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The impact of geopolitical risks on cash holdings of hospitality companies: Evidence from emerging countries

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ABSTRACT

This paper examines the relationship between geopolitical risks (GPR) and corporate cash holdings in emerging countries, where such kind of risks are more relevant. Our sample consists of 166 hospitality companies from seven emerging economies (Malaysia, Mexico, Thailand, Turkey, Argentina, Brazil and China) for the period 2008–2017. The results show that geopolitical risks negatively affect cash holdings of hospitality firms, confirming the high dependence of hospitality business on geopolitical sways. We also test if our findings are relevant when considering ALFO strategy in hospitality companies. The findings are robust to alternative models and selection of sub-samples. This study adds to the incipient literature on hospitality companies' cash holdings determinants by considering GPR as an alternative measure of uncertainty in the hospitality industry. Consequently, this paper contributes to enhancing the understanding of hospitality firms' business characteristics, highly sensitive to geopolitical risks.

1. Introduction

The study of corporate cash holdings is regaining attention among finance researchers in recent years, especially since the constant increase in the cash ratio in the last decades (Bates, Kahle, & Stulz, 2009; Dittmar & Mahrt-Smith, 2007)[1] could not avoid the liquidity issues regarding the 2008 confidence crisis. Hence, the generalized accepted precautionary motive (Keynes, 1936) cannot be the sole answer to that tendency. Thus, there is still a question that needs an answer: why do companies would be interested in maintaining such high levels of cash?

Nevertheless, prior research such as Zhou (2009) reveal that the cash holding issue needs to be analyzed considering the industry characteristics. In fact, despite the generalized tendency to increase cash ratios, there are sectors, like the accommodation, that are not intensive in cash holding reserves (Gao, Harford, & Li, 2013; Kusnadi, 2011).[2] However, while there is a rich and mature literature on the cash holding behavior of non-financial companies, the number of studies focusing on the hospitality industry is relatively scarce. In this sense, cash management is decisive for hospitality firms as the choice between retaining or distributing the excess cash might distort the perceived value cash (Dogru & Sirakaya-Turk, 2017).

Apart from being one of the most competitive businesses, several characteristics of hospitality firms may lead to particular cash holding policies. Firstly, hospitality companies traditionally present high fixed costs as a result of capital investment in land and building, which, on the one hand, decreases flexibility and increases the leverage ratio when those assets guarantee debt (Jang, Tang, & Chen, 2008; Kizildag, 2015). On the other hand, exit barriers are higher since it is difficult and costly to find an alternative use of the property what makes firms to stay in the industry even the profits are decreasing or nonexistent. Nevertheless, a new trend in the hospitality companies' strategy, known as ALFO (assets-light and fee-orientated strategy) has recently emerged (Li & Singal, 2019). This new business model allows hospitality companies to reduce or even eliminate real estate properties and focus more on technological and loyalty-based assets.[3] Hence, by investing less in fixed and illiquid assets, hospitality companies may be less exposed to

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[1] Prior and after 2008 financial crisis studies report high levels of cash ratio for US firms (Gao et al., 2013), for European non-financial companies (Ferreira & Vilela, 2004) or for a multi-country sample (Iskandar-Datta and Jia (2012).

[2] The report "The credit overhang: Follow the money– where's all the cash on U.S. corporate balance sheets?" by Standard and Poor's's (2012) shows a ratio of nearly 5% for leisure firms.

[3] A deeper analysis about the ALFO strategy can be found in Lin and Huang (2011) or Liou (2011).

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economic sways and be able to follow diverse cash-holding policies.

Second, the services of hospitality firms are substitutable as the industry does not have long-term contracts such as mortgage payments, health services, cell phones or education (Singal, 2015). Lastly, hospitality firms present high volatility of operational cash-flow as the seasonal nature of tourism business leads to high operational risks (Jang et al., 2008).

The uniqueness of the hospitality business makes it more sensitive to adverse macroeconomic shocks (Ehling & Haushalter, 2013) and hence moderate its cash holding policy. Although previous literature has considered the impact of various uncertainty measures on cash holding decisions of firms (Baum, Caglayan, Stephan, & Talavera, 2008, 2006; Bhaduri & Kanti, 2011; Demir & Ersan, 2017; Pinkowitz, Stulz, & Williamson, 2003; Xu, Chen, Xu, & Chan, 2016), we consider that multinational hospitality firms are exposed to new types of risks and uncertainty, particularly geopolitical instability (Gkillas, Gupta, & Wohar, 2018). Consequently, we introduce the Geopolitical Risk (GPR) index developed by Caldara and Iacoviello (2018) as it is considered by central bankers, business investors and the financial press as one of the determinants of financial decisions (Balcilar, Bonato, Demirer, & Gupta, 2018). By using this measure, we are considering not only terrorist attacks, but also other forms of geopolitical tensions like war risks, military threats and Middle East tensions, and hence capture a wider array of exogenous global uncertainty (Balcilar et al., 2018).

