



Portfolio's weighted political risk and mutual fund performance: A text-based approach

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ABSTRACT

Using text-based measures of firm-level political risk, we find a negative impact of the portfolio's weighted political risk on U.S. mutual fund performance. This relationship is robust to a wide range of topic-specific political risks at the firm level. We, however, find that national geopolitical risk, the U.S. state-level economic policy uncertainty, and Brexit-induced risk do not affect mutual fund performance. Our results suggest that even though mutual funds are immune from political risk at the macro level, they are significantly exposed to idiosyncratic political risk. We also demonstrate that partisanship matters to mutual fund performance.

1. Introduction

The recent developments in international politics have exposed economies and businesses to a higher political risk. This trend continued with the election of Donald Trump as president of the United States (U.S. hereafter), who advocated significant changes to the status quo worldwide. Increasing concerns about political and economic policy uncertainty emerged against the global financial crisis and growing partisan policy disputes. Relationships within and between countries in Europe have been strained by events like Russia's annexation of Crimea in 2014 and the refugee crisis, which gave rise to right-wing political viewpoints and escalated threats to regional security. Moreover, the 2016 Brexit referendum raises concerns about the future of the Euro, European economic policies and financial markets. This research thus focuses on an intriguing question about how political risk affects financial markets and firm decisions.

Previous studies suggest that at the aggregate level, uncertainty associated with policy changes is a significant determinant of long-term economic growth (Acemoglu et al., 2001). Political uncertainty is associated with decreased GDP growth, employment, and

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investment (Aisen and Veiga, 2013) and the equity option market (Kelly et al., 2016). Political risk raises firm's funding costs (Colak et al., 2017; Jens, 2017; Kelly et al., 2016), lowers capital expenditures (Gulen et al., 2015), hinders initial public offerings (IPOs) (Colak et al., 2017) and mergers and acquisitions (M&A) (Bonaime et al., 2018), drives more conservative pay-out policies (Panousi et al., 2012) as well as larger cash holdings (Phan et al., 2019). Nevertheless, how the firm-level political risk, via stock holdings, impacts mutual fund performance remains under-researched. In this study, we construct the weighted political risk of mutual funds' international portfolios via the text-based approach proposed by Hassan et al. (2019) to examine the impact of political risk on mutual fund performance at both firm- and aggregate (i.e., national- and state-) level data.

Our empirical analysis yields some interesting findings. Using the weighted portfolio political risk computed by stock-level political risk (Hassan et al., 2019), we show that portfolio political risk negatively affects mutual fund performance proxied by Carhart's alpha. This suggests that general mutual fund performance decreases significantly under increased portfolio's political risk. The effect is consistent and persists for most political risk categories, including economic policy and budgeting, environmental issues, trade, nationwide institutions, security and defense, tax policy, and technology and infrastructure. Our results are in line with and can be explained by the findings of recent studies. For example, Banerjee and Dutta (2022) find that firm-level political risk decreases capital investment. Das and Yaghoubi (2023) show that idiosyncratic political risk significantly reduces stock liquidity due to increased informational asymmetry. Accordingly, an increase in firm-level political risk can be perceived as a negative signal to investors, adversely affecting stock performance. Extending to our context, an increase in a mutual fund's weighted portfolio political risk implies that the mutual fund is increasing holdings of one or more stocks with higher firm-level political risk compared to its previous level. This may be perceived as a negative signal to investors. Mutual funds, which normally do not employ dynamic trading strategies (Bali et al., 2014), can experience a decrease in their performance.

Our further analysis shows that mutual fund performance is not affected by the portfolio's weighted national geopolitical risks, the U.S. state-level economic policy uncertainty, and Brexit risk. Our finding is supported by Bali et al. (2014), who state that mutual funds are independent of the macroeconomic risks. This is because, unlike hedge funds, mutual funds do not have the capability to time macroeconomic changes and tend to mainly invest in the long run but do not extensively use other tools such as derivatives, short-selling, and leverage. Additional tests indicate that partisanship in the U.S. matters to the risk-return relationship in mutual funds. Mutual funds generally perform better during Democratic presidencies than during Republican presidencies given their

Table 1
Variable description.

