Aizenman et al. (2008)
Capital Account Openness	Taken from the trilemma indexes by Aizenman et al. (2008). It is the <i>de jure</i> capital account openness from Chinn and Ito (2008).	Aizenman et al. (2008), Chinn and Ito (2008)
Financial Integration	The <i>de facto</i> financial openness calculated as the ratio of the external liabilities and assets to GDP.	Lane and Milesi-Ferretti (2007)
Trade Openness	The ratio of trade, i.e., sum of the imports and exports, to GDP.	WDI
Macro Prudential Policy	It is an index capturing the change in integrated macroprudential policies covering broad based, household sector, corporate sector, liquidity and foreign exchange, nonbank, and structural tools. An increase in the index is interpreted as a tightening of macroprudential policies.	iMaPP, IMF

**Table A3: Country and Sample Period**

OECD Countries		Non-OECD Countries	
Country	Sample Period	Country	Sample Period
Australia	1993-2019	Argentina	1992-2019
Belgium	1991-2019	Bulgaria	2001-2019
Canada	1999-2019	China	1993-2019
Chile	1991-2019	Croatia	1998-2015
Czech Republic	1997-2019	Cyprus	2005-2019
Denmark	1991-2019	India	1992-2019
Estonia	1998-2019	Indonesia	1991-2017
Finland	1991-2019	Jamaica	1991-2019
France	1991-2019	Jordan	1991-2017
Germany	1991-2019	Kenya	1991-2019
Greece	1991-2019	Kuwait	1995-2019
Hungary	1993-2019	Malaysia	1991-2019
Iceland	1997-2019	Malta	1996-2019
Ireland	1991-2019	Morocco	2003-2019
Israel	1997-2019	Oman	1997-2019
Italy	1998-2019	Pakistan	1991-2019
Japan	1991-2019	Peru	1994-2019
Mexico	1991-2019	Philippines	1991-2019
Netherlands	1991-2019	Romania	1998-2019
New Zealand	2001-2019	Russia	1999-2019
Portugal	1993-2019	Singapore	2000-2019
Slovak Republic	1997-2019	South Africa	1996-2019
Slovenia	2007-2019	Sri Lanka	1991-2019
South Korea	1992-2019	Thailand	1991-2019
Spain	1991-2019	Tunisia	1998-2019
Sweden	1991-2019		
Switzerland	1998-2019		
Turkey	1991-2019		
United Kingdom	1991-2019		

**Table A4:** Using Current Political Connection and Control Variables

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
VIX $\times$ Political Tie	-0.432 (0.302)		-2.629*** (0.674)		-0.047 (0.508)	
GZ Spread $\times$ Political Tie		-3.893** (1.687)		-12.897*** (4.389)		-1.806 (2.439)
Political Tie	23.682** (11.099)	24.877** (11.094)	72.280** (27.547)	51.088* (27.099)	21.579* (12.623)	24.525* (12.640)
Observations	1295	1295	576	576	719	719
Adjusted R-Square	0.400	0.400	0.372	0.366	0.479	0.480
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

**Table A5:** Standard Errors Clustered at Country and Year Level (Two-way)

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
VIX $\times$ L.Political Tie	-0.731** (0.323)		-2.055*** (0.403)		-0.066 (0.369)	
GZ Spread $\times$ L.Political Tie		-5.549** (2.026)		-12.367*** (2.521)		0.551 (2.385)
L.Political Tie	8.175 (7.035)	7.952 (6.965)	49.289*** (13.130)	38.747*** (11.679)	-18.601** (8.443)	-21.128* (10.343)
Observations	1267	1267	571	571	696	696
Adjusted R-Square	0.358	0.360	0.352	0.347	0.464	0.464
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