The aim of this paper is to examine the effect of the Geopolitical Risk (GPR) Index on the cash holding decisions of 166 listed hospitality companies in Malaysia, Mexico, Thailand, Turkey, Argentina, Brazil, and China for the period of 2008–2017. Although some recent studies have dealt with the subject of determinants of corporate cash holdings in the hospitality industry, they are largely conducted in developed countries (Ahmad & Adaoglu, 2018; Kim et al., 2011, 2013; Koh & Jang, 2011; Woods, Kim, & Kim, 2011). Those emerging tourist destinations differ from those of developed countries in several aspects. Among others, we can mention the weak regulatory environment and corporate governance as well as low information disclosure level (Uyar & Kuzey, 2014), what creates a higher external financing cost for firms operating in those countries. Moreover, firms in such markets rely more on internally generated funds instead of costly external funding (Arslan, Florackis, & Ozkan, 2006). Apart from that, most of the previously mentioned studies analyze firms' cash holding policy without considering alternative business models in the hospitality industry like ALFO strategy.

Our results reveal that firms' cash holdings are negatively affected by geopolitical risks in all estimations. This implies that during rising geopolitical risks periods, hospitality firms tend to keep less cash. This finding is robust to alternative estimation techniques. We contribute to the literature in many aspects. This study is the first in terms of analyzing the effect of geopolitical risks on financial decisions of firms operating in hospitality industry. Additionally, while previous studies on hospitality industry cash holdings' determinants use weighted least squares or fixed/random effects techniques, we perform a GMM analysis. We also present a multi-country perspective to the topic however studies on cash holdings' determinants are focusing on a single country.

The reminder of this study is organized as follows. The next section presents the literature review on the link between uncertainty measures and corporate cash holdings with a focus on geopolitical risks and formulates our hypotheses. The data and the empirical model used are explained in Section 3. Section 4 summarizes the findings while the last section concludes the paper.

2. Literature review and hypothesis

2.1. Cash holdings in the hospitality industry

Although the referred relevance of examining the cash holding policy of hospitality companies, the number of studies in this field are very incipient. Kim et al. (2011) study corporate cash holding's determinants for 125 listed restaurants firms in the United States for the period of 1997–2008. By performing the weighted least-squares, they find that size positively affect corporate cash holdings. Moreover, firms with higher capital expenditures, firms holding liquid assets other than cash, and firms paying dividends tend to hold less cash. Restaurants with greater investment opportunities prefer to hold more cash. Kim et al. (2013) find that restaurants holding higher cash are likely to have greater investment opportunities while cash-poor restaurants are larger, have more net working capital and experience higher capital expenditures.

Woods et al. (2011) analyze the determinants of cash holdings in 67 listed hotel firms in the USA between 1997 and 2008. It is found that firms with better access to capital markets and with higher operational cash flow present lower levels of cash holdings, whereas hotel with greater investment opportunities, more capital expenditures and leverage tend to show a higher cash ratio. Koh and Jang (2011) conduct a study for 47 US hotel firms for the period 1988–2008, and, accordingly to the pecking order theory, they find that cash holdings are negatively related to leverage.

Mun and Jang (2015) investigate the relationship between working capital and cash holdings and its subsequent impact on the profitability of 362 US restaurants for the period 1963–2012. Their findings show an inverted U-shape relationship between working capital and a firm's profitability and that a firm's cash level is a relevant dimension for effective working capital management.

Dogru and Sirakaya-Turk (2017) examine how franchising, financial constraints and corporate governance affect the value of hotel firms' cash holdings. Using a sample of publicly traded hotel companies in the United States for the period of 1993–2016, they find that cash is more valuable for financially constrained firms and less valuable for poorly-governed firms. Besides, following an ALFO strategy through a franchise model might make poorly-governed firms more vulnerable to overinvestment.

Recently, Ahmad and Adaoglu (2018) analyze the cash holdings' determinants for firms in the British leisure and travel industry for the time period of 2005–2016. They find that growth opportunities and cash flow (also cash flow volatility) positively affect cash holdings while leverage, liquidity, size, dividend payments, and asset intangibility have negative effects on cash holdings of travel and leisure firms.

Previous studies point out the need for a business model specification in order to examine the value of cash holdings. Finance literature has demonstrated that companies facing higher external financing costs (especially in emerging countries) keep higher levels of cash holdings compared to unconstrained firms (Kim & Jang, 2012; Hadlock & Pierce, 2010; Almeida, Campello, & Weisbach, 2004). This is because cash holdings are more valuable since they might help to reduce underinvestment[4] issues (Dogru & Sirakaya-Turk, 2017).

In the context of hospitality companies, firms were usually found not intensive in cash holding reserves (Gao et al., 2013; Kusnadi, 2011) and, thus, have easier access to external financing. Nevertheless, the increasing adoption of the ALFO strategy by hospitality companies has switched the attention from the overinvestment to the underinvestment problem (Li & Singal, 2019). Hence, we can conclude that the pecking order[5] principles for explaining the cash flow behavior of hospitality companies is predominant, whereas the studies carried out in other industries find support for the trade-off theory, giving a prominent role to the precautionary motive (Bates et al., 2009; Opler, Pinkowitz, Stulz, & Wlliamson, 1999; Powell & Baker, 2010).

[4] Underinvestment refers to the situation in which financially constrained firms have profitable investment opportunities but do not have easy access to external funds.

[5] The pecking order theory developed by Myers and Majluf (1984) suggests that the asymmetric information problems when financing through capital markets makes external funds more costly than internal funds.

2.2. Geopolitical risks and cash holdings

Previous literature considers the impact of various uncertainty measures such as stock market volatility (Pinkowitz et al., 2003), volatility in macro-economic conditions (Bhaduri & Kanti, 2011; Baum et al., 2008, 2006), political uncertainty (Xu et al., 2016), and economic policy uncertainty (Demir & Ersan, 2017) on cash holding decisions of firms. However, those uncertainty measures increase during recessions and financial crises and they reflect the impact of economic fluctuations. GPR index is largely independent of business fluctuations especially in the short run. For example, the GPR index did not rise during the dot-com bubble and during the sub-prime mortgage crisis while other uncertainty measures (VIX and EPU) rose significantly in the same periods while those measures cannot capture the effect of Russian annexation of Crimea or terrorist attacks. Therefore, GPR index is different from previously studied alternative measures (Caldara & Iacoviello, 2018).

GPR index is developed by Caldara and Iacoviello (2018) and aims to understand the effects of global tension, friction, and conflict on different economic variables. Since its introduction, the interest of the literature on the effects of GPR on different economic variables is increasing. Cheng and Chiu (2018) show that shocks to global geopolitical risks lead to significant economic contractions in 38 emerging countries. Furthermore, Gupta et al. (2018) find that geopolitical risks negatively affect the trade flows for 18 emerging economies. In terms of studies on financial markets, Gkillas et al. (2018) document that index of GPR causes volatility jumps in Dow Jones Industrial Average. Antonakakis, Gupta, Kollias, and Papadamou (2017) analyze the interrelation between oil prices, stock prices, and geopolitical risks and document that oil return and volatility are negatively affected by geopolitical risks. Baur and Smales (2018) examine the effects of GPR on different financial assets and it is found that gold serves as a safe haven during the rising geopolitical risks period while no other assets has such a property. Balcilar et al. (2018) considers the effect of GPR on BRICS stock markets. They show that GPR do not affect the stock markets in a uniform way.

Geopolitical risks are considered as determinants of economic decisions by policy-makers, investors and media. Hospitality companies are likely to be affected from the geopolitical risks in many aspects. First, geopolitical risks have a negative effect on the tourist inflows (Demir, Gozgor, & Paramati, 2019). The rise in geopolitical risks will make tourists to postpone or cancel their travel plans due to security concerns. As services provided by hospitality industry are substitutable, people may easily prefer to go to the restaurants less or prefer to stay at home causing a decrease in demand for hotels and travel services. Even more, inbound tourists might show a similar behavior. People might prefer not to visit a country when this country is experiencing higher geopolitical risks. Decreasing inbound tourism and domestic tourism will have negative effects on the financial decisions of hospitality firms. Although the number of tourist is decreasing and/or their spending is declining, hospitality companies must still bear the high fixed costs due to capital investment in land and building. Therefore, rising geopolitical risks will force firms to use their cash in hand to meet their ongoing costs and lead to a decrease in cash holdings.

Hence, according to pecking order theory (Myers & Majluf, 1984), the effect of a rise in geopolitical risks will negatively affect hospitality firms' cash holding in emerging countries. First, because the weak regulatory environment, the low information disclosure level (Uyar & Kuzey, 2014) and the inefficient corporate governance in those countries makes external financing cost higher and, thus, firms in such markets must rely more on internally generated funds than in costly external funding (Arslan et al., 2006). Second, because when geopolitical instability arise, hospitality companies will have to make use of their cash reserves, what points out the importance of good cash management in periods of political stability.

Consequently, considering the high dependence of hospitality business on geopolitical sways, we postulate our first hypothesis as follows:

Hypothesis 1. Geopolitical risks negatively affect corporate cash holdings in hospitality firms.

2.3. ALFO strategy and cash holdings

Although the focus of our research is to study the impact of geopolitical risks on hospitality firms' cash holdings, that influence must be explained in a business model context. As argued before, ALFO strategy is gaining a prominent place among the hospitality industry (Li & Singal, 2019).

Hospitality companies have traditionally maintained high fixed costs due to investments in land and building. That inflexibility to face uncertainty periods has led managers to modify their corporate strategies from a fixed assets-based model to a fee-based income one. In order to implement this asset-light strategy, firms can either spend less to acquire new property or sell properties to reduce the amount of fixed assets they have. Thus, the extent to which ALFO strategy affects cash holding policy deserves a deeper analysis.

Accordingly, the role played by capital expenditures in cash holding value is double. On the one hand, finance practice has demonstrated that, when access to credit is easy, companies prefer to hold less cash (Almeida et al., 2004; Hadlock & Pierce, 2010; Kim & Jang, 2012). On the other hand, prior literature shows that whether the assets created by capital expenditures may become collateral if needed, then they may boost indebtedness capacity and reduce cash requirements (Bates et al., 2009).

Therefore, our second hypothesis states that:

Hypothesis 2. Capital expenditures negatively affect corporate cash holdings in hospitality firms.

Regarding the reduction of fixed assets, an efficient working capital management is crucial for hospitality firms' capability to cope with weak financial conditions and increased global uncertainty. Net working capital is commonly classified as a short-term asset and thus, an alternative definition of cash holdings (Demir & Ersan, 2017).

Financially constrained hospitality firms in emerging countries may present low levels of working capital (Mun & Jang, 2015), contrary to what ALFO strategy postulates. Besides, as a firms' working capital reflects both operating efficiency and liquidity, we expect an inverse relationship with corporate cash holdings (Lian, Sepehri, & Foley, 2011).

Thus, our third hypothesis is expressed as follows:

Hypothesis 3. Working capital negatively affects corporate cash holdings in hospitality firms.

3. Sample, data and methodology

3.1. Sample composition and data sources

Our sample consists of 166 hospitality companies located in emerging countries[6] for the period 2008–2017. On the one hand, companies' selection has been made following the Thomson Reuters Business Classification TRBC code provided by THOMSON EIKON database. On the other hand, country selection has considered two dimensions: the availability of geopolitical risks data and being one of the 25 top emerging tourist destinations according to the World Bank Databases. Annex 1 provides the top 25 countries in terms of tourist arrivals in 2017 for all countries (Panel A) and for emerging economies (Panel B). As our paper focuses on emerging economies, we consider the number

[6] The consideration of emerging country is based on the classification provided by the International Monetary Fund (IMF), in its World Economic Outlook of April 2016.

Table 1
Sample composition by countries and sub-industry.
Source: Thomson Eikon database.

Sub-industry	Malaysia	Mexico	Thailand	Turkey	Argentina	Brazil	China	Total
Airline services	4	5	5	4	0	1	15	34
Hotels and resorts	16	7	20	8	0	2	14	67
Leisure and recreation	11	1	1	0	0	1	11	25
Tourist services	5	0	5	1	1	1	27	40
Total	36	13	31	13	1	5	67	166

of listed hospitality companies in those countries. Accordingly, the list of countries in the dataset is constructed based on two criteria: being among top tourism markets and having listed companies in hospitality industry. In most of the emerging economies, the stock market is not well-developed and, therefore, there are very limited number of listed companies in the whole stock market. Table 1 presents the number of companies by country and hospitality sub-industry.

Accounting and financial data has been obtained from THOMSON EIKON database. The difficulty in obtaining complete financial data (firms without data for at least three consecutive years) does not allow the study of all hospitality companies in each country. Thus, the final sample consists of companies of different sizes.

3.2. Variables explanation and empirical model

3.2.1. Cash holdings

For testing firm cash holdings determinants, previous research has utilized alternative cash ratios. In our study, we use two complementary measures of a firm's cash level. First, cash holdings (CASH) is calculated as the ratio of cash and cash equivalents to net assets (total assets minus cash and cash equivalents) (Boubakri, El Ghoul, & Saffar, 2013; Demir & Ersan, 2017; Dittmar, Mahrt-Smith, & Servaes, 2003; Dogru & Sirakaya-Turk, 2017; Kim et al., 2011; Lian et al., 2011; Mun & Jang, 2015). An alternative measure of cash holdings (CASH1) is defined as the ratio of cash and cash equivalents to total assets (Boubakri et al., 2013; Hardin, Highfield, Hill, & Kelly, 2009; Ozkan & Ozkan, 2004).

3.2.2. Geopolitical risks

Our model makes use of the geopolitical risks (GPR) measure developed by Caldara and Iacoviello (2018). They define the geopolitical risks as the "*risk associated with wars, terrorist acts, and tensions between states that affect the normal and peaceful course of international relations*" (Caldara & Iacoviello, 2018, p. 2). This index does not only consider the impact of conflicts and political instability but also the effects of terrorist events. Unlike previous measures of this kind of risk (Brink, 2004; Busse & Hefeker, 2007), GPR calculation is based on the frequency of articles in leading newspapers discussing rising geopolitical tensions, such as wars, terrorism or tensions between states. The index is built by reckoning the number of articles related to geopolitical risks in 11 leading newspapers as a share of total number of articles in each month and then this value is normalized to average a value of 100 for the period of 2000–2009. The index reflects the impacts of important events such as Paris attacks, ISIS Escalation, and Annexation of Crimea by the Russian Federation. This index overcomes several shortcomings (such as lack of clear definition of what they measure, difficulty of replication, publicly unavailability and lack of transparency in calculation methodology) of existing indicators that make them relatively poorly suited for empirical analysis. The data for this index is updated monthly.[7] Since our financial data are calculated annually, our measure of geopolitical risks (LNGPR) is calculated as the natural logarithm of the annual average of GPR. We use the natural logarithm because the original GPR data is not evenly distributed in our sample.

3.2.3. ALFO strategy dimensions

According to prior research (Li & Singal, 2019; Dogru & Sirakaya-Turk, 2017; Bates et al., 2009 and Opler et al., 1999), capital expenditures variable (CE) is defined as the ratio of capital expenditure to total assets. Working capital (NWC) variable is calculated as the ratio of current assets minus current liabilities and cash and cash equivalents to net assets (Lian et al., 2011; Mun & Jang, 2015).

3.2.4. Control variables

We have introduced in our model several firm-level relevant control variables according to prior research on corporate cash holdings.

3.2.4.1. Return on assets. To control for a firm profitability, the return on assets ratio (ROA) is used and calculated as the ratio of net income to total assets. The rationale is that companies with more profitable investment opportunities are those which show high productivity, and hence will receive a higher cash inflow (Ferreira & Vilela, 2004; Kim et al., 2011).

3.2.4.2. Firm size. Firm size plays a relevant role on a firm's cash holdings and there is plenty of empirical support for a negative relationship (Bates et al., 2009; Ferreira & Vilela, 2004; Kim et al., 2011; Opler et al., 1999). For reducing considerable asset variance across our sample, firm size (SIZE) is measured as the natural logarithm of total assets.

3.2.4.3. Leverage. The literature provides two perspectives on the relationship between a company's leverage and cash holdings. On the one hand, highly indebted companies should maintain more cash in order to face their greater default likelihood. That is why Ferreira and Vilela (2004) show that those firms tend to accumulate more cash. On the other hand, debt issuance is considered to be a proper mechanism to reduce the agency costs derived from the free cash flow issue, and thus, Hardin et al. (2009) argue that leverage is negatively associated with corporate cash holdings. Considering these two competing theories, we define (LEV), as the ratio of total liabilities to total assets.

3.2.4.4. Market variables. To consider the influence of the market, we include in the model the market to book ratio (MB) and the dividend pay-out ratio (DIV). Prior empirical studies on the relationship between this two market variables and cash holdings have been inconclusive. Whereas some posit a positive influence (Demir & Ersan, 2017; Opler et al., 1999) others find a negative one (Bates et al., 2009; Kim et al., 2011). Even Ferreira and Vilela (2004) or Ozkan and Ozkan (2004) fail to find a significant correlation. Considering that those previous results are conditioned for the sample used, the influence of both market variables on corporate cash holdings is inconclusive at this stage.

Based on the definition of variables, Table 2 shows the expected signs of the relationship between cash holdings and the geopolitical risk hypothesis, in addition to the control variables considered.

3.2.5. Empirical method

Our empirical framework starts by showing the main characteristics

[7] Data can be retrieved from the authors website: https://www2.bc.edu/matteo-iacoviello/gpr.htm.

Table 2
Explanatory variables and their expected signs on cash holdings.

Hypothesis	Explanatory variable	Definition	Expected signs
H1	LNGPR	Natural logarithm of GPR index	(−)
H2	CE	Capital expenditures to total assets	(−)
H3	NWC	[current assets – (current liabilities + cash + cash equivalents)]/net assets	(−)
Control	ROA	Return on assets	(+)
Control	SIZE	Natural logarithm of total assets	(−)
Control	LEV	Total liabilities to total assets	¿?
Control	MB	Market to book	¿?
Control	DIV	Dividend pay-out ratio	¿?

of our sample by a descriptive study. Proceeding this way, we provide initial evidence about the impact of geopolitical risks as well as other relevant variables on corporate cash holdings.

Subsequently, we test the hypotheses through an empirical analysis and our estimation model is as follows:

$$CASH_{i,t} = \beta_0 + \beta_1 LNGPR_{i,t} + \beta_2 ROA_{i,t} + \beta_3 CE_{i,t} + \beta_4 NWC_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 LEV_{i,t} + \beta_7 MB_{i,t} + \beta_8 DIV_{i,t} + YEAR + \eta_i + \varepsilon_{i,t} \quad (1)$$

being:

- i: firm
- t: time period
- η_i: fixed-effects term of each firm
- $\varepsilon_{i,t}$: stochastic error.

Given the characteristics of our sample, we employ panel data methodology to estimate the proposed model. Specifically, by using the generalized method of moments (GMM) we control for the constant unobserved heterogeneity can be controlled (included in the fixed-effects term η_i) and overcome the possible endogeneity of variables (Blundell & Bond, 2000; Blundell, Bond, & Windmeijer, 2000; Bond, 2002). Thus, Tables 5 and 6 include the model specification tests (Hansen and AR2 tests).

4. Main findings

4.1. Descriptive statistics

The descriptive statistics of the variables are presented in Table 3. While Panel (A) and (B) report country and sub-industry specific means respectively, overall descriptive statistics on the variables are provided in Panel (C).

First, in order to avoid outliers in our sample, all variables are winsorized at 1% (Boubakri et al., 2013; Demir & Ersan, 2017). The data shows that, on average, the firms in our sample hold 11.2% of their net assets in cash (15.4% for CASH1 Variable). It is remarkable that those values are conditioned by Argentina and China ones (21.3% and 17.5% respectively). Regarding geopolitical risks (LNGPR), the data show that, on average, the considered countries present a punctuation of 4.639. In this case, three countries (Mexico, Thailand and Turkey) are above this value.

Regarding sub-industry data, hotels and resorts and leisure and recreation present lower levels of corporate cash holding on average, whereas the mean values for capital expenditures and working capital reveal that those sub-industries are more intensive in following the ALFO strategy.

Concerning the control variables, the firms in our sample present a relatively high level of growth (proxy by MB) implying that the market is highly valuing this industry around the world, especially in China (3.438). Our sample also considers firms of different sizes, as well as very indebted firms (on average, the leverage ratio is 74.2%), except for Argentina (34.2%).

Table 4 shows the Pearson correlations between the variables. Both CASH and CASH1 are negatively correlated with LNGPR while it is negatively related with the rest of control variables, except for SIZE and LEV that present an insignificant correlation. Moreover, there are no multicollinearity issues among the variables.

4.2. Multivariate analysis

Table 5 reports the estimations of equation (1). Similar to prior studies on this field, reduced models are estimated in a first stage (Boubakri et al., 2013; Dittmar et al., 2003). Thus, in columns 1 and 4 we first run the univariate regression model with LNGPR variable, where the effect of geopolitical risks on corporate cash holdings is analyzed, without considering other control variables. In a second model (columns 2 and 5), we include the previously discussed firm level variables, i.e. return on assets, capital expenditures, net working capital, size and leverage. Lastly, in a third model (columns 3 and 6), we include both market to book and dividend pay-out ratio.

The coefficient of LNGPR is negative and significant in all models and for the two measures of the dependent variables. Specifically, LNGPR coefficient in column 3 (6) is −0.126 (−0.154), what means that a 1% increase in LNGPR has an estimated 12.6% (15.4%) decrease in CASH (CASH1) ratio. When the geopolitical risks are rising, firms in the hospitality industry tend to use their cash in hand to meet their ongoing costs and lead to a decrease in cash.

The negative association between capital expenditures (CE) and cash holdings is consistent with the idea that the investments made through capital expenditures may be used to collateralize borrowing (Bates et al., 2009). Thus, debt capacity may be increased by capital expenditures, reducing the cash holding needs, confirming our second hypothesis.

We find a negative significant relationship between net working capital (NWC) and corporate cash holdings. As non-cash liquid assets can be paid off if there is a need for cash, they serve as a close substitute for cash holdings (Bates et al., 2009; Demir & Ersan, 2017). Thus, firms may prefer to rely more on liquid assets rather than on the capital markets (Ozkan & Ozkan, 2004). Therefore, companies that hold more non-cash liquid assets can save the substantial fixed cost of obtaining external funds in case of cash shortcomings, allowing them to hold less cash, what confirms our third hypothesis.

Regarding control variables, the profitability measured by ROA positively influence cash holdings, which is consistent with our assumption. In fact, firms with profitable investment opportunities and cash inflow present better performance, what leads to excessive cash holdings levels.

The market to book ratio (MB) is positively related with cash holdings. Companies with higher market to book ratio are expected to have higher growth opportunities and hence, being able to maintain larger cash holdings as insurance against needs in liquid assets (Hardin et al., 2009; Opler et al., 1999).

The dividend pay-out ratio (DIV) is negatively related to corporate cash holdings. This result implies that firms that present a higher dividend ratio, are able to hold less cash as they are more efficient in accessing capital markets (Ferreira & Vilela, 2004; Opler et al., 1999). By reducing their dividend payments, firms may obtain resources at a lower cost, although they are also likely to be less risky and have easier access to capital markets.

Lastly, we must mention that we find no significance for company size and leverage, in accordance with the insignificant correlation among those variables and both measures of cash holdings reported in Table 4.

We have carried out additional robustness tests to make our findings more consistent. First, we have included in the model appropriate country and sub-industry dummies (columns 1–2 and 4–5 of Table 6,

Table 3
Descriptive statistics.

Panel (A)

Country	CASH	CASH1	LNGPR	ROA	CE	NWC	SIZE	LEV	MB	DIV
Malaysia	0.063	0.079	4.595	0.028	0.043	0.027	19.293	0.770	1.365	0.015
Mexico	0.098	0.121	4.731	0.068	0.067	0.020	20.638	0.836	2.247	0.022
Thailand	0.061	0.078	4.659	0.057	0.055	0.025	19.335	0.715	2.513	0.030
Turkey	0.066	0.083	4.866	0.031	0.045	0.018	19.133	0.770	1.876	0.006
Argentina	0.213	0.275	4.600	0.050	0.019	0.106	19.073	0.342	0.216	0.023
Brazil	0.078	0.090	4.606	0.051	0.034	0.122	20.719	0.656	2.232	0.008
China	0.175	0.254	4.594	0.051	0.077	0.070	20.332	0.723	3.438	0.023

Panel (B)

Sub-industry	CASH	CASH1	LNGPR	ROA	CE	NWC	SIZE	LEV	MB	DIV
Airline services	0.120	0.162	4.655	0.062	0.076	0.033	21.446	0.764	2.331	0.022
Hotels & resorts	0.092	0.124	4.663	0.040	0.058	0.032	19.146	0.770	2.443	0.022
Leisure & recreation	0.099	0.133	4.604	0.044	0.051	0.054	19.544	0.728	2.573	0.020
Tourist services	0.156	0.231	4.609	0.045	0.064	0.067	19.757	0.698	3.010	0.020

Panel (C)

Variable	Mean	Std. Dev	Median	Minimum	Maximum
CASH	0.112	0.118	0.077	0.000	0.557
CASH1	0.154	0.219	0.083	0.000	1.259
LNGPR	4.639	0.179	4.603	4.268	5.099
ROA	0.046	0.075	0.048	−0.254	0.259
CE	0.061	0.064	0.039	0.000	0.298
NWC	0.046	0.090	0.023	−0.126	0.461
SIZE	19.846	1.736	19.777	16.177	24.081
LEV	0.742	0.182	0.768	0.004	0.990
MB	2.534	2.656	1.661	−0.418	16.115
DIV	0.020	0.027	0.013	0.000	0.146

Note: Panel (A) shows the mean values for each variable in each country. Panel (B) shows the mean, standard deviation, median, minimum, and maximum values of the model variables. See Table 2 for variable definitions.

Table 4
Correlation matrix.

Variable	CASH	CASH1	LNGPR	ROA	CE	NWC	SIZE	LEV	MB
CASH1	0.966***								
LNGPR	−0.058**	−0.048*							
ROA	0.204***	0.171***	−0.014						
CE	0.048*	0.012	−0.048*	0.079**					
NWC	0.186***	0.157***	−0.003	0.215***	−0.047*				
SIZE	0.012	−0.010	−0.003	0.177***	0.069***	0.045*			
LEV	0.024	0.025	0.073***	0.114***	0.010	−0.116***	0.025		
MB	0.268***	0.247***	−0.061**	0.229***	0.078***	0.294***	−0.090***	−0.112***	
DIV	0.115***	0.097***	−0.034	0.477***	0.121***	0.204***	−0.023	−0.057**	0.284***

Note: ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively. See Table 2 for variable definitions.

respectively). Sub-industry classification is the one reported in Table 1, which follows the TRBC sector code classification provided by THOMSON EIKON database. As another robustness check, we test model 1 excluding the observations from Argentina and Brazil (results are given in columns 3 and 6 of Table 6). We proceed this way for two reasons: on the one hand, as reported in Table 3, mean values for both CASH and CASH1 are extremely high in Argentina, and, on the other hand, the weight of both countries in the sample is less than 4%, what may condition our findings.