Variable	Description	Data source
ALPHA	Mutual fund performance is intercepted (i.e., alphas) by estimating Carhart's four-factor model by using the prior 36 months of returns.	Thomson Reuters
WPRISK	The weighted average firm-level political risk of firms in the portfolio during the year.	Hassan et al. (2019)
WPRISK_ECON	The weighted average firm-level political risk of firms in the portfolio regarding economic policy and budgeting during the year.	Hassan et al. (2019)
WPRISK_ENVI	The weighted average firm-level political risk of firms in the portfolio regarding environmental issues during the year.	Hassan et al. (2019)
WPRISK_TRADE	The weighted average firm-level political risk of firms in the portfolio regarding trade issues during the year.	Hassan et al. (2019)
WPRISK_INSTITUTIONS	The weighted average firm-level political risk of firms in the portfolio regarding nationwide institutions during the year.	Hassan et al. (2019)
WPRISK_HEALTH	The weighted average firm-level political risk of firms in the portfolio regarding public health issues during the year.	Hassan et al. (2019)
WPRISK_SECURITY	The weighted average firm-level political risk of firms in the portfolio regarding security issues during the year.	Hassan et al. (2019)
WPRISK_TAX	The weighted average firm-level political risk of firms in the portfolio regarding tax policy during the year.	Hassan et al. (2019)
WPRISK_TECHNOLOGY	The weighted average firm-level political risk of firms in the portfolio regarding technology and infrastructure issues during the year.	Hassan et al. (2019)
WPRISK_PC	The weighted average political risk of the fund portfolio constructed using the Principal Component Analysis (PCA) from WPRISK_ECON, WPRISK_ENVI, WPRISK_TRADE, WPRISK_INSTITUTIONS, WPRISK_HEALTH, WPRISK_SECURITY, WPRISK_TAX, and WPRISK_TECHNOLOGY.	Authors' construction using the PCA approach
NAV	The quarter-end net asset value of the mutual fund	Thomson Reuters
EXP_RATIO	The quarter-end expense ratio as reported in the CRSP survivorship bias-free mutual fund database.	CRSP
TURN_RATIO	The quarter-end turnover ratio as reported in the CRSP survivorship bias-free mutual fund database.	CRSP
NUMBER_OF_STOCKS	Number of stocks in the portfolio of the mutual fund during the year	Thomson Reuters
DIV_YTD	The value-weighted dividend yield of mutual funds	CRSP
WGPR	The weighted average geopolitical risk of the countries where the headquarters of firms in the portfolio are located.	Caldara and Iacoviello (2022)
WSTATE_EPU	The weighted average state-level economic policy uncertainty index of the states where the firms in the portfolio are located. This measure is for U.S. firms only.	Baker et al. (2022)
WBREXIT_RISK	The weighted average firm-level Brexit risk of firms in the portfolio during the year.	Hassan et al. (2020)
DEMOCRATS	Dummy variable that equals one if it is Democratic presidency, zero otherwise	
POST	Dummy variable that equals one if the year is from 2011 (the year of the Debt Ceiling Crisis in the U.S.) onwards, zero otherwise	
TREAT	Dummy variable that equals one if the fund's WPRISK is higher than its cross-sectional median, zero otherwise.	

portfolios' political risk. We suggest that U.S. mutual funds enjoy fast economic growth under Democratic presidencies, thus underestimating the impact of firm-level political risk.

This article contributes to the literature in several ways. First, we add novel insights into the growing body of literature about how political risk affects mutual fund performance. To the best of our knowledge, this is the first study to investigate how portfolio political risks, constructed by stock-level data, impact mutual fund performance. As U.S. mutual funds invest in international stock markets, they are exposed to higher political risk at both the firm-level and macro-level, thus affecting their performance. Second, we contribute to a more thorough knowledge of mutual funds' performance. Macro-level risks do not seem to have a substantial impact on mutual fund performance. Finally, we provide useful recommendations for addressing political risk-related complications of mutual funds through their holdings.

2. Methodology and data

2.1. Empirical model and variables

We use the following empirical model to examine the relationship between political risk and mutual fund performance:

$$ALPHA_{i,t} = \beta + \gamma WPRISK_{i,t} + \sum CONTROL_{i,t} + \delta_i + \theta_t + \varepsilon_{i,t} \quad (1)$$

where: $ALPHA_{i,t}$ is the return of mutual fund i during quarter t . For each mutual fund i in month m , we follow the literature (Cici et al., 2010; Ghouli and Karoui, 2017; Wermers, 2000) to estimate Carhart's four-factor model by using the prior 36 months of returns to obtain monthly mutual fund performance. We use the set of monthly alphas to calculate quarter alphas; $WPRISK_{i,t}$ is the weighted portfolio political risk of mutual fund i during quarter t , calculated by $WPRISK_{i,t} = \sum (w_{j,i,t} \times PRISK_{j,t})$, in which $w_{j,i,t}$ is the weight of stock j in the portfolio of fund i during quarter t , and $PRISK_{j,t}$ is the firm-level political risk of firm j during quarter t ; $\sum CONTROL_{i,t}$ is the vector of control variables; δ_i is the fund-fixed effect; θ_t is the quarter-fixed effect; $\varepsilon_{i,t}$ is the error term.

For further tests, we construct eight categorical weighted average firm-level political risk measures as classified by Hassan et al. (2019): economic, environment, health, institutions, security, tax, technology, and trade. Given that U.S. mutual funds invest in stocks in international markets, they are exposed to different levels of political risk arising from business operations and cross-country geopolitics. We use the same method to construct several more indexes of the portfolio's weighted macro political risk and uncertainty: geopolitical risk, Brexit risk, and U.S. state-level economic policy uncertainty. Using these variables as the alternatives of $WPRISK$ to regress Model (1), we can tell how mutual fund performance reacts to different types of political/non-political risk at both macro- and firm-level.

The control variables include the net asset value of the mutual fund (NAV), fund expense ratio (EXP_RATIO) fund turnover ratio ($TURN_RATIO$), number of stocks in the portfolio ($NUMBER_OF_STOCKS$), dividend yield (DIV_YTD) following the previous studies (Cici et al., 2010; Dong et al., 2020; Avramov et al., 2020). Variable descriptions are provided in Table 1.

2.2. Data

The data is collected from several sources. Mutual fund data is from Thomson Reuters CDA/Spectrum and CRSP survivorship bias-free mutual fund databases. Firm-level political risk is proposed by Hassan et al. (2019) and collected from <https://www.firmlevelrisk.com/>. Data for geopolitical risk indexes proposed by Caldara and Iacoviello (2022) is collected from <https://www.matteoiacoviello.com/gpr.htm>. U.S. state-level economic policy uncertainty indices proposed by Baker et al. (2022) is collected from <http://policyuncertainty.com/>. We exclude mutual funds if political risk measures are missing for one or more stocks in their portfolio. This results in 55,537 fund-quarter observations of $WPRISK$ available during 2002–2017.¹ After excluding the missing value from other variables in the model, the sample size reduces to 19,645 fund-quarter observations. Continuous variables are winsorized at the 1st and the 99th percentiles. Table 2 reports the descriptive statistics and correlation matrix of the variables.

3. Empirical results and discussion

3.1. Baseline regression

Table 3 presents the estimation results of Model (1) using the reduced-form specification (Column 1) and the full model specification (Column 2).

$WPRISK$'s coefficient is negative and significant in both model specifications, implying a negative association between portfolio political risk and mutual fund performance. On average, one standard deviation increase in $WPRISK$ is generally associated with a 0.053 standard deviation decrease in $ALPHA$, which is equivalent to 34 basis points in $ALPHA$. This suggests that mutual funds

¹ As our data sample includes the Global Financial Crisis (GFC) period, we perform an additional analysis to examine the potential influence of the GFC on the relationship by interacting the GFC dummy with the $WPRISK$. Overall, the regression result suggests that adverse impact of $WPRISK$ on mutual fund performance significantly worsened during the crisis. We do not present the estimation results to conserve space, but details are available upon request.

Table 2
Descriptive statistics.

Panel A. Summary statistics of variables in the study					
Variable	Obs	Mean	Std. Dev.	Min	Max
ALPHA	65,881	-0.004	0.065	-0.912	13.625
WPRISK	55,537	0.127	0.153	0	3.514
WPRISK_ECON	55,537	3.668	4.511	0	90.974
WPRISK_ENVI	55,537	3.704	7.778	0	472.952
WPRISK_TRADE	55,537	2.455	4.956	0	185.391
WPRISK_INSTITUTIONS	55,537	2.493	4.283	0	143.649
WPRISK_HEALTH	55,537	5.050	20.545	0	954.821
WPRISK_SECURITY	55,537	3.214	4.258	0	120.143
WPRISK_TAX	55,537	3.975	5.949	0	147.129
WPRISK_TECHNOLOGY	55,537	2.901	5.412	0	119.268
WPRISK_PC	55,537	0.000	2.210	-1.636	63.461
NAV	69,189	2.911	0.698	1.552	4.902
EXP_RATIO	62,143	0.010	0.005	0	.022
TURN_RATIO	62,143	0.606	0.783	-1.813	4.84
NUMBER OF STOCKS	64,779	1.466	0.993	0	4.078
DIV_YTD	31,795	0.181	0.220	0.001	1.252
WGPR	9315	1.482	0.856	0	6.597
WSTATE_EPU	7312	71.132	37.907	0	281.257
WBREXIT_RISK	5817	0.072	1.278	0	53.348
DEMOCRATS	74,251	0.804	0.397	0	1

Panel B. Pairwise correlation matrix of variables in Model (1)							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) ALPHA	1.000						
(2) WPRISK	0.010**	1.000					
(3) NAV	0.037***	-0.005	1.000				
(4) EXP_RATIO	-0.047***	-0.009**	-0.374***	1.000			
(5) TURN_RATIO	-0.015***	0.006	-0.161***	0.340***	1.000		
(6) NUMBER_OF_STOCKS	0.055***	0.015***	0.139***	-0.366***	-0.026***	1.000	
(7) DIV_YTD	0.000	0.005	0.611***	-0.381***	-0.195***	0.119***	1.000

This table reports the descriptive statistics and correlation matrix of the variables. The sample includes 55,537 fund-quarter observations of *WPRISK* available during 2002–2017. After excluding the missing value from other variables in the model, the sample size reduces to 19,645 fund-quarter observations. Variable descriptions are in Table 1. All continuous variables are winsorized at the 1st and the 99th percentiles. *, **, and *** denote significance level of 10 %, 5 %, and 1 %, respectively.

Table 3
The effect of portfolio's political risk on fund performance.

Variables	(1) ALPHA	(2) ALPHA
WPRISK	-0.2615** (0.1133)	-0.7545*** (0.1436)
NAV		-1.2876*** (0.2509)
EXP_RATIO		30.9358 (21.6034)
TURN_RATIO		-0.1159* (0.0608)
NUMBER OF STOCKS		0.0016 (0.0461)
DIV_YTD		0.4271* (0.2524)
Constant	-0.3916*** (0.0190)	3.4075*** (0.8032)
Fund fixed effect	Yes	Yes
Time fixed effect	Yes	Yes
Observations	49,359	19,645
Adjusted R-squared	0.0906	0.1329

This table presents the estimation results of Model (1) to examine the relationship between political risk and mutual fund performance, using the reduced-form specification (Column 1) and the full model specification (Column 2) with different control variables, including net asset value, expense ratio, turnover ratio, number of stocks and dividend yield of mutual funds. Variable descriptions are in Table 1. The asterisks ***, ** and * indicate significance at the 1 %, 5 % and 10 % level, respectively.

Table 4
The impact on different categories of political risk.

Variables	(1) ALPHA	(2) ALPHA	(3) ALPHA	(4) ALPHA	(5) ALPHA	(6) ALPHA	(7) ALPHA	(8) ALPHA	(9) ALPHA
<i>WPRISK_ECON</i>	−0.0284*** (0.0051)								
<i>WPRISK_ENVI</i>		−0.0093** (0.0037)							
<i>WPRISK_TRADE</i>			−0.0216*** (0.0050)						
<i>WPRISK_INSTITUTIONS</i>				−0.0186*** (0.0055)					
<i>WPRISK_HEALTH</i>					0.0008 (0.0008)				
<i>WPRISK_SECURITY</i>						−0.0163*** (0.0056)			
<i>WPRISK_TAX</i>							−0.0239*** (0.0042)		
<i>WPRISK_TECHNOLOGY</i>								−0.0198*** (0.0035)	
<i>WPRISK_PC</i>									−0.0453*** (0.0107)
NAV	−1.2895*** (0.2512)	−1.2962*** (0.2513)	−1.2832*** (0.2512)	−1.2924*** (0.2513)	−1.2913*** (0.2513)	−1.2915*** (0.2512)	−1.2929*** (0.2513)	−1.2978*** (0.2513)	−0.1179*** (0.0382)
<i>EXP_RATIO</i>	30.8346 (21.5958)	32.5852 (21.6305)	31.0970 (21.6295)	31.9585 (21.6318)	33.4169 (21.6545)	31.8805 (21.6530)	30.4272 (21.6162)	31.1202 (21.6301)	30.7114*** (10.4954)
<i>TURN_RATIO</i>	−0.1174* (0.0608)	−0.1178* (0.0608)	−0.1182* (0.0607)	−0.1172* (0.0609)	−0.1205** (0.0608)	−0.1183* (0.0608)	−0.1141* (0.0609)	−0.1171* (0.0608)	−0.1052* (0.0573)
<i>NUMBER OF STOCKS</i>	0.0035 (0.0461)	−0.0014 (0.0460)	−0.0037 (0.0461)	0.0005 (0.0460)	−0.0016 (0.0460)	−0.0038 (0.0461)	0.0014 (0.0461)	−0.0046 (0.0460)	−0.0299 (0.0413)
<i>DIV_YTD</i>	0.4261* (0.2525)	0.4389* (0.2524)	0.4268* (0.2524)	0.4358* (0.2526)	0.4375* (0.2526)	0.4348* (0.2524)	0.4285* (0.2525)	0.4290* (0.2524)	0.1095 (0.2448)
Constant	−6.0276*** (0.6981)	−6.0888*** (0.6976)	−6.1012*** (0.6971)	−6.0954*** (0.6977)	−6.1648*** (0.6983)	−6.0921*** (0.6978)	−6.0322*** (0.6987)	−6.0562*** (0.6970)	0.0620* (0.0338)
Fund fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19,645	19,645	19,645	19,645	19,645	19,645	19,645	19,645	19,645
Adjusted R-squared	0.1331	0.1319	0.1324	0.1321	0.1312	0.1318	0.1334	0.1326	0.0116

This table presents the robust results of Model (1), using different categories of political risk, regarding economic policy and budget, environment, trade, nationwide institutions, public health, security, tax, and technology and infrastructure during the year. Variable descriptions are in Table 1. The Principal Component Analysis is employed to construct an orthogonal component of weighted political risk for the fund portfolio's weight political risk (*WPRISK_PC*), which is then used as an alternative explanatory variable. The asterisks ***, ** and * indicate significance at the 1 %, 5 % and 10 % level, respectively.

underestimate the political risk of stocks in their portfolio, thus undermining their performance. This finding contradicts the classic view on the risk-return relationship where higher risk is generally associated with higher returns. However, our finding is in line with previous studies relating higher asset prices to lower political uncertainty (Chan and Marsh, 2021; Lehkonen and Heimonen, 2015). Despite political risk being one of the important factors in explaining asset pricing, empirical evidence in the literature indicates that political risk factors usually violate the classic risk-return relationship (Dimic et al., 2015; Perotti and van Oijen, 2001). As U.S. mutual funds invest in international stocks, they are exposed to more sources of political risk than those that only invest in domestic stocks. Given the increasing tensions in international relations and geopolitics in the last few decades, our finding further corroborates the political risk sign paradox where a negative association between political risk and stock return exists (Lehkonen and Heimonen, 2015).

3.2. Robustness tests

Table 4 shows robust results by using different categories of political risk. We find consistent effects of political risk in seven categories of political risk except for the public-health political risk. In addition, we employ the Principal Component Analysis to construct an orthogonal component of weighted political risk for the fund portfolio's weight political risk (*WPRISK_PC*) and use it as an alternative explanatory variable. The findings from Columns 1–9, Table 4, suggest a consistent impact of portfolio political risk on mutual fund performance.

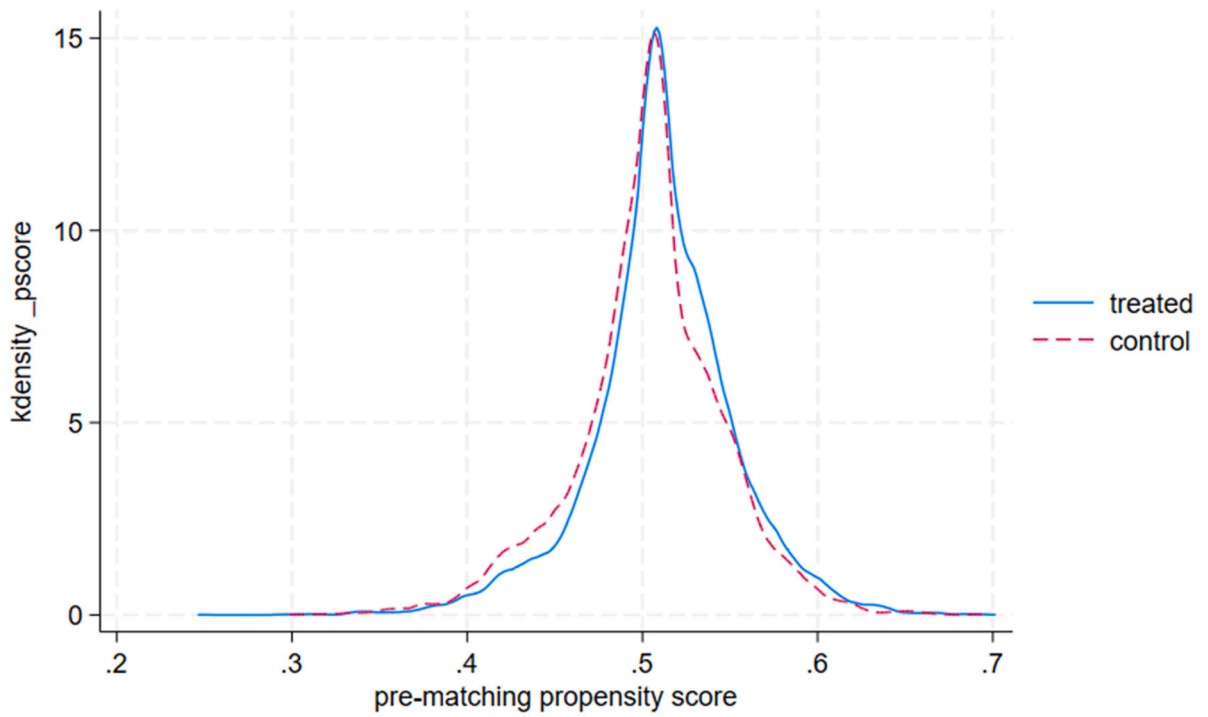
We use the Entropy Balancing approach (Hainmueller, 2012) to address the causality in the newfound relationship between portfolio political risk and mutual fund performance. The approach relies on a maximum entropy reweighting process to ensure that balance improves on all reweighted covariate moments and eradicates correlations between covariates and the continuous treatment. Entropy balancing is doubly robust regarding linear outcome regression and logistic propensity score regression and can reach the asymptotic semiparametric variance bound (Zhao and Percival, 2017). Since *WRISK* is a continuous variable, we apply Tübbicke (2022)'s Entropy Balancing for continuous treatment to balance on the other covariates in Model (1). We then use the estimated weights to re-perform the baseline regression.

Table 5 presents the regression results. Column 1 shows the reduced-form regression results with Entropy-Balancing weights; Column 2 shows the results with Entropy-Balancing weights in the full specification model. We find *WPRISK*'s coefficient negative and significant at the 1 % level in both specifications. The results support the baseline findings and bolster our confidence in the causal inference of the newfound relationship.

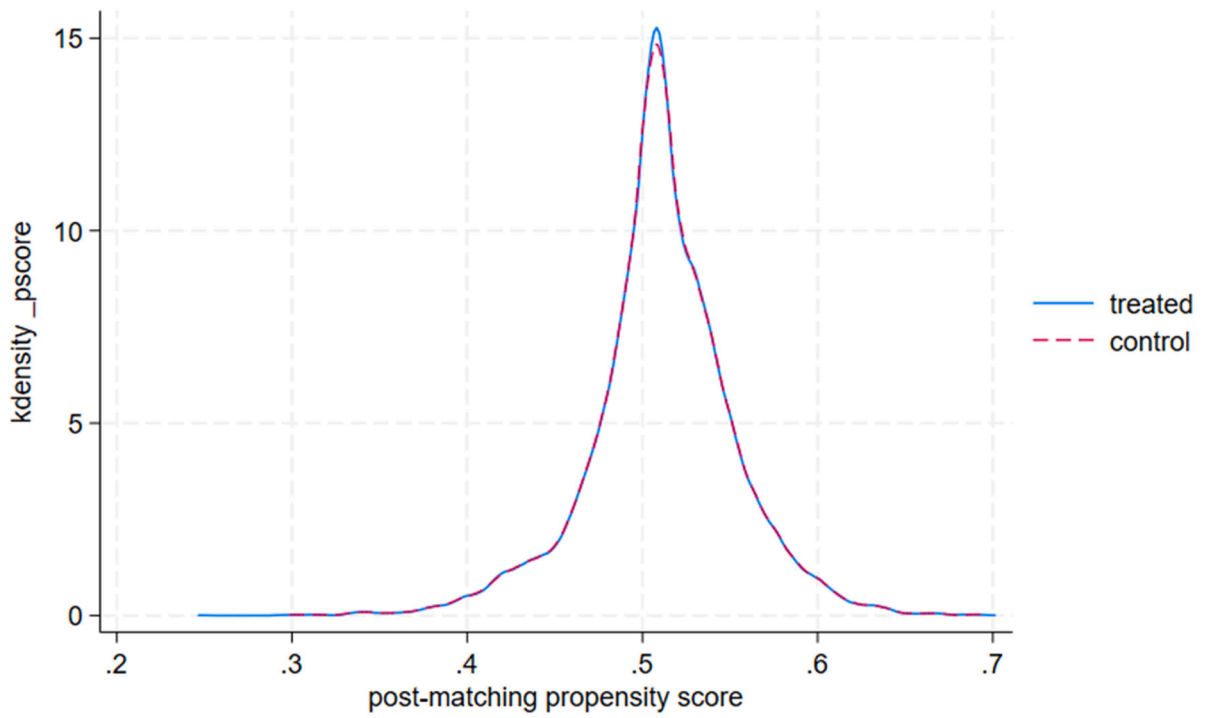
Table 5
Regressions with entropy balancing weights.

Variables	(1) <i>ALPHA</i>	(2) <i>ALPHA</i>
<i>WPRISK</i>	−0.8555*** (0.1418)	−0.7806*** (0.1411)
<i>NAV</i>		−1.2540*** (0.2514)
<i>EXP_RATIO</i>		27.8800 (22.2398)
<i>TURN_RATIO</i>		−0.1046* (0.0612)
<i>NUMBER OF STOCKS</i>		−0.0044 (0.0463)
<i>DIV_YTD</i>		0.3339 (0.2568)
Constant	−0.2266*** (0.0257)	3.3636*** (0.8069)
Fund fixed effect	Yes	Yes
Time fixed effect	Yes	Yes
Observations	20,842	19,350
Adjusted R-squared	0.1335	0.1325

This table presents the regression results using the Entropy Balancing approach to address the causality between portfolio political risk and mutual fund performance. Variable descriptions are in Table 1. Since *WRISK* is a continuous variable, Tübbicke (2022)'s Entropy Balancing is utilized for continuous treatment to balance the other covariates in Model (1) and their transformations. We apply estimated weights to re-perform the regression of Model (1). Column 1 shows the reduced-form Model (1) regression results with Entropy-Balancing weights; Column 2 shows the results with Entropy balancing weights in the full specification model, with different control variables, including net asset value, expense ratio, turnover ratio, number of stocks and dividend yield of mutual funds. The asterisks ***, ** and * indicate significance at the 1 %, 5 % and 10 % level, respectively.



(a) Pre-match propensity score



(b) Post-match propensity score

(caption on next page)

Fig. 1. Pre-match and post-match propensity scores.

This figure illustrates the successful matching results using Propensity Score Matching (PSM) to balance the treated and control groups based on their control variables. The graph shows that after matching, the distributions of covariates for both groups align closely, indicating effective balancing.

3.3. Difference-in-difference analysis

To further establish causality inferences for the political risk–fund performance relationship, we adopt the difference-in-difference (DID) approach using the Debt Ceiling Crisis (DCC) starting in the US in 2011 as the exogenous political shock. The DCC of 2011 was a political standoff in the U.S. over increasing the statutory limit on the federal government’s debt. The conflict arose due to disagreements between political parties on how to address the country’s rising debt levels, risking default on government obligations and financial instability. Similar events happened in 2013, 2015, 2017, and 2019, and each time, the government shutdown was narrowly avoided as parliaments reached last-minute agreements to raise the debt ceiling. The DCC is considered a major event that has significant political and economic impacts. Therefore, it can serve as a quasi-natural experiment to test the impact of political risk on mutual fund performance.

We construct the treated and control groups by sorting mutual funds from low *WPRISK* to high *WPRISK*, then generate a dummy variable, *TREAT*, that equals one if the fund’s *WPRISK* is higher than its cross-sectional median, zero otherwise. We define mutual funds with *TREAT* equals one as those having political-risk-sensitive portfolios, while those with *TREAT* equalizing zero do not have political-risk-sensitive portfolios. To support the causal inference of the DID estimation, we apply the Propensity Score Matching (PSM) to match the treated and the control groups on the control variables. Fig. 1 illustrates a successful matching result. The DID regression results are reported in Table 6.

Column 1 of Table 6 reports the DID regression results without the PSM weight and fixed effects. Column 2 reports the DID

Table 6
Difference-in-differences analysis.

Variables	(1) <i>ALPHA</i>	(2) <i>ALPHA</i>	(3) <i>ALPHA</i>
<i>TREAT</i>	−0.0658 (0.0776)	−0.0321 (0.1015)	
<i>POST</i>	−4.2585*** (1.4995)		
<i>TREAT</i> × <i>POST</i>	−0.2668*** (0.0923)	−0.3265*** (0.1200)	
<i>L.TREAT</i>			−0.0600 (0.1312)
<i>L.TREAT</i> × <i>L.POST</i>			0.1052 (0.1587)
<i>L2.TREAT</i>			0.1389 (0.1245)
<i>L2.TREAT</i> × <i>L2.POST</i>			−0.1846 (0.1517)
<i>L3.TREAT</i>			−0.0597 (0.1295)
<i>L3.TREAT</i> × <i>L3.POST</i>			−0.0705 (0.1562)
<i>L4.TREAT</i>			−0.0661 (0.1245)
<i>L4.TREAT</i> × <i>L4.POST</i>			0.0155 (0.1528)
<i>L5.TREAT</i>			−0.2623** (0.1119)
<i>L5.TREAT</i> × <i>L5.POST</i>			0.2040 (0.1404)
<i>Constant</i>	3.7954** (1.4932)	4.1465*** (0.9886)	0.1679** (0.0710)
Matching/balancing method	No	PSM	PSM
Control variables	Yes	Yes	Yes
Fund FE	No	Yes	Yes
Time FE	No	Yes	Yes
Observations	19,645	16,191	11,767
Adjusted R-squared	0.0097	0.0560	0.1177

This table presents the results of the Difference-in-Differences analysis. Column 1 shows the regression results without Propensity Score Matching (PSM) weight and fixed effects. Column 2 includes PSM weight and fixed effects. Column 3 tests the parallel trends assumption. Variable descriptions are in Table 1. The asterisks ***, ** and * indicate significance at the 1 %, 5 % and 10 % level, respectively.

regression results with the PSM weight and fixed effects. Column 3 presents the results of the parallel trends assumption test for DID estimation. From Columns 1 and 2, the coefficient of the $TREAT \times POST$ interaction remains negative and significant, suggesting that heightened political risk during the Debt Ceiling Crisis causes a significant reduction in the performance of mutual funds with politically sensitive portfolios. This result well supports our baseline findings and helps establish a causal inference of the portfolio political risk–fund performance relationship. In addition, the results from Column 3 suggest that the parallel trends assumption of DID holds, thus bolstering our confidence in the validity of the DID analysis.

3.4. Geopolitical risk, policy uncertainty, and Brexit risk

We take one step further to examine the impacts of different types of risk/uncertainty on mutual fund performance: the portfolio's exposure to geopolitical risk, the portfolio's exposure to uncertainty in the economic policy of the U.S., and the exposure to Brexit as a policy shock that affects global stock markets. We employ three alternative measures of portfolio risk: the portfolio's geopolitical risk ($WGPR$), the portfolio's exposure to U.S. state-level policy uncertainty ($WSTATE_EPU$), and the portfolio's Brexit risk ($WBREXIT_RISK$). As $WGPR$ is estimated using the cross-sectional weighted average of the geopolitical risk index (Caldara and Iacoviello, 2022) of the countries where firms in a portfolio are located, it represents the general geopolitical risk of the portfolio of U.S. mutual funds. $WSTATE_EPU$ is computed using the U.S. state-level economic policy uncertainty index (Baker et al., 2022) of the states where firms in a portfolio are located. Similarly, we proxy the portfolio's Brexit risk by the cross-sectional weighted average of firm-level Brexit risk measures (Hassan et al., 2020). Table 7 reports the regression results.

Interestingly, we see that the coefficients of $WGPR$, $WSTATE_EPU$, and $WBREXIT_RISK$ remain statistically insignificant in Columns 1–3 in Table 7, respectively, suggesting that national-level geopolitical risk, U.S. state-level policy uncertainty, and Brexit risk do not have a significant impact on U.S. mutual funds' performance. The findings imply that mutual fund performance is unaffected by the risks associated with upheaval in national geopolitics, uncertainty in macroeconomic policy, and extreme exogenous economic-political events such as Brexit. Together with our baseline finding, we argue that U.S. mutual funds can diversify political risk and uncertainty at the national level and state level but fail to address firm-level political risk.

3.5. Does partisanship matter?

Previous literature suggests that U.S. stocks perform better during the Democratic presidency than during the Republican's, often referred to as the “presidential puzzle” (Pástor and Veronesi, 2020). Specifically, Democrats generally promise more fiscal redistribution and faster economic growth compared to Republican. As such, Pástor and Veronesi (2020) predict higher average stock market returns under Democrats. This is supported by other studies in the literature on finance and political cycles (Blinder and Watson, 2016; Broz, 2013). Based on this understanding, we argue that mutual funds may also perform better under Democratic than under

Table 7
Further analysis: geopolitical risk, policy uncertainty, and Brexit risk.

Variables	(1) ALPHA	(2) ALPHA	(3) ALPHA
$WGPR$	−0.0156 (0.1708)		
$WSTATE_EPU$		0.0009 (0.0036)	
$WBREXIT_RISK$			−0.0447 (0.0352)
NAV	−2.6998*** (1.0214)	−0.9305 (0.9498)	−7.0859*** (1.2736)
EXP_RATIO	68.5722 (114.2882)	13.9195 (127.6926)	157.6219 (122.3644)
$TURN_RATIO$	−0.2190 (0.2759)	−0.2835 (0.2968)	−0.3063 (0.3680)
$NUMBER\ OF\ STOCKS$	0.0009 (0.0461)	0.0045 (0.0453)	0.0084 (0.0454)
DIV_YTD	1.9570** (0.9542)	0.9833 (0.8573)	1.3473 (1.2164)
Constant	6.6351* (3.6169)	2.2363 (3.3886)	19.5409*** (4.2089)
Fund fixed effect	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Observations	2712	2315	1707
Adjusted R-squared	0.1663	0.1567	0.2711

This table presents the estimation results examining the impact of different types of risks on mutual fund performance, specifically geopolitical risk ($WGPR$), U.S. state-level policy uncertainty ($WSTATE_EPU$), and Brexit risk ($WBREXIT_RISK$) in Columns 1–3, with different control variables. Variable descriptions are in Table 1. The asterisks ***, ** and * indicate significance at the 1 %, 5 % and 10 % level, respectively.

Republican presidents. Following this line of argument, we expect that the effect of portfolio political risk weakens during a Democratic presidency. We empirically test this conjecture by adding a dummy variable indicating the Democratic presidency (*DEMOCRATS*) and its interaction with *WPRISK* into Model (1). Table 8 reports the regression results.

Consistent with our conjecture, $WPRISK \times DEMOCRATS$'s coefficients are positive and significant in all regression specifications. The results suggest that public policies during Democratic presidencies alleviate the negative impact of portfolio political risk on mutual fund performance. Typically, the negative impact of portfolio political risk is weakened by approximately 57 % under Democrats, judging from the size of coefficients of the interaction term compared to that of *WPRISK* in Column 2, Table 8. We suggest that mutual funds underestimate the impact of firm-level political risk during fast economic growth under Democratic presidencies and pay the price during Republican presidencies.

4. Conclusion

This research finds that mutual funds' performance decreases when the portfolio political risk increases. This relationship is consistent across almost all dimensions of political risks. However, being highly consistent with Bali et al. (2014), we show that mutual funds' performance seems immune to political risks at the macro level. Our additional analysis documents that political partisanship matters in an essence that the negative impact of political risk on mutual funds' performance is weakened during the Democratic presidencies.

Our findings hold important implications beyond the confines of the U.S. market. Mutual funds are potentially exposed to political risk due to their assets' worldwide expansion and diversification strategies. Given our findings and the limitations of our U.S. market research scope, further empirical study on how political risks affect mutual fund performance in other countries would be a significant and intriguing area for future research. Besides, considering the importance of cross-listing, studying how home country political risk interacts with foreign investment decisions could also be worthwhile for future research.

CRediT authorship contribution statement

Huong Giang Nguyen: Writing – review & editing, Writing – original draft, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Khanh Hoang:** Writing – review & editing, Writing – original draft, Software, Methodology, Conceptualization. **Quan M.P. Nguyen:** Writing – review & editing, Writing – original draft, Software, Methodology, Formal

Table 8
Does political partisanship matter?

Variables	(1) <i>ALPHA</i>	(2) <i>ALPHA</i>
<i>WPRISK</i> × <i>DEMOCRATS</i>	1.9897*** (0.2326)	0.7385** (0.2980)
<i>DEMOCRATS</i>	−0.9834 (8.7875)	4.3494*** (1.3123)
<i>WPRISK</i>	−1.7154*** (0.1936)	−1.2755*** (0.2387)
<i>NAV</i>		−1.2899*** (0.2507)
<i>EXP_RATIO</i>		30.4692 (21.6010)
<i>TURN_RATIO</i>		−0.1154* (0.0607)
<i>NUMBER OF STOCKS</i>		−0.0015 (0.0461)
<i>DIV_YTD</i>		0.4272* (0.2524)
<i>Constant</i>	−0.3663 (8.7868)	−1.6820 (1.5093)
Fund fixed effect	Yes	Yes
Time fixed effect	Yes	Yes
Observations	49,359	19,649
Adjusted R-squared	0.0922	0.1334

* p-value < 0.100; ** p-value < 0.05; *** p-value < 0.01.

This table presents the regression results examining the effect of portfolio political risk during Democratic and Republican presidencies. This conjecture is empirically tested by adding a dummy variable indicating the Democratic presidency (*DEMOCRATS*) and its interaction with *WPRISK* into Model (1). Column 1 displays the results using the reduced-form specification. Column 2 presents the results using the full model specification with different control variables, including net asset value, expense ratio, turnover ratio, number of stocks and dividend yield of mutual funds. Variable descriptions are in Table 1. The asterisks ***, ** and * indicate significance at the 1 %, 5 % and 10 % level, respectively.

analysis, Data curation. **Hung Xuan Do:** Writing – review & editing, Writing – original draft. **Duc Khuong Nguyen:** Writing – review & editing, Writing – original draft, Validation, Supervision.

Declaration of competing interest

On behalf of all authors included in the manuscript “Portfolio’s weighted political risk and mutual fund performance: A text-based approach”, I, Hung Do, declare that there is no financial/personal interest relating to this research project. Hung X. Do Associate Professor in Finance School of Economics and Finance (Albany), Massey University, New Zealand.

Data availability

The authors do not have permission to share data.

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