**Table A6:** Robust Standard Errors

	Full Sample		Non-OECD		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
VIX $\times$ L.Political Tie	-0.705** (0.298)		-2.900*** (0.747)		0.324 (0.425)	
GZ Spread $\times$ L.Political Tie		-7.628*** (2.046)		-15.391*** (5.114)		-1.348 (3.405)
L.Political Tie	10.154 (8.763)	14.800 (9.065)	47.438** (22.145)	27.604 (20.506)	5.000 (10.444)	12.786 (11.543)
Observations	1321	1321	593	593	728	728
Adjusted R-Square	0.355	0.359	0.350	0.345	0.458	0.458
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

**Table A7: Institutional Quality: Control of Corruption**

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX × L.Political Tie		-1.658** (0.620)				-3.769*** (0.648)				-0.407 (0.852)		
VIX × L.Control of Corruption	-0.024 (0.093)	0.276** (0.128)			0.112 (0.210)	0.290 (0.238)			0.224 (0.154)	0.241 (0.167)		
GZ Spread × L.Political Tie				-12.429*** (4.107)				-24.750*** (4.761)				-5.565 (5.207)
GZ Spread × L.Control of Corruption			-0.998 (0.639)	1.260 (0.933)			0.985 (1.382)	2.224 (1.536)			0.344 (1.178)	0.594 (1.270)
L.Political Tie		33.605*** (12.363)		34.194** (12.883)		64.445** (27.476)		51.463* (29.280)		17.273 (14.619)		22.790 (13.416)
L.Control of Corruption	3.417 (5.210)	-2.664 (5.317)	5.528 (4.717)	-0.122 (4.769)	-4.138 (7.314)	-8.528 (8.332)	-4.157 (6.029)	-6.265 (6.955)	7.281 (5.428)	6.684 (5.355)	10.330** (5.009)	8.997* (5.112)
Observations	1002	1002	1002	1002	459	459	459	459	543	543	543	543
Adjusted R-Square	0.418	0.427	0.419	0.430	0.360	0.386	0.360	0.382	0.541	0.540	0.539	0.540
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**Table A8: Institutional Quality: Government Effectiveness**

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX × L.Political Tie		-1.826*** (0.630)				-3.830*** (0.670)				-0.518 (0.866)		
VIX × L.Government Effectiveness	0.018 (0.127)	0.438** (0.176)			0.305 (0.338)	0.450 (0.334)			0.261 (0.190)	0.316 (0.209)		
GZ Spread × L.Political Tie				-12.851*** (3.903)				-24.989*** (5.048)				-6.435 (5.236)
GZ Spread × L.Government Effectiveness			-1.060 (0.923)	1.824 (1.182)			2.119 (2.124)	3.028 (2.044)			-0.022 (1.495)	0.623 (1.695)
L.Political Tie		37.824*** (13.311)		35.961*** (13.288)		65.663** (27.864)		52.944* (29.241)		20.221 (16.024)		25.330* (14.563)
L.Government Effectiveness	-2.609 (6.244)	-12.399* (7.158)	0.393 (5.911)	-7.503 (6.476)	-12.219 (12.431)	-17.219 (12.818)	-11.105 (10.994)	-15.161 (11.397)	-0.901 (4.832)	-2.243 (5.670)	4.329 (4.525)	2.667 (5.189)
Observations	1002	1002	1002	1002	459	459	459	459	543	543	543	543
Adjusted R-Square	0.418	0.429	0.419	0.430	0.363	0.390	0.363	0.386	0.535	0.535	0.533	0.535
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**Table A9: Institutional Quality: Rule of Law**