Our findings indicate that the negative effect of geopolitical risks (LNGPR) on cash holdings is robust to all considered countries and to the four sub-industries. Moreover, the possible outlier effect of Argentina and Brazil is not relevant.

We must mention that the effect of company size (SIZE) becomes relevant in our robustness models, confirming previous related research on cash holdings (Bates et al., 2009; Kim et al., 2011; Opler et al., 1999). In all cases, a negative relationship between firm size and both measures of cash holdings is found, in accordance to the fact that larger firms take advantage of economies of scale in cash management, what allows them to maintain less cash. Lastly, the effect of ALFO strategy (collected in (CE) and (NWC)) on corporate cash holdings remains negative and significant.

5. Conclusion, implications, and suggestions for future studies

We analyze the relation between geopolitical risks (GPR) and corporate cash holdings among 166 hospitality companies from seven emerging countries (Malaysia, Mexico, Thailand, Turkey, Argentina, Brazil and China) for the period 2008–2017. The sample selection has been done considering the growing relevance of those countries in the worldwide tourism industry. Specifically, we have introduced in the cash holding literature an alternative measure of uncertainty, measured by the GPR index provided by Caldara and Iacoviello (2018). Our main finding reveals that, according to pecking order theory, cash holding of

Table 5
Results of the estimation of model 1.

	CASH						CASH1					
	Geopolitical risks		Firm-level variables		Market variables		Geopolitical risks		Firm-level variables		Market variables	
$CASH_{t-1}/CASH1_{t-1}$	0.568	***	0.715	***	0.578	***	0.527	***	0.683	***	0.536	***
	(0.061)		(0.056)		(0.067)		(0.041)		(0.034)		(0.041)	
LNGPR	−0.145	***	−0.138	***	−0.126	**	−0.191	***	−0.258	***	−0.154	**
	(0.051)		(0.051)		(0.053)		(0.069)		(0.079)		(0.077)	
ROA			0.135	***	0.149	***			0.219	***	0.222	***
			(0.030)		(0.035)				(0.044)		(0.055)	
CE			−0.213	***	−0.162	***			−0.352	***	−0.257	***
			(0.042)		(0.043)				(0.068)		(0.064)	
NWC			−0.034	**	−0.005	**			−0.086	**	−0.049	**
			(0.047)		(0.054)				(0.077)		(0.112)	
SIZE			−0.001		0.001				−0.001		0.001	
			(0.001)		(0.001)				(0.002)		(0.002)	
LEV			0.004		0.005				0.019		0.010	
			(0.013)		(0.014)				(0.022)		(0.023)	
MB					0.001	**					0.003	**
					(0.001)						(0.003)	
DIV					−0.111	***					−0.118	***
					(0.110)						(0.197)	
YEAR	YES		YES		YES		YES		YES		YES	
Constant	0.704	**	0.670	***	0.612	**	0.928	***	1.216	***	0.736	**
	(0.235)		(0.236)		(0.251)		(0.320)		(0.365)		(0.372)	
Wald Test (g.l.)	304.28 (9)	***	553.60 (14)	***	428.98 (16)	***	662.48 (9)	***	974.79 (14)	***	711.07 (16)	***
m1	−4.34	***	−4.39	***	−4.05	***	−3.30	***	−3.30	***	−3.13	***
m2	1.63		1.64		1.52		0.92		0.87		0.89	
Hansen Test (g.l.)	20.57 (20)		18.89 (20)		18.52 (20)		23.34 (20)		21.25 (20)		25.42 (20)	

Note: ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively. See Table 2 for variable definitions.

Table 6
Robustness checks.

	CASH						CASH1					
	Country dummies		Country + sub-industry dummies		Without Brazil and Argentina		Country dummies		Country + sub-industry dummies		Without Brazil and Argentina	
CASH/CASH1 (t-1)	0.558	***	0.555	***	0.539	***	0.529	***	0.553	***	0.500	***
	(0.065)		(0.062)		(0.059)		(0.045)		(0.038)		(0.039)	
LNGPR	−0.141	***	−0.139	***	−0.132	**	−0.164	**	−0.164	**	−0.163	**
	(0.049)		(0.048)		(0.053)		(0.077)		(0.076)		(0.072)	
ROA	0.161	***	0.160	***	0.158	***	0.244	***	0.271	***	0.245	***
	(0.038)		(0.037)		(0.035)		(0.056)		(0.058)		(0.057)	
CE	−0.202	***	−0.209	***	−0.162	***	−0.343	***	−0.346	***	−0.274	***
	(0.041)		(0.041)		(0.042)		(0.068)		(0.089)		(0.066)	
NWC	−0.037	**	−0.027	*	−0.021	**	−0.072	**	−0.050	**	−0.006	**
	(0.052)		(0.052)		(0.060)		(0.112)		(0.127)		(0.126)	
SIZE	−0.004	**	−0.005	***	−0.002	*	−0.004	*	−0.008	**	−0.004	*
	(0.002)		(0.002)		(0.001)		(0.003)		(0.005)		(0.003)	
LEV	0.017		0.014		0.001		0.026		0.025		0.009	
	(0.014)		(0.015)		(0.015)		(0.023)		(0.042)		(0.025)	
MB	0.001	*	0.001	*	0.001	**	0.001	**	0.001	**	0.003	***
	(0.001)		(0.001)		(0.001)		(0.003)		(0.003)		(0.003)	
DIV	−0.006	**	−0.022	**	−0.155	***	−0.024	**	−0.075	*	−0.193	**
	(0.105)		(0.108)		(0.109)		(0.184)		(0.304)		(0.198)	
YEAR	YES		YES		YES		YES		YES		YES	
COUNTRY	YES		YES		YES		YES		YES		YES	
SUB-INDUSTRY	NO		YES		YES		NO		YES		YES	
Constant	0.761	***	0.777	***	0.706	**	0.855	**	0.969	***	0.891	**
	(0.245)		(0.242)		(0.255)		(0.363)		(0.370)		(0.348)	
Wald Test (g.l.)	733.99 (20)	***	757.45 (23)	***	554.94 (19)	***	879.55 (20)	***	978.41 (23)	***	888.19 (19)	***
m1	−4.23	***	−4.20	***	−3.86	***	−3.17	***	−3.23	***	−3.02	***
m2	1.43		1.43		1.40		0.86		0.84		0.84	
Hansen Test (g.l.)	16.87 (20)		16.42 (20)		17.09 (20)		24.14 (20)		22.48 (20)		24.79 (20)	

Note: ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively. . See Table 2 for variable definitions.

hospitality industries are negatively affected by GPR.

Besides, our study emphasizes the importance on studying cash holdings' policy under a business model. Our results confirm that ALFO strategy is gaining a prominent place among the hospitality industry (Li & Singal, 2019). Both capital expenditures and working capital reduce corporate cash holdings, what should be considered when hospitality firm managers decide to implement such kind of strategy.

Our findings may have implications for academia, policy makers and practitioners. First, we demonstrate that, for hospitality industries, GPR becomes an appropriate measure of environmental risk. As it is

defined, GPR considers the effect of terrorist events, conflicts and political instability, rather than economic fluctuations. As hospitality firms are very sensitive to those facts, we can isolate their effect by using the index and, hence, explain how sensitive cash holdings to GPR variations are. Second, we demonstrate that, because of their business characteristics, hospitality firms cash holdings are negatively affected by GPR, as rising geopolitical risks may make companies to use their cash in hand to meet their ongoing costs because of a decrease in tourist inflows.

This study also provides implications for policy makers and managers. The negative relationship between firms' cash holdings and GPR implies a reduction of the quick ratio and, hence, create a liquidity problem. Thus, on the one hand, governments should promote the adoption of balanced cash levels in hospitality companies in order to overcome possible short-term liquidity imbalances. On the other hand, public authorities ought to facilitate credit channels for this kind of companies when liquidity problems arise, especially if the geopolitical environment is unsteady.

We also show that there is a need for a good cash management in periods of political stability, since hospitality companies will have to make use of their cash reserves when instability arise. This issue is more relevant for companies in emerging economies, where external financing costs are higher and, traditionally, firms in such markets rely more on internally generated funds.

Lastly, our paper adds to the incipient field of studies that analyses the determinants of corporate cash holdings in hospitality firms. In fact, our control variables influence is in line with previous studies what, apart from validating our model specification, contributes to the existing literature by studying a cross-country sample and by using panel data methodology. A future line of research may consider ownership and board dimensions of hospitality firms, in order to better explain possible governance issues, apart from considering the impact of alternative uncertainty measures such as EPU and VIX (Volatility Index) on financial decisions of hospitality companies.

Annex 1

Top 25 international tourist arrivals - 2017 (million).

Source: World Bank Databases (https://databank.worldbank.org).

Rank	PANEL A - ADVANCED & EMERGING ECONOMIES		PANEL B - EMERGING ECONOMIES	
	Country	Arrivals	Country	Arrivals
1	France	86.861	China	60.74
2	Spain	81.786	Mexico	39.291
3	United States	76.941	Turkey	37.601
4	China	60.74	Thailand	35.592
5	Italy	58.253	Malaysia	25.948
6	Mexico	39.291	Russian Federation	24.39
7	United Kingdom	37.651	Poland	18.258
8	Turkey	37.601	Saudi Arabia	16.109
9	Germany	37.452	Croatia	15.593
10	Thailand	35.592	India	15.543
11	Austria	29.46	Ukraine	14.23
12	Japan	28.691	Indonesia	14.04
13	Hong Kong SAR, China	27.884	Vietnam	12.922
14	Greece	27.194	Bahrain	11.37
15	Malaysia	25.948	Morocco	11.349
16	Russian Federation	24.39	Belarus	11.0602
17	Canada	20.798	Romania	10.926
18	Poland	18.258	South Africa	10.285
19	Netherlands	17.924	Bulgaria	8.883
20	Macao SAR, China	17.255	Egypt, Arab Rep.	8.157
21	Saudi Arabia	16.109	Kazakhstan	7.701
22	Croatia	15.593	Tunisia	7.052
23	India	15.543	Argentina	6.72
24	Portugal	15.432	Philippines	6.621
25	Ukraine	14.23	Brazil	6.589

∗ Classification based on the International Monetary Fund (IMF), see the Statistical Annex of the IMF World Economic Outlook of April 2016, page 146.

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