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The effects of multinationality on the market value of cash: Evidence from Latin America

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ABSTRACT

The aim of this paper is to examine whether the value investors place on cash holdings varies between multinationals and domestic firms from Latin America. Utilizing data from the six largest Latin American economies, our analyses with different proxies of multinationality reveal that investors do not attribute a significant valuation premium, nor do they impose a price discount, on the cash held by Latin American multinational corporations (Multilatinas) when compared to the cash of their domestic counterparts. These findings suggest that shareholders do not view Multilatinas' cash holdings as conferring greater advantages relative to those of domestic firms. We interpret this as evidence that the perceived benefits of multinationality, such as increased growth potential, may be counterbalanced by elevated agency costs and greater information asymmetry. Our study advances the literature on cash holdings and international business and discusses implications for stakeholders of multinational corporations that have subsidiaries in countries with potential growth opportunities but in which poor investor protection may lead to agency conflicts and the risk of improper cash diversion. Our research yields important implications for policymakers by highlighting the relevance of requiring the disclosure of disaggregated information about domestic and foreign cash to improve efficiency in stakeholder decision-making.

1. Introduction

The aim of this paper is to examine whether the value investors place on cash holdings varies between multinationals and domestic firms from Latin America. One of the most crucial financial decisions that administrators make in the presence of agency conflicts and information asymmetry relates to the amount of total assets that should be held in the form of cash and cash equivalents in a firm in order to maximize its value (Almeida et al., 2014; Manoel and Moraes, 2022a; Ramírez and Tadesse, 2009). Organizations worldwide

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retain sizable amounts of cash on their balance sheets (Al-Najjar, 2013; Foley et al., 2007; Harford et al., 2017; Opler et al., 1999) and the topic of cash reserves has recently gained growing interest from academics, policymakers, and practitioners (Bates et al., 2018; Faulkender et al., 2019; Graham and Leary, 2018; Harford et al., 2017; Manoel and Moraes, 2022b).

The heightened attention to the determinants of cash reserves and cash value has largely stemmed from U.S. multinational firms' notable surge in cash holdings (Faulkender et al., 2019; Fernandes and Gonenc, 2016; Graham and Leary, 2018). Nevertheless, despite the rich insights into the cash management of U.S. publicly listed companies, the mainstream research on cash holdings and international business (IB) falls short in providing evidence regarding the value shareholders assign to each additional dollar of cash in multinational corporations (MNCs) compared to their domestic counterparts. Notably, even in the North American context, existing research predominantly focuses on elucidating the factors that contributed to the substantial increase in average cash ratios among these MNCs since 2000 (Faulkender et al., 2019; Fernandes and Gonenc, 2016; Graham and Leary, 2018). Additionally, some recent manuscripts shed light on the value consequences for stakeholders resulting from the strategic retention of high levels of cash abroad by U.S.-based MNCs as a strategy to circumvent repatriation costs (e.g., Hanlon et al., 2015).

Certain circumstances tend to enhance the perceived value of cash holdings, such as the presence of superior growth prospects (Pinkowitz and Williamson, 2007) and higher levels of financial constraints (Denis and Sibilkov, 2010; Faulkender and Wang, 2006). Conversely, other conditions can diminish the market value of cash. These include a high degree of information asymmetry (Drobetz et al., 2010; Huang and Zhang, 2012), increased agency conflicts (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Huang and Zhang, 2012; Louis et al., 2012; Manoel et al., 2023), and the lack of effective investor protection (Kalcheva and Lins, 2007; Pinkowitz et al., 2006).

Multinationals often benefit from broader growth opportunities and greater access to external funding than domestic firms (Doukas and Pantzalis, 2003). However, the multinational context also introduces unique challenges, such as greater agency costs and heightened information asymmetries between managers and shareholders, particularly between headquarters and subsidiaries. Additionally, many MNCs operate in regions with weaker shareholder protections and less robust governance frameworks than those in their home countries (Agyei-Boapeah et al., 2020; Doukas and Pantzalis, 2003; Harford et al., 2017; Ul Haq et al., 2017). Theoretically, internationalization may affect the market value of cash both positively and negatively, creating competing impacts on cash valuation for MNCs compared to domestic firms. Consequently, whether internationalization leads to a valuation premium or discount for cash holdings remains an open empirical question. In this manuscript, we aim to provide empirical evidence to address this gap in the cash holdings and international business literature.

Given this backdrop, we explore the following question in this paper:

Does the market value of cash holdings for MNCs originating from Latin America exceed that of their domestic counterparts?

To address this question, we draw upon theoretical frameworks related to financial constraints, tax motivations, as well as agency and information asymmetry theories. By applying these frameworks in the Latin American context—a region characterized by weak investor protections and heightened expropriation risks for shareholders (Aguinis et al., 2020; Chong and López-de-Silanes, 2007) — we examine whether the value investors place on cash holdings varies between multinationals and domestic firms from Latin America, balancing the perceived growth opportunities with the agency and information asymmetry costs tied to multinational operations. Our study thus advances theoretical understanding by showing that the presumed benefits of multinationality, such as expanded growth potential, may be mitigated or even outweighed by elevated agency costs and greater information asymmetry.

The paper most closely related to our study is that of Harford et al. (2017), which examines how tax constraints, alongside financing frictions and potential agency problems, influence the deployment of cash and, consequently, the valuation of foreign cash holdings by shareholders. Harford et al. (2017) analyzed a sample of U.S.-based MNCs from 1997 to 2012. Their dataset, which includes the foreign cash ratio, comprises 389 distinct firms and 657 firm-year observations. The authors' empirical analysis demonstrated that shareholders tend to discount a firm's cash holdings as the proportion of cash held overseas increases. Specifically, their findings indicate that for each standard deviation increase in a company's foreign cash ratio, the market value of global cash declines by $0.31. They attribute these results to the combined effects of taxes, financial constraints, and agency issues, which collectively contribute to the discounted valuation of foreign cash. Our study takes a different approach, focusing on the consolidated level of cash holdings rather than separately analyzing domestic and foreign cash due to the unavailability of detailed foreign cash data for Latin American firms.

Other studies have delved into related yet distinct research objectives. For instance, Fernandes and Gonenc (2016) examined the association between cash holdings, distinct from the market value of cash, and the level of multinationality. Faulkender et al. (2019) sought to enhance our understanding of the recent surge in firms' cash balances. Specifically, they examined the relative significance of tax motivations compared to alternative explanations. Additionally, Pinkowitz et al. (2016) conducted comparative analyses of the cash reserves held by U.S. and foreign MNCs to ascertain whether disparities in the magnitude of cash holdings across countries are attributed to firm-specific characteristics or country-level factors.

Despite these valuable contributions, a theoretical gap remains regarding the impact of internationalization on the value investors assign to cash holdings. To the best of our knowledge, our article is the first to examine whether the value investors place on cash reserves varies between multinationals and domestic firms, considering both developed and developing markets. By addressing this gap, our research introduces a novel perspective to the literature by incorporating the internationalization dimension into the analysis of the market value of cash. Furthermore, the distinctive nature of our research objective provides important contributions to the international business community, as cash management is crucial to all firms and may carry unique implications for firm value, regardless of whether the firms are multinational or domestic.

The rise of emerging markets multinationals (EMMs) is relevant to economic liberalization and globalization (Cuervo-Cazurra, 2007, 2008, 2016; Luo and Zhang, 2016). As companies become increasingly global, so do their cash reserves. Hence, given the rise of EMMs in general and the increasing importance of Multilatinas to the world economy, extending the debate about the value that

investors attach to their cash balances in comparison to their domestic counterparts' cash gains relevance (Manoel and Moraes, 2022b). Additionally, from an international business perspective, as most studies on EMMs have focused on China and India, the IB literature calls for research on other emerging economies to advance the understanding of the behavior of EMMs (Cuervo-Cazurra, 2007, 2008, 2016; Luo and Zhang, 2016; Nielsen et al., 2018; Pattnaik et al., 2021). This article is a step in this direction.

A Latin American context offers valuable insights for academic studies (Aguinis et al., 2020; Borda Reyes et al., 2019; Cuervo-Cazurra, 2007, 2008), although the generalizability of our findings to other settings may vary. First, capital markets in Latin America are significantly smaller and less liquid than those in the United States. Consequently, access to international markets may enable Multilatinas to mitigate some of the financial constraints present in their domestic markets (Manoel and Moraes, 2022a). As a result, access to international funding sources is expected to affect the contribution of Multilatinas' cash balances to shareholder wealth. Second, firms from Latin America generally experience poor investor protection, weak market infrastructures, and high levels of corruption (Aguinis et al., 2020; Chong and López-de-Silanes, 2007), factors that can facilitate cash expropriation by entrenched managers (Kalcheva and Lins, 2007; Manoel and Moraes, 2022a; Pinkowitz et al., 2006). The value the market assigns to cash resources, in turn, is a valuable proxy of the degree of the private benefits of control and allows us to provide some proof of the magnitude of their degree (Huang and Zhang, 2012).

Third, many Latin American companies, which historically served only their home-country markets, began to expand their activities into other markets[1] (Aguilera et al., 2017; Carneiro et al., 2018; Casanova et al., 2009; Cuervo-Cazurra, 2008). However, unlike other MNCs from developed economies, most Multilatinas explore their growth opportunities in neighboring countries instead of choosing a worldwide internationalization pattern (Aguilera et al., 2017; Carneiro and Brenes, 2014; Casanova et al., 2009; Cuervo-Cazurra, 2008). Thus, due to the fact that they usually operate across neighboring countries with historical, institutional, social, and economic similarities that diverge from MNCs from developed markets, then the two sets of companies (Multilatinas vs. domestic Latin American firms) that are compared in this study are similar to each other and face similar economic conditions and legal institutions. These similarities, in turn, mitigate confounding effects and increase comparability (Cuervo-Cazurra, 2007, 2008, 2016).

As briefly discussed in this section and further elaborated upon in Section 2, corporate multinationality theoretically encompasses both positive and negative factors that can influence investors' perceptions of the contribution of corporate cash holdings to firm value. Therefore, by using the Latin American setting, we can better capture the influence of the degree of internationalization on the market value of cash, if any, while reducing the possible undue influence of other factors such as varying levels of governance standards, regulatory environments, and investor protection.

Last but not least, the Latin American setting is unique in the literature because it has received scant scrutiny from researchers (Cuervo-Cazurra, 2016; Manoel and Moraes, 2022b), and the predictions from existing theories, which researchers developed by examining MNCs from advanced economies, may not be fully applicable for them (Cuervo-Cazurra, 2007). In light of this, Nguyen (2017) and Nguyen and Kim (2020) highlight the need to broaden the geographic focus in international business research beyond U.S. firm datasets to enhance the generalizability of research outcomes. In conclusion, Latin America is an under-researched setting with the possibility of offering new insights for developing cash holdings and IB theories (Aguinis et al., 2020; Cuervo-Cazurra, 2007, 2008, 2016; Luo and Zhang, 2016; Manoel and Moraes, 2022b).

The determination of the market value of cash relies on investor expectations regarding its potential utilization (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Kalcheva and Lins, 2007; Manoel et al., 2023). Collectively, our empirical evidence indicates that the value that investors attach to Multilatinas' cash balances does not differ substantially from that of non-Multilatinas'. Hence, despite the greater value-enhancing investment opportunities of Multilatinas, investors do not perceive Multilatinas' cash holdings as providing greater benefits than their domestic peers' cash. Accordingly, they do not put a statistically significant premium on Multilatinas' cash holdings vis-a-vis the cash of their domestic counterparts. The empirical findings remain robust across various robustness checks, including various internationalization measures and alternative regression specifications.

Our study makes several significant contributions to corporate cash holdings and international business literature. First, it broadens the scope of cash management research by incorporating the dimension of internationalization, offering novel insights into how multinationality influences the value investors attribute to cash holdings. Second, it addresses the call for greater geographic diversity in international business studies by moving beyond the predominantly U.S.-centric focus (e.g., Cuervo-Cazurra, 2007, 2008, 2016; Luo and Zhang, 2016; Pattnaik et al., 2021). Third, the study enhances the theoretical framework by integrating a wide range of arguments. It evaluates both the positive aspects of multinational operations, such as access to growth opportunities, and the negative factors, including information asymmetry, agency conflicts between headquarters and subsidiaries, and limited disclosure of foreign cash holdings, which collectively heighten the risk of improper cash expropriation. These factors are examined to assess their combined effect on the perceived cash value between multinationals and domestic firms.

Fourth, by focusing on a region with greater intra-continental homogeneity, the study minimizes confounding effects, enhances cross-country comparability, and strengthens the robustness of the findings. Finally, recognizing the dual nature of theoretical predictions—encompassing both positive and negative effects—the study empirically examines their aggregated impact. Although preliminary and specific to the selected sample, this research represents the first empirical investigation into the differential valuation of cash holdings between multinational and domestic firms.

This article is structured as follows. After this introduction, in Section 2, we present the theoretical background and the research

[1] Either they started suffering higher competition at home from foreign companies, found little opportunities to grow in premium segments in the home market, or wanted to protect themselves from the harsher conditions to do business at home (Aguilera et al., 2017; Carneiro et al., 2018; Casanova et al., 2009; Cuervo-Cazurra, 2008).

hypothesis. Section 3 is dedicated to the research methodology. In Section 4, we present and discuss the findings. Section 5 brings the conclusions.

2. Theoretical background and hypothesis development

2.1. Cash management and cash value

If firms were located in perfect capital markets, with no transaction costs, no informational asymmetry and no agency problems, the decision regarding the quantity of assets to be maintained in cash and cash equivalents would be secondary (Keynes, 1936) and would not affect firm value (Bates et al., 2018; Drobetz et al., 2010; Faulkender and Wang, 2006; Graham and Leary, 2018; Opler et al., 1999). In this hypothetical situation, firms would be able to fund all their attractive growth opportunities in that investment would not be conditioned on the readiness of internal funds (Denis and Sibilkov, 2010). However, since corporations do business in imperfect capital markets where external capital is typically more expensive as opposed to funds generated internally (Myers and Majluf, 1984), then they need to guard themselves against adverse cash shocks by accumulating precautionary cash savings (Keynes, 1936; Opler et al., 1999).

Other than keeping cash to hedge unexpected cash-flow shocks, cash holdings also provide other benefits to companies. For example, an important benefit of cash reserves in imperfect capital markets is to increase companies' ability to quickly seize valuable investment opportunities without resorting to costly external capital (Kim et al., 1998). Furthermore, liquid assets help corporations carry out their regular activities (Keynes, 1936). In times of crisis, cash reserves still provide a means by which firms can guarantee their liquidity (Almeida et al., 2014). Nevertheless, cash still minimizes the likelihood of financial distress by allowing companies to invest close to the first-best optimum (Faulkender and Wang, 2006; Denis and Sibilkov, 2010; Manoel et al., 2024). Consequently, cash can also prevent underinvestment problems (Faulkender and Wang, 2006).

Notwithstanding the above benefits, cash balances also have a negative side (Almeida et al., 2014). First, holding cash implies an opportunity cost, as liquid assets offer lower returns compared to more productive but less liquid assets (Al-Najjar, 2013; Graham and Leary, 2018; Kim et al., 1998). Second, shareholders have agency concerns regarding the private benefits associated with cash (Dittmar and Mahrt-Smith, 2007; Harford, 1999; Kim et al., 2015). More specifically, cash holdings are especially at risk of expropriation because the decision to retain and employ cash resources is at managers' discretion, some of which operate under little scrutiny (Dittmar and Mahrt-Smith, 2007; Jensen, 1986). As Myers and Rajan (1998) contend, stealing cash reserves from the firm is simpler than stealing fixed assets. Hence, if the agents' interests are not in line with those of the principal, then self-interested managers may waste cash on perquisite consumption or on negative net present value (NPV) investments that somehow benefit themselves but do not add value for all investors (Graham and Leary, 2018; Harford, 1999; Jensen and Meckling, 1976; Kim et al., 2015; Myers and Rajan, 1998; Opler et al., 1999; Pinkowitz and Williamson, 2007).

More recently, the cash management literature started to examine how valuable or necessary cash is by studying the growth in firm value related to an additional dollar of cash held in the balance sheet (Bates et al., 2018; Denis and Sibilkov, 2010; Dittmar and Mahrt-Smith, 2007; Drobetz et al., 2010; Faulkender and Wang, 2006; Frésard and Salva, 2010; Harford et al., 2017; Kalcheva and Lins, 2007; Louis et al., 2012; Manoel et al., 2023; Pinkowitz et al., 2006). In a frictionless environment, the market value of cash balances should be close to their face value ($1) since the cost of acquiring and holding cash would equal its expected benefits (Bates et al., 2018). However, knowing about the fragility of liquidity assets, the value of firms' cash balances is affected by how investors assume cash will be utilized or misused. To put it another way, shareholders value cash resources depending on whether they prevent underinvestment in value-enhancing projects or make it easier for unscrupulous administrators to overinvest in destructive projects (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Kalcheva and Lins, 2007; Manoel et al., 2023).