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX × L.Political Tie		-1.823** (0.704)				-3.976*** (0.628)				-0.532 (0.951)		
VIX × L.Rule of Law	-0.021 (0.106)	0.384** (0.169)			0.287 (0.239)	0.544* (0.283)			0.209 (0.227)	0.262 (0.244)		
GZ Spread × L.Political Tie				-13.538*** (4.635)				-26.423*** (4.582)				-5.744 (5.610)
GZ Spread × L.Rule of Law			-1.052 (0.776)	1.930 (1.221)			2.342 (1.640)	4.126** (1.669)			-0.339 (1.326)	0.179 (1.567)
L.Political Tie		38.133*** (14.143)		37.450** (14.213)		69.713** (26.687)		56.218* (28.109)		19.932 (16.576)		23.400 (14.500)
L.Rule of Law	-0.626 (5.521)	-8.471 (6.149)	1.902 (5.334)	-5.211 (5.876)	-14.713* (8.333)	-20.475* (10.738)	-14.709* (7.193)	-19.255** (8.659)	8.727 (5.722)	7.755 (5.760)	13.064** (5.606)	11.439* (6.085)
Observations	1002	1002	1002	1002	459	459	459	459	543	543	543	543
Adjusted R-Square	0.418	0.428	0.419	0.430	0.363	0.392	0.364	0.389	0.539	0.539	0.537	0.539
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**Table A10: Institutional Quality: Regulatory Quality**

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX × L.Political Tie		-1.556** (0.668)				-4.017*** (0.626)				-0.489 (0.839)		
VIX × L.Regulatory Quality	-0.163 (0.147)	0.273 (0.204)			-0.137 (0.319)	0.350 (0.300)			0.292 (0.261)	0.343 (0.284)		
GZ Spread × L.Political Tie				-13.136*** (4.723)				-27.716*** (5.337)				-7.020 (5.536)
GZ Spread × L.Regulatory Quality			-1.686 (1.026)	2.001 (1.545)			-0.584 (2.021)	2.955 (1.978)			1.147 (2.320)	1.934 (2.486)
L.Political Tie		34.388** (13.355)		38.492*** (14.245)		72.131** (28.081)		62.511** (29.663)		19.302 (15.337)		26.202* (14.929)
L.Regulatory Quality	-4.319 (6.263)	-12.065* (6.982)	-3.330 (6.027)	-11.430* (6.496)	-11.084 (8.656)	-20.406** (8.847)	-12.282 (7.293)	-21.954*** (7.395)	-2.393 (6.860)	-3.188 (7.303)	0.477 (6.833)	-1.183 (7.300)
Observations	1002	1002	1002	1002	459	459	459	459	543	543	543	543
Adjusted R-Square	0.421	0.427	0.422	0.432	0.368	0.394	0.367	0.392	0.534	0.534	0.533	0.535
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**Table A11: Institutional Quality: Voice and Accountability**

	Full Sample				Non-OECD				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIX × L.Political Tie		-0.936 (0.626)				-3.132*** (0.631)				-0.423 (0.922)		
VIX × L.Voice Accountability	-0.338*** (0.123)	-0.088 (0.198)			-0.745*** (0.265)	-0.226 (0.251)			0.293 (0.307)	0.349 (0.342)		
GZ Spread × L.Political Tie				-8.329* (4.410)				-21.650*** (5.583)				-5.735 (4.927)
GZ Spread × L.Voice Accountability			-2.981*** (0.814)	-0.788 (1.405)			-4.405** (1.745)	-0.824 (1.719)			0.000 (2.004)	0.679 (2.181)
L.Political Tie		21.042 (13.210)		26.267* (13.617)		52.203* (28.126)		44.928 (31.066)		22.906 (17.530)		27.705* (14.095)
L.Voice Accountability	6.692 (4.231)	2.583 (4.888)	7.167** (3.458)	3.050 (3.866)	12.652** (5.952)	4.225 (6.044)	8.140 (4.849)	1.768 (4.620)	15.654 (9.582)	16.090 (9.634)	19.045** (9.182)	18.846* (9.426)
Observations	1002	1002	1002	1002	459	459	459	459	543	543	543	543
Adjusted R-Square	0.423	0.424	0.426	0.429	0.375	0.385	0.371	0.380	0.541	0.542	0.540	0.542
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES