

The role of security measures: Addressing geopolitical risk in Indian hospitality investments

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Abstract

This study examines the impact of geopolitical risk (GPR) on corporate investments within the Indian hospitality sector. The findings indicate a significant negative relationship between GPR and corporate investment levels. Notably, even financially stable firms cannot completely offset the detrimental effects of GPR. Additionally, investment reductions during periods of heightened GPR are found to be more substantial than the increases observed during periods of reduced GPR. However, the strategic implementation of security measures can substantially mitigate the challenges associated with GPR. These insights offer valuable guidance to regulators and business leaders in emerging markets when making informed investment decisions.

JEL Classifications: G11, G30, G32, G38, E22

Keywords

corporate investments, hospitality sector, India, geopolitical risk, terrorist attacks

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Introduction

The uncertainties induced by geopolitical risks (GPR) are often a matter of grave concern to governments, businesses, and individuals to undertake or continue investments (Caldara and Iacoviello, 2022; Wang et al., 2019). An uncertain business condition prompted by GPR may confound managers to form a reasonable view of the future business outlook. For instance, a recent policy report by the Government of India (GoI) expresses severe apprehensions regarding the Russia-Ukraine conflict and its likely impact on the Indian economy.¹ According to the report, the current geopolitical instability predisposes the economy to higher inflation and subdued corporate investments, besides other detrimental implications. The latest financial stability report furnished by the International Monetary Fund (IMF) also highlights the adverse influence of GPR on global growth and investment potential.² Given the prominence of GPR in determining corporate investments, a nascent body of literature focuses on this relationship (Balli et al., 2019; Rumokoy et al., 2023; Wang et al., 2019). This article contributes to the ongoing debate by empirically examining the influence of GPR on corporate investments in the Indian hospitality industry and the impact of security force deployment.

Specifically, the primary objective of this paper is to empirically investigate the impact of geopolitical risk (GPR) on corporate investments in the Indian hospitality sector, specifically focusing on the hotel and restaurant industry. The study aims to uncover how GPR influences investment decisions, with a particular emphasis on how these risks constrain capital-intensive initiatives like capacity development and service enhancement. Additionally, the paper explores whether financial flexibility among firms mitigates the adverse effects of GPR while examining the role of security force deployment as a potential buffer against the challenges posed by GPR. By focusing on an emerging market, the study seeks to contribute valuable insights into the unique vulnerabilities of the Indian hospitality sector in the face of geopolitical uncertainties, which have often been underexplored in existing literature.

The focus of our research is timely and relevant on three credible grounds. First, India is a prominent representative of the emerging market universe. It contributes 3.5% to the global nominal Gross Domestic Product (GDP) and is pegged to become one of the world's top three GDP contributors by 2029.³ The contributions from the hospitality sector would be critical to India's growth story. According to KPMG's estimates, the Indian hospitality sector will likely flourish at a compounded annual growth rate (CAGR) of 16.10%, yielding US\$ 342 billion (approx.) by 2022.⁴ On the one hand, following domestic economic progress, discretionary public spending on quality hospitality experiences may increase, corresponding to incremental disposable income.⁵ On the other hand, a potential source of revenue for the sector will be increased business travel due to new trade opportunities in a growing economy. The Indian business travel market is already worth US\$ 35.60 billion in 2022 and is expected to grow to US\$ 59.50 billion by 2028. The predicted CAGR of 8.71% during 2023-2028 in the business travel and accommodation segment could transpire as a catalyst for the growth of the Indian hospitality sector.⁶

Second, it is well-known that institutional voids expose emerging economies, such as weaker law and order enforcement mechanisms and prompt conflict resolution procedures (Gray, 1997; Khanna and Palepu, 2010). Moreover, higher macroeconomic risk susceptibility of emerging markets than their developed counterparts affects tourist inflows (Tiwari et al., 2019). Thus, the hindrances regulators face in controlling the uncertainty swiftly pose severe concerns to the hospitality sector. Notably, previous studies examining the influential role of uncertainties in shaping corporate decisions in the hospitality sector are mainly confined to developed markets (Akron et al., 2020; Das et al., 2020). Given the criticality of these relationships, unravelling the association between uncertainties and corporate investments in the hospitality sector in an emerging market appears indispensable.

The third reason stems from the fact that while economic and political uncertainties (EPU) affect all sectors somewhat uniformly, the impact of GPR can vary across sectors (Cam, 2008; Kannadhasan and Das, 2020). Thus, a sector or industry-specific focus becomes a pertinent choice to diagnose its vulnerability to GPR (Rumokoy et al., 2023). This study explicitly focuses on the hotel and restaurant industry in the Indian hospitality sector.⁷ As the hotel and restaurant industry is capital intensive (Akron et al., 2020), regular investments in capacity development and renovation are unavoidable to enhance the quality of experience for the patrons. The investment hindrances sparked by GPR may constrain strategic expansion or service improvisation goals of firms in the industry (Jallat and Shultz, 2011).

Our study unearths a clear inverse association between GPR and corporate investments within India's hotel and restaurant industry. This relationship remains consistent across various measurements of both dependent and independent variables. Interestingly, even companies with greater financial flexibility cannot fully offset the detrimental impacts of GPR. Additionally, we observe that firms in this sector reduce investments to a greater extent in response to increases in GPR compared to decreases of an equivalent magnitude. However, we find that strategic deployment of security forces can significantly mitigate the challenges posed by GPR.

Literature and hypothesis development

Caldara and Iacoviello (2022) posit that uncertainties triggered by geopolitical events may constrain firm-level investments, with at least two possible underlying mechanisms explaining this association. First, the '*real options channel*' proposes that firms may view their investment choices as a series of real options. When the degree of uncertainty is high, the option value of investment delay is also high, given the adjustment costs (Wang et al., 2019). Put differently, unless the firms are certain about the returns from new investments, they may keep the project(s) on hold, thus depressing investments. Several studies have empirically validated this channel (Guiso and Parigi, 1999; Kang et al., 2014; Leahy and Whited, 1995). Second, the '*cost of external financing channel*' propounds that lending institutions often impose higher risk premiums to compensate for increased default risk under uncertainty (Bernanke, 1983; Gilchrist et al., 2014). The lenders usually feel discouraged from extending funds under uncertainty as a translucent view of the future economic outlook prevents them from ascertaining the proposed project's future cash flows.

Following this theoretical prediction, Wang et al. (2019) examine the relationship between GPR and corporate investments using a sample of U.S. firms across different industries. After controlling for firm-level characteristics, their results reveal a strong negative association between them. Similar results are recently reported by Rumokoy et al. (2023) using a firm-level sample of the metal and mining industry in Australia. The findings of this study support the real options channel and hence, a negative relationship. In a related context, Kim and Mun (2022) investigate the impact of terrorist attacks on corporate investments using U.S. firm-level data within all industries except the financial and utility industries. More specifically, the tourist inflow is affected because of terrorist incidents (Aloui et al., 2021). Their results suggest that the relationship is primarily negative except for the firms with overconfident Chief Executive Officers (CEOs). While studies are broadly conducted in the context of the developed world, the focus on emerging markets has been limited. Adding to the gravity of the issue is the fact that the hotel and restaurant industry is mainly capital-intensive. Further, it is evident from previous studies that tourist arrivals are vulnerable to a state of uncertainty (Demir and Gözgör, 2018). Consequently, the performance of the firms in the hotel and restaurant industry may suffer in the phases of high uncertainty (Ozdemir et al., 2023). Thus, rising uncertainties and limited tourist arrivals may discourage firms in this industry from undertaking investments (Akron et al., 2020).

It is worth mentioning that most of these studies related to the firms in the hospitality industry consider EPU to be a proxy of uncertainty as it affects tourism in various ways (see Ersan et al., 2019; Gong et al., 2024; Khan et al., 2021; Lee and How, 2023; Man Wai Leong et al., 2024; Payne and Apergis, 2022). While we concur that EPU is a good measure of uncertainty, we also argue that the firms in this industry may stand more vulnerable to GPR than EPU. This argument seems logical as EPU mainly consider uncertainties related to economic or political nature where risks of losing lives or a severe physical injury are relatively minuscule. In the case of GPR, the exposure to probable war casualties and adverse economic consequences is relatively extreme.⁸ Further, the impacts of GPR in this industry can aggravate in the case of emerging markets with higher institutional voids. Therefore, we examine the effects of GPR on the hotel and restaurant industry firms in an emerging market, that is, India. In light of the above discussion, we form our first hypothesis:

H1: *GPR negatively affects the corporate investments of firms in the hotel and restaurant industry.*

The second channel (i.e., ‘*cost of external financing channel*’) argues that under conditions of uncertainty, the default risk is high, and so is the risk premium on borrowings by the firm (Pástor and Veronesi, 2013). While it is relatively easy to conceive that a higher cost of credit under uncertainty (Kaviani et al., 2020) would affect corporate investments (Gilchrist et al., 2014), it is interesting to understand how firms with relatively lower financing constraints behave under such conditions. Firms can fund their planned investments from internally generated capital or from raising external financing. Simply put, a firm can be regarded as less constrained if it has sufficient resources to fund its investment plans (Kaplan and Zingales, 1997).

In the hospitality industry, customers primarily derive value from the quality of their living and dining experiences (Weiermair and Fuchs, 1999). To augment service quality, these firms must invest recurrently. A discontinuity to upgrade or renovate existing facilities may affect customer satisfaction. Under the state of uncertainty, firms may have limited access to external funding due to higher risk premiums. Thus, it is instinctive that firms with constrained internal capital will refrain from investing. However, questions like how the firms with sufficient internal capital (less constrained) respond in such a situation and whether these firms use internal capital to mitigate the investment cut in response to GPR are worth examining. However, theoretically, as uncertainties amplify, the option value to wait for precise information increases (Dixit et al., 1994). Thus, managers are better off adopting a “*wait and watch*” approach, especially when these investments are irreversible (Bernanke, 1983). Since the firms in this industry typically invest in irreversible projects (Akron et al., 2020), the managers, even in the lesser constrained firms, may refrain from investing under uncertainties prompted by GPR. Nevertheless, it is also reasonable to argue that the lesser constrained firms may be marginally less impacted (in undertaking new investments) than more constrained firms. This leads to our second hypothesis:

H2: *GPR negatively affects the corporate investments of firms in the hotel and restaurant industry; even when they are less constrained, the impact is not completely mitigated.*

Data and research design

Sample selection

In this article, we assess the impact of GPR on corporate investments, using a sample of Indian firms in the hotel and restaurant industry spanning the years 2003 to 2020. Our sample period starts in

2003 as the data for one of the critical control variables (Economic Policy Uncertainty (EPU) for India)⁹ is available from 2003. The accounting data is extracted from the Centre for Monitoring Indian Economy's (CMIE) *Prowess* database. To finalize our sample, we drop firm-year observations with missing values. In addition, the variables are winsorized at 1% and 99% of the distribution to eliminate the influence of outliers. Finally, our sample for analysis is condensed to 3943 firm-year observations for 395 hotel and restaurant industry firms. The key independent variable GPR is represented by the GPR index created by [Caldara and Iacoviello \(2022\)](#).¹⁰

Measurement of variables

Measuring corporate investments. The dependent variable, corporate investment, is defined as the annual capital expenditure scaled by lagged total assets (CAPEX/TA) following the previous literature ([Akron et al., 2020](#); [Bates et al., 2009](#); [Gulen and Ion, 2016](#); [Wang et al., 2019](#)). Also, following [Akron et al. \(2020\)](#), an alternative measurement of corporate investment is modelled for testing the robustness of our baseline results. In this case, the annual capital expenditure scaled by lagged total revenues (CAPEX/TR).

Measuring GPR and other macro uncertainties. The variable of interest in our study is GPR, which is proxied by the GPR index constructed by [Caldara and Iacoviello \(2022\)](#). Several studies in the recent past have used this index as a measure of geopolitical uncertainty ([Das et al., 2019a, 2019b](#); [Demiralay and Kilincarslan, 2019](#)). We use the Indian GPR index, which is constructed based on the count of the number of articles appearing in leading national newspapers discussing the events of geopolitical conflicts. The predefined set of keywords used to construct the index include words such as: 'war,' 'insurrection,' 'rebel,' 'nuclear missile,' 'atomic war,' 'bomb,' 'hostage,' 'terror attacks,' 'insurgency' and many others. The Indian GPR index over the study period is exhibited in [Figure 1](#), which indicates some critical geopolitical events.

Since the GPR index is available at a monthly frequency, following [Akron et al. \(2020\)](#), we consider the annual average of the monthly natural logarithmic GPR value ($GPR_{L,Avg.}$) to match the yearly frequency of the firm-level data. This measure is primarily used for our baseline and subsequent regression model estimates. In addition, we will consider two alternative specifications of the GPR index to test the stability of our estimates. The first is the highest value of the monthly natural logarithm of GPR ($GPR_{L,Max.}$) in a year. Further, the first logged difference in annual GPR data ($\Delta \ln GPR$) is the second alternative specification. Lastly, we also include the annual natural logarithmic average of international GPR ($GPR_{L,International}$) and GPR threat ($GPR_{L,Threat}$) to perform robustness checks.

[Wang et al. \(2019\)](#) argue that it is critical to distinguish GPR's impact from other macroeconomic uncertainties. This approach could help control confounding effects. Thus, we control for two crucial sources of uncertainties, the Indian EPU (EPU) and the Financial Stress Index (FSI), in our baseline estimates. The EPU index will control for uncertainties arising from economic and political instabilities, such as expectations related to changes in government, tax regime, monetary policy, and regulations, among others. We use the Indian version of the EPU index provided by [Baker et al. \(2016\)](#).¹¹ Similarly, to control for stressed financial conditions in the economy, we consider the FSI of India. This is a composite index suggested by [Park and Mercado \(2014\)](#) that captures the stress in four major financial markets: (a) the banking sector, (b) the equity market, (c) the debt market, and (d) the foreign exchange market.¹² Like GPR, we also took an annual natural logarithmic average of EPU. In

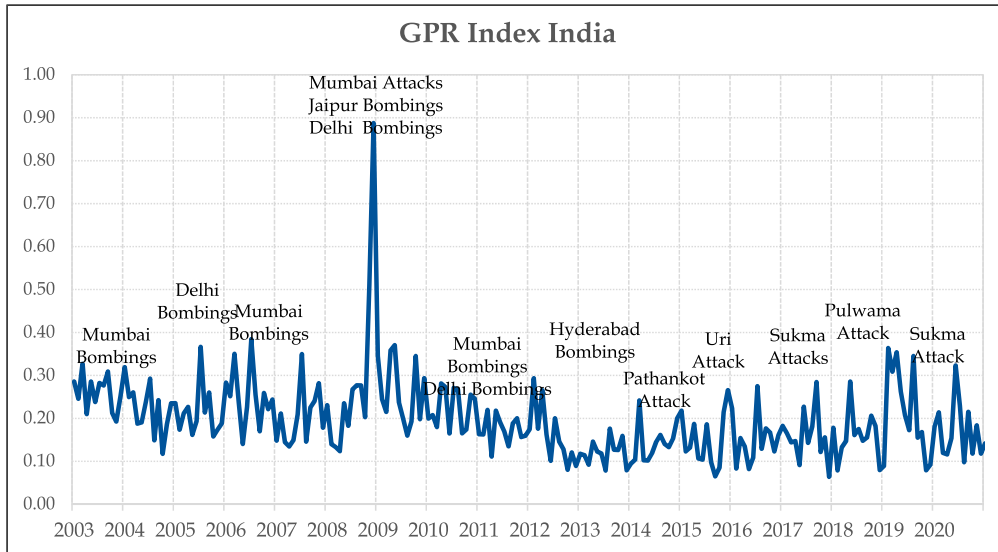


Figure 1. Geopolitical risk in India. This figure plots the continuous spectrum of geopolitical risks in India for a period spanning from 2003 to 2020. The figure also highlights some of the crucial historical events.

the case of FSI, we take only the annual average of FSI following previous literature as it encompasses negative values during the phases of low-stress periods (Das et al., 2022a, 2022b).

Measuring other control variables. We control for all firm characteristics that are likely to determine corporate investments. The control variables, such as Growth opportunities, Cash flows, Firm size, Leverage and Profitability, are considered following Gulen and Ion (2016), Wang et al. (2019), and Akron et al. (2020). Further, Non-debt tax shields and Liquidity are controlled in congruence with Keating and Zimmerman (1999). These financial variables indicate different aspects of a firm's performance, financial health, and potential growth, providing a comprehensive picture of its operational and financial standing for undertaking corporate investments. Investments in hospitality firms greatly rely on growth opportunities as they are motivated to invest in new facilities or renovate existing ones to capture market share and improve customer experiences. Cash flow availability is crucial as it provides internal funding, reduces reliance on external financing, and enables firms to finance capital projects while maintaining liquidity. Additionally, larger firms generally have more resources and access to capital, allowing them to leverage economies of scale and undertake significant investments.

Leverage has a dual impact on investments as high debt levels can restrict investment due to debt obligations, but it can also facilitate investments when borrowing costs are manageable. Profitability enhances investment potential, as profitable firms can reinvest earnings into capital projects without increasing debt. However, low profitability limits investment capabilities, pushing firms to prioritize essential projects. Non-debt tax shields, like depreciation and tax credits, lower the effective tax burden, enabling firms to conserve cash and reinvest in physical assets. Finally, liquidity is essential for ensuring firms meet operational expenses while investing in capital projects. Finally, high liquidity allows firms to make timely investments, whereas low liquidity might constrain

investments due to a focus on cash preservation. Together, these factors shape the investment strategies of hospitality firms, which is essential to control. The construction of these variables is elaborated in [Appendix A1](#).

Descriptive statistics

The summary statistics of the variables used in our study are listed in [Table 1](#). In the sample, firms, on average, have an annual capital investment ratio of 0.019 when scaled on total assets and a ratio of 1.12 when scaled upon total annual revenues. The natural logarithmic annual average and monthly maximum figures depict the mean (standard deviation) values of -1.6893 (0.2363) and -1.1726 (0.3141), respectively. To control for variables of macroeconomic uncertainty, the mean values (standard deviation) of FSI and EPU are 1.5947 (2.8865) and 4.4731 (0.3845), respectively. The year-on-year change in annual sales shows an average growth rate of 1.24. The mean of operating cash flows scaled on lagged total assets depicts a negative value of -0.2369 , implying that more cash is used to run the business operations than generated. Further, the negative mean value (-0.0584) of profitability suggests that the firms, on average, failed to stand profitable. The ratio of depreciation scaled by lagged total assets, which is represented as non-debt tax shields, is 0.0399. The mean debt-to-book value of the asset ratio, termed leverage, is 0.6439. The value of firm size is measured as the natural logarithm of total assets averages at 5.4575. Lastly, liquidity is measured as net working capital scaled by lagged total assets, which indicates a mean of 0.0051. This implies on average, firms have managed to hold more current assets to service current liabilities.¹³

Table 1. Summary statistics.

Variable	Mean	Std. Deviation	Median
CAPEX/TA	0.0186	3.4625	0.0381
CAPEX/TR	1.1181	40.8413	0.1178
GPR _{L,Avg}	-1.6893	0.2363	-1.7578
GPR _{L,Max}	-1.1726	0.3141	-1.2527
$\Delta \ln$ GPR	-0.0176	0.1841	0.0110
GPR _{L,International}	4.5519	0.1572	4.5405
GPR _{L,Threat}	4.5694	0.1759	4.5795
FSI	1.5947	2.8865	0.4366
EPU	4.4731	0.3845	4.3037
Growth opportunities	1.2410	18.7059	0.0857
Cash flows	-0.2369	70.7502	0.0446
Non-debt tax shields	0.0399	0.0416	0.0320
Firm size	5.4575	2.4212	5.6535
Leverage	0.6439	1.7180	0.4374
Liquidity	0.0051	2.6876	-0.0014
Profitability	-0.0584	3.6901	0.0243

This table illustrates the descriptive statistics of the key variables used for analysis and final results. The sample dataset comprises 3943 firm-year observations for a set of 395 firms spanning over the years 2003 to 2020 (unbalanced panel). All variables used for analysis are winsorized at the 1% and 99% levels. The construction of the variables is described in [Appendix Table A1](#).

Model specifications

We specify a similar baseline model following Wang et al. (2019) to explore the empirical relationship between GPR and corporate investments. The regression specification for testing the first hypothesis is expressed as follows:

$$\frac{CAPEX_{i,t+1}}{T.A._{i,t}} = \alpha_i + \beta_1 GPR_t + \beta_2 FSI_t + \beta_3 EPU_t + \beta_{4-10} Firm\ controls_{i,t} + \eta_i + \kappa_t + \varepsilon_{i,t} \quad (1)$$

where $\frac{CAPEX_{i,t+1}}{T.A._{i,t}}$ represents the capital expenditures (corporate investments) incurred scaled upon lagged total assets for a firm i and in year $t + 1$. GPR_t is the geopolitical risk, which is constructed as the natural logarithm of the average annual GPR. β_1 measures the degree to which geopolitical risk affects corporate investments. As mentioned previously, we hypothesize that $\beta_1 < 0$. β_2 and β_3 controls for other forms of macroeconomic uncertainties and β_{4-10} controls for all firm-level variables, which are: (a) Growth opportunities, (b) Cash flows, (c) Non-debt tax shields, (d) Firm size, (e) Leverage, (f) Liquidity, and (g) Profitability. Lastly, we contain the year and firm-fixed effects to lessen the potential influences of unobserved macroeconomic and firm-level factors.

We first select a measure of financing constraint to test how heterogeneity affects the relationship between GPR and corporate investments. To that end, following the literature, we consider average net worth to be an indicator of financing constraints (Bose et al., 2021).¹⁴ To devise our empirical strategy, we follow a similar regression framework as Fan et al. (2021). The model expressed in eq. (1) is first re-estimated by way of a sub-sample analysis (stated as eq. (2)). The sub-sampling is done by bifurcating our sample based on the median of average net worth. Firms with an average net worth above the median are classified as ‘lesser constrained’ (sub-eq. (2.i)), ‘constrained’ (sub-eq. (2.ii)) otherwise.¹⁵

Thus, the equation is to be re-estimated as:

$$\frac{CAPEX_{i,t+1}}{T.A._{i,t}} = \alpha_i + \beta_1 GPR_t + \beta_2 FSI_t + \beta_3 EPU_t + \beta_{4-10} Firm\ controls_{i,t} + \eta_i + \kappa_t + \varepsilon_{i,t} \quad (2)$$

$$\mathbf{Constrained\ if\ Avg.\ Net\ worth\ \leq\ median\ (Avg.\ Net\ worth)} \quad (2i)$$

$$\mathbf{Lesser\ constrained\ if\ Avg.\ Net\ worth\ >\ median\ (Avg.\ Net\ worth)} \quad (2ii)$$

In addition, we also use an interaction term between GPR and lesser constraints dummy (LESS) to gauge the moderating effects of financing constraints. The variable of interest in our case is $GPR*LESS$; it captures the impact of lesser financing constraints on the relationship between GPR and corporate investments. If lesser financing constraints can mitigate the negative impact of GPR on corporate investments, then the coefficient of the interaction term ($GPR*LESS$) should be positive. Thus, the revised eq. (1) is specified as follows:

$$\begin{aligned} \frac{CAPEX_{i,t+1}}{T.A._{i,t}} = & \alpha_i + \beta_1 LESS_t + \beta_2 GPR*LESS_{i,t} + \beta_3 GPR_t + \beta_4 FSI_t + \beta_5 EPU_t \\ & + \beta_{6-12} Firm\ controls_{i,t} + \eta_i + \kappa_t + \varepsilon_{i,t} \end{aligned} \quad (3)$$

Empirical results and discussion

Table 2 exhibits our hypothesis 1 (H1) results, which connote a negative relationship between GPR and corporate investments. As argued by Wang et al. (2019), it is critical to account for other

Table 2. Impact of GPR on corporate investments: baseline estimates.

Variables	(1)	(2)	(3)	(4)
	Baseline model	Full model	Alt. GPR I	Alt. GPR II
GPR	-0.0979** (-2.036)	-0.0895*** (-2.633)	-0.1159*** (-2.633)	-0.0936*** (-2.633)
FSI	-0.0036 (-1.170)	-0.0079*** (-3.528)	-0.0070*** (-3.498)	-0.0127*** (-3.353)
EPU	-0.0051 (-0.221)	0.0257 (1.019)	0.0322 (1.220)	0.0194 (0.800)
Growth opportunities		-0.0004*** (-3.332)	-0.0004*** (-3.332)	-0.0004*** (-3.332)
Cash flows		-0.0198 (-0.944)	-0.0198 (-0.944)	-0.0198 (-0.944)
Non-debt tax shields		0.5904*** (2.769)	0.5904*** (2.769)	0.5904*** (2.769)
Firm size		0.0757*** (5.315)	0.0757*** (5.315)	0.0757*** (5.315)
Leverage		0.0008 (0.044)	0.0008 (0.044)	0.0008 (0.044)
Liquidity		0.0042 (0.525)	0.0042 (0.525)	0.0042 (0.525)
Profitability		-0.0622** (-2.540)	-0.0622** (-2.540)	-0.0622** (-2.540)
Constant	-0.1515 (-1.026)	-0.7940*** (-4.262)	-0.8022*** (-4.259)	-0.6021*** (-4.023)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R-squared	0.007	0.112	0.112	0.112

This table illustrates the impacts of geopolitical risk proxied by GPR on corporate investments. The specification of the regression model is expressed in eq. (1). We regress the baseline model from the year 2003 to 2020. The explanatory variables are defined in [Appendix Table A1](#). The figures in the brackets represent t-statistics based on standard errors clustered at the firm level. The null hypothesis is that the estimated coefficients are equal to zero. The asterisks ^{***}, ^{**}, and ^{*} denote the level of statistical significance at 1%, 5% and 10% levels, respectively.

macroeconomic adversities to discern the influences of GPR from other forms of uncertainties. Following the argument, we control EPU and FSI in the Indian context. The uncertainties induced by economic, political, and financial events are broadly controlled. Column (1) of Table 2 reports the baseline results. The results confirm a statistically significant negative relationship between GPR and corporate investments. The result of the full model is exhibited in Column (2), which shows that even after controlling for firm characteristics, the baseline result for our variable of interest still holds true.

In addition, we also test for two alternative measurements of GPR. In the baseline regression, we measure GPR as the annual average of the monthly natural logarithmic GPR value. In the first alternative measurement (Alt. GPR I), we consider GPR as the highest value of the monthly natural logarithm of GPR in a year. The coefficient of GPR again appears significantly negative in Column (3). The second alternative measure of GPR (Alt. GPR II) is constructed as the first logged difference in annual GPR. The result for the regression model with Alt. GPR II is reported in Column (4), which reiterates similar findings. Overall, the significant and negative associations between GPR and corporate investments are robust across the alternative GPR measurement specifications.

The results above support our first hypothesis, and the findings are consistent with the past literature and the theoretical prediction of the '*real options channel*' (Akron et al., 2020; Caldara and Iacoviello, 2022). The GPR coefficients of Alt. GPR I and Alt. GPR II are not only significantly negative but also marginally strong compared to the GPR coefficient in the baseline model. Such a finding re-emphasizes the severity of GPR in terms of business confidence and new investments. Further, another interesting observation is that while the coefficients of GPR are consistently negative across various specifications, the coefficients of EPU remain largely insignificant. This phenomenon is somewhat concomitant with the findings of Tiwari et al. (2019), who argue that in India, the negative impacts of GPR on tourism are direr than those of EPU. Lastly, the coefficients of FSI are mostly negative and significant. This finding is consistent with the theoretical intuition as financial stress will widen the credit market frictions and restrict new investments (Ko, 2022).

Next, we report the results of our hypothesis 2 (*H2*) in Table 3. Here, we intend to examine whether less-constrained firms in this industry can mitigate the adverse impact of GPR in respect of their corporate investments. Columns (1) and (2) of Table 3 exhibit the results of the sub-sample analysis. Interestingly, we find that the coefficient of GPR for constrained firms reported in Column (1) is negative and statistically significant at the 1% level. Meanwhile, the coefficient of interest for lesser constrained firms in Column (2) is still negative but not statistically significant.

This result supports our hypothesis that the severity of GPR may only be reduced for the lesser constrained firms; however, it cannot be eliminated completely. Such a result can also be predicted theoretically using the '*cost of external financing channel*.' The firms that are more dependent on external financing may have to cut down investment spending more aggressively compared to their peers with fewer constraints. Another interesting observation is that while the coefficient of FSI is significantly negative for constrained firms, as reported in Column (1), it is insignificant for lesser constrained firms in Column (2). The FSI indicates stressed conditions in the debt and banking sector. In a way, it re-emphasizes the higher vulnerability of constrained firms to credit market frictions.

Finally, we consider the full model reported in Column (3). In this result, our coefficient of interest in the interaction term between GPR and lesser constraints dummy (LESS) is used to reaffirm the moderating effects of financing constraints. The interaction term coefficient ($GPR*LESS$) should be positive if the lesser financing constraints eradicate the adverse influence of GPR. We observe a consistent result as reported in the sub-sample analysis. The interaction term coefficient ($GPR*LESS$) stands negative, however insignificant. Thus, the results confirm that even firms with relatively lower reliance on external financing may fail to neutralize the severity of GPR upon investments.¹⁶

Table 3. Impact of GPR on corporate investments: financing constraints.

Variables	(1)	(2)	(3)
	Constrained	Less constrained	Full model
LESS			-0.0073 (-0.105)
GPR*LESS			-0.0024 (-0.062)
GPR	-0.1640** (-2.541)	-0.0454 (-1.173)	-0.0877** (-2.038)
FSI	-0.0148*** (-3.540)	-0.0034 (-1.339)	-0.0078*** (-3.529)
EPU	0.0693 (1.522)	-0.0064 (-0.188)	0.0255 (1.013)
Growth opportunities	-0.0006*** (-3.499)	0.0030*** (3.796)	-0.0004*** (-3.324)
Cash flows	0.0127 (0.255)	-0.0243 (-0.977)	-0.0196 (-0.939)
Non-debt tax shields	1.1903*** (2.853)	0.5177** (2.019)	0.5925*** (2.777)
Firm size	0.0854*** (3.535)	0.0835*** (4.577)	0.0753*** (5.256)
Leverage	0.0845 (1.631)	-0.0130 (-0.615)	0.0011 (0.061)
Liquidity	0.0486 (1.535)	0.0036 (0.436)	0.0041 (0.521)
Profitability	-0.1664** (-2.355)	-0.0385 (-1.326)	-0.0619** (-2.546)
Constant	-1.2536*** (-3.567)	-0.6202*** (-2.691)	-0.7857*** (-4.141)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
R-squared	0.205	0.111	0.112

This table illustrates the impacts of geopolitical risk proxied by GPR on corporate investments for constrained and lesser-constrained firms. The specification of the regression model is expressed in eqs. (2) and (3). We regress the baseline model from the year 2003 to 2020. The explanatory variables are defined in Appendix Table A1. The figures in the brackets represent *t*-statistics based on standard errors clustered at the firm level. The null hypothesis is that the estimated coefficients are equal to zero. The asterisks ***, **, and * denote the level of statistical significance at 1%, 5% and 10% levels, respectively.

Further analysis

This section furthers our understanding by exploring two additional dimensions of the relationship between GPR and corporate investment. First, we examine whether GPR has an asymmetric impact on corporate investment. Second, we also evaluate whether the deficit in the deployment of security forces can exacerbate the negative impact of GPR caused by perceived weaker enforcement of law and order. In addition to the basic results, these findings can be useful from the perspective of policy formulation in practice. We initially assess the asymmetric corporate investment adjustments by firms. To achieve this objective, we modify the regression model specified in eq. (1) by following the asymmetric adjustment models suggested by Anderson et al. (2003). The revised regression model is specified below:

$$\frac{CAPEX_{i,t+1}}{T.A._{i,t}} = \alpha_i + (\beta_1 + \beta_2 FSI_t + \beta_3 EPU_t + \beta_{4-10} Firm\ controls_{i,t}) \Delta \ln GPR_t + (\delta_1 + \delta_2 FSI_t + \delta_3 EPU_t + \delta_{4-10} Firm\ controls_{i,t}) Inc * \ln \Delta GPR_t + \eta_i + \kappa_t + \varepsilon_{i,t} \quad (4)$$

where $\Delta \ln GPR_t$ is the first logged difference in annual GPR data. The interaction variable, *Inc*, takes the value of 1 when GPR increases between periods *t*-1 and *t*, 0 otherwise. The sum of the coefficients $\gamma = (\beta_1 + \delta_1)$, then $(\gamma/100)$ (since it is level-log regression specification), measures the net decrease in corporate investments in INR Millions with a 1% increase in GPR. Thus, if the

corporate investments behave asymmetrically to GPR (i.e., more investment cut with the rise in GPR as compared to an increase in investment spending when GPR falls by the same proportion), the empirical hypothesis conditional on $\beta_1 0$ is $\delta_1 0$.

The results for the model specified in eq. (4) are exhibited in Table 4. In the results, our coefficients of interest are $\Delta \ln \text{GPR}$ and $\text{Inc}^* \Delta \ln \text{GPR}$. We observe that while a 1% decrease in GPR increases the investments by INR million 0.0490, it falls more by INR million 0.5352 ($-0.5842 + 0.0490$) in response to a 1% increase in GPR. The results satisfy the conditions of asymmetric behaviour of investments in response to GPR, that is, $\beta_1 0$ is $\delta_1 0$. Thus, we find that more investment is curtailed with the increase in GPR as compared to an enhancement in investment spending with a fall in GPR by an equal proportion. Such a result can be justified by using the managerial risk-aversion theories, which state that, in general, managers (or investors) are more sensitive to expected losses than otherwise (Li et al., 2021; Panousi and Papanikolaou, 2012). Furthermore, a corollary argument for the steep disproportionate investment cut could be

Table 4. Impact of GPR on corporate investments: asymmetric adjustments.

Variables	(1) Investments
$\Delta \ln \text{GPR}$	4.4890** (2.141)
$\text{Inc}^* \Delta \ln \text{GPR}$	-58.4247*** (-3.301)
$\Delta \ln \text{GPR} * \text{FSI}$	0.0144 (0.532)
$\Delta \ln \text{GPR} * \text{EPU}$	-0.9277** (-2.159)
$\Delta \ln \text{GPR} * \text{growth opportunities}$	0.0046 (1.479)
$\Delta \ln \text{GPR} * \text{cash flows}$	0.1913 (0.883)
$\Delta \ln \text{GPR} * \text{non-debt tax shields}$	-0.7050 (-0.715)
$\Delta \ln \text{GPR} * \text{firm size}$	-0.0043 (-0.252)
$\Delta \ln \text{GPR} * \text{leverage}$	0.0455 (0.575)
$\Delta \ln \text{GPR} * \text{liquidity}$	-0.0269 (-0.340)
$\Delta \ln \text{GPR} * \text{profitability}$	0.1868 (0.510)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{FSI}$	0.2214 (1.261)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{EPU}$	13.4690*** (3.256)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{growth opportunities}$	-0.0087** (-2.290)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{cash flows}$	-0.2364 (-0.888)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{non-debt tax shields}$	0.4907 (0.292)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{firm size}$	0.0035 (0.124)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{leverage}$	-0.1397 (-1.070)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{liquidity}$	0.0567 (0.332)
$\text{Inc}^* \Delta \ln \text{GPR} * \text{profitability}$	-0.4141 (-1.062)
Constant	0.0581*** (7.202)
Firm fixed effects	Yes
Year fixed effects	Yes
R-squared	0.068

This table illustrates the asymmetric impacts of geopolitical risk proxied by GPR on corporate investments. The specification of the regression model is expressed in eq. (4). We regress the baseline model from the year 2003 to 2020. The explanatory variables are defined in Appendix Table A1. The figures in the brackets represent t-statistics based on standard errors clustered at the firm level. The null hypothesis is that the estimated coefficients are equal to zero. The asterisks ***, **, and * denote the level of statistical significance at 1%, 5% and 10% levels, respectively.

the prudent adoption of an Asset-Light Fee Oriented (ALFO) strategy under uncertainty. According to this strategy, hotel and restaurant industry firms can franchise and manage existing properties rather than owning them (Li and Singal, 2019). The adoption of the ALFO strategy is useful for firms in this industry to improve scalability and hedge earnings volatility. Hence, the firms can downsize their investments in fixed assets. Several hotels and restaurants in India have fast-adopted the ALFO strategy over the past few years to stand tall against the macroeconomic headwinds.^{17,18}

We further explore whether the deficit in the deployment of security forces can accentuate the influence of GPR on corporate investments. In India, police forces are delegated the responsibility of enforcing civil law and order. They are also the most perceptible representative of the government in the hour of crisis.¹⁹ Nevertheless, it is somewhat paradoxical to note that India's police force is also one of the weakest in the world in terms of the public-to-police ratio. The United Nations (U.N.) has recommended an optimal ratio of 222 police personnel per 1,00,000 population. However, there are only 144 police personnel per 1,00,000 population in India.²⁰ Consequentially, under-deployment of police personnel leads to a higher workload and poor work-life balance. For instance, a recent survey by the Centre for the Study of Developing Societies (CSDS) reveals that average police personnel work for 14–16 h a day.²¹ These factors could be attributed as the antecedents for inefficient police action and security lapses eroding public confidence in them.

Given the contextual background, it appears interesting to examine whether such a deficit in police deployment intensifies the adverse GPR-corporate investment relationship. To fulfil our purpose, we first create a state/union territory (U.T.)-wise index of security deployment deficit by taking a difference between the number of police personnel posts sanctioned by the government and the actual positions filled per lakh population.²² Then, we map the index value with the respective state of the firms using the *PROWESS* state/U.T. code. Next, following Fan et al., (2021), we perform a sub-sample analysis. We re-estimate the baseline regression model as indicated in eq. (5) by splitting them into low- and high-security deployment deficit sub-samples. If the firms fall below the median security deployment deficit index, they are classified as low-deficit firms (sub-eq. (5.i)) or else high-deficit firms (sub-eq. (5.ii)). The results of the sub-sample analysis are reported in Columns (1) and (2) of Table 5. We observe that while the firms in the low-deficit states exhibit a negative, however weak, and insignificant coefficient (see Column (1), Table 5), the coefficient for the firms in states with a higher deficit is significantly negative and relatively stronger (see Column (2), Table 5). In a way, the results suggest that the optimum deployment of security forces can mitigate the adverse impact of GPR.

$$\frac{CAPEX_{i,t+1}}{T.A.}_{i,t} = \alpha_i + \beta_1 GPR_t + \beta_2 FSI_t + \beta_3 EPU_t + \beta_{4-10} Firm\ controls_{i,t} + \eta_i + \kappa_t + \varepsilon_{i,t} \quad (5)$$

$$\text{Low Deficit if Security deployment deficit} \leq \text{median (Security deployment deficit)} \quad (5i)$$

$$\text{High Deficit if Security deployment deficit} > \text{median (Security deployment deficit)} \quad (5ii)$$

Next, we also use an interaction term between GPR and high-security deployment deficit dummy (HIGH) to captivate the moderating effects of security deployment. The variable of interest in our case is $GPR*HIGH$; it describes the impact of a high-security deficit on the relationship between GPR and corporate investments. If a high-security deficit exacerbates the negative impact of GPR

Table 5. Impact of GPR on corporate investments: security deployment deficit.

Variables	(1)	(2)	(3)
	Low deficit	High deficit	Full model
HIGH			-0.1307** (-2.108)
GPR*HIGH			-0.0624* (-1.890)
GPR	-0.0125 (-0.308)	-0.1737*** (-3.174)	-0.0597* (-1.656)
FSI	-0.0066** (-2.198)	-0.0092*** (-2.769)	-0.0078*** (-3.521)
EPU	0.0247 (0.697)	0.0199 (0.545)	0.0258 (1.022)
Growth opportunities	-0.0003*** (-3.190)	-0.0006* (-1.807)	-0.0004*** (-3.310)
Cash flows	-0.0169 (-0.713)	-0.0218 (-0.580)	-0.0186 (-0.896)
Non-debt tax shields	0.3946 (1.607)	0.7048** (2.186)	0.5872*** (2.740)
Firm size	0.0837*** (4.888)	0.0696*** (2.984)	0.0765*** (5.402)
Leverage	-0.0155 (-0.683)	0.0202 (0.868)	0.0012 (0.069)
Liquidity	0.0011 (0.124)	0.0357* (1.759)	0.0046 (0.578)
Profitability	-0.0605** (-2.156)	-0.0462 (-0.946)	-0.0633** (-2.563)
Constant	-0.6931*** (-2.805)	-0.8910*** (-3.175)	-0.7386*** (-3.936)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
R-squared	0.123	0.133	0.115

This table illustrates the impacts of geopolitical risk proxied by *GPR* on corporate investments for firm years in the low and high-security deployment deficit states. The specification of the regression model is expressed in eqs. (5) and (6). We regress the baseline model from the year 2003 to 2020. The explanatory variables are defined in [Appendix Table A1](#). The figures in the brackets represent t-statistics based on standard errors clustered at the firm level. The null hypothesis is that the estimated coefficients are equal to zero. The asterisks ***, **, and * denote the level of statistical significance at 1%, 5% and 10% levels, respectively.

on corporate investments, then the coefficient of the interaction term (*GPR*HIGH*) should be negative and significant. Thus, the revised eq. (1) specification is as follows:

$$\frac{CAPEX_{i,t+1}}{T.A._{i,t}} = \alpha_i + \beta_1 HIGH_t + \beta_2 GPR*HIGH_{i,t} + \beta_3 GPR_t + \beta_4 FSI_t + \beta_5 EPU_t + \beta_{6-12} Firm\ controls_{i,t} + \eta_i + \kappa_t + \varepsilon_{i,t} \quad (6)$$

The empirical results derived from eq. (6) are reported in Column (3), [Table 5](#). The results restate our findings of the sub-sample analysis. Our coefficient of interest *GPR*HIGH* remains negative and statistically significant. Thus, the empirical evidence suggests that the degree of security implementation can mitigate the impediments of GPR on corporate investments.

Robustness test results

We create another measure of corporate investments by considering annual capital expenditure scaling upon lagged total revenues (CAPEX/TR). Further, we run the regression model specified in eq. (1) with the stated alternate measure of corporate investments. The empirical results are reported in [Table 6](#); Column (1) exhibits the results for the full model, whereas Columns (2) and (3) report the results with the alternative measures of GPR that is, Alt. GPR I and Alt. GPR II, respectively. We observe that these results comply with our baseline results, both in terms of the direction and

Table 6. Impact of GPR on corporate investments: an alternative measure of investments.

Variables	(1)	(2)	(3)
	Full model	Alt. GPR I	Alt. GPR II
GPR	− 0.6287** (−2.546)	− 0.8142** (−2.546)	− 0.6571** (−2.546)
Controls	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
R-squared	0.042	0.042	0.042

This table illustrates the impacts of geopolitical risk proxied by *GPR* on corporate investments while controlling for international GPRs. We regress the baseline model from the year 2003 to 2020. The explanatory variables are defined in [Appendix Table A1](#). The list of control variables is the same as in the previous specifications and is not shown here for brevity. The figures in the brackets represent t-statistics based on standard errors clustered at the firm level. The null hypothesis is that the estimated coefficients are equal to zero. The asterisks ***, **, and * denote the level of statistical significance at 1%, 5% and 10% levels, respectively.

Table 7. Impact of GPR on corporate investments: controlling for international GPRs.

Variables	(1)	(2)
	Global GPR	Global GPR threat
GPR _{India}	− 3.3691*** (−3.134)	− 0.1031*** (−3.136)
GPR _{International}	− 8.3094*** (−3.022)	− 0.1610*** (−3.022)
Controls	Yes	Yes
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
R-squared	0.112	0.112

This table illustrates the impacts of geopolitical risk proxied by *GPR* on corporate investments while controlling for international GPRs. We regress the baseline model from the year 2003 to 2020. The explanatory variables are defined in [Appendix Table A1](#). The list of control variables is the same as in the previous specifications and is not shown here for brevity. The figures in the brackets represent t-statistics based on standard errors clustered at the firm level. The null hypothesis is that the estimated coefficients are equal to zero. The asterisks ***, **, and * denote the level of statistical significance at 1%, 5% and 10% levels, respectively.

statistical significance of the relationship. Thus, our results are robust to alternative measurements of corporate investments and GPR. Next, we control for international GPR indicators that is, international GPR²³ (GPR_{L,International}) and GPR threat (GPR_{L,Threat}), to perform robustness checks. While international GPR captures global geopolitical uncertainties, the GPR threat proxies for global war-like situations. As reported in [Table 7](#), the nature of the domestic GPR coefficients remains consistent after controlling for the international GPR proxies. Hence, we find that our results are robust in either case.

Conclusions and policy implications

In conclusion, our study provides critical insights into the intricate relationship between GPR and corporate investment in India's hotel and restaurant industry. By investigating the impact of GPR on corporate investments, we extend the existing literature on how firms respond to geopolitical

uncertainty, specifically in the context of emerging markets. The findings confirm that GPR has a significant and negative effect on investment levels within the hospitality sector, reinforcing previous research that emphasizes the pervasive influence of geopolitical tensions on corporate decision-making.

A key contribution of this study is the identification of an asymmetry in how firms respond to geopolitical risk. Our research reveals that firms react more sharply to increases in GPR than to its decline. When geopolitical tensions rise, firms exhibit a pronounced reduction in investments, indicating a heightened sensitivity to adverse events and a risk-averse approach during periods of uncertainty. Conversely, when GPR levels decrease, firms are less responsive in resuming or ramping up their investments. This asymmetry underscores the disproportionate impact of geopolitical instability on business strategies and the cautious nature of firms in re-entering investment cycles after periods of elevated risk.

Interestingly, the study finds that internal financing, which is typically considered a buffer against external shocks, does not significantly shield firms from the negative effects of geopolitical risk. This finding challenges the conventional wisdom that internal financial resources can help firms maintain stability during turbulent times. Instead, it highlights the all-encompassing nature of geopolitical uncertainty, which can disrupt even those firms with relatively robust financial health. This insight is particularly relevant for policymakers and business leaders, underscoring the need for broader risk management strategies beyond financial hedging.

A notable finding in our research is the mitigating role of security measures. We find that firms located in better security infrastructure are better able to withstand the negative impacts of GPR. This suggests that perceptions of safety and security play a crucial role in maintaining business continuity in the face of geopolitical threats. By deploying appropriate security measures, firms can reduce the adverse effects of GPR on investment decisions, highlighting the importance of a proactive approach to risk management. In an industry like hospitality, where customer perceptions of safety are paramount, this finding is particularly significant.

Our study also has broader implications for other emerging markets facing similar geopolitical challenges. The insights gained from India's hospitality sector can be applied to industries in other countries where geopolitical instability is a concern. We advocate for the adoption of comprehensive risk management strategies that include both financial and non-financial measures, such as enhanced security protocols and resilience-building initiatives.

In light of these findings, we suggest that future research should explore the effects of GPR on other aspects of corporate decision-making, particularly revenue expenditures. Understanding how firms adjust their operational spending in response to geopolitical uncertainty could offer valuable insights into their adaptive strategies. Additionally, examining the role of government policies in mitigating the effects of GPR on industries would provide further clarity on how external interventions can support corporate resilience.

Overall, this study enriches the understanding of how GPR affects corporate investments, particularly in emerging markets. It offers actionable recommendations for firms and policymakers to overcome uncertain geopolitical landscapes, emphasizing the importance of proactive risk management and security measures to safeguard investments and ensure long-term growth in the hospitality sector.

Lastly, despite its contributions, this study has certain limitations. First, it focuses exclusively on India's hotel and restaurant industry, limiting generalizability across other sectors or countries. Future research should explore different industries and regions to better understand the broader effects of GPR. Second, we rely on aggregate GPR indices, which may not fully capture the impact of specific events. Future studies could examine firm-level exposure to explore the granular impacts

of GPR on individual companies. Additionally, the role of government policies in mitigating GPR effects warrants further investigation to develop more comprehensive risk management strategies. Nevertheless, these limitations facilitate future research.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Parliament Library, “*Background note on Impact of Russia-Ukraine War on Indian Economy*,” July 2022, Research and Information Division, Parliament Library and Reference, Research, Documentation and Information Service, New Delhi, India. The document is available at: https://parliamentlibraryindia.nic.in/lcwing/Impact_of_Russia-Ukraine_war_on_Indian_Economy.pdf accessed March 09, 2023, 12:56 Hours, Indian Standard Time (IST).
2. International Monetary Fund, “*IMF/Global Financial Stability Report October 2022 Update*,” October 2022, IMF Media Center, United States. The full report is available at: <https://mediacenter.imf.org/news/imf-global-financial-stability-report-october-2022-update/s/1730edc6-2e1e-4ede-89d0-d0453b77029f>, accessed March 09, 2023, 14:01 Hours, IST.
3. The Times of India, “*India to become 3rd largest economy by 2029: SBI report*,” September 2022. The full report is available at: <https://timesofindia.indiatimes.com/business/india-business/india-to-become-3rd-largest-economy-by-2029-sbi-report/articleshow/93971469.cms>, accessed March 11, 2023, 20:43 Hours, IST.
4. Business World, “*Hospitality Industry in India: A Big Contributor to Economy’s Growth*,” May 2017. The full report is available at: <https://www.businessworld.in/article/Hospitality-Industry-In-India-A-Big-Contributor-To-Economy-s-Growth-/16-05-2017-118291/>, accessed March 11, 2023, 21:44 Hours, IST.
5. *Ibid.*
6. Imarc Insightful Insights, “*India Business Travel Market: Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023–2028*,” 2022, The full report is available at: <https://www.imarcgroup.com/india-business-travel-market/toc>, accessed March 12, 2023, 12:22 Hours, IST.
7. While a *sector* denotes a large segment of the economy, an *industry* describes a group of similar types of companies. For instance, the hospitality sector may broadly encapsulate services such as (a) accommodation, (b) food and drink, and (c) tourism and travel. In this study, we mainly focus on the hotel and restaurant industry in India, which falls under the bracket of the hospitality sector.
8. Tiwari et al. (2019) compare the impacts of EPU and GPR on tourist arrivals in India. Their results show that the impacts of GPR are more chronic and long-lasting than EPU. Such a result reaffirms our argument.
9. The Indian EPU index is similar to the US EPU Index, which is created using the American newspapers. For the Indian index, the articles from seven prominent newspapers: *The Economic Times*, *The Times of*

India, The Hindustan Times, The Hindu, The Statesman, The Indian Express, and The Financial Express are analyzed. In each publication, the number of articles that include at least one term from each of the three following groups are counted. The first group includes terms like “uncertain,” “uncertainties,” or “uncertainty.” The second group focuses on economic context with terms like “economic” or “economy.” The third group features policy-relevant terms such as “regulation,” “central bank,” “monetary policy,” “policymakers,” “deficit,” “legislation,” and “fiscal policy.” This method provides a consistent measure of policy uncertainty based on the frequency of relevant terms across India’s major news sources.

10. The GPR data is freely downloadable at: <https://www.matteoiacoviello.com/gpr.htm>.
11. The data is freely available here: https://www.policyuncertainty.com/india_monthly.html.
12. The data for Indian Financial Stress Index is freely downloadable from the website of Asian Development Bank, available here: <https://aric.adb.org/database/fsi>.
13. The Pearson correlation of the key variables used in the analysis is presented in [Appendix table A2](#).
14. Though we are aware of other popular measures of financing constraints, such as the *Size-Age* (SA) index proposed by [Hadlock and Pierce \(2010\)](#) and the *Whited-Wu* (WW) index suggested by [Whited and Wu \(2006\)](#), we could not employ them in our case since the majority of our sample firms are unlisted. The computation of the SA index requires information on the listing year, whereas the WW index necessitates having information on dividend declarations. This information can’t be fetched for unlisted firms; thus, we resort to a plausible solution by relying upon average net worth following previous literature.
15. [Ersahin \(2020\)](#) also adopts a similar empirical approach to split firms into two heterogeneous groups based on financial constraints.
16. As a quasi-measure for the robustness test, we proxy the financing constraints using the SA index of [Hadlock and Pierce \(2010\)](#). SA index requires a proxy for age by using the date the firm went public. As we stated before, the majority of our sample firms are unlisted. Thus, we use the date of incorporation as a measure of age. We perform a similar sub-sample and interaction regression model and find somewhat qualitatively identical results.
17. Kamat, V., “*Shift to an asset-light model is boosting profit margins at Indian Hotels*,” Mint, February 26, 2020. The full report is available at: <https://www.livemint.com/market/mark-to-market/shift-to-an-asset-light-model-is-boosting-profit-margins-at-indian-hotels-11582655919719.html>, accessed April 24, 2023, 18:04 Hours, IST.
18. Jethmalani, H., “*IHCL’s asset-light strategy has made investors forget covid woes*,” Mint, July 11, 2021. The full report is available at: <https://www.livemint.com/market/mark-to-market/ihcsls-asset-light-strategy-has-made-investors-forget-covid-woes-11626019145289.html>, accessed April 24, 2023, 18:12 Hours, IST.
19. Bureau of Police Research and Development. The full document is available at: https://bprd.nic.in/WriteReadData/userfiles/file/6798203243-Volume_2.pdf, accessed April 25, 2023, 18:29 Hours, IST.
20. Devulapalli, S., & Padmanabhan V., “*India’s police force among the world’s weakest*,” Mint, June 19, 2019. The full report is available at: <https://www.livemint.com/news/india/india-s-police-force-among-the-world-s-weakest-1560925355383.html>, accessed April 25, 2023, 20:43 Hours, IST.
21. Kawoosa, V. M., “*Stress, apathetic attitude taking toll on policing: study*,” Hindustan Times, June 22, 2020. The full report is available at: <https://www.hindustantimes.com/india-news/stress-apatetic-attitude-taking-toll-on-policing-study/story-YxU95pBYRBUopCdR8Ck1VJ.html>, accessed April 25, 2023, 21:09 Hours, IST.
22. We source the data from the Ministry of Home Affairs, Government of India and Bureau of Police Research and Development. The data provides state/UT-wise historical cumulative public-police ratio (i.e., number of police per lakh population) as on 2020.
23. We proxy for international GPR and GPR threat by using the GPR indexes of the US. The US GPR index is constructed by considering 10 leading newspapers, which has a global coverage. They are: Chicago Tribune, the Daily Telegraph, Financial Times, The Globe and Mail, The Guardian, the Los Angeles

Times, The New York Times, USA Today, The Wall Street Journal, and The Washington Post. In the context of EPU, previous studies have proxied US EPU to benchmark international EPU, see [Das and Kumar \(2018\)](#).

References

- Akron S, Demir E, Díez-Esteban JM, et al. (2020) Economic policy uncertainty and corporate investment: evidence from the US hospitality industry. *Tourism Management* 77: 104019.
- Aloui C, Hamida HB and Hkiri B (2021) Democratic transition, political risk, economic instability, and tourist inflows: the case of Tunisia. *Tourism Economics* 27(5): 1157–1165.
- Anderson MC, Banker RD and Janakiraman SN (2003) Are selling, general, and administrative costs “sticky”. *Journal of Accounting Research* 41: 47–63.
- Baker SR, Bloom N and Davis SJ (2016) Measuring economic policy uncertainty. *Quarterly Journal of Economics* 131: 1593–1636.
- Balli F, Uddin GS and Shahzad SJH (2019) Geopolitical risk and tourism demand in emerging economies. *Tourism Economics* 25(6): 997–1005.
- Bates TW, Kahle KM and Stulz RM (2009) Why do US firms hold so much more cash than they used to? *The Journal of Finance* 64: 1985–2021.
- Bernanke BS (1983) Irreversibility, uncertainty, and cyclical investment. *Quarterly Journal of Economics* 98: 85–106.
- Bose U, Filomeni S and Mallick S (2021) Does bankruptcy law improve the fate of distressed firms? The role of credit channels. *Journal of Corporate Finance* 68: 101836.
- Caldara D and Iacoviello M (2022) Measuring geopolitical risk. *The American Economic Review* 2018: 1–66.
- Cam M (2008) The impact of terrorism on United States industries. *Economic Papers: A Journal of Applied Economics and Policy* 27: 115–134.
- Das D and Kumar SB (2018) International economic policy uncertainty and stock prices revisited: multiple and partial wavelet approach. *Economics Letters* 164: 100–108.
- Das D, Kannadhasan M and Bhattacharyya M (2019a) Do the emerging stock markets react to international economic policy uncertainty, geopolitical risk and financial stress alike? *The North American Journal of Economics and Finance* 48: 1–19.
- Das D, Kannadhasan M and Bhowmik P (2019b) Geopolitical risk and precious metals. *Journal of Economic Research* 24: 49–66.
- Das D, Dutta A, Bhadra A, et al. (2020) Role of presidential uncertainties on the hotel industry. *Annals of Tourism Research* 81: 102762.
- Das D, Dutta A, Jana RK, et al. (2022a) The asymmetric impact of oil price uncertainty on emerging market financial stress: a quantile regression approach. *International Journal of Finance & Economics* 28(4): 4299–4323.
- Das D, Maitra D, Dutta A, et al. (2022b) Financial stress and crude oil implied volatility: new evidence from continuous wavelet transformation framework. *Energy Economics* 115: 106388.
- Demir E and Gözgor G (2018) Does economic policy uncertainty affect tourism? *Annals of Tourism Research* 69: 15–17.
- Demiralay S and Kilincarslan E (2019) The impact of geopolitical risks on travel and leisure stocks. *Tourism Management* 75: 460–476.
- Dixit RK, Dixit AK and Pindyck RS (1994) *Investment under Uncertainty*. Princeton, NJ: Princeton University Press.
- Ersahin N (2020) Creditor rights, technology adoption, and productivity: plant-level evidence. *The Review of Financial Studies* 33(12): 5784–5820.

- Ersan O, Akron S and Demir E (2019) The effect of European and global uncertainty on stock returns of travel and leisure companies. *Tourism Economics* 25(1): 51–66.
- Fan Z, Zhang Z and Zhao Y (2021) Does oil price uncertainty affect corporate leverage? Evidence from China. *Energy Economics* 98: 105252.
- Gilchrist S, Sim JW and Zakrajšek E (2014) *Uncertainty, Financial Frictions, and Investment Dynamics*. Cambridge, MA: National Bureau of Economic Research.
- Gong Y, Chang CH, Lee PTW, et al. (2024) Unveiling the mystery of the responsiveness of inbound tourism to economic policy uncertainty: new evidence from Australia. *Tourism Economics* 30(8): 2159–2180.
- Gray CW (1997) Reforming legal systems in developing and transition countries. *Finance and Development* 34: 14–16.
- Guiso L and Parigi G (1999) Investment and demand uncertainty. *Quarterly Journal of Economics* 114: 185–227.
- Gulen H and Ion M (2016) Policy uncertainty and corporate investment. *Review of Financial Studies* 29: 523–564.
- Hadlock CJ and Pierce JR (2010) New evidence on measuring financial constraints: moving beyond the KZ index. *Review of Financial Studies* 23: 1909–1940.
- Jallat F and Shultz CJ (2011) Lebanon: from cataclysm to opportunity—crisis management lessons for MNCs in the tourism sector of the Middle East. *Journal of World Business* 46: 476–486.
- Kang W, Lee K and Ratti RA (2014) Economic policy uncertainty and firm-level investment. *Journal of Macroeconomics* 39: 42–53.
- Kannadhasan M and Das D (2020) Do Asian emerging stock markets react to international economic policy uncertainty and geopolitical risk alike? A quantile regression approach. *Finance Research Letters* 34: 101276.
- Kaplan SN and Zingales L (1997) Do investment-cash flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics* 112: 169–215.
- Kaviani MS, Kryzanowski L, Maleki H, et al. (2020) Policy uncertainty and corporate credit spreads. *Journal of Financial Economics* 138: 838–865.
- Keating AS and Zimmerman JL (1999) Depreciation-policy changes: tax, earnings management, and investment opportunity incentives. *Journal of Accounting and Economics* 28: 359–389.
- Khan K, Su CW, Xiao YD, et al. (2021) Trends in tourism under economic uncertainty. *Tourism Economics* 27(4): 841–858.
- Khanna T and Palepu KG (2010) *Winning in Emerging Markets: A Road Map for Strategy and Execution*. Boston, MA: Harvard Business Press.
- Kim HJ and Mun S (2022) Terrorist attacks and corporate investment: the beneficial value of CEO overconfidence. *International Review of Financial Analysis* 84: 102363.
- Ko D (2022) Financial stress in the foreign exchange market and its real effect on firm investments: evidence from South Korea. *Global Economic Review* 51: 142–158.
- Leahy JV and Whited T (1995) *The Effect of Uncertainty on Investment: Some Stylized Facts*. Cambridge, MA: National Bureau of Economic Research.
- Lee CG and How SM (2023) The impacts of domestic and global economic policy uncertainties on the hotel room demand: evidence from Singapore. *Tourism Economics* 29(4): 1121–1129.
- Li Y and Singal M (2019) Capital structure in the hospitality industry: the role of the asset-light and fee-oriented strategy. *Tourism Management* 70: 124–133.
- Li Y, Xu X, Zhu Y, et al. (2021) CEO decision horizon and corporate R&D investments: an explanation based on managerial myopia and risk aversion. *Accounting and Finance* 61: 5141–5175.
- Man Wai Leong A, Kocak E, Bai J, et al. (2024) Macau hotel industry's response to global shocks. *Tourism Economics* 30(7): 1914–1921.

- Ozdemir O, Erkmen E and Han W (2023) EPU and financial performance in the hospitality and tourism industry: moderating effect of CSR, institutional ownership and cash holding. *Tourism Management* 98: 104769.
- Panousi V and Papanikolaou D (2012) Investment, idiosyncratic risk, and ownership. *The Journal of Finance* 2011: 1–52.
- Park C-Y and Mercado RV (2014) Determinants of financial stress in emerging market economies. *Journal of Banking & Finance* 45: 199–224.
- Pástor L and Veronesi P (2013) Political uncertainty and risk premia. *Journal of Financial Economics* 110: 520–545.
- Payne JE and Apergis N (2022) The influence of economic policy uncertainty and geopolitical risk on US citizens overseas air passenger travel by regional destination. *Tourism Economics* 28(5): 1333–1341.
- Rumokoy LJ, Omura A and Roca E (2023) Geopolitical risk and corporate investment in the metals and mining industry: evidence from Australia. *Pacific-Basin Finance Journal* 79: 101991.
- Tiwari AK, Das D and Dutta A (2019) Geopolitical risk, economic policy uncertainty and tourist arrivals: evidence from a developing country. *Tourism Management* 75: 323–327.
- Wang X, Wu Y and Xu W (2019) Geopolitical risk and investment. *Journal of Money, Credit, and Banking* Forthcoming.
- Weiermair K and Fuchs M (1999) Measuring tourist judgment on service quality. *Annals of Tourism Research* 26: 1004–1021.
- Whited TM and Wu G (2006) Financial constraints risk. *Review of Financial Studies* 19: 531–559.

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