2.2. Multinationality condition and the Latin American setting

Empirical studies demonstrate that investors penalize the market value of cash in environments characterized by weak institutional protection due to the perceived risk that insiders may prioritize personal objectives at the expense of shareholder wealth. For example, studying a sample of 35 countries, Pinkowitz et al. (2006) found that in countries with weak investor protection, one dollar in cash is valued at substantially less than one dollar ($0.33), while in nations with high institutional protection, the equivalent dollar of cash is worth approximately their full face value ($0.91). Pinkowitz et al. (2006) attributed this result to the fact that shareholders discount cash value in countries in which shareholder protection is weak, as they expect cash to be partially siphoned for personal benefits. Such tunneling behavior is more likely in poorly protected environments. Therefore, in the face of more pronounced managerial agency costs, cash value tends to be penalized as they are partly consumed to increase the utility function of the ones who make corporate decisions instead of maximizing the wealth of all investors (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Kalcheva and Lins, 2007; Manoel et al., 2023; Pinkowitz et al., 2006).

In this context, the literature points out that Latin American economies are marked by weak institutional environments and limited financial development. Additionally, Latin America has a low level of shareholder protection system (French civil law) and investors' expropriation risk is high (Chong and López-de-Silanes, 2007). As referenced earlier, in a framework where investors are weakly protected, the market places a discount on cash value due to the ability of self-interest managers to derive more easily the personal gains contained in cash balances (Dittmar and Mahrt-Smith, 2007; Pinkowitz et al., 2006). Consistent with the above arguments, Manoel and Moraes (2022a) find that cash reserves are worth substantially less than their face value in Latin America. More precisely, they contend that this is a consequence of the fact that Latin America is characterized by relatively weak institutional environments,

low levels of financial development and poor standards of investor protection. Therefore, investors suffer from higher expropriation risks and, as a result, fear receiving less than the face value of cash resources in this setting.

On the other hand, the value investors place on an additional dollar of cash may differ in MNCs from Latin America compared to their domestic counterparts. The rising foreign competition pressured Latin American companies to expand their activities into other markets, historically serving only their home country markets. One of the primary motivations propelling Multilatinas to expand their operations globally was the saturation of their domestic markets, characterized by limited growth potential. Consequently, the constrained nature of domestic markets prompted Latin American companies to seek growth opportunities beyond their borders (Aguilera et al., 2017; Carneiro and Brenes, 2014; Casanova et al., 2009).

In a sample of North American companies from 1965 to 2004, Pinkowitz and Williamson (2007) document that the cash of corporations with greater investment opportunities is valued at a premium compared to the cash of those with fewer growth options. Pinkowitz and Williamson (2007) also show that, for most firms, the principal determinant of cash value is a firm's set of investment opportunities. The authors used three different proxies for growth opportunities to reach this conclusion: sales growth, research and development (R&D) expenditures, and capital expenditures. Hence, given that international markets generally provide the most attractive growth opportunities for the majority of MNCs (Bodnar and Weintrop, 1997), and the literature about Multilatinas suggests that one of the main reasons they go abroad is to explore greater growth opportunities (Aguilera et al., 2017; Carneiro and Brenes, 2014; Casanova et al., 2009), then it can be argued that investors would value Multilatinas' cash holdings more due to their greater investment opportunities compared to their domestic peers' cash.

However, at least six counterarguments, grounded in the theoretical frameworks of financial constraints, tax motivations, agency theory, and information asymmetry, suggest that investors may not assign a higher value to the cash reserves of Multilatinas relative to those of domestic firms. First, unlike MNCs from developed countries, a common feature of Multilatinas is that they often expand their activities first into regional markets in Latin America, with only a small number of firms achieving global status. Thus, despite the global ambitions of some Multilatinas to establish a presence in other continents, the overwhelming majority of Multilatinas' revenues come from their domestic and regional markets (Aguilera et al., 2017; Carneiro and Brenes, 2014; Casanova et al., 2009). Operating in a region where shareholder protections are weaker, investors recognize that the cash holdings of Multilatinas are more vulnerable to embezzlement. Consequently, they may discount the market value of Multilatinas' cash holdings due to the anticipated higher agency conflicts in such an environment.

Second, MNCs are subject to more information asymmetries and agency costs than domestic companies due to geographic distance, sovereignty uncertainties, language and cultural differences (Doukas and Pantzalis, 2003; Harford et al., 2017; Pattnaik et al., 2021). These differences obstruct proper monitoring and communication between headquarters and foreign subsidiaries (Ul Haq et al., 2017). Under the framework of agency theory, the empirical literature on cash holdings suggests that with more severe agency conflicts, investors penalize the market value of cash (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Huang and Zhang, 2012; Manoel et al., 2023). Third, Drobetz et al. (2010) document that investors' valuation of cash holdings is significantly lower in settings where information asymmetry is more acute. Thus, the greater agency problems and informational asymmetry with respect to foreign operations can negatively influence investors' perception of how Multilatinas' managers deploy cash resources and, consequently, regarding the contribution of Multilatinas' cash balances to shareholder wealth.

Fourth, prior academic studies show that tax incentives affect multinationals' cash reserves (Faulkender et al., 2019; Fernandes and Gonenc, 2016; Foley et al., 2007; Harford et al., 2017). As Argentina, Brazil, Colombia, Chile, Mexico and Peru apply a worldwide taxation system, then MNCs from these countries may have incentives to stockpile cash savings overseas to defer the taxes on repatriating foreign earnings. However, holding cash abroad can hamper the functioning of a company's domestic market, as it diminishes financial flexibility domestically. This reduction in financial flexibility within the domestic realm often gives rise to challenges associated with underinvestment, thereby resulting in a diminished market value of cash, as substantiated by Harford et al. (2017).

In this regard, existing studies indicate that foreign cash carries all the costs of domestic cash but not all the benefits. Therefore, when repatriation is costly, foreign and domestic cash are not perfect substitutes (Faulkender et al., 2019; Fernandes and Gonenc, 2016; Foley et al., 2007; Harford et al., 2017). Moreover, foreign cash also creates more agency conflicts as foreign operations are exposed to higher degrees of information asymmetry due to financial and organizational complexities (Faulkender et al., 2019; Fernandes and Gonenc, 2016; Foley et al., 2007; Harford et al., 2017). Anticipating the larger likelihood of foreign cash misappropriation, Harford et al. (2017) show that investors indeed discount the value they attach to foreign cash relative to domestic cash in the U.S. setting. The evidence of Harford et al. (2017) supports the notion that agency costs and information asymmetries are more pronounced for foreign than domestic operations.

While Harford et al. (2017) emphasis was on the market value of foreign cash relative to domestic cash, our attention is on the consolidated level of cash. We focus on global cash in this paper instead of studying domestic and foreign cash separately due to the lack of data regarding foreign cash in Latin America. The absence of disclosure about the magnitude and specific location of foreign cash holdings compared to domestic cash limits our analyses. However, this lack of information also limits investors' capacity to assess the contribution of Multilatinas' cash reserves to the market value of these MNCs. The non-disclosure of foreign cash holdings, which we propose as a fifth factor explaining why investors may not assign a higher value to Multilatinas' cash holdings compared to those of domestic firms, limits the ability to evaluate potential uses for these funds and exacerbates information asymmetry and agency costs.

Sixthly, MNCs typically have access to additional sources of funds on favorable conditions because they can tap into multiple capital markets (Jang, 2017). Thus, MNCs can take advantage of funds available in the host country and, consequently, are expected to report lower financial constraint levels than domestic companies (Doukas and Pantzalis, 2003; Jang, 2017). In light of the financial constraint argument, the literature documents that cash balances are more valuable for financially constrained than unconstrained companies because cash resources allow the former to explore attractive growth prospects that might otherwise be bypassed (Denis

and Sibilkov, 2010; Faulkender and Wang, 2006). This implies, among other things, that investors would attribute a lower value to MNCs' cash balances than purely domestic companies' cash in light of the fact that MNCs are supposed to experience fewer financial constraints.

Considering the potentially adverse effects of multinationality, including factors such as information asymmetry, agency conflicts, and insufficient disclosure of foreign operations, which may offset the positive effects such as enhanced flexibility and growth opportunities on the market value of cash for Multilatinas relative to their domestic counterparts, we postulate that the overall net effect, if present, could be minimal. Thus, to the extent that investors do not perceive Multilatinas' cash holdings as providing greater benefits compared to the cash of their domestic counterparts, despite the value-enhancing investment opportunities of the former, we hypothesize that they do not place a greater value on Multilatinas' cash holdings as opposed to the value they assign to the cash of their domestic peers. Therefore, we advance a hypothesis in the null form:

H1. : Investors do not assign a valuation premium to Multilatinas' cash holdings compared to the cash holdings of their domestic

Table 1
Sample distribution.

Panel A: Sample distribution by year						
	MNCs		non-MNCs		Full Sample	
Year	Observations (n)	Percentage of the sample (%)	Observations (n)	Percentage of the sample (%)	Observations (n)	Percentage of the sample (%)
2000	14	29.17 %	34	70.83 %	48	1.22 %
2001	17	31.48 %	37	68.52 %	54	1.38 %
2002	19	32.76 %	39	67.24 %	58	1.48 %
2003	22	27.85 %	57	72.15 %	79	2.01 %
2004	25	26.88 %	68	73.12 %	93	2.37 %
2005	20	21.51 %	73	78.49 %	93	2.37 %
2006	20	21.51 %	73	78.49 %	93	2.37 %
2007	26	26.26 %	73	73.74 %	99	2.52 %
2008	30	23.08 %	100	76.92 %	130	3.31 %
2009	34	22.82 %	115	77.18 %	149	3.80 %
2010	59	28.50 %	148	71.50 %	207	5.28 %
2011	70	27.67 %	183	72.33 %	253	6.45 %
2012	79	27.62 %	207	72.38 %	286	7.29 %
2013	94	28.23 %	239	71.77 %	333	8.49 %
2014	107	28.69 %	266	71.31 %	373	9.51 %
2015	115	29.79 %	271	70.21 %	386	9.84 %
2016	115	29.26 %	278	70.74 %	393	10.02 %
2017	118	28.57 %	295	71.43 %	413	10.52 %
2018	109	28.39 %	275	71.61 %	384	9.79 %
Total	1093	27.85 %	2831	72.15 %	3924	100.00 %
Panel B: Sample distribution by industry						
	MNCs		non-MNCs		Full Sample	
Industry	Observations (n)	Percentage of the sample (%)	Observations (n)	Percentage of the sample (%)	Observations (n)	Percentage of the sample (%)
Basic Materials	344	38.26 %	555	61.74 %	899	22.91 %
Consumer Cyclicals	160	17.06 %	778	82.94 %	938	23.90 %
Consumer Non-Cyclicals	299	32.86 %	611	67.14 %	910	23.19 %
Energy	57	32.39 %	119	67.61 %	176	4.49 %
Healthcare	9	10.98 %	73	89.02 %	82	2.09 %
Industrials	194	26.18 %	547	73.82 %	741	18.88 %
Technology	12	22.22 %	42	77.78 %	54	1.38 %
Telecommunications Services	18	14.52 %	106	85.48 %	124	3.16 %
Total	1093	27.85 %	2831	72.15 %	3924	100.00 %
Panel C: Sample distribution by country						
	MNCs		non-MNCs		Full Sample	
Industry	Observations (n)	Percentage of the sample (%)	Observations (n)	Percentage of the sample (%)	Observations (n)	Percentage of the sample (%)
Argentina	77	15.01 %	436	84.99 %	513	13.07 %
Brazil	288	24.89 %	869	75.11 %	1157	29.49 %
Chile	251	43.13 %	331	56.87 %	582	14.83 %
Colombia	43	31.62 %	93	68.38 %	136	3.47 %
Mexico	373	34.76 %	700	65.24 %	1073	27.34 %
Peru	61	13.17 %	402	86.83 %	463	11.80 %
Total	1093	27.85 %	2831	72.15 %	3924	100.00 %

Notes: Table 1 presents the distribution and composition of the final sample of MNCs and non-MNCs by year (Panel A), industry (Panel B) and country (Panel C) during the sample period. The sample is made up of 491 Latin American publicly traded firms (3924 firm-year observations), for which annual data are available from Argentina, Brazil, Chile, Colombia, Mexico, and Peru for the years 2000 to 2018. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing.

counterparts.

3. Research design

3.1. Sample

All companies headquartered in the six major Latin American economies (Argentina, Brazil, Chile, Colombia, Mexico and Peru) for which annual data are available over the period of 2000–2018 comprise our initial sample. The financial statement data used are obtained from Thomson Reuters. We include firms appearing at any moment during the above period to alleviate the concern of survival bias. In the spirit of Opler et al. (1999), we exclude financial and utility companies from our sample, given that statutory capital requirements and other government regulations influence their cash policies. We also exclude from the sample the subsidiaries of non-Latin American firms. These sample selection criteria resulted in unbalanced panel data comprising 491 publicly listed Latin American companies (3924 firm-year observations), for which all necessary data were available over the 2000–2018 period.

Table 1 presents the distribution and composition of the final sample of MNCs and non-MNCs by year, industry and country during the sample period.

Panel A of Table 1 presents the distribution of MNCs and non-MNCs over the sample period. It is observed that MNCs account for 27.85 % of the overall sample, corresponding to 1093 firm-year observations. Non-MNCs, on the other hand, make up 72.15 % of the sample, comprising 2831 firm-year observations. Panel B of Table 1 provides the industry composition of our sample. The sample consists of publicly traded companies across eight distinct industries in Latin America, with Consumer Cyclicals firms representing the largest proportion at 23.90 %. Technology companies exhibit the lowest representation, comprising 1.38 % of the sample. Notably, enterprises in the Basic Materials industry have the highest percentage of MNCs compared to non-MNCs, at 38.26 %. In contrast, Healthcare companies display the lowest incidence of MNCs, with only 10.98 % of firms falling into this category.

Panel C of Table 1 provides a detailed breakdown of the distribution of MNCs and non-MNCs across each Latin American country examined in our study. The specific distribution of firm-year observations is as follows: 513 from Argentina, 1157 from Brazil, 582 from Chile, 136 from Colombia, 1073 from Mexico, and 463 from Peru. Notably, the data in Panel C also reveals significant variations in the proportion of MNCs to non-MNCs across countries. Chile stands out with the highest proportion of MNCs, at 43.13 %, while Peru has the lowest number, with only 13.17 %.

3.2. Measure of multinationality

In the primary regression analyses, we classify a firm as a MNC if its proportion of foreign sales to total sales is equal to or higher than 25 % and as a non-MNC if its foreign sales are <25 % or else missing. This measure is consistent with Fernandes and Gonenc (2016), Manoel and Moraes (2022b), and Pinkowitz et al. (2016). For robustness tests (presented ahead), we use alternative measures of the multinationality condition, computed as either a continuous or a binary variable, and our main conclusions remain unchanged.

3.3. Market value of cash

To measure shareholders' valuation of cash holdings, we augment the valuation regression proposed by Pinkowitz et al. (2006), which is a variation of the model introduced by Fama and French (1998) to examine the impact of debt and dividends on company value. Specifically, the valuation model used by Pinkowitz et al. (2006) is shown in Eq. (1):

$$V_{i,t} = \alpha_i + \beta_1 E_{i,t} + \beta_2 dE_{i,t} + \beta_3 dE_{i,t+1} + \beta_4 dNa_{i,t} + \beta_5 dNa_{i,t+1} + \beta_6 RD_{i,t} + \beta_7 dRD_{i,t} + \beta_8 dRD_{i,t+1} + \beta_9 I_{i,t} + \beta_{10} dI_{i,t} + \beta_{11} dI_{i,t+1} + \beta_{12} D_{i,t} + \beta_{13} dD_{i,t} + \beta_{14} dD_{i,t+1} + \beta_{15} dV_{i,t+1} + \beta_{16} dCash_{i,t} + \beta_{17} dCash_{i,t+1} + \epsilon_{i,t} \quad (1)$$

In the above equation:

- V corresponds to the market value of the company (Market-to-Book), computed at the fiscal year end as the sum of the market value of equity, the book value of short-term debt, and the book value of long-term debt;
- E corresponds to earnings before extraordinary items plus interest, deferred tax credits, and investment tax credits;
- NA corresponds to net assets, defined as total assets less cash and cash equivalents;
- $Cash$ corresponds to cash and cash equivalents;
- RD corresponds to research and development expenditures;
- I corresponds to interest expenses; and
- D corresponds to dividends computed as common dividends paid.

Following Pinkowitz et al. (2006), we divided all firm-specific control variables by total assets in order to make company attributes comparable. Additionally, in the above notation system:

- X_t is the level of variable X in year t divided by the level of assets in year t;
- dX_t is the change in the level of X from year $t-1$ to year t divided by assets in year t, i.e., $((X_t - X_{t-1})/\ Total\ Assets_t)$;

- dX_{t+1} is the change in the level of X from year $t+1$ to year t divided by assets in year t, i.e., ((X_{t+1} - X_t)/ *Total Assets*$_t$);

Pinkowitz et al. (2006) incorporated the aforementioned control variables, both in levels and differences, into the valuation model to capture shareholders' expectations of future cash flows, which determine the firm's value. For our study, the most relevant coefficient of Eq. (1) is the one on the change in cash holdings (β_{16}), which gauges how sensitive a company's value is to a dollar increase in cash. Therefore, the coefficient β_{16} is an estimate of cash value and mirrors the degree to which shareholders perceive the potential for value creation or destruction associated with cash resources (Frésard and Salva, 2010).

The IB literature documents that MNCs generally have higher growth prospects than their domestic counterparts (Aguilera et al., 2017; Casanova et al., 2009; Manoel and Moraes, 2022b). Therefore, if the control variables in our valuation equation do not sufficiently account for the impact of growth opportunities on firm value, our findings might instead reflect the unique investment opportunities inherent to MNCs. In their valuation model, Pinkowitz et al. (2006) employed R&D expenditures as a proxy for growth opportunities. However, it is important to note that a substantial number of Latin American corporations do not provide data on R&D expenditures in their financial reports. Thus, given that investment opportunities are a relevant determinant of cash value (Pinkowitz and Williamson, 2007), then we include sales growth, measured as the percentage change in total sales from year $t-1$ to year t, as an alternative measure.

We also extend their empirical model by including the indicator variable ($MNC_{i,t}$) equal to 1 for MNCs and 0 otherwise, as well as an interaction of the change in cash holdings with the MNC dummy ($dCash_{i,t}$*$MNC_{i,t}$). The interaction term measures the cash value difference between MNCs and non-MNCs. The MNC indicator is also added in Eq. (2) to control the multinationality condition's direct influence on firm value.

Based on Kraay et al. (2010) and Pinkowitz et al. (2016), we also account for the average of the six World Bank corporate governance indices (WGI index). The WGI index provides "a summary of the overall governance quality of a country." Furthermore, we include the anti-director rights index of La Porta et al. (1998), which measures the quality of legal protection offered to minority shareholders as another country-level variable in our valuation regression. We also use GDP growth[2] from the World Bank to mitigate the impact of unpredictable macroeconomic conditions and economic policy on cash value (Graham and Leary, 2018).

A primary challenge in our study, particularly in determining a firm's multinational status, lies in recognizing that the decision to become a multinational corporation is not a random choice but a corporate decision. Firms adopt a multinational stance to generate value when opportune circumstances arise. However, it is acknowledged that the decision to engage in international sales or to initiate or terminate cross-border operations is constrained by various factors. This implies that firms identified as multinationals in our sample may not be subject to random selection, thereby characterizing geographic diversification as an endogenous decision (Chang et al., 2016; Fernandes and Gonenc, 2016). Unfortunately, overcoming this challenge is intricate, and due to these inherent characteristics, identifying econometrically valid instruments for MNC identification becomes exceptionally challenging. Hence, we conduct our regression analyses by incorporating firm fixed effects, enabling an examination of the dynamics of changes in the market value of cash in response to fluctuations in international sales (Fernandes and Gonenc, 2016; Manoel and Moraes, 2022b). Finally, we also add year fixed effects to account for macroeconomic trends.

Our augmented valuation model is shown in Eq. (2):

$$\begin{aligned} V_{i,t} = {} & \alpha_i + \beta_1 E_{i,t} + \beta_2 dE_{i,t} + \beta_3 dE_{i,t+1} + \beta_4 dNa_{i,t} + \beta_5 dNa_{i,t+1} + \beta_6 \textit{Growth Opportunities}_{i,t} + \beta_7 I_{i,t} + \beta_8 dI_{i,t} + \beta_9 dI_{i,t+1} + \beta_{10} D_{i,t} + \beta_{11} dD_{i,t} \\ & + \beta_{12} dD_{i,t+1} + \beta_{13} dV_{i,t+1} + \beta_{14} dCash_{i,t} + \beta_{15} MNC_{i,t} + \beta_{16} dCash_{i,t} * MNC_{i,t} + \beta_{17} dCash_{i,t+1} + \beta_{18} \textit{Investor Protection}_{i,t} + \beta_{19} WGI_{i,t} \\ & + \beta_{20} GDP_{i,t} + \mu_t + \epsilon_{i,t} \end{aligned} \tag{2}$$

Appendix A contains details of the definitions of the variables. The coefficient of interest in Eq. (2) is β_{16} ($dCash_{i,t}$*$MNC_{i,t}$), which measures the influence of the multinationality condition on the market value of cash. To ensure that outliers and possible data errors do not drive our findings, we winsorize all continuous variables at the 1 % level in each tail of their distribution.

4. Results

4.1. Descriptive statistics

Panel A of Table 2 depicts the mean values of the variables described above, along with firm size (natural logarithm of net assets) and leverage (the sum of short and long-term debt scaled by net assets) for both individual countries and the entire sample, covering the sample period of 2000–2018. Panel B, in turn, displays the mean, median and standard deviation of the variables, as well as the *t*-test and Wilcoxon test results for the difference in means and medians between Multilatinas and non-Multilatinas.

[2] In unreported results, we find qualitatively similar results when we estimate Eq. (2) without including the WGI index, anti-director rights index, and GDP growth. Furthermore, in an alternative approach, we divided our Latin American sample into two subsamples based on values below or above the sample median (low = 0 and high = 1), utilizing the WGI index, anti-director rights index, and GDP growth. In addition to the binary variables, we included their interaction terms with the change in cash assets in a regression model otherwise identical to Eq. (2). Results not reported for brevity continue to indicate that our primary findings remain consistent within this alternative framework. We are grateful to an anonymous referee for suggesting these additional analyses.

Table 2
Descriptive statistics.

Panel A							
Variables	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Full Sample
Cash/Total Assets	0.095	0.131	0.080	0.062	0.092	0.056	0.097
Foreign Sales	0.127	0.150	0.258	0.186	0.228	0.099	0.179
Multinational Dummy	0.150	0.248	0.431	0.316	0.347	0.131	0.278
Size	18.926	20.396	20.153	20.334	20.824	19.762	20.208
Leverage	0.238	0.386	0.273	0.190	0.695	0.242	0.410
Market-to-Book	1.584	1.091	0.939	0.841	1.218	0.797	1.124
$E_{i,t}$	0.031	0.006	0.020	0.036	−0.057	0.043	−0.000
$dE_{i,t}$	0.008	−0.001	−0.001	0.004	0.083	−0.000	0.023
$dE_{i,t+1}$	0.011	0.005	0.004	0.004	−0.018	0.009	0.000
$dNa_{i,t}$	−0.033	−0.037	0.004	0.047	0.027	0.048	0.000
$dNa_{i,t+1}$	0.095	0.033	0.031	0.045	0.062	0.062	0.053
Growth Opportunities$_{i,t}$	0.106	0.018	0.055	0.071	0.068	0.070	0.057
$I_{i,t}$	0.033	0.036	0.012	0.015	0.036	0.013	0.029
$dI_{i,t}$	−0.001	−0.001	0.000	0.001	0.005	0.000	0.000
$dI_{i,t+1}$	0.001	−0.000	0.000	0.001	0.004	0.000	0.001
$D_{i,t}$	−0.015	−0.018	−0.019	−0.018	−0.016	−0.025	−0.018
$dD_{i,t}$	−0.000	0.000	−0.000	−0.001	−0.001	0.001	−0.000
$dD_{i,t+1}$	−0.004	0.000	−0.010	−0.001	−0.001	0.000	−0.002
$dV_{i,t+1}$	−0.280	0.083	0.024	0.031	0.073	0.101	0.024
$dCash_{i,t}$	−0.000	−0.005	−0.001	0.001	0.005	0.000	−0.000
$dCash_{i,t+1}$	0.009	0.003	−0.001	0.001	0.003	0.007	0.003
Investor Protection	4.000	3.000	5.000	3.000	1.000	3.000	2.880
WGI index	−0.240	0.154	0.906	−0.224	−0.242	−0.152	0.056
GDP	2.522	1.032	3.160	3.333	2.275	4.574	2.380
Observations (n)	513	1157	582	136	1073	463	3924
Panel B							
	MNCs				non-MNCs		
Variables	Mean	Median	Stand. Dev.		Mean	Median	Stand. Dev.
Cash/Total Assets	0.108 ***	0.080 ‴	0.092		0.092	0.063	0.096
Foreign Sales	0.550 ***	0.509 ‴	20.601		0.036	0.000	6.777
Size	21.257 ***	21.159 ‴	1.631		19.802	19.841	1.739
Leverage	0.346 ***	0.331 ‴	0.198		0.435	0.246	8.349
Market-to-Book	1.213 ***	0.877 ‴	2.091		1.090	0.755	3.330
$E_{i,t}$	0.030 ***	0.035	0.085		−0.011	0.033	1.869
$dE_{i,t}$	0.004 *	0.002	0.103		0.030	0.001	1.627
$dE_{i,t+1}$	0.007 ***	0.001	0.105		−0.002	0.000	0.434
$dNa_{i,t}$	0.017 ***	0.019	0.216		−0.006	0.017	0.305
$dNa_{i,t+1}$	0.058 **	0.017	0.301		0.050	0.014	0.331
Growth Opportunities$_{i,t}$	0.068 ***	0.041	0.247		0.052	0.040	0.256
$I_{i,t}$	0.021 ***	0.017	0.017		0.032	0.017	0.285
$dI_{i,t}$	−0.000 ***	0.000	0.013		0.001	0.000	0.097
$dI_{i,t+1}$	0.000	0.000	0.010		0.001	0.000	0.058
$D_{i,t}$	−0.019 ***	−0.009 ‴	0.035		−0.018	−0.002	0.039
$dD_{i,t}$	−0.000 ***	0.000	0.031		−0.000	0.000	0.037
$dD_{i,t+1}$	−0.001	0.000	0.032		−0.002	0.000	0.117
$dV_{i,t+1}$	0.095	0.002	2.824		−0.002	−0.001	2.647
$dCash_{i,t}$	0.004 ***	0.001	0.065		−0.001	0.000	0.081
$dCash_{i,t+1}$	0.008	0.001	0.103		0.002	−0.000	0.076
Observations (n)	1093				2831		

Notes: Table 2 provides the descriptive statistics of the variables used in the paper. The definitions of each one are provided in Appendix A. The sample is made up of 491 Latin American publicly traded firms (3924 firm-year observations), for which annual data are available from Argentina, Brazil, Chile, Colombia, Mexico, and Peru for the years 2000 to 2018. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Panel A of Table 2 provides the number of observations and means of the Latin American countries' firm- and country-level variables. Panel B of Table 2 displays descriptive statistics of the variables used in the empirical analyses. In Panel B of Table 2, we also test for the difference in the mean and median values between Multilatinas and non-Multilatinas. ***, ** and * (‴, ″ and ′) denote significance levels of 1 %, 5 % and 10 % of the *T*-test (Wilcoxon Test) for Multilatinas and non-Multilatinas having equal mean (median).

As observed in Panel A of Table 2, the average ratio of cash to total assets across all Latin American firms is 9.72 %. This average value is substantially lower than the range documented for U.S. companies, such as the 17 % observed by Opler et al. (1999) in their seminal study of public companies from the United States from 1952 to 1994. Among the Latin American countries, Brazilian companies exhibit the highest level of cash holdings, with an average ratio of 13.15 %. Argentinean and Mexican companies follow closely, with average values of 9.53 % and 9.23 %, respectively. In contrast, companies from Colombia and Peru have the lowest cash holdings levels, with 6.20 % and 5.63 %, respectively. Moreover, the mean foreign sales ratio is 17.99 %.

Regarding firm value (market-to-book), we note that Argentina has the highest average firm value, while Peru has the lowest. Furthermore, compared to other Latin American economies, Chile boasts the highest WGI index at 0.9066, followed by Brazil with an index of 0.1541. Mexico has the lowest investor protection, while Chile is the Latin American country that offers the highest investor protection. Finally, Peru is the country with the highest average GDP growth.

Referring to Panel B of Table 2, we first see that Multilatinas, on average, tend to hold substantially more cash holdings (10.87 %) than their domestic peers[3] (9.27 %). The findings are broadly similar when the median cash levels are compared. This result is consistent with that of Ramírez and Tadesse (2009). Based on a sample of 49 countries between 1990 and 2004, they found that MNCs accumulate substantially more cash compared to their domestic peers. According to the authors, the increased internationalization of a firm's operations is likely to augment the demand for cash reserves, given the extension of its business cycle. The necessity to facilitate export activities involves extended credit terms, a less stringent credit policy, and the maintenance of larger inventories—all contributing to increased cash levels (Ramírez and Tadesse, 2009).

Moreover, Multilatinas and non-Multilatinas differ in more aspects other than cash levels. Compared with purely domestic companies, Multilatinas are larger and hold less debt. The differences in means and medians also show that the market-to-book ratio of MNCs is significantly larger than that of non-MNCs, indicating that MNCs have a higher value than non-MNCs. It is relevant to mention that the market-to-book ratio is also a proxy of the agency costs of debt (Mittoo and Zhang, 2008). Then, the results obtained for this variable also suggest that Multilatinas have greater agency debt problems than domestic firms. Multilatinas are exposed to more agency conflicts than their national peers, which generally agrees with the view that greater geographic diversity is positively related to informational asymmetry. This, in turn, increases monitoring costs (Doukas and Pantzalis, 2003). Multilatinas' higher agency costs of debt may explain why they have lower debt than firms without international involvement.

Finally, the univariate tests indicate that Multilatinas have higher growth opportunities than their domestic peers. This finding supports Bodnar and Weintrop's (1997) argument that MNCs have more investment opportunities compared to domestic companies. Similarly, the fact that Multilatinas have greater growth opportunities is also consistent with the argument that limited domestic markets lead them to seek investment opportunities abroad (Aguilera et al., 2017; Carneiro and Brenes, 2014; Casanova et al., 2009; Manoel and Moraes, 2022b).

4.2. Main results

To offer a framework for comparison with previous research that does not take into account the influence of the multinationality condition on the market value of cash, we first provide the results in Panel A of Table 3 without considering the effects of multinationality. In this specification, the variable of interest is the change in cash holdings ($\beta_{14} dCash_{i,t}$), which measures how sensitive a company's value is to a dollar increase in cash. In sequence (Panel B), we report the results of the valuation regression in Eq. (2), which includes the $MNC_{i,t}$ indicator and its interaction term with the change in cash holdings ($dCash_{i,t}{*}MNC_{i,t}$).

We estimated Eq. (2) using firm and years fixed effects. Robust standard errors are provided in parentheses. In this table and the ones that follow, we do not present the coefficients on the year dummies to save space. Furthermore, untabulated variance inflation factor (VIF) results reveal that multicollinearity does not pose limitations in the empirical analyses, considering that all VIF scores are <10.

The findings in Panel A of Table 3 suggest that without considering the effects of multinationality on the results, the estimated coefficient (β_{14}) is positive and statistically significant at the $p < 0.05$ level (Coeff. = 0.407). Therefore, a one-dollar raise in cash balances in Latin America is related to an increase in the market-to-book ratio of $0.407. As mentioned before, Latin America (which follows French civil law) offers a low level of investor protection and the problems related to managerial expropriation of shareholder wealth are serious (Chong and López-de-Silanes, 2007). Shareholders, in turn, fear that cash may be partly converted into private benefits in inadequately protected environments (Pinkowitz et al., 2006). As a result, they discount the value of retained cash. Hence, anticipating that managers will extract some of the firms' resources to derive personal benefits, investors then place a discount on the market value of cash. Our findings, therefore, support the tunneling literature and the results of Pinkowitz et al. (2006) and Manoel and Moraes (2022a), indicating that the relationship between cash holdings and firm value is more fragile in nations with weaker investor protection, such as in the Latin American context.

Regarding the control variables, most of them had the predicted signs as in Pinkowitz et al. (2006). For instance, the coefficient of sales growth is positive and statistically significant, indicating that Latin American firms with greater growth prospects have a higher market value. Another observation is that earnings have a positive and significant coefficient. Finally, we observe insignificant coefficients on the WGI index and GDP growth.

Turning to Panel B of Table 3, we find that the coefficient on the interaction term $dCash_{i,t}{*}MNC_{i,t}$ is statistically indistinguishable from zero. Hence, our findings show that the value shareholders attach to Multilatinas' cash holdings is not significantly different from that of non-Multilatinas. Thus, even though the univariate analyses indicate that Multilatinas have higher growth opportunities, we verify that shareholders do not perceive Multilatinas' cash holdings as offering more benefits vis-a-vis the cash holdings of their domestic peers. Accordingly, investors do not place a significantly higher value on the cash holdings of Multilatinas compared to the cash of non-Multilatinas. Finally, the MNC indicator was positive, but the coefficient was not statistically significant. Taken as a whole, the findings in Panel B of Table 3 support our hypothesis and suggest that cash balances are not more valuable for Multilatinas.

[3] Unreported results indicate that for all the dichotomous measures of multinationality used, the median and mean ratios of cash are substantially higher for MNCs compared to their domestic counterparts.

Table 3
Firm fixed effects estimate of Eq. (2).

Panel A		Panel B	
Variables	Coefficient	Variables	Coefficient
Constant	0.899*** (0.315)	Constant	0.869*** (0.297)
$E_{i,t}$	1.779*** (0.641)	$E_{i,t}$	1.800*** (0.648)
$dE_{i,t}$	−0.274*** (0.143)	$dE_{i,t}$	−0.283* (0.148)
$dE_{i,t+1}$	1.276** (0.534)	$dE_{i,t+1}$	1.282** (0.532)
$dNa_{i,t}$	−0.133** (0.059)	$dNa_{i,t}$	−0.130** (0.058)
$dNa_{i,t+1}$	0.423*** (0.082)	$dNa_{i,t+1}$	0.424*** (0.082)
$Growth\ Opportunities_{i,t}$	0.148** (0.068)	$Growth\ Opportunities_{i,t}$	0.146** (0.068)
$I_{i,t}$	0.727 (2.968)	$I_{i,t}$	0.780 (2.936)
$dI_{i,t}$	0.015 (0.820)	$dI_{i,t}$	0.007 (0.818)
$dI_{i,t+1}$	0.681 (1.533)	$dI_{i,t+1}$	0.699 (1.505)
$D_{i,t}$	−3.962*** (1.162)	$D_{i,t}$	−3.896*** (1.164)
$dD_{i,t}$	1.263*** (0.434)	$dD_{i,t}$	1.247*** (0.425)
$dD_{i,t+1}$	−1.250** (0.624)	$dD_{i,t+1}$	−1.239* (0.637)
$dV_{i,t+1}$	−0.561*** (0.021)	$dV_{i,t+1}$	−0.561*** (0.020)
$dCash_{i,t}$	0.407** (0.205)	$dCash_{i,t}$	0.308 (0.200)
$MNC_{i,t}$	1.505*** (0.470)	$MNC_{i,t}$	0.157 (0.203)
$dCash_{i,t}*MNC_{i,t}$	–	$dCash_{i,t}*MNC_{i,t}$	0.451 (0.369)
$dCash_{i,t+1}$	–	$dCash_{i,t+1}$	1.503*** (0.467)
Investor Protection	–	Investor Protection	–
WGI index	−0.547 (0.418)	WGI index	−0.544 (0.413)
GDP	0.025 (0.021)	GDP	0.025 (0.208)
Adj. R^2	0.581	Adj. R^2	0.582
Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	3924	Observations (*n*)	3924

Notes: Table 3 reports the results from estimating Eq. (2) with firm and year fixed-effects. Panel A shows the estimation results without considering the effects of multinationality, while Panel B presents the estimation of the main valuation regression in Eq. (2). The dependent variable ($V_{i,t}$) in both specifications is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

To ensure that the non-significant results regarding our variable of interest, specifically the coefficient on the interaction term β_{16} ($dCash_{i,t}*MNC_{i,t}$) between changes in cash and the MNC dummy variable, are not influenced by potential issues related to statistical power, we conducted a statistical power analysis[4] using the G*Power package (Faul et al., 2009). The results of this analysis reveal that our empirical design, encompassing both the model specification and the sample size, has a probability exceeding 99.99 % of detecting even small-sized effects (as low as 0.02) at a confidence level of 5 %, assuming such effects genuinely exist within the target population. Consequently, we maintain confidence that the non-significant empirical findings of the variable of interest, consistent with our

[4] We would like to express our sincere gratitude to the anonymous referees for their insightful suggestions for conducting a statistical power analysis. Their recommendation enabled us to address potential concerns regarding the non-significant results for the interaction term between changes in cash and the MNC dummy variable ($dCash_{i,t}*MNC_{i,t}$).

theoretical expectations, do not result from inadequate statistical power.

4.3. Robustness checks

In this subsection, we undertake robustness checks that provide further evidence supporting the results displayed earlier.

An alternative measure of firm value: Although the market-to-book ratio is a standard measure of firm value, we also use Tobin's Q as an alternative proxy (Kalcheva and Lins, 2007). Hence, we first reestimate Eq. (2) with Tobin's Q, computed as the firm's market value ratio to total assets, as the new left-hand-side variable. All other variables are predefined in the main specification. Table 4 displays the estimation results of Eq. (2) with Tobin's Q as a proxy for firm value.

Table 4 shows that the interaction of the change in cash with the MNC dummy ($dCash_{i,t}$*$MNC_{i,t}$) is statistically indistinguishable from zero. Therefore, the inferences remain qualitatively similar when Tobin's Q is employed as an alternative proxy of firm value.

Alternative measures of multinationality: In our analyses, we employed the proportion of foreign sales to total sales to sort Latin American companies as multinational or domestic. Specifically, companies with a minimum of 25 % of their total sales abroad were classified as MNCs. This approach is consistent with some key research, which includes Fernandes and Gonenc (2016), Manoel and Moraes (2022b), and Pinkowitz et al. (2016). However, to mitigate the potential bias in identifying MNCs and non-MNCs, we also consider four alternative proxies of internationalization as our second robustness check in Table 5. First, in the spirit of Gu (2017) and Pinkowitz et al. (2016), we define a company as a MNC if its foreign sales are greater than zero and as a non-MNC if foreign sales are either missing or equal to zero (Panel A). Second, in line with Doukas and Pantzalis (2003) and Mittoo and Zhang (2008), a firm is defined as an MNC if both foreign sales (foreign sales/total sales) and foreign assets (foreign assets/total assets) ratios are equal to or >10 %, and as non-MNC, if it does not report foreign assets and foreign sales (Panel B).

Moreover, instead of using dummy variables to classify MNCs and non-MNCs, we also estimate our valuation model with foreign assets (foreign assets as a percentage of total assets) and foreign sales (foreign sales as a percentage of total sales) ratios being two continuous proxies for internationalization as depicted in Panels C and D of Table 5, respectively (Batten et al., 2021; Fernandes and Gonenc, 2016; Ramírez and Tadesse, 2009). According to Park et al. (2013), using continuous variables, such as foreign assets and foreign sales ratios, can be a better alternative way to capture the multinationality condition of a company as it utilizes more fine-grained information. The greater the company's total assets (sales) in other countries, the greater its degree of internationalization. (Fernandes and Gonenc, 2016; Park et al., 2013; Ramírez and Tadesse, 2009).

Using these alternative proxies of multinationality, one at a time, we repeat the baseline regression model of Eq. (2). Once again, the coefficient of interest is β_{16} ($dCash_{i,t}$*$MNC_{i,t}$). Table 5 presents the results.

As depicted in Table 5, the coefficients on the interaction terms ($dCash_{i,t}$*$MNC_{i,t}$) are positive but, again, insignificant. Therefore, the results with the four alternative measures for internationalization are consistent with the predictions in our hypothesis, which posits that cash balances are not significantly more valuable for Multilatinas relative to non-Multilatinas. Finally, we also note in Panels C and D of Table 5, for which we use just foreign assets (foreign assets/total assets) and foreign sales (foreign sales/total sales) ratios instead of MNCs dummies, that the coefficients for foreign assets (Panel C) and foreign sales (Panel D) ratios are both insignificant.

Alternative regression specifications: In the initial analyses, we add time effects to account for the time effects that may be associated with changes in company characteristics (Faulkender and Wang, 2006). Now, as another robustness test, we reestimate Eq. (2) without time fixed effects. The findings are outlined in Panel A of Table 6. Additionally, to provide further evidence supporting our main results, we estimate our valuation model using ordinary least squares (OLS) regression with cluster robust standard errors[5] rather than with firm fixed effects. This new specification, reported in Panel B of Table 6, also includes country, industry and year fixed effects (which are not reported to save space).

Based on Table 6, we verify that the coefficients on $dCash_{i,t}$*$MNC_{i,t}$ are again insignificant in both models, which is in accordance with the evidence in Table 3. Thus, Table 6 shows that our main inferences do not change when we estimate the valuation regression without year fixed effects and with the OLS procedure. Notably, the OLS estimation results reported in Panel B show that the WGI index is now negative and statistically significant. Panel B of Table 6 also reveals a higher market value in Latin American countries with high investor protection (shareholders' rights).

Individual analyses of the impact of multinationality: In a further robustness check, we individually examine the market value of cash in Multilatinas and non-Multilatinas, as shown in Table 7. In this additional test, we did not add the MNC indicator nor the interaction of the change in cash with the MNC dummy. The other specifications are the same as Eq. (2). Thus, the test of the research hypothesis is that the coefficient $\beta_{14}dCash_{i,t}$ is not larger for Multilatinas compared to non-Multilatinas.

We find additional empirical support for our hypothesis when we individually examine Multilatinas and non-Multilatinas, as reported in Table 7. To be specific, we verify that the market places a similar value on the cash holdings of Multilatinas ($0.562) relative to the cash of their domestic peers ($0.544). Moreover, the insignificance of the *p*-value of difference (0.971) supports this interpretation, given that the difference in the coefficients on the change in cash holdings ($\beta_{14}dCash_{i,t}$) is not statistically significant. Therefore, we do not find cash holdings to be valued at a statistically significant premium in Multilatinas relative to non-Multilatinas. Indeed, we verify that, on average, Multilatinas' cash holdings are valued similarly to non-Multilatinas' cash.

Individual analyses for each Latin American country used: To address the potential issue of bias arising from the variation in the

[5] Untabulated results also show that our empirical findings remain unchanged when standard errors are clustered at the country level.

Table 4
Firm fixed effects estimate of Eq. (2) with Tobin's Q as the new left-hand-side variable.

Panel A		Panel B	
Variables	Coefficient	Variables	Coefficient
$E_{i,t}$	2.151*** (0.706)	$E_{i,t}$	2.171*** (0.712)
$dE_{i,t}$	−0.322* (0.165)	$dE_{i,t}$	−0.331* (0.170)
$dE_{i,t+1}$	1.501*** (0.565)	$dE_{i,t+1}$	1.506*** (0.562)
$dNa_{i,t}$	−0.149** (0.063)	$dNa_{i,t}$	−0.146*** (0.062)
$dNa_{i,t+1}$	0.247*** (0.085)	$dNa_{i,t+1}$	0.249*** (0.085)
$Growth\ Opportunities_{i,t}$	0.143** (0.069)	$Growth\ Opportunities_{i,t}$	0.141** (0.069)
$I_{i,t}$	−0.726 (3.064)	$I_{i,t}$	−0.673 (3.032)
$dI_{i,t}$	−0.067 (0.977)	$dI_{i,t}$	−0.074 (0.975)
$dI_{i,t+1}$	−0.589 (1.654)	$dI_{i,t+1}$	−0.574 (1.628)
$D_{i,t}$	−4.477*** (1.144)	$D_{i,t}$	−4.414*** (1.147)
$dD_{i,t}$	1.311*** (0.427)	$dD_{i,t}$	1.296*** (0.419)
$dD_{i,t+1}$	−1.648*** (0.595)	$dD_{i,t+1}$	−1.641*** (0.607)
$dV_{i,t+1}$	−0.561*** (0.021)	$dV_{i,t+1}$	−0.560*** (0.021)
$dCash_{i,t}$	0.380** (0.207)	$dCash_{i,t}$	0.268 (0.201)
$MNC_{i,t}$	1.354* (0.493)	$MNC_{i,t}$	0.147 (0.204)
$dCash_{i,t}*MNC_{i,t}$	–	$dCash_{i,t}*MNC_{i,t}$	0.515 (0.372)
$dCash_{i,t+1}$	–	$dCash_{i,t+1}$	1.352*** (0.489)
Investor Protection	–	Investor Protection	–
WGI index	−0.464 (0.422)	WGI index	−0.462 (0.417)
GDP	0.023 (0.021)	GDP	0.022 (0.020)
Adj. R^2	0.580	Adj. R^2	0.581
Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	3924	Observations (*n*)	3924

Notes: In Table 4, we reestimate our main model with Tobin's Q, measured as the ratio of the firm's market value to total assets, as the new left-hand-side variable. Appendix A contains details of the definitions of the variables. Panel A shows the estimation results without considering the effects of multinationality, while Panel B presents the estimation of the main valuation regression in Eq. (2). We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

number of observations across countries in our sample, we conducted an additional robustness check. Specifically, to mitigate this concern, we reestimate our main valuation approach for each Latin American country.[6] The unreported results, which are omitted for brevity, consistently support our research hypothesis.

Uncaptured growth opportunities: Pinkowitz and Williamson (2007) present empirical findings that highlight the relevant role of a firm's investment opportunities in shaping the perceived value of its retained cash by investors. Specifically, their research suggests that investors tend to assign significantly higher value to the cash reserves of firms possessing greater growth prospects. Our descriptive statistics reveal that, on average, Multilatinas have greater growth opportunities than Non-Multilatinas. Accordingly, a possible caveat of this research is that if we do not capture the influence of investment opportunities on shareholder value, then our

[6] Except for Colombia due to the restricted sample size (136 firm-year observations).

Table 5
Firm fixed effects estimates of Eq. (2) with four alternative proxies for multinationality.

Panel A		Panel B		Panel C		Panel D	
Variables	Coefficient	Variables	Coefficient	Variables	Coefficient	Variables	Coefficient
Constant	0.840*** (0.302)	Constant	0.841*** (0.306)	Constant	0.905*** (0.313)	Constant	0.902*** (0.310)
$E_{i,t}$	1.768*** (0.639)	$E_{i,t}$	1.761*** (0.640)	$E_{i,t}$	1.779*** (0.642)	$E_{i,t}$	1.781*** (0.642)
$dE_{i,t}$	−0.272** (0.144)	$dE_{i,t}$	−0.270* (0.144)	$dE_{i,t}$	−0.276* (0.142)	$dE_{i,t}$	−0.276* (0.143)
$dE_{i,t+1}$	1.272** (0.531)	$dE_{i,t+1}$	1.278** (0.534)	$dE_{i,t+1}$	1.275** (0.534)	$dE_{i,t+1}$	1.271** (0.530)
$dNa_{i,t}$	−0.131** (0.060)	$dNa_{i,t}$	−0.138** (0.061)	$dNa_{i,t}$	−0.131** (0.060)	$dNa_{i,t}$	−0.129** (0.059)
$dNa_{i,t+1}$	0.424*** (0.082)	$dNa_{i,t+1}$	0.421*** (0.082)	$dNa_{i,t+1}$	0.422*** (0.082)	$dNa_{i,t+1}$	0.422*** (0.082)
$Growth\ Opportunities_{i,t}$	0.146** (0.069)	$Growth\ Opportunities_{i,t}$	0.149** (0.069)	$Growth\ Opportunities_{i,t}$	0.146** (0.069)	$Growth\ Opportunities_{i,t}$	0.147** (0.068)
$I_{i,t}$	0.699 (3.001)	$I_{i,t}$	0.554 (3.026)	$I_{i,t}$	0.756 (2.998)	$I_{i,t}$	0.764 (2.967)
$dI_{i,t}$	0.015 (0.829)	$dI_{i,t}$	0.056 (0.832)	$dI_{i,t}$	0.007 (0.825)	$dI_{i,t}$	0.003 (0.820)
$dI_{i,t+1}$	0.648 (1.528)	$dI_{i,t+1}$	0.613 (1.547)	$dI_{i,t+1}$	0.691 (1.540)	$dI_{i,t+1}$	0.665 (1.528)
$D_{i,t}$	−3.945*** (1.159)	$D_{i,t}$	−3.909*** (1.162)	$D_{i,t}$	−3.960*** (1.162)	$D_{i,t}$	−3.972*** (1.167)
$dD_{i,t}$	1.252*** (0.430)	$dD_{i,t}$	1.254*** (0.434)	$dD_{i,t}$	1.265*** (0.434)	$dD_{i,t}$	1.276*** (0.438)
$dD_{i,t+1}$	−1.267** (0.624)	$dD_{i,t+1}$	−1.282** (0.625)	$dD_{i,t+1}$	−1.248** (0.622)	$dD_{i,t+1}$	−1.277** (0.627)
$dV_{i,t+1}$	−0.561*** (0.021)	$dV_{i,t+1}$	−0.561*** (0.021)	$dV_{i,t+1}$	−0.561*** (0.021)	$dV_{i,t+1}$	−0.560*** (0.020)
$dCash_{i,t}$	0.292 (0.202)	$dCash_{i,t}$	0.377* (0.208)	$dCash_{i,t}$	0.404** (0.203)	$dCash_{i,t}$	0.243 (0.207)
$MNC_{i,t}$	0.135 (0.138)	$MNC_{i,t}$	0.282 (0.196)	$MNC_{i,t}$	−0.001 (0.003)	$MNC_{i,t}$	−0.000 (0.001)
$dCash_{i,t}*MNC_{i,t}$	0.291 (0.313)	$dCash_{i,t}*MNC_{i,t}$	0.157 (0.433)	$dCash_{i,t}*MNC_{i,t}$	0.000 (0.010)	$dCash_{i,t}*MNC_{i,t}$	0.012 (0.007)
$dCash_{i,t+1}$	1.511*** (0.468)	$dCash_{i,t+1}$	1.502*** (0.470)	$dCash_{i,t+1}$	1.507*** (0.471)	$dCash_{i,t+1}$	1.506*** (0.465)
Investor Protection	–	Investor Protection	–	Investor Protection	–	Investor Protection	–
WGI index	−0.564 (0.425)	WGI index	−0.560 (0.422)	WGI index	−0.542 (0.422)	WGI index	−0.551 (0.417)
GDP	0.025 (0.021)	GDP	0.025 (0.021)	GDP	0.025 (0.021)	GDP	0.025 (0.021)
Adj. R^2	0.580	Adj. R^2	0.581	Adj. R^2	0.580	Adj. R^2	0.580
Year effects	Yes	Year effects	Yes	Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000	*P*-value	0.000	*P*-value	0.000
Observations (*n*)	3924	Observations (*n*)	3924	Observations (*n*)	3924	Observations (*n*)	3924
Adj. R^2	0.580	Adj. R^2	0.581	Adj. R^2	0.580	Adj. R^2	0.580
Year effects	Yes	Year effects	Yes	Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000	*P*-value	0.000	*P*-value	0.000
Observations (*n*)	3924	Observations (*n*)	3924	Observations (*n*)	3924	Observations (*n*)	3924

Notes: Table 5 reports the results from estimating our main model with four alternative proxies for multinationality. The dependent variable ($V_{i,t}$) in all specifications is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. In Panel A, we define a firm as an MNC if it reports non-zero foreign sales and as purely domestic those that have no foreign sales. In Panel B, a firm is defined as an MNC if both the foreign sales and foreign assets ratios are equal to or >10 %, and as a non-MNC if it reports no foreign assets and foreign sales. In Panels C and D, instead of using dummy variables to classify MNCs and non-MNCs, we estimate our valuation model with foreign assets (foreign assets/total assets) and foreign sales (foreign sales/total sales) being two continuous proxies (one at a time) for the multinationality condition of the company, respectively. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

Table 6
Different robustness checks based on the main valuation model in Eq. (2).

Panel A		Panel B	
Variables	Coefficient	Variables	Coefficient
Constant	0.943***	Constant	0.476**
	(0.056)		(0.232)
$E_{i,t}$	1.809***	$E_{i,t}$	−0.314
	(0.130)		(0.134)
$dE_{i,t}$	−0.231*	$dE_{i,t}$	0.926***
	(0.130)		(0.132)
$dE_{i,t+1}$	1.346**	$dE_{i,t+1}$	0.682
	(0.551)		(0.203)
$dNa_{i,t}$	−0.111	$dNa_{i,t}$	−0.012
	(0.069)		(0.088)
$dNa_{i,t+1}$	0.448***	$dNa_{i,t+1}$	0.552***
	(0.086)		(0.069)
$Growth\ Opportunities_{i,t}$	0.185**	$Growth\ Opportunities_{i,t}$	0.209***
	(0.081)		(0.098)
$I_{i,t}$	0.889	$I_{i,t}$	−0.471
	(2.283)		(0.799)
$dI_{i,t}$	0.084	$dI_{i,t}$	1.856**
	(0.714)		(0.704)
$dI_{i,t+1}$	0.753	$dI_{i,t+1}$	0.742
	(1.202)		(0.866)
$D_{i,t}$	−3.947***	$D_{i,t}$	−9.935***
	(1.249)		(0.612)
$dD_{i,t}$	1.226***	$dD_{i,t}$	2.235***
	(0.401)		(0.641)
$dD_{i,t+1}$	−1.342**	$dD_{i,t+1}$	−4.845***
	(0.671)		(0.207)
$dV_{i,t+1}$	−0.559***	$dV_{i,t+1}$	−0.807***
	(0.020)		(0.007)
$dCash_{i,t}$	0.323	$dCash_{i,t}$	1.290***
	(0.215)		(0.309)
$MNC_{i,t}$	0.136	$MNC_{i,t}$	0.214*
	(0.184)		(0.047)
$dCash_{i,t}*MNC_{i,t}$	0.495	$dCash_{i,t}*MNC_{i,t}$	1.051
	(0.367)		(0.665)
$dCash_{i,t+1}$	1.544***	$dCash_{i,t+1}$	3.367***
	(0.469)		(0.260)
Investor Protection	–	Investor Protection	−0.136**
			(0.042)
WGI index	−0.488*	WGI index	−1.155***
	(0.261)		(0.245)
GDP	0.019	GDP	0.013
	(0.014)		(0.013)
Adj. R^2	0.577	Adj. R^2	0.825
Country effects	No	Country effects	Yes
Industry effects	No	Industry effects	Yes
Year effects	No	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	3924	Observations (*n*)	3924

Notes: Table 6 reports the results of different robustness checks based on the main valuation model in Eq. (2). In Panel A, we reestimate Eq. (2) without year fixed effects. In Panel B, we estimate our valuation model using OLS with cluster robust standard errors rather than with firm fixed effects. We also include country, industry and year fixed effects in Panel B. The dependent variable ($V_{i,t}$) in both specifications is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

cash value estimates could transmit information about growth opportunities that are particular to Multilatinas. To alleviate the likelihood that Multilatinas' greater growth prospects could unduly influence our conclusions, we include an interaction term of sales growth,[7] as a measure of growth potential, with the change in cash reserves in Eq. (2).

A positive and statistically significant value on the coefficient of this interaction term ($dCash_{i,t}*Growth\ Opportunities_{i,t}$) would

[7] Our results are qualitatively unchanged when the median industry market-to-book ratio rather than sales growth is considered an alternative measure of investment opportunities (e.g., Frésard and Salva, 2010; Manoel and Moraes, 2022b).

Table 7
Firm fixed effects estimates when we individually examine Multilatinas and non-Multilatinas.

Panel A: Multilatinas		Panel B: Non-Multilatinas	
Variables	Coefficient	Variables	Coefficient
Constant	1.543 (1.008)	Constant	0.594*** (0.000)
$E_{i,t}$	4.674*** (1.001)	$E_{i,t}$	0.755** (0.416)
$dE_{i,t}$	−0.986*** (0.254)	$dE_{i,t}$	−0.146 (0.119)
$dE_{i,t+1}$	2.774*** (0.529)	$dE_{i,t+1}$	0.442 (0.357)
$dNa_{i,t}$	−0.217 (0.233)	$dNa_{i,t}$	−0.127*** (0.044)
$dNa_{i,t+1}$	0.393*** (0.105)	$dNa_{i,t+1}$	0.548*** (0.084)
Growth Opportunities$_{i,t}$	−0.230 (0.146)	*Growth Opportunities*$_{i,t}$	0.220*** (0.061)
$I_{i,t}$	−7.045 (17.267)	$I_{i,t}$	2.627** (1.008)
$dI_{i,t}$	0.121 (2.745)	$dI_{i,t}$	−0.321 (0.435)
$dI_{i,t+1}$	−3.365 (7.000)	$dI_{i,t+1}$	1.777*** (0.631)
$D_{i,t}$	−1.243 (2.319)	$D_{i,t}$	−3.913*** (1.099)
$dD_{i,t}$	0.638 (0.751)	$dD_{i,t}$	1.076** (0.449)
$dD_{i,t+1}$	−0.707 (1.121)	$dD_{i,t+1}$	−1.417* (0.758)
$dV_{i,t+1}$	−0.448*** (0.016)	$dV_{i,t+1}$	−0.900*** (0.074)
$dCash_{i,t}$	0.562 (0.469)	$dCash_{i,t}$	0.544*** (0.203)
$dCash_{i,t+1}$	0.637** (0.304)	$dCash_{i,t+1}$	0.167*** (0.374)
Investor Protection	–	Investor Protection	–
WGI index	−2.233* (1.325)	WGI index	−0.369* (0.185)
GDP	0.059 (0.043)	GDP	0.008 (0.006)
Adj. R^2	0.560	Adj. R^2	0.828
Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	1093	Observations (*n*)	2831
F-test # (*P* -value)	0.971		

Notes: Table 7 reports firm fixed effects estimations when we individually examine Multilatinas and non-Multilatinas. In this new specification, we do not include the MNC indicator nor the interaction of the change in cash with the MNC dummy. The other specifications are the same as Eq. (2). The dependent variable ($V_{i,t}$) in both specifications is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. F-test# tests the hypothesis that the coefficient on the change in cash holdings ($\beta_{14}dCash_{i,t}$) obtained from Multilatinas is equal to the coefficient on ($\beta_{14}dCash_{i,t}$) obtained from their domestic counterparts; *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

denote the existence of uncaptured investment opportunities. The findings in Table 8, however, reveal that the coefficient on the interaction term between growth opportunities and the change in cash holdings is insignificant. Furthermore, Table 8 confirms our previous findings: the coefficient on $dCash_{i,t}$*$MNC_{i,t}$ is statistically indistinguishable from zero. By and large, this robustness check mitigates the worry about whether our empirical findings could be biased by the influence of the greater growth potential that is particular to Multilatinas.

Propensity score matching model: A company becomes multinational to create value for stakeholders whenever some opportunities exist. Therefore, it is clear that deciding to become a multinational company is not random (Chang et al., 2016; Fernandes and Gonenc, 2016). Thus, our sample of Latin American MNCs cannot be selected randomly. As noted earlier, we add firm fixed effects in the initial analyses to reduce part of the self-selection bias concern, which is one type of endogeneity. However, we recognize that it is not easy to overcome the self-selection concern in our paper completely. Thus, in an effort to address this issue properly, we also use the propensity score matching technique as an additional robustness check. The propensity score matching technique helps reduce part of the selection concerns based on observable, not unobservable, firm characteristics and the large difference in the sample distribution

Table 8
Firm fixed effects estimate of Eq. (2) with an additional interaction term of investment opportunities with the change in cash holdings.

Variables	Coefficient
Constant	0.868***
	(0.297)
$E_{i,t}$	1.794***
	(0.647)
$dE_{i,t}$	−0.277*
	(0.148)
$dE_{i,t+1}$	1.275**
	(0.531)
$dNa_{i,t}$	−0.127**
	(0.060)
$dNa_{i,t+1}$	0.424***
	(0.082)
Growth Opportunities$_{i,t}$	0.144**
	(0.068)
$dCash_{i,t}$*Growth Opportunities*$_{i,t}$	0.238
	(0.634)
$I_{i,t}$	0.777
	(2.935)
$dI_{i,t}$	0.027
	(0.813)
$dI_{i,t+1}$	0.691
	(1.501)
$D_{i,t}$	−3.890***
	(1.168)
$dD_{i,t}$	1.248***
	(0.426)
$dD_{i,t+1}$	−1.237*
	(0.637)
$dV_{i,t+1}$	−0.561***
	(0.021)
$dCash_{i,t}$	0.306
	(0.204)
$MNC_{i,t}$	0.157
	(0.203)
$dCash_{i,t}$*$MNC_{i,t}$	0.424
	(0.372)
$dCash_{i,t+1}$	1.501***
	(0.471)
Investor Protection	–
WGI index	−0.545
	(0.413)
GDP	0.025
	(0.021)
Adj. R^2	0.582
Year effects	Yes
P-value	0.000
Observations (*n*)	3924

Notes: Table 8 displays the firm fixed effects estimations of Eq. (2) with an additional interaction term of investment opportunities (sales growth) with the change in cash holdings ($dCash_{i,t}$*$Growth\ Opportunities_{i,t}$). The dependent variable ($V_{i,t}$) is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

between MNCs (27.85 %) and non-MNCs (72.15 %) (Batten et al., 2021; Lennox et al., 2012).

Thus, for each Multilatina (1093 firm-year observations), we find its matched non-Multilatina in the same country, industry, and closest in size (total assets). This matched procedure with no replacement generates a sample of 2186 firm-year observations with an equal number of Multilatinas and non-Multilatinas firm-year observations. In sequence, we rerun our main specification in an OLS estimation for the Multilatinas and the matched non-Multilatinas samples. Panel A of Table 9 shows the findings with the propensity

Table 9
Propensity Matching Score (PMS) approach.

Panel A		Panel B	
Variables	Coefficient	Variables	Coefficient
Constant	0.206 (0.387)	Constant	0.041 (0.366)
$E_{i,t}$	2.455*** (0.426)	$E_{i,t}$	−0.101 (0.268)
$dE_{i,t}$	−0.092 (0.286)	$dE_{i,t}$	0.795*** (0.234)
$dE_{i,t+1}$	2.651*** (0.358)	$dE_{i,t+1}$	0.892*** (0.311)
$dNa_{i,t}$	0.009 (0.125)	$dNa_{i,t}$	−0.019 (0.133)
$dNa_{i,t+1}$	0.556*** (0.108)	$dNa_{i,t+1}$	0.591*** (0.108)
Growth Opportunities$_{i,t}$	0.198 (0.133)	*Growth Opportunities*$_{i,t}$	0.349*** (0.135)
$I_{i,t}$	1.479 (1.459)	$I_{i,t}$	1.075 (1.722)
$dI_{i,t}$	1.812 (1.381)	$dI_{i,t}$	3.715* (2.191)
$dI_{i,t+1}$	3.354* (1.811)	$dI_{i,t+1}$	3.122 (2.200)
$D_{i,t}$	−8.240*** (0.931)	$D_{i,t}$	−9.147*** (0.860)
$dD_{i,t}$	2.278** (0.979)	$dD_{i,t}$	2.628*** (1.012)
$dD_{i,t+1}$	−4.691*** (0.216)	$dD_{i,t+1}$	−4.686*** (0.220)
$dV_{i,t+1}$	−0.559*** (0.012)	$dV_{i,t+1}$	−0.551*** (0.013)
$dCash_{i,t}$	0.500 (0.478)	$dCash_{i,t}$	0.578 (0.443)
$MNC_{i,t}$	0.125** (0.056)	$MNC_{i,t}$	0.128** (0.056)
$dCash_{i,t}$*$MNC_{i,t}$	0.933 (0.766)	$dCash_{i,t}$*$MNC_{i,t}$	0.960 (0.750)
$dCash_{i,t+1}$	1.701*** (0.362)	$dCash_{i,t+1}$	2.194*** (0.339)
Investor Protection	−0.044 (0.073)	Investor Protection	0.038 (0.074)
WGI index	−1.989*** (0.380)	WGI index	−2.566*** (0.411)
GDP	0.063*** (0.016)	GDP	0.072*** (0.017)
Adj. R^2	0.588	Adj. R^2	0.802
Country effects	Yes	Country effects	Yes
Industry effects	Yes	Industry effects	Yes
Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	2186	Observations (*n*)	2186

Notes: Table 9 presents the results with the Propensity Matching Score approach in an OLS estimation for the Multilatinas and the matched non-Multilatinas samples. In this robustness check, we have a final sample of 2186 firm-year observations with an equal number of firm-year observations of Multilatinas and non-Multilatinas. In Panel A, for each Multilatina (1093 firm-year observations), we find its matched non-Multilatina (1093 firm-year observations) in the same country, industry, and closest in terms of size. In Panel B, on the other hand, for each Multilatina (1093 firm-year observations), we find its matched non-Multilatina (1093 firm-year observations) in the same country and industry and similar characteristics in terms of size, cash levels, leverage, and growth opportunities. More details of the matching procedure are provided in the text. The dependent variable ($V_{i,t}$) in both specifications is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

score matching (PSM) model.

The findings depicted in Panel A of Table 9 further confirm the absence of a valuation premium regarding the value investors place on cash balances of Multilatinas relative to the cash of their propensity score-matched domestic counterparts, given that the coefficient on the interaction term β_{16} ($dCash_{i,t}$*$MNC_{i,t}$) is insignificant.

In a subsequent robustness assessment, we broaden our matching criteria to include the firm's cash position (cash and cash equivalents to total assets), leverage (the sum of short- and long-term debt scaled by net assets), and sales growth (the percentage change in total sales from year $t-1$ to year t) as additional factors for matching Multilatinas and non-Multilatinas. This extension is inspired by prior empirical research on the market value of cash, which underscores the importance of the company's cash position (e.g., Faulkender and Wang, 2006), leverage (e.g., Faulkender and Wang, 2006) and growth prospects (e.g., Pinkowitz and Williamson, 2007), as significant determinants of the value that investors attribute to cash resources.

Table 10
Heckman's (1979) self-selection correction model results.

Panel A: Probit Estimation - First Stage		Panel B: Second stage of Heckman's (1979) two-stage approach	
Variables	Coefficient	Variables	Coefficient
Constant	−8.613***	Constant	0.402
	(0.449)		(0.429)
$Size_{i,t}$	0.330***	$E_{i,t}$	1.738***
	(0.016)		(0.638)
$Growth\ Opportunities_{i,t}$	0.081	$dE_{i,t}$	−0.293**
	(0.108)		(0.141)
$Leverage_{i,t}$	0.706***	$dE_{i,t+1}$	1.295**
	(0.126)		(0.534)
$ROA_{i,t}$	−0.541*	$dNa_{i,t}$	−0.117**
	(0.328)		(0.057)
$Cash_{i,t}/Total\ Assets_{i,t}$	1.671***	$dNa_{i,t+1}$	0.404***
	(0.278)		(0.081)
Investor Protection	−0.253***	$Growth\ Opportunities_{i,t}$	0.169**
	(0.055)		(0.076)
WGI index	−0.631**	$I_{i,t}$	0.976
	(0.313)		(2.848)
GDP	0.023*	$dI_{i,t}$	−0.001
	(0.013)		(0.787)
Pseudo R^2	0.206	$dI_{i,t+1}$	0.950
			(1.396)
Country effects	Yes	$D_{i,t}$	−3.681***
			(1.189)
Industry effects	Yes	$dD_{i,t}$	1.196***
			(0.416)
Year effects	Yes	$dD_{i,t+1}$	−1.135*
			(0.661)
P-value	0.000	$dV_{i,t+1}$	−0.561***
			(0.021)
Observations (*n*)	3924	$dCash_{i,t}$	0.441**
			(0.196)
		$MNC_{i,t}$	0.170
			(0.209)
		$dCash_{i,t}*MNC_{i,t}$	0.445
			(0.369)
		$dCash_{i,t+1}$	1.383***
			(0.514)
		Investor Protection	–
		WGI index	−0.653
			(0.469)
		GDP	0.030
			(0.024)
		$\lambda_{i,t}$	0.329
			(0.275)
		Adj. R^2	0.583
		Country effects	Yes
		Industry effects	Yes
		Year effects	Yes
		P-value	0.000
		Observations (*n*)	3924

Notes: Panel A of Table 10 presents the results from the first-stage probit regression, whereas Panel B outlines the findings from the second stage of Heckman's (1979) two-stage approach. In the first-stage probit regression, the dependent variable is a binary indicator that equals one if the firm is classified as a multinational corporation and zero otherwise. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. In the second stage, we estimate the market value of cash with the inverse Mills ratio, $\lambda_{i,t}$, obtained in the first stage, included as an additional explanatory variable to account for potential self-selection bias. The dependent variable ($V_{i,t}$) in Panel B is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

In this specification, we identify a corresponding non-Multilatina enterprise for each Multilatina firm, comprising 1093 firm-year observations. These matches are based on the criteria of operating within the same country and industry and possessing similar characteristics in terms of size, cash levels, leverage, and growth opportunities. Employing a non-replacement matching approach, we assemble a sample comprising 2186 firm-year observations evenly distributed between Multilatina and non-Multilatina entities. Subsequently, we reestimate our primary model specifications. The results presented in Panel B of Table 9 indicate once again that the coefficient on the interaction term β_{16} ($dCash_{i,t}$*$MNC_{i,t}$) remains statistically insignificant.

Heckman's (1979) *two-step treatment effect model:* Another aspect of concern pertains to the possibility that our empirical findings might be impacted by unobservable firm-level characteristics that affect firms' decisions to become multinational companies instead of remaining domestic (Aabo et al., 2015; Agyei-Boapeah et al., 2020; Chang et al., 2016; Dastidar, 2009; Jang, 2017). In this regard, for example, Aabo et al. (2015) posited that various factors, including firm size, leverage, and profitability, influence a firm's decision to engage in foreign business activities. Consequently, if our empirical model fails to adequately discern the effects of these unobservable firm-level characteristics on international involvement, there exists a risk of erroneously attributing the empirical findings concerning the market value of cash to internationalization rather than the genuine underlying determinants of cash value. In other words, neglecting to account for the firm-specific characteristics that prompt a firm's decision to internationalize may impact the valuation that investors assign to the firm's cash holdings, given that the decision to become multinational is endogenous (Aabo et al., 2015; Dastidar, 2009; Jang, 2017).

Therefore, to accurately assess the impact of the degree of internationalization on the market value of cash, if any, it is imperative to disentangle the effects of the degree of internationalization from the endogeneity associated with the decision to become multinational rather than remain domestic. Thus, in addition to utilizing the propensity score matching technique to mitigate part of the self-selection bias based on observable firm characteristics, we also employ Heckman's (1979) two-step treatment effect model as a further robustness check to account for self-selection based on unobservable factors (Lennox et al., 2012).

In the first-stage probit regression, the dependent variable is a binary indicator that equals one if the firm is classified as a multinational corporation and zero otherwise. Consistent with our primary methodology, firms are categorized as MNCs if their proportion of foreign sales to total sales equals or exceeds 25 %. In contrast, those falling below this threshold or with missing foreign sales data are classified as non-MNCs. Although additional findings are not reported here for brevity, they indicate that our core empirical conclusions, derived from Heckman's (1979) self-selection correction model, remain qualitatively consistent when the alternative binary measures of multinationality, as detailed in the robustness checks subsection, are employed to distinguish between MNCs and non-MNCs.

In the spirit of Aabo et al. (2015) and Agyei-Boapeah et al. (2020), we include company size, leverage, growth opportunities, a continuous measure of profitability (Return on Assets – ROA), and cash ratio as explanatory variables in the first stage of Heckman's (1979) self-selection correction model to estimate the likelihood of a company's engagement in international business activities. Please refer to Appendix A for detailed definitions of the variables. Additionally, we include the WGI index, the anti-director rights index from La Porta et al. (1998), GDP growth, as well as country, industry and year fixed effects in the first-stage probit regressions. In the second stage, we estimate the market value of cash with the inverse Mills ratio (IMR), obtained in the first stage, included as an additional explanatory variable to account for potential self-selection bias.

Panel A of Table 10 presents the results from the first-stage probit regression, whereas Panel B outlines the findings from the second stage of Heckman's (1979) two-stage approach.

The results presented in Panel A of Table 10 indicate that larger firms, those with higher leverage, and firms with a greater proportion of cash and cash equivalents relative to total assets are more likely to become multinational enterprises. Conversely, companies with lower profitability are less likely to pursue multinational status. Turning to Panel B, the findings provide additional support for our research hypothesis, as the coefficient of interest β_{16} ($dCash_{i,t}$*$MNC_{i,t}$) remains insignificant. Thus, our empirical results continue to support the research hypothesis even after addressing self-selection based on unobservable factors using Heckman's (1979) two-stage approach. Finally, we observe that the coefficient on the inverse Mills ratio is not significant at conventional levels.

The subprime crisis: According to Kim et al. (2015), the value the market attaches to a dollar of cash can increase in crisis circumstances because cash assets are more valuable to companies during such times. Our sample spans the years of the subprime crisis (2007–2009). It is plausible that during this period, cash holdings gained heightened importance to shareholders due to the elevated costs and scarcity of external funding sources in times of crisis (Kim et al., 2015). In light of this argument, as an additional robustness check, we rerun our baseline regression model for three distinct periods: before the subprime crisis (2000–2006), after the crisis (2010–2018), and with the exclusion of the credit crunch years (2007–2009) from our dataset. Unreported results, for brevity, confirm that the core findings of our analyses remain robust and are not influenced by the subprime crisis.[8]

Effects of financial constraints: The level of financial constraints a firm experiences enhances the need for precautionary cash savings because financial constraints restrict the company from accessing external financing, which limits its ability to finance attractive growth opportunities when they materialize (Denis and Sibilkov, 2010; Faulkender and Wang, 2006; Keynes, 1936; Opler et al., 1999). In light of the financial constraints argument, Denis and Sibilkov (2010) and Faulkender and Wang (2006) show that an incremental dollar of cash within the company is worth more for financially constrained firms compared to their unconstrained peers in the United States. To assess the robustness of our conclusions, we also examine whether they hold after considering the impact of financial constraints, especially given the expectation that MNCs face fewer financial constraints relative to their domestic peers (Jang, 2017).

[8] We are grateful to an anonymous referee for suggesting this robustness check.

Based on Denis and Sibilkov (2010), Faulkender and Wang (2006), and Manoel et al. (2024), we employ two measures of financial constraints: size and dividend dummy.

In the size specification, we include a binary variable that is equal to 1 for constrained firms whose size, measured as the book value of total assets, is lower than the size of the company at the 30th percentile of the annual size distribution and 0 otherwise. In the dividend dummy specification, we add a binary variable that takes the value of 1 for financially constrained companies (those that did not pay dividends in a given year) and 0 for the unconstrained ones (those that paid dividends). To measure the difference in cash value for constrained and unconstrained companies, we augment Eq. (2) with the dummy of financial constraints, one at a time, and with an interaction term of the change in cash holdings with the financial constraints binary variable. No other variables or parameters in Eq. (2) are modified. The interaction term ($dCash_{i,t}$*$Dummy\ Financial\ Constraints_{i,t}$) measures the difference in the cash value across constrained versus unconstrained companies. In order to take into account the direct impact of the degree of financial constraints that firms face on firm value, we also include the financial constraints dummy itself in Eq. (2). Table 11 presents the results when we estimate the augmented Eq. (2) separately for each measure of financial constraints.

We first confirm in Table 11 that financial constraints do not drive our results, given that the coefficients of interest β_{16} ($dCash_{i,t}$*$MNC_{i,t}$) are again insignificant. Moreover, unlike the findings of Denis and Sibilkov (2010) and Faulkender and Wang (2006), our findings reveal that cash balances do not contribute more to financially constrained firms' market value than their unconstrained counterparts.[9]

Controlling for firm-specific proxies of corporate governance: As amply attested by existing research on cash management and corporate governance (e.g., Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Louis et al., 2012), investors discount the market value of cash in companies with poorer corporate governance structures as they anticipate that they will not obtain the face value of cash balances in these companies. On the other hand, in companies where robust governance mechanisms protect investors well, the contribution of corporate cash holdings to shareholder wealth is close to their face value because insiders are less likely to disgorge cash resources for their personal ends. Therefore, the discounts on the market value of cash can be alleviated by the presence and effectiveness of monitoring arrangements that deter self-interested managers' self-serving behavior (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Louis et al., 2012; Manoel et al., 2023).

We control for a country's overall governance quality in the previous analyses by adding the World Bank WGI index to our valuation approach. We did not include firm-specific governance proxies in our primary regression model because the necessity of corporate governance data would significantly reduce the already limited sample of publicly traded companies in Latin America. Aiming to isolate the governance role on investors' valuation of cash reserves, we replicate our regression analyses using a subsample of companies with data available on corporate governance.[10] More precisely, in addition to the country-level governance measure (WGI index), we now add two firm-specific proxies of corporate governance, one at a time, as an additional robustness check: management score and accounting conservatism.

As our first firm-level corporate governance proxy, we employed the variable management score developed by Thomson Reuters. This governance score assesses a company's commitment to and effectiveness in adhering to best practices in corporate governance. This score is computed using a percentile rank scoring ranging from 0 to 100. A low score suggests lower levels of corporate governance and a high value suggests better governance practices (Manoel and Moraes, 2022a). In addition to the interaction term of the management score with the change in cash holdings ($dCash_{i,t}$*$Management\ Score_{i,t}$), we also include management score ($Management\ Score_{i,t}$) as a separate control variable in a regression otherwise identical to Eq. (2) to ensure that the interaction term does not simply capture the influence of governance itself on firm value.

In addition to the management score, we incorporate a proxy for accounting conservatism as an additional firm-specific governance measure. According to Louis et al. (2012), the incremental value of an additional dollar in cash balances is enhanced under conservative accounting policies, signifying that accounting conservatism is associated with more efficient utilization of cash balances. Specifically, their analyses suggest that conservative accounting policies promote *ex-ante* efficient investment decisions, facilitate *ex-post* monitoring of insiders' investment decisions, and, consequently, mitigate managerial expropriation of cash reserves. The literature, therefore, views accounting conservatism as a governance device that helps curb insiders' capacity to abuse cash reserves in lieu of shareholders' interests (Louis et al., 2012).

Given the empirical results of Louis et al. (2012), we also include the negative of the ratio of non-operating accruals to total assets cumulated over the previous three years ($CONACC_{i,t}$) and its interaction term with the change in cash holdings ($dCash_{i,t}$*$CONACC_{i,t}$) to control for the influence of conservative accounting policies as a governance mechanism on investors' valuation of cash balances. Non-operating accruals are computed as net income before extraordinary items plus depreciation less operating cash flows multiplied by −1

[9] For a thorough examination of the impact of financial constraints on the valuation of cash in one of the countries examined in this paper (Brazil), refer to the recent study of Manoel et al. (2024). In this context, where all profitable public companies are obligated to distribute a minimum portion of their profits, the authors demonstrate that investors do not assign a higher value to cash held by financially constrained firms than those not constrained.

[10] Unfortunately, the measures of corporate governance (institutional blockholders and Gompers, Ishii, and Metrick index) used by Dittmar and Mahrt-Smith (2007) are not available for our setting. Moreover, we recognize that the constraints imposed by data limitations prevent our study from incorporating additional firm-level governance measures.

Table 11
Firm fixed effects estimates of our main model after controlling for the effects of financial constraints.

Panel A: Size		Panel B: Dividend Dummy	
Variables	Coefficient	Variables	Coefficient
Constant	0.841***	Constant	0.938***
	(0.302)		(0.315)
$E_{i,t}$	1.787***	$E_{i,t}$	1.848***
	(0.648)		(0.653)
$dE_{i,t}$	−0.283*	$dE_{i,t}$	−0.310**
	(0.149)		(0.153)
$dE_{i,t+1}$	1.288**	$dE_{i,t+1}$	1.293**
	(0.536)		(0.533)
$dNa_{i,t}$	−0.127**	$dNa_{i,t}$	−0.116**
	(0.063)		(0.056)
$dNa_{i,t+1}$	0.417***	$dNa_{i,t+1}$	0.422***
	(0.082)		(0.083)
Growth Opportunities$_{i,t}$	0.151**	*Growth Opportunities*$_{i,t}$	0.140**
	(0.069)		(0.067)
$I_{i,t}$	0.673	$I_{i,t}$	0.601
	(2.906)		(3.011)
$dI_{i,t}$	0.021	$dI_{i,t}$	0.034
	(0.818)		(0.850)
$dI_{i,t+1}$	0.681	$dI_{i,t+1}$	0.653
	(1.497)		(1.519)
$D_{i,t}$	−3.910***	$D_{i,t}$	−4.758***
	(1.158)		(1.133)
$dD_{i,t}$	1.268***	$dD_{i,t}$	1.387***
	(0.424)		(0.441)
$dD_{i,t+1}$	−1.228*	$dD_{i,t+1}$	−1.360**
	(0.633)		(0.608)
$dV_{i,t+1}$	−0.561***	$dV_{i,t+1}$	−0.561***
	(0.021)		(0.021)
$dCash_{i,t}$	0.214	$dCash_{i,t}$	0.319
	(0.328)		(0.305)
$MNC_{i,t}$	0.127	$MNC_{i,t}$	0.170
	(0.118)		(0.209)
$dCash_{i,t}$*$MNC_{i,t}$	0.205	$dCash_{i,t}$*$MNC_{i,t}$	0.480
	(0.490)		(0.458)
Dummy Financial Constraints$_{i,t}$	0.156	*Dummy Financial Constraints*$_{i,t}$	−0.241*
	(0.203)		(0.133)
$dCash_{i,t}$*Dummy Financial Constraints$_{i,t}$	0.497	$dCash_{i,t}$*Dummy Financial Constraints$_{i,t}$	0.036
	(0.435)		(0.497)
$dCash_{i,t+1}$	1.477***	$dCash_{i,t+1}$	1.511***
	(0.471)		(0.458)
Investor Protection	–	Investor Protection	–
WGI index	−0.520	WGI index	−0.485
	(0.418)		(0.386)
GDP	0.024	GDP	0.023
	(0.021)		(0.020)
Adj. R^2	0.584	Adj. R^2	0.582
Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	3924	Observations (*n*)	3924

Notes: Table 11 reports firm fixed-effects estimates of our main model after controlling for the effects of financial constraints. See the text for definitions of the financial constraints criteria. The dependent variable ($V_{i,t}$) in both specifications is the firm's market value (Market-to-Book). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

and deflated by total assets cumulated over the last three years. We reverse the sign of accumulated non-operating accruals so that the value of the conservatism proxy increases with a firm's level of conservatism (Louis et al., 2012).

When using Management Score (Accounting Conservatism[11]) as a firm-specific governance measure, the firm-year observations fall

[11] Given that the market-to-book ratio is also used to measure conservative accounting policies (Louis et al., 2012), we choose to utilize Tobin's Q as the dependent variable when we control for the influence of accounting conservatism in the market value of cash. The left-hand-side variable is the market-to-book ratio when we control for the governance score (Management Score).

Table 12
Firm fixed effects estimates of our main model after controlling for two firm-specific proxies of corporate governance.

Panel A: Management Score		Panel B: Accounting Conservatism	
Variables	Coefficient	Variables	Coefficient
Constant	0.948***	Constant	0.362**
	(0.133)		(0.141)
$E_{i,t}$	2.914**	$E_{i,t}$	2.792***
	(1.177)		(0.571)
$dE_{i,t}$	−0.450**	$dE_{i,t}$	−0.672***
	(0.193)		(0.211)
$dE_{i,t+1}$	1.027	$dE_{i,t+1}$	1.42***
	(0.809)		(0.344)
$dNa_{i,t}$	−0.056	$dNa_{i,t}$	−0.135***
	(0.122)		(0.048)
$dNa_{i,t+1}$	0.268*	$dNa_{i,t+1}$	0.144
	(0.157)		(0.091)
Growth Opportunities$_{i,t}$	−0.041	*Growth Opportunities*$_{i,t}$	0.141*
	(0.084)		(0.081)
$I_{i,t}$	4.875	$I_{i,t}$	2.868
	(3.905)		(1.940)
$dI_{i,t}$	−1.734	$dI_{i,t}$	−2.029*
	(2.596)		(1.048)
$dI_{i,t+1}$	3.876	$dI_{i,t+1}$	0.876
	(2.813)		(1.256)
$D_{i,t}$	−8.547***	$D_{i,t}$	−5.493***
	(1.774)		(1.281)
$dD_{i,t}$	0.625	$dD_{i,t}$	0.632
	(0.934)		(0.521)
$dD_{i,t+1}$	−3.560***	$dD_{i,t+1}$	−2.112***
	(1.187)		(0.765)
$dV_{i,t+1}$	−0.371***	$dV_{i,t+1}$	−0.289***
	(0.054)		(0.059)
$dCash_{i,t}$	0.991	$dCash_{i,t}$	−0.013
	(0.814)		(0.273)
$MNC_{i,t}$	−0.094	$MNC_{i,t}$	−0.162*
	(0.117)		(0.097)
$dCash_{i,t}$*$MNC_{i,t}$	−0.663	$dCash_{i,t}$*$MNC_{i,t}$	0.261
	(0.517)		(0.344)
Management Score$_{i,t}$	−0.001	$CONACC_{i,t}$	−1.236
	(0.001)		(1.032)
$dCash_{i,t}$*Management Score$_{i,t}$	0.007	$dCash_{i,t}$*$CONACC_{i,t}$	10.678**
	(0.015)		(4.175)
$dCash_{i,t+1}$	0.802***	$dCash_{i,t+1}$	0.918***
	(0.286)		(0.311)
Investor Protection	–	Investor Protection	–
WGI index	−1.252**	WGI index	0.383*
	(0.509)		(0.218)
GDP	0.016	GDP	0.020**
	(0.011)		(0.008)
Adj. R^2	0.553	Adj. R^2	0.364
Year effects	Yes	Year effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	662	Observations (*n*)	1508

Notes: Table 12 reports firm fixed-effects estimates of our main model after controlling for two firm-specific proxies of corporate governance. In Panel A of Table 12, we control for Management Score from Thomson Reuters and the dependent variable ($V_{i,t}$) is the firm's market value (Market-to-Book). In Panel B of Table 12, we control for Accounting Conservatism by using *CONACC* as our accrual-based conservatism proxy. The dependent variable in Panel B is Tobin's Q. The other variables are the same as in Eq. (2). Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

from 3924 to 662 (1508). Panel A of Table 12 depicts the findings measuring corporate governance with management score, while in Panel B, we use the proxy of conservative accounting policies.

Panel A of Table 12 shows that the coefficients of *Management Score*$_{i,t}$ and its interaction term with the change in cash holdings *dCash*$_{i,t}$**Management Score*$_{i,t}$ are statistically insignificant.[12] Turning to Panel B, we observe that the estimated coefficient on the interaction term *dCash*$_{i,t}$**CONACC*$_{i,t}$ is positive and statistically significant, suggesting a positive relationship between the market value of cash and conservative accounting policies. This finding aligns with Louis et al. (2012) and implies that the value of cash increases under conservative accounting policies. The coefficient of the variable *CONACC*$_{i,t}$, however, is insignificant. More importantly for our research, the coefficients on the interaction terms *dCash*$_{i,t}$**MNC*$_{i,t}$ remain statistically insignificant, suggesting the absence of a valuation premium for Multilatinas' cash holdings. Hence, our results persist when we control for these two firm-level corporate governance measures.

Removing the bonding effect of a U.S. cross-listing: Frésard and Salva (2010) provide empirical evidence that the market value of excess cash is almost three times greater for foreign companies cross-listed in the United States ($1.61) than for their domestic peers ($0.58). Frésard and Salva (2010) ascribe this result to investors associating a U.S. listing with a commitment that diminishes the likelihood of converting cash balances to private benefits. To be more precise, they provide supporting arguments that stringent laws and disclosure requirements related to a U.S. cross-listing place incremental bounds on self-interested managers' behaviors and, consequently, lessen the embezzlement of cash assets. Therefore, a U.S. cross-listing has various characteristics that shrink the likelihood of corporate cash holdings being misappropriated and, thereby, curb the discounts the market places on an additional dollar of cash (Frésard and Salva, 2010).

Therefore, the act of cross-listing on a U.S. exchange serves as an additional mechanism for a company to signal its commitment to enhanced governance practices. In this sense, we rerun our primary valuation model of Eq. (2) after removing from the entire sample those firms cross-listing their shares on U.S. stock exchanges (348 firm-year observations). Non-tabulated results for the sake of brevity still indicate that, on average, shareholders do not put a significantly higher value on the cash balances of Multilatinas than on that of non-Multilatinas.

The market value of excess cash: In sequence, as an additional analysis, we reestimate our main valuation approach (Eq. (2)) by utilizing a measure of the level of excess cash[13] instead of the change in cash assets. Existing empirical studies reveal that agency conflicts are more pronounced when a corporation has excess cash resources (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010; Jensen, 1986; Opler et al., 1999). As posited by Jensen (1986), the presence of excess cash within a firm often intensifies managers' incentives to allocate these surplus cash resources towards projects that reduce firm value. Consequently, the accumulation of excess cash reserves can lead to more adverse outcomes for firm value, especially when self-interested insiders exploit these resources for personal gain, as highlighted by Dittmar and Mahrt-Smith (2007). Accordingly, to shed additional light on the role of the degree of internationalization on the market value of cash, we extend our analyses by examining whether the value investors place on excess cash holdings varies between multinationals and domestic firms from Latin America.

In the spirit of Dittmar and Mahrt-Smith (2007), we operationally define excess cash[14] (referred to as *EXCash*$_{i,t}$) as the surplus cash reserves a firm retains, exceeding the requisite amount for its operational and investment needs. To put it differently, excess cash is quantified as the residual derived from a cash-level regression, which represents the variance between actual and predicted "normal" (or "optimal") cash levels (Dittmar and Mahrt-Smith, 2007). In the first step, we align our methodology with the procedures outlined by Opler et al. (1999) and Dittmar et al. (2003) to compute the measure of excess cash. To be more specific, we regress the natural logarithm of cash and cash equivalents to net assets against variables that have been conventionally employed in preceding research on cash management to elucidate firms' cash positions. In this regression analysis, we also include firm and year fixed effects. The regression model employed to estimate the normal level of cash is as follows:

$$Ln\left(\frac{Cash\ Holdings_{i,t}}{NA_{i,t}}\right) = \beta_0 + \beta_1 Ln(NA_{i,t}) + \beta_2\left(\frac{Cash\ Flow_{i,t}}{NA_{i,t}}\right) + \beta_3\left(\frac{NWC_{i,t}}{NA_{i,t}}\right) + \beta_4 Growth\ Opportunities_{i,t} + \beta_5\left(\frac{Leverage_{i,t}}{NA_{i,t}}\right) + \beta_6 Dividend\ Dummy_{i,t} + \beta_7 Investor\ Protection_{i,t} + \beta_8 WGI_{i,t} + \beta_9 GDP_{i,t} + u_{i,t} \quad (3)$$

Where *Cash Holdings* is the sum of cash and cash equivalents; *NA* is net assets, calculated as total assets minus cash and cash equivalents; *Cash Flow* is operating income plus depreciation and amortization minus interest minus taxes minus dividend; *NWC* is net working capital, computed as non-cash current assets minus current liabilities; *Growth Opportunities* is the percentage change in total sales from year $t-1$ to year t; *Leverage* is the sum of short and long term debt; *Dividend Dummy* is a binary variable set equal to one in years where a company pays a dividend, and zero otherwise; The other variables are as previously defined in Eq. (2). For the sake of brevity, we omit the outcomes of the initial step.

In the second step, we add the residual term obtained from the first step (*EXCash*$_{i,t}$) as an explanatory variable and its interaction term with the MNC dummy. The coefficient on the interaction term (*EXCash*$_{i,t}$**MNC*$_{i,t}$) is the main coefficient of interest and it captures the influence of the degree of internationalization, if any, on the market value of excess cash. The other variables and regression

[12] However, we recognize that these results need to be interpreted cautiously, considering the reduced sample size of companies with available data on this governance index.

[13] We are grateful to an anonymous referee for recommending the inclusion of this additional analysis.

[14] The regression specifications related to excess cash computation have been meticulously examined and delineated in the articles of Opler et al. (1999), Dittmar et al. (2003) and Frésard and Salva (2010).

Table 13
Firm fixed effects estimate of Eq. (4).

Variables	Coefficient
Constant	0.610***
	(0.183)
$E_{i,t}$	2.075***
	(0.746)
$dE_{i,t}$	−0.348*
	(0.209)
$dE_{i,t+1}$	1.096
	(0.721)
$dNa_{i,t}$	−0.049
	(0.049)
$dNa_{i,t+1}$	0.444***
	(0.078)
Growth Opportunities$_{i,t}$	0.161***
	(0.060)
$I_{i,t}$	4.929**
	(2.205)
$dI_{i,t}$	−1.204
	(0.755)
$dI_{i,t+1}$	0.654
	(1.414)
$D_{i,t}$	−3.736***
	(1.172)
$dD_{i,t}$	1.132***
	(0.354)
$dD_{i,t+1}$	−1.127*
	(0.586)
$dV_{i,t+1}$	−0.473***
	(0.110)
$EXCash_{i,t}$	0.034
	(0.040)
$MNC_{i,t}$	0.014
	(0.107)
$EXCash_{i,t}$*$MNC_{i,t}$	−0.021
	(0.046)
Investor Protection	–
WGI index	−0.565**
	(0.220)
GDP	0.024***
	(0.008)
Adj. R^2	0.450
Year effects	Yes
P-Value	0.000
Observations (*n*)	2203

Notes: Table 13 reports the results from estimating Eq. (4) with firm and year fixed-effects. The dependent variable ($V_{i,t}$) is the firm's market value (Market-to-Book). *EXCash* is computed as the residual term from Eq. (3); Appendix A contains details of the definitions of the other variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

specifications are the same as in our main model. Specifically, the new valuation approach can be observed in Eq. (4):

$$V_{i,t} = \alpha_i + \beta_1 E_{i,t} + \beta_2 dE_{i,t} + \beta_3 dE_{i,t+1} + \beta_4 dNa_{i,t} + \beta_5 dNa_{i,t+1} + \beta_6 Growth\,Opportunities_{i,t} + \beta_7 I_{i,t} + \beta_8 dI_{i,t} + \beta_9 dI_{i,t+1} + \beta_{10} D_{i,t} + \beta_{11} dD_{i,t} + \beta_{12} dD_{i,t+1} + \beta_{13} dV_{i,t+1} + \beta_{14} EXCash_{i,t} + \beta_{15} MNC_{i,t} + \beta_{16} EXCash_{i,t}{*}MNC_{i,t} + \beta_{17} Investor\,Protection_{i,t} + \beta_{18} WGI_{i,t} + \beta_{19} GDP_{i,t} + \mu_t + \epsilon_{i,t} \quad (4)$$

Similarly to Dittmar and Mahrt-Smith (2007), we carried out this additional analysis exclusively for companies with positive excess cash reserves. The new findings are presented in Table 13.

Based on the findings displayed in Table 13, we observe that the coefficient on the interaction term $EXCash*MNC_{i,t}$ is insignificant. Consequently, in line with our research hypothesis, which asserts that cash balances are not significantly more valuable for Multilatinas in comparison to non-Multilatinas, we do not find excess cash balances to be valued at a statistically significant premium in Multilatinas as compared to non-Multilatinas. Furthermore, recognizing the significant influence of country-specific factors on determining companies' cash levels (Dittmar et al., 2003), we follow the approach proposed by Frésard and Salva (2010) to estimate the normal level of cash independently for each Latin American country. Unreported results in the interest of brevity show that this approach has no significant influence on our conclusions. Finally, our empirical results demonstrate robustness across a variety of methodologies employed in the computation of excess cash, highlighting the consistency and reliability of our findings.

Economic Policy Uncertainty (EPU): Drawing upon a dataset encompassing 19 countries from 2005 to 2018, Benkraiem et al. (2023) provide empirical evidence that investors discount the market value of excess cash of firms exposed to heightened economic policy uncertainty. This finding implies that during periods of elevated EPU, investors impose penalties on the market value of excess cash held by firms, driven by aggravated information asymmetry and agency problems (Benkraiem et al., 2023). Thus, to alleviate the concerns that economic policy uncertainty may unduly influence our empirical findings, we also incorporate a control for the potential impact of EPU[15] on cash value in an additional robustness check. In our study, we utilize the EPU index, computed as the natural logarithm of the monthly average values of the EPU index developed by Baker et al. (2016) within a specific year, as a measure of economic policy uncertainty.

In addition to the EPU index, we also include its interaction term with the change in cash assets ($dCash_{i,t}*EPU_{i,t}$) and excess cash ($EXCash_{i,t}*EPU_{i,t}$), one at a time, in our valuation regressions to examine the possible influence of EPU on the market value of cash (Eq. (2)) and excess cash (Eq. (4)). No adjustments are made to other variables or specifications in Eqs. (2) or (4), except for removing year fixed effects. This exclusion is justified because the EPU index is the same for all companies in a given year. Moreover, we remove the Latin American countries (Argentina and Peru) that are not included in Baker et al. (2016) for the EPU index. Table 14 displays the results after accounting for the EPU index.

Panel A of Table 14 reveals that EPU exerts a negative and statistically significant influence on the market value of cash, as evidenced by the negative and statistically significant estimated coefficient on the interaction term $dCash_{i,t}*EPU_{i,t}$. Hence, investors apply a discount to the market value of cash held by Latin American companies that are highly exposed to EPU. However, the estimated coefficient on the interaction term between $EXCash_{i,t}$ and $EPU_{i,t}$ in Panel B is also negative but statistically insignificant. This insignificant estimated coefficient might be attributed to the reduced sample size of firms with positive excess cash holdings. Most importantly, the results in Table 14 show that the estimated coefficients on the interaction terms $dCash_{i,t}*MNC_{i,t}$ and $EXCash*MNC_{i,t}$ are again insignificant. This implies that investors' valuations of Multilatinas' cash resources do not significantly differ from those of non-Multilatinas, even when accounting for the EPU index.

Alternative valuation approach: In all of the aforementioned analyses, we used the valuation model of Pinkowitz et al. (2006) to estimate the impact of corporate cash holdings on shareholder wealth. However, scholars recognize that their approach is also subject to limitations. For instance, Huang and Zhang (2012) contend that Pinkowitz et al.'s (2006) assertion that the impact of changes in cash reserves on future cash flows is adequately accounted for by other expectation variables appears unjustified. Moreover, while Faulkender and Wang's (2006) framework uses excess stock return as a proxy for shareholders' value, Pinkowitz et al. (2006) use the market-to-book ratio as a left-hand-side variable. However, this proxy is likely to capture constructs other than share value, such as accounting conservatism, agency costs of debt, and growth opportunities. In sum, Huang and Zhang (2012) highlight that the approach developed by Faulkender and Wang (2006) should also be utilized in papers on the theme because their model is an improvement on the methodology used by Pinkowitz et al. (2006).

In this sense, we also build on the methodology that Faulkender and Wang (2006) developed as our final robustness check. Specifically, we augment their valuation model by adding the MNC dummy variable, as well as an interaction of the change in cash holdings with the MNC dummy ($MNC_{i,t}*\frac{\Delta C_{i,t}}{M_{i,t-1}}$). The coefficient on ($MNC_{i,t}*\frac{\Delta C_{i,t}}{M_{i,t-1}}$) measures the cash value difference between MNCs and non-MNCs. In addition, as in Eq. (2), we include sales growth as an alternative measure of growth opportunities. The other variables (defined in Appendix A) and specifications are the same as in the original model of Faulkender and Wang (2006). Eq. (5) describes the model:

$$\begin{aligned} r_{i,t} - R^{B}_{i,t} = {} & \gamma_0 + \gamma_1 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_2 MNC_{i,t} + \gamma_3 MNC_{i,t} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_4 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \gamma_5 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \gamma_6 \frac{\Delta RD_{i,t}}{M_{i,t-1}} + \gamma_7 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \gamma_8 \frac{\Delta D_{i,t}}{M_{i,t-1}} + \gamma_9 \frac{C_{i,t-1}}{M_{i,t-1}} + \gamma_{10} L_{i,t} \\ & + \gamma_{11} \frac{NF_{i,t}}{M_{i,t-1}} + \gamma_{12} \frac{C_{i,t-1}}{M_{i,t-1}} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_{13} L_{i,t} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \epsilon_{i,t} \end{aligned} \tag{5}$$

Where the dependent variable is a firm's excess stock return over the fiscal year. It is computed as $r_{i,t}$, the raw stock return of firm i during fiscal year t, minus $R^{B}_{i,t}$, the benchmark return during the same period. As in the model developed by Faulkender and Wang (2006), we used the value-weighted portfolio return of Fama-French 25 portfolios formed on size and market-to-book as the benchmark return. The Δ terms on the right-hand side of Eq. (5) indicate the changes (from year $t-1$ to year t) in explanatory variables, including cash and cash equivalents (C), earnings before extraordinary items (E), net assets (NA), interest expense (I), dividends (D), leverage (L) and net financing (NF). Given that both dependent and independent variables of the model, except for leverage and sales

[15] We thank an anonymous referee for recommending this additional robustness check.

Table 14
Firm fixed effects estimates of Eq. (2) (Panel A) and Eq. (4) (Panel B).

Panel A: Market Value of Cash		Panel B: Market Value of Excess Cash	
Variables	Coefficient	Variables	Coefficient
Constant	1.189***	Constant	1.412***
	(0.062)		(0.118)
$E_{i,t}$	0.687	$E_{i,t}$	2323***
	(0.429)		(0.661)
$dE_{i,t}$	−0.058	$dE_{i,t}$	−0.260
	(0.120)		(0.220)
$dE_{i,t+1}$	0.679**	$dE_{i,t+1}$	1.758***
	(0.283)		(0.394)
$dNa_{i,t}$	0.041	$dNa_{i,t}$	0.052
	(0.050)		(0.065)
$dNa_{i,t+1}$	0.475***	$dNa_{i,t+1}$	0.439***
	(0.068)		(0.072)
$Growth\ Opportunities_{i,t}$	0.229***	$Growth\ Opportunities_{i,t}$	0.191***
	(0.059)		(0.063)
$I_{i,t}$	0.292	$I_{i,t}$	−0.250
	(1.129)		(1.715)
$dI_{i,t}$	0.236	$dI_{i,t}$	1.553
	(0.438)		(0.961)
$dI_{i,t+1}$	0.179	$dI_{i,t+1}$	−1.723
	(0.703)		(1.630)
$D_{i,t}$	−6.752***	$D_{i,t}$	−5.204***
	(1.159)		(1.179)
$dD_{i,t}$	1.106***	$dD_{i,t}$	1.035***
	(0.384)		(0.373)
$dD_{i,t+1}$	−3.266***	$dD_{i,t+1}$	−2.525***
	(0.552)		(0.602)
$dV_{i,t+1}$	−0.346***	$dV_{i,t+1}$	−0.312***
	(0.041)		(0.043)
$dCash_{i,t}$	0.731**	$EXCash_{i,t}$	−0.019
	(0.321)		(0.059)
$MNC_{i,t}$	−0.062	$MNC_{i,t}$	−0.012
	(0.070)		(0.108)
$dCash_{i,t}*MNC_{i,t}$	0.065	$EXCash_{i,t}*MNC_{i,t}$	0.002
	(0.259)		(0.051)
$EPU_{i,t}$	−0.001***	$EPU_{i,t}$	−0.002***
	(0.000)		(0.000)
$dCash_{i,t}*EPU_{i,t}$	−0.003*	$EXCash_{i,t}*EPU_{i,t}$	0.000
	(0.002)		(0.000)
$dCash_{i,t+1}$	0.566**	–	–
	(0.233)		
Investor Protection	–	Investor Protection	–
WGI index	−0.582***	WGI index	−0.620***
	(0.165)		(0.220)
GDP	0.010**	GDP	0.013**
	(0.004)		(0.005)
Adj. R^2	0.310	Adj. R^2	0.329
Year effects	No	Year effects	No
P-value	0.000	*P*-value	0.000
Observations (*n*)	2948	Observations (*n*)	1842

Notes: Table 14 reports firm fixed-effects estimates of Eq. (2) (Panel A – Market Value of Cash) and Eq. (4) (Panel B – Market Value of Excess Cash). The dependent variable ($V_{i,t}$) in both specifications is the firm's market value (Market-to-Book). *EXCash* in Panel B is computed as the residual term from Eq. (3); The EPU index is calculated as the natural logarithm of the average monthly EPU index developed by Baker et al. (2016) within a specific year; Appendix A contains details of the definitions of the other variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

Table 15
OLS estimations of Eq. (5).

Panel A		Panel B	
Variables	Coefficient	Variables	Coefficient
Constant	0.159* (0.086)	Constant	0.163* (0.084)
$MNC_{i,t}$	–	$MNC_{i,t}$	−0.021 (0.021)
$\Delta C_{i,t}$*$MNC_{i,t}$	–	$\Delta C_{i,t}$*$MNC_{i,t}$	0.317 (0.201)
$\Delta C_{i,t}$	0.519*** (0.158)	$\Delta C_{i,t}$	0.442*** (0.157)
$\Delta E_{i,t}$	0.137** (0.054)	$\Delta E_{i,t}$	0.136*** (0.047)
$\Delta NA_{i,t}$	−0.023 (0.017)	$\Delta NA_{i,t}$	−0.023 (0.016)
Growth Opportunities$_{i,t}$	0.042 (0.030)	*Growth Opportunities*$_{i,t}$	0.043 (0.028)
$\Delta I_{i,t}$	0.656 (0.414)	$\Delta I_{i,t}$	0.645* (0.385)
$\Delta D_{i,t}$	0.050 (0.264)	$\Delta D_{i,t}$	0.047 (0.247)
$C_{i,t-1}$	–	$C_{i,t-1}$	–
$L_{i,t}$	−0.131*** (0.012)	$L_{i,t}$	−0.130*** (0.013)
$NF_{i,t}$	−0.047 (0.043)	$NF_{i,t}$	−0.046 (0.039)
$C_{i,t-1}$*$\Delta C_{i,t}$	−0.921*** (0.351)	$C_{i,t-1}$*$\Delta C_{i,t}$	−0.781** (0.342)
$L_{i,t}$*$\Delta C_{i,t}$	0.274*** (0.083)	$L_{i,t}$*$\Delta C_{i,t}$	0.261*** (0.079)
Investor Protection	−0.046*** (0.014)	Investor Protection	−0.046*** (0.014)
WGI index	0.175*** (0.047)	WGI index	0.176*** (0.045)
GDP	−0.004** (0.002)	GDP	−0.004** (0.002)
Adj. R^2	0.051	Adj. R^2	0.051
Year effects	No	Year effects	No
Industry effects	Yes	Industry effects	Yes
Country effects	Yes	Country effects	Yes
P-value	0.000	*P*-value	0.000
Observations (*n*)	5540	Observations (*n*)	5540

Notes: Table 15 reports OLS estimations of Eq. (5). Panel A shows the estimation results without considering the effects of multinationality, while Panel B shows the estimation of Eq. (5) after controlling for the effects of multinationality on cash value. The dependent variable is a firm's excess stock return over the fiscal year. The Δ terms denote the changes (from year $t-1$ to year t) in explanatory variables. In the regressions, *C* is cash and cash equivalents; *E* is earnings before extraordinary items; *NA* is net assets; *RD* is research and development expense (which is set equal to zero if missing); *I* is interest expense; *D* is common dividends; *L* is market leverage; *NF* is net financing; Appendix A contains details of the definitions of the variables. We define a firm as a MNC if it reports at least 25 % of its total sales, the ratio of foreign sales to total sales, abroad and as a non-MNC if its foreign sales are <25 % or either missing. Robust standard errors clustered at the firm level are provided in parentheses. *, **, *** denote the significance at the 10 %, 5 % and 1 % levels, respectively.

growth, are scaled by lagged market value ($M_{i,t-1}$) at the end of the fiscal year $t-1$, the coefficient on the change in cash holdings (γ_1) can be seen as an estimate of the value investors assign to a dollar of cash (Dittmar and Mahrt-Smith, 2007; Faulkender and Wang, 2006).

The main coefficient of interest in Eq. (5) is the coefficient on $\Delta C_{i,t}$*$MNC_{i,t}$. The results from estimating Eq. (5) are displayed in Panel B of Table 15. In Panel A of this Table, in turn, we replicate Faulkender and Wang's (2006) value-of-cash model, i.e., without controlling for the degree of internationalization, to confirm whether the contribution of corporate cash holdings to shareholder value is lower in Latin America, as obtained with the Pinkowitz et al. (2006) methodology.

Table 15 reports the results.

The key variable of interest in Panel A is the change in cash holdings (γ_1). The estimated coefficient for $\Delta C_{i,t}$ in Panel A of Table 15 is 0.519, suggesting that each $1.00 increase in cash is valued at $0.519 by shareholders. Therefore, a dollar increase in cash holdings improves shareholders' wealth by only $0.519. This finding is consistent with those obtained with our primary valuation model ($0.407). Moreover, it reinforces the argument that investors undervalue cash in Latin American companies because they anticipate that they will not get the face value of cash balances in a framework where shareholders are not well-protected due to the higher expected managerial agency costs. With respect to the results of the other variables, we observe that the excess stock return is

positively related to the change in earnings, the interaction term between leverage and the change in cash reserves, and the WGI index. On the other hand, the excess return is negatively associated with leverage, lagged cash holdings, investor protection, and GDP. The other coefficients are not statistically significant.

Turning to the findings of Panel B of Table 15, we note that the coefficient on $\Delta C_{i,t}$*$MNC_{i,t}$ is statistically indistinguishable from zero. Hence, we continue to observe no statistically significant difference in shareholders' valuation of cash reserves between Multilatinas and non-Multilatinas when we draw on the approach developed by Faulkender and Wang (2006).[16] Altogether, the analyses in this subsection endorse the initial findings and suggest that shareholders do not put a statistically significant premium on Multilatinas' cash in comparison to the cash of non-Multilatinas.

5. Conclusions

Our study breaks new ground in the field of cash management and international business practices. While previous research has made significant strides, a theoretical gap remains in understanding how internationalization affects the value investors assign to cash assets. To the best of our knowledge, this study is the first to investigate whether the value of cash reserves differs between multinationals and domestic firms. By filling this research void, our manuscript introduces a fresh perspective to the literature, underscoring the role of internationalization in shaping the market value of cash. Our unique focus provides valuable insights for the international business community, emphasizing the critical role of cash management in determining firm value, regardless of a firm's multinational or domestic status. Furthermore, by concentrating on the Latin American context, our research responds to the call for greater geographic diversity in international business studies (e.g., Cuervo-Cazurra, 2007, 2008, 2016; Luo and Zhang, 2016; Nielsen et al., 2018; Pattnaik et al., 2021). It expands the applicability of existing theories beyond their predominantly U.S.-centric foundations and enriches the discourse with perspectives from an underrepresented region.

Consistent with our research hypothesis, we find robust evidence that the market value of cash is not significantly higher for Multilatinas compared to non-Multilatinas. Our confidence in these findings is bolstered by further results that confirm that, on average, the cash holdings of Multilatinas are valued similarly to those of non-Multilatinas. The main findings are confirmed when we use alternative measures of multinationality to identify MNCs and non-MNCs. Furthermore, we conduct several robustness checks that support our results. These include using propensity score matching as a statistical technique and applying Heckman's (1979) self-selection correction model to account for self-selection bias arising from the non-random nature of our sample of Multilatinas and non-Multilatinas.

We attribute our results to the interplay of opposing effects. On one hand, factors such as higher growth opportunities tend to increase the market value of cash held by multinationals compared to domestic firms. On the other hand, factors such as better access to capital markets, greater information asymmetry, higher risks of managerial agency costs, operations in countries with less protection of shareholders' rights, and lack of disclosure of foreign cash tend to decrease this value. In sum, despite the value-enhancing investment opportunities of Multilatinas, investors do not perceive Multilatinas' cash holdings as providing greater benefits than their domestic peers' cash. Consequently, they do not put a statistically significant premium on Multilatinas' cash in comparison to the cash of their domestic counterparts.

In addition to the contributions to the empirical literature on cash holdings and IB, our paper also yields relevant implications for managers of Multilatinas. By and large, investors' valuation of cash mirrors how they expect cash holdings to be utilized. Therefore, by demonstrating the absence of a valuation premium for Multilatinas' cash holdings, our findings indicate that investors do not perceive Multilatinas' cash holdings as providing more benefits relative to the cash of their domestic counterparts. Thus, although the literature points out that cash should contribute more to a firm with greater investment opportunities (as would be the case of MNCs vs. non-MNCs), factors like increased information asymmetry, higher risks of managerial agency costs related to foreign operations, operations in countries with less protection of shareholders' rights, and lack of disclosure of foreign cash lead investors to perceive Multilatinas' cash reserves as not providing greater benefits relative to those of non-Multilatinas.

Accordingly, although leaving cash holdings in foreign subsidiaries provides a quick way for managers to benefit from potentially attractive investment opportunities abroad, these cash resources may end up being spent on unnecessary expenses and unprofitable investments that somehow increase managers' welfare. In this sense, Multilatinas' shareholders may consider improving their foreign subsidiaries' governance mechanisms and disclosure standards to diminish the potential managerial expropriation of foreign cash holdings. Without improved disclosure and governance, investors may incorrectly assess the real contribution of Multilatinas' cash holdings to firm value. This is especially valid for Multilatinas' case, as they usually exhibit a regional instead of a global pattern of internationalization, thus being located in other Latin American countries, that is, in relatively weaker legal environments where the problem of managerial diversion is more severe.

Our research also yields important implications for policymakers in light of the above. Most parts of Multilatinas do not disclose information about their foreign cash, given that this information is not legally required. These companies only need to disclose information about the consolidated cash levels. Our study highlights the importance of disclosing separate information about domestic and foreign cash, including their locations and amounts, to enhance efficiency in stakeholder decision-making. With access to this disaggregated information, investors can better evaluate how managers might deploy these resources—a critical consideration given

[16] Untabulated analyses with the Faulkender and Wang (2006) approach also reveal that our main conclusions are unchanged when we employ the same alternative proxies of multinationality and after controlling for the same governance proxies, as reported in the previous robustness checks with the valuation approach of Pinkowitz et al. (2006).

the elevated risk of cash improper diversion in foreign subsidiaries, which can significantly affect investor wealth.

Additionally, detailed information on foreign and domestic cash holdings can deepen the understanding of how foreign cash reserves influence Multilatinas' investment strategies. Lastly, accurate data on the amount and location of foreign cash would support more informed discussions on MNC taxation. In recent years, considerable international efforts, particularly by the Organization for Economic Co-operation and Development (OECD), have focused on reducing discrepancies between MNCs' reported earnings and the actual location of their operations. This issue holds particular importance for the global economy, as corporate tax avoidance has led to reduced tax revenues for many countries. Therefore, policymakers may consider requiring companies to disclose domestic and foreign cash reserves separately (including amounts and locations) rather than mandating only global cash reserves disclosure.

This article is subject to several limitations. First, we share the imperfections related to cross-country studies. Second, even following prior literature and using alternative measures of international involvement, we acknowledge that our conclusions are restricted to their effectiveness in capturing the multinationality condition of companies. Third, the fact that we do not control for geographic distance due to data unavailability can also be recognized as a limitation of our research since that higher geographic distance between the subsidiary and parent company tends to increase the monitoring costs. Fourth and maybe the study's principal limitation is that most Multilatinas do not disclose information about their foreign cash.

A better understanding of the relation between the value investors place on each additional dollar of cash and MNCs would be to examine the domestic and foreign cash separately rather than concentrating only on the global cash. Hence, as foreign cash data become available, future studies might examine the market value of domestic and foreign cash in MNCs. Lastly, we acknowledge that our conclusions are restricted to the Latin American context due to the diverse institutional settings and firm characteristics across different developing countries. Recognizing this, future replications of this study in other emerging market contexts will offer additional insights into the external validity of our findings.

Looking forward, future research could also explore differences in the market value of cash between firms that voluntarily disclose detailed information about their foreign cash holdings and those that do not, investigating whether increased transparency enhances the perceived value of cash. Additionally, the role of geographic distance between parent and subsidiary firms merits further investigation, as it can heighten monitoring costs and impact the market value of cash. Moreover, building on the OECD's initiatives to counter tax avoidance, future research could also examine how tax policies affect cash valuation. For instance, by comparing MNCs from countries with different tax regimes (e.g., worldwide versus territorial tax systems), researchers could evaluate whether tax-driven incentives for retaining cash abroad influence perceived cash value. Insights into how tax policy shapes the perceived value of cash holdings could be valuable for policymakers and investors focused on transparency and fiscal responsibility in MNCs.

CRediT authorship contribution statement

Aviner Augusto Silva Manoel: Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Marcelo Botelho da Costa Moraes:** Visualization, Validation. **Jorge Carneiro:** Visualization, Validation, Supervision, Methodology, Formal analysis. **Eloisa Perez-de Toledo:** Visualization, Validation, Supervision.

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Appendix A. Description of the variables

Variables	Abbreviation	Operational definition
Cash/Total Assets	Cash/Total Assets	Cash and Cash Equivalents/Total Assets
Foreign Sales	FS	Foreign Sales/Total Sales
Multinational Dummy	MNC	Binary variable for multinationality (=1 if FS >25 %; 0 otherwise).
Net Assets	NA	Net assets, that is, total assets minus cash and cash equivalents.
Size	Size	Natural logarithm of Net Assets.
Leverage	Lev	Short and Long-Term Debt/Net Assets
Market-to-Book	Market-to-Book	Computed at fiscal year-end as the sum of the market value of equity and the book values of short-term and long-term debt divided by the book value of assets.
Tobin's Q	Tobin's Q	Calculated as the market value of equity less the book value of equity plus the book value of assets, all scaled by total assets.
Earnings	*E*	Earnings before extraordinary items plus interest, deferred tax credits, and investment tax credits.
Cash Holdings	Cash	The sum of cash and cash equivalents.
Growth Opportunities	Sales Growth	Percentage change in total sales from year *t*-1 to year *t*.
Interest expense	I	Interest expense
Dividends	*D*	Total dividends paid
Dividend dummy	Dividend dummy	A binary variable set equal to one in years where a company pays a dividend, and zero otherwise.

(*continued on next page*)

(*continued*)

Variables	Abbreviation	Operational definition
Cash Flow	Cash Flow	Computed as operating income plus depreciation and amortization minus interest minus taxes minus dividend.
Net Working Capital	NWC	Computed as non-cash current assets minus current liabilities
Excess Cash	$EXCash_{i,t}$	*EXCash* is computed as the residual term from Eq. (3).
$R_{i,t}$	$R_{i,t}$,	$R_{i,t}$ is the raw stock return of firm i over fiscal year $t-1$ to t.
$R^B_{i,t}$	$R^B_{i,t}$	$R^B_{i,t}$ is the benchmark return over fiscal year $t-1$ to t.
Excess Return	Excess Return	Excess Return is defined as $R_{i,t} - R^B_{i,t}$.
Net Financing	Net Financing	Computed as sales of common and preferred stock net of stock repurchases, plus issuance of long-term debt net of long-term debt reduction deflated by the market value of equity of the firm at the end of the previous year.
Investor Protection (Shareholders Rights)	Investor Protection	This index measures how strongly the legal system favors minority shareholders against managers or dominant shareholders in the corporate decision-making process, including the voting process. The Investor Protection (Shareholder Rights) variable goes from zero to five (La Porta et al., 1998).
The Worldwide Governance Indicators (WGI) index	WGI	WGI is the equal-weighted average of the six components of the Worldwide Governance Indicators: (1) Voice and Accountability, (2) Political Stability and Absence of Violence/Terrorism, (3) Government Effectiveness, (4) Regulatory Quality, (5) Rule of Law and (6) Control of Corruption.
EPU index	EPU	The EPU index is computed as the natural logarithm of the monthly average values of the EPU index developed by Baker et al. (2016) within a specific year.
Management Score	$Management\ Score_{i,t}$	The Management Score is calculated using a percentile rank scoring ranging from 0 to 100. A low score suggests weak governance mechanisms and a high value indicates better governance practices.
Accounting Conservatism	$CONACC_{i,t}$	Non-operating accruals are computed as net income before extraordinary items plus depreciation less operating cash flows multiplied by −1 and deflated by total assets cumulated over the last three years.
GDP Growth	GDP	Growth in GDP per capita, obtained from the World Bank

Notes: Appendix A describes the variables used in this article.

Data availability

Data will be made available on request.

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