

## C.E.O. characteristics and corporate risk-taking: evidence from emerging markets

Carlos Cid-Aranda & Félix López-Iturriaga

**To cite this article:** Carlos Cid-Aranda & Félix López-Iturriaga (2023) C.E.O. characteristics and corporate risk-taking: evidence from emerging markets, Economic Research-Ekonomiska Istraživanja, 36:2, 2175008, DOI: [10.1080/1331677X.2023.2175008](https://doi.org/10.1080/1331677X.2023.2175008)

**To link to this article:** <https://doi.org/10.1080/1331677X.2023.2175008>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 02 May 2023.



Submit your article to this journal [↗](#)



Article views: 165



View related articles [↗](#)



View Crossmark data [↗](#)

# C.E.O. characteristics and corporate risk-taking: evidence from emerging markets

Carlos Cid-Aranda<sup>a,b</sup>  and Félix López-Iturriaga<sup>c</sup> 

<sup>a</sup>Management Department, Faculty of Administration and Economics, University of Santiago of Chile (USACH), Chile; <sup>b</sup>Accounting Department, University of Valencia, Valencia, Spain; <sup>c</sup>Department of Financial Economics and Accounting, Universidad de Valladolid, Valladolid, Spain

## ABSTRACT

Although the Upper Echelon Theory predicts that C.E.O.s play a relevant role in corporate risk-taking, the C.E.O.s' traits that can be associated with such risk are not well-explored. Our study fills this gap and shows the effect of C.E.O.s' characteristics on corporate risk-taking of a hand-collected sample of 369 Latin American listed firms. We study six traits: C.E.O.s' age, tenure, gender, duality (i.e., holding concurrent Chairman and C.E.O. roles), educational background, and career horizon. We find that age increases risk-taking. However, when the C.E.O.'s age reaches a given point, their concern about reputation and retirement results in a negative relationship. We also find that as C.E.O. tenure increases, corporate risk begins to decrease. Nevertheless, there comes a point at which the C.E.O. uses their knowledge and their overconfidence to make risky financial decisions. Female C.E.O.s are negatively related to risk-taking, while C.E.O. duality, C.E.O. educational background, foreign C.E.O.s, and a C.E.O.'s career horizon have the opposite effect. Our study is novel because of the focus on emerging markets and because of the use of different market-based measures of risk-taking. We provide policymakers, investors, and practitioners with fresh evidence about how C.E.O.s' risk aversion shapes the firm's risk-taking behaviour.

## ARTICLE HISTORY

Received 18 June 2022  
Accepted 20 January 2023

## KEYWORDS

C.E.O.; corporate risk-taking;  
Latin America; C.E.O. age;  
C.E.O. tenure

## JEL CLASSIFICATION CODES

G32; G34; L25

## 1. Introduction

The C.E.O. bears the highest responsibility within the company and is one of its most critical resources. Traditional theoretical approaches consider C.E.O.s to be homogeneous individuals whose personal characteristics are irrelevant, such that corporate decisions are only explained by firm- or industry-level factors (Bertrand & Schoar, 2003; Huang & Kisgen, 2013). However, the Upper Echelons Theory points out that C.E.O.s' experience, values and other attributes play a key role in their decisions and shape organisational outcomes (Hambrick & Mason, 1984). From this point of view, the company's

**CONTACT** Carlos Cid-Aranda  [carlos.cid.a@usach.cl](mailto:carlos.cid.a@usach.cl)

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

decision-making process can be explained by a C.E.O.'s observable characteristics, such as age, tenure, or duality, as well as their psychological behavioural traits (Graham et al., 2013; Nguyen et al., 2018). Nevertheless, the impact of a C.E.O.'s profile on company outcomes remains an ongoing subject of inquiry and as yet there is no conclusive evidence as to how a C.E.O.'s characteristics impact organisational outcomes.

A growing stream of literature is focusing on the importance of C.E.O. profile in corporate risk-taking. Specifically, several authors indicate that the C.E.O.'s characteristics can affect corporate risk through financial decisions, such as R&D expenditures, diversification, financial leverage, and acquisition, among others (Matta & Beamish, 2008; Serfling, 2014). Yet despite this, the relationship between C.E.O. profile and corporate risk-taking remains relatively unexplored, and the evidence is still unclear. This is due to four main reasons. First, most studies on demographic characteristics usually employ C.E.O. age and C.E.O. tenure measures indistinctly. While C.E.O. age and C.E.O. tenure are highly correlated, the two metrics do not necessarily reflect the same C.E.O. characteristic. Second, the mixed evidence can be explained by the disagreement concerning what is the appropriate measure of corporate risk to be applied. Third, the literature has neglected other C.E.O. features that may have significant explanatory power, such as C.E.O. duality, gender, foreignness, and educational background, among others. Finally, only a few studies address the relationship between C.E.O.'s observable characteristics and corporate risk-taking outside the context of the U.S.A. In this sense, there is a lack of studies on emerging economies.

Considering the above-mentioned gaps, this study aims to empirically test the impact of C.E.O. profile on the firm's risk-taking behaviour. Accordingly, we attempt to address the following research questions: How are the demographic characteristics of C.E.O.s – age and tenure – related to corporate risk-taking? Are there other demographic, cultural or acquired traits (such as gender, power, educational background or foreignness) that are relevant to risk-taking?

To answer these questions, we follow a threefold method. First, we define a set of C.E.O. profile variables to measure C.E.O. risk behaviour, and we also determine the appropriate risk-taking measures. Second, we construct a panel data by matching time-series with cross-section data to deal with unobservable heterogeneity. We also control for different firm-level characteristics that might impact the firm's riskiness. Third, we test the potential explanatory power of a comprehensive set of personal C.E.O. traits on corporate risk-taking by using the two-step Generalised Method of Moments (G.M.M.) to address the endogeneity problem and reverse causality.

We report enlightening results using a sample of 369 Latin American companies between 2005 and 2020. Our initial findings indicate that the relationship between C.E.O. age and risk-taking is non-linear and displays an inverted U-shape. Hence, C.E.O. age at first positively impacts the level of risk-taking. However, the relationship becomes negative when the C.E.O. turns about 45 years old. This indicates that ageing generates a better ability for younger C.E.O.s to learn and adapt quickly to complex environments. For older C.E.O.s, ageing causes a greater preference for the status quo. The second set of results shows that the relationship between C.E.O. tenure and risk-taking is also non-linear but U-shaped. In other words, as tenure increases, the C.E.O. becomes more entrenched and avoids risky decisions. Nevertheless, when C.E.O. tenure reaches around 17 years, the benefits of long tenure – such

as greater trust with other stockholders or experience – outweigh the costs, and the risk-taking increases. We also test whether C.E.O. gender influences risk-taking. Our results suggest that greater female conservatism leads to lower corporate risk in female-led firms. In contrast, we find that the concentration of power in the hands of a single executive – C.E.O. duality – and a C.E.O.'s education decrease risk aversion. Interestingly, C.E.O.s with a master degree in business sciences increase corporate risk. We also find that foreign C.E.O.s are positively associated with corporate risk-taking. Additional results indicate that the C.E.O.'s career horizon – adjusted by the industry, and the uncertainty avoidance of the C.E.O.'s country of nationality – affect risky financial decisions.

We contribute to the extant literature in several aspects. First, we contribute to the literature addressing the link between a C.E.O.'s characteristics and firm-level issues. Our results align with the Upper Echelon Theory proposed by Hambrick and Mason (1984) and show that the C.E.O.'s observable characteristics have explanatory power on corporate risk-taking. Second, to the best of our knowledge, this is the first work in Latin America to study the impact of C.E.O.s' observable attributes on risk-taking. Latin American countries are characterised by a high concentration of ownership – usually in the hands of families – and weak investor protection (Gallego & Larrain, 2012; Mellado & Saona, 2020; Santiago-Castro & Brown, 2011). Nevertheless, in terms of corporate governance, there have been significant changes in legislation and regulation to protect investors (Gaitán et al., 2018). Previously, Briano-Turrent et al. (2020) reported that long-tenured C.E.O.s pay less dividends, while Gallego and Larrain (2012) studied the impact of C.E.O.s' characteristics on compensation premium. However, none were able to conclude the relationship between C.E.O. profile and risk-taking behaviour. Third, we disentangle the effect of two closely related C.E.O. traits: age and tenure. Longer tenure has usually been associated with older age. However, anecdotal evidence confirms that this situation does not hold for all C.E.O.s. For instance, Mauricio Varela, C.E.O. of the Chilean company *Socovesa*, had been in that position for over 10 years at the end of 2013, and he was only 40 years old, while the C.E.O. of *Cementos Bío Bío*, had been in the position for only four years at the end of 2008 and yet was over 64 years old. Thus, we identify experience in the company with longer C.E.O. tenure rather than with being an older C.E.O. This is consistent with Cline and Yore (2016), who find that the market undervalues companies with old C.E.O.s but rewards those with long-tenured C.E.O.s. Following this view, we report that C.E.O. age and C.E.O. tenure affect risk-taking in opposite directions. Finally, as a fourth contribution, we use different market-based measures of risk-taking that cannot be managed directly by the C.E.O. but which reflect the market perception of the C.E.O.'s financial decisions, business strategy, and risk-taking behaviour.

The article proceeds as follows. Section 2 discusses the literature and proposes the main hypotheses; Section 3 describes the research model, statistical methodology, sample, and variables; Section 4 presents our empirical results and the discussion; and Section 5 provides the conclusion, contributions, implications, and suggestions for future research.

## 2. Literature review and hypotheses

Corporate risk-taking is likely one of the firm-level issues to be most affected by managerial traits. Prior research has identified three main characteristics of managers

through which the C.E.O.'s traits can affect corporate risk-taking: the C.E.O.'s social capital, the C.E.O.'s cultural and institutional environment, and the C.E.O.'s demographic characteristics.

As far as the C.E.O.'s social capital is concerned, Ferris et al. (2017, 2019) show a positive association between C.E.O. social capital and aggregate corporate risk-taking because social capital alters the risk tolerance of the most connected agents, reinforces the individual sense of power, and enhances opportunities in the labour market.

Another stream of research has explored the cultural and institutional environment in which C.E.O.s take their decisions. For example, Baxamusa and Jalal (2016), Díez-Esteban et al. (2019), and Jiang et al. (2015) highlight the role played by religious backgrounds in corporate risk-taking. As regards cultural environment, some authors have reported a relationship between risk-taking and a number of cultural dimensions such as power distance, masculinity, individualism, uncertainty avoidance, harmony, and long-term orientation (Díez-Esteban et al., 2019; Li et al., 2013) or the legal protection of investors rights (Acharya et al., 2011; Boubakri et al., 2013).

In this article, we focus on the relationship between C.E.O.s' demographic characteristics and corporate risk-taking. More specifically, we study the influence of seven traits: age, tenure, gender, power, educational background, foreignness, and career horizon.

### **2.1. C.E.O. age**

The literature provides evidence that ageing affects C.E.O. incentives as well as their physiological and psychological characteristics (Croci et al., 2017). Younger C.E.O.s (as opposed to older C.E.O.s) prefer riskier financial decisions to prove their skills (Serfling, 2014). Zhang et al. (2016) called this phenomenon the 'signaling-incentive effect', in which younger C.E.O.s act aggressively and make risky but profitable financial decisions in order to build their reputation. Similarly, younger C.E.O.s possess cognitive skills that can better adapt to strategic changes (Cline & Yore, 2016). Thus, young C.E.O.s acquire better cognitive skills as they get older. The relationship between C.E.O. age and corporate risk-taking could therefore be positive when a young C.E.O. runs the company. However, there comes a time when ageing is associated with less energy and cognitive abilities (Kitchell, 2009). As a result, older C.E.O.s prefer the stability of future returns. Kim et al. (2016) and Yim (2013) report that older C.E.O.s increase their desire for the status quo in their life and reduce R&D expenditures because they are likely to fall short of benefiting from the success of these investments.

From a psychological point of view, older people are resistant to complex problems because ageing generates negative changes in their cognitive capacity (Mata et al., 2011). In this sense, older C.E.O.s increase conflicts of interest with the rest of the stakeholders by disregarding value-enhancing risky projects. Risk-taking partly explains the misalignment of interests between the C.E.O. and shareholders that both parties are willing to assume. Shareholders desire risky projects with high potential for growth opportunities, while older C.E.O.s, unlike shareholders, cannot diversify their risk so easily.

In summary, assuming more risk generates different incentives between older and younger C.E.O.s. For younger C.E.O.s, the benefits of taking on more risk outweigh

the costs, while the opposite occurs with older C.E.O.s. Thus, younger C.E.O.s gain more experience over the years, which translates into a greater ability to manage risky projects. However, there comes a time when managers become less risk-tolerant. Taking this into account, our first hypothesis postulates that:

Hypothesis 1: C.E.O. age has an inverse U-shaped relationship with risk-taking.

## **2.2. C.E.O. tenure**

The literature has failed to report any conclusive results regarding how C.E.O. tenure explains firms' risk behaviour. On the one hand, short-tenured C.E.O.s are concerned about their reputation, career, and about understanding the company as well as the industry (Walters et al., 2007). These short-tenured C.E.O.s need the supervision and guidance of the board of directors or top management team to enhance their skills and to understand how to interact with internal stakeholders (Shen, 2003). They also have little power in the company and are afraid of being misunderstood by the company or the labour market. On the other hand, McClelland et al. (2012) point out that as the years pass, C.E.O.s worry about their working career due to the fear that their specific human capital will not adapt to the other companies in the market. Moreover, long-tenured C.E.O.s have a different agenda than those who are still building and maintaining their careers. The former focus on projects with short-term payoffs rather than risky projects with long-term growth potential.

However, time can also result in an alignment of interests between C.E.O. and stakeholders. Long-tenured C.E.O.s have already earned the trust of the board and other influential stakeholders, so they can better maintain business stability in the midst of risky decisions. The match theory points out that long C.E.O. tenure is due to the fact that their skills and knowledge match the characteristics and needs of the company (Allgood & Farrell, 2003). In contrast, traditional agency theory indicates that C.E.O.s can take advantage of their power, entrench themselves in their position and pursue their interests over the firm's interests.

On the other hand, in emerging economies such as Latin America – characterised by a high concentration of ownership and shareholder representatives on the board – there is a low separation between management and control and a low probability of managerial opportunism (Pombo & Tabora, 2017). While long-tenured C.E.O.s do not risk their career and job stability, they accumulate firm- and industry-specific knowledge and develop specific human capital, which improves the firm's performance (Nguyen et al., 2018). In this sense, the risk behaviour of long-tenured C.E.O.s has been shaped by failure-based learning, and they evaluate risky decisions more objectively and systematically (Simsek, 2007). In addition, companies with long-tenured C.E.O.s have a better alignment of interests between senior management and company culture, which translates into organisational outcomes (Hartnell et al., 2016).

We thus anticipate that as tenure increases, C.E.O.s take fewer risks. However, once they have earned the trust of the rest of the powerful internal stakeholders, they are able to use their experience and knowledge to manage risky decisions.

Hypothesis 2: C.E.O. tenure has a U-shaped relationship with risk-taking.

### **2.3. Female C.E.O.s**

In recent years, some studies have reported that the heterogeneous composition of senior management in terms of gender diversity has a positive impact on firm performance. Khan and Vieito (2013) find that companies led by female C.E.O.s display superior performance but lower corporate risk. Controversially, the literature has stereotyped female C.E.O.s as being conservative and risk-averse individuals (La Rocca et al., 2020). Faccio et al. (2016) and Huang and Kisgen (2013) report that firms run by female C.E.O.s take less risky corporate finance decisions because female C.E.O.s are more risk-averse, less overconfident, and are associated with a higher risk of unemployment. In the same vein, Sah et al. (2022) and Xu et al. (2019) point out that female senior management maintain higher levels of cash holdings for investing in financial decisions that reduce the firm's risk. This view is confirmed by Palvia et al. (2015), who find that female C.E.O.s and chairwomen act conservatively in periods of financial stress, and by Adhikari et al. (2019), who report that female-led companies avoid risky strategies with positive N.P.V. but high litigation probability, such as aggressive R&D investments or intensive advertising. Similar results were also obtained by Elsaid and Ursel (2011), according to whom a change from a male C.E.O. to a female C.E.O. is linked to reduced R&D spending, lower volatility in cash flows, and increased cash holdings. Thus, our third hypothesis is as follows:

Hypothesis 3: Female C.E.O.s have a negative relationship with risk-taking.

### **2.4. C.E.O. duality**

C.E.O. duality has been widely studied from different perspectives. From an agency theory point of view, Adams et al. (2005) point out that C.E.O. duality generates a concentration of power in a single executive, which allows them to influence the company's decision-making without significant objections from other internal stakeholders. Kim et al. (2009) indicate that C.E.O. duality decreases board vigilance, increases managerial opportunism, and reduces the firm's risk through unrelated diversification. In this way, C.E.O.s maintain the status quo in the firm, preserve their job stability and prestige, and obtain personal benefits at the expense of shareholders. In summary, agency theory supports that these C.E.O.s use their power and discretion in the company's management to avoid risky decisions and to entrench themselves in their position.

In contrast, according to stewardship theory, C.E.O. duality fosters energetic and unified leadership. Peng et al. (2007) note that C.E.O. duality incentivises an efficient leadership unit that streamlines decision-making and has a positive impact on the performance of firms within a dynamic environment. Nguyen et al. (2018) report that C.E.O. duality reduces board conflicts of interest and allows them to respond quickly to high-growth opportunities in complex environments. Similarly, Peni (2014) finds a positive relationship between C.E.O. duality and firm performance. Finally, for a list of Latin American companies, Gaitán et al. (2018) find no evidence that C.E.O. duality negatively impacts firm outcomes.

Since there is no consensus as to which theory is best suited to emerging economies such as Latin America, we propose two hypotheses:

Hypothesis 4a: C.E.O. duality has a negative relationship with risk-taking.

Hypothesis 4b: C.E.O. duality has a positive relationship with risk-taking.

### **2.5. C.E.O.s' educational background**

Naseem et al. (2020) point out that C.E.O.s' educational background promotes efficient financial and investment decision-making. C.E.O.s with a higher level of education are usually more creative, react faster to innovative ideas, and prefer risky and aggressive strategies (Bertrand & Schoar, 2003; Zhou et al., 2021). In a similar vein, C.E.O.s with an M.B.A. exhibit overconfidence and higher risk tolerance (Beber & Fabbri, 2012). Farag and Mallin (2018) find a positive relationship between a C.E.O.'s education and risk-taking measures because C.E.O.s with postgraduate degrees are better informed about new trends and are more likely to pursue innovative ideas. Therefore, highly educated C.E.O.s know to develop risky and more profitable projects (King et al., 2016).

We therefore suggest that the firm's financial decisions depend on the C.E.O.'s background. Specifically, we posit that C.E.O.s with a business science master's degree possess more tools and skills to manage risk and take riskier decisions.

Hypothesis 5: Being a C.E.O. with a business science background has a positive relationship with risk-taking.

### **2.6. Foreign C.E.O.s**

Shaw (1990) points out that the C.E.O.'s nationality influences their cognitive ability and, thus, decision-making. Nielsen and Nielsen (2011) stress that diversity of nationality within senior management encourages constructive debate and improves the ability to assess risky projects. In fact, Graham et al. (2013) report that U.S. C.E.O.s exhibit different personality traits and attitudes – such as level of optimism – to non-U.S. C.E.O.s. Foreign C.E.O.s are more likely to lead companies in risky industries (Hoang et al., 2019). Additionally, foreign C.E.O.s have a larger network of international contacts (Fang et al., 2018) and specific knowledge of their native country's economy (Conyon et al., 2019).

We therefore anticipate that foreign C.E.O.s have better abilities and resources to handle risky projects. Our sixth hypothesis thus reads as follows:

Hypothesis 6: Being a foreign C.E.O. has a positive relationship with risk-taking.

### **2.7. C.E.O.s' career horizon**

Retirement is the last step of the C.E.O.'s career, in which their track record is judged. In this sense, one common problem is the horizon problem, where the C.E.O. pursues short-term decisions as they approach retirement (Davidson et al., 2007). As a general rule, the further away a C.E.O. is from retirement, the longer their career horizon. C.E.O.s with short career horizons are more likely to display myopic risk aversion because they reject risky projects with expected cash flows after retirement (Aktas et al.,



2021). In other words, as they approach retirement, C.E.O.s avoid risky decisions that might jeopardise their reputation or ruin the perception of their recent career (Matta & Beamish, 2008). The C.E.O.'s career horizon therefore influences their decision-making process. For the Italian market, both Wade et al. (2006) and Martino et al. (2020) provide empirical support for the fact that C.E.O.s with longer career horizons make faster and riskier decisions because of their risk preferences. Similar results for U.S. firms have been reported by McClelland et al. (2012). As a result, our seventh hypothesis postulates that:

Hypothesis 7: C.E.O.'s career horizon has a positive relationship with risk-taking.

### 3. Empirical method

#### 3.1. Research model

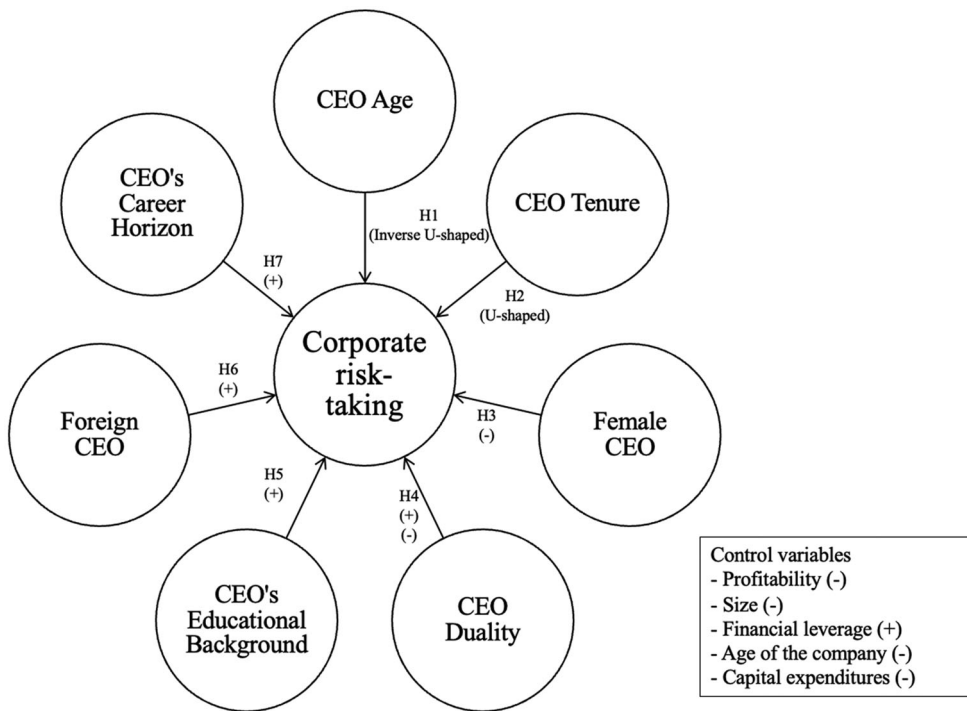
We capture the impact of C.E.O. profile on corporate risk-taking by using a list of the C.E.O.'s observable characteristics. C.E.O.'s risk aversion is a subjective measure and, in turn, is usually unknown or hard to measure correctly. In contrast, observable characteristics – such as age, tenure, gender, power, educational background, foreignness, and career horizon – are more accessible. These variables thus allow us to proxy the C.E.O.'s risk preference. Figure 1 presents the hypotheses and the expected signs.

We have a panel data set with cross-sectional and longitudinal information, such that we control for unobservable heterogeneity that could affect corporate risk-taking (Baltagi, 2013). We propose Equation (1) to identify the impact of a C.E.O.'s characteristics on corporate risk:

$$\text{Firm risk}_{it} = \beta_0 + \beta_k(\text{CEO characteristics}_{it}) + \omega_k(\text{Control variables}_{it}) + \gamma_i + \eta_i + \mu_t + \varepsilon_{it}, \quad (1)$$

where Firm risk<sub>it</sub> are the two different measures of risk-taking for firm *i* at time *t*: Total Risk (T.R.) and Idiosyncratic Risk (I.R.). CEO characteristics<sub>it</sub> are the set of explanatory variables to examine the possible impact of C.E.O. profile on firm risk. We include C.E.O. Age and C.E.O. Tenure in linear and quadratic forms. We also introduce the rest of the C.E.O.'s characteristics: Female C.E.O., C.E.O. Duality, C.E.O. Master, Foreign C.E.O., C.E.O. Career Horizon, and C.E.O. UA Index. Control variables<sub>it</sub> is the vector of firm characteristics potentially correlated with risk-taking: R.O.A., Size, L.E.V., Age, and C.A.P.E.X. We also include a set of fixed effects to control for unobservable industry-specific effects ( $\gamma_i$ ), unobservable country-fixed effects ( $\eta_i$ ), and time-variant fixed effects ( $\mu_t$ ). We use industry sector dummies based on the 2-digit NAICS Code to control for industry-fixed effects. Finally,  $\varepsilon_{it}$  is the stochastic error in the estimations.

To deal with the endogeneity problem and reverse causality, we use the two-step system G.M.M. proposed by Arellano and Bover (1995) and Blundell and Bond (1998). This econometric technique provides more efficient and consistent estimates than ordinary least squares (O.L.S.) or fixed effects. We run Equation (1) using the two-step system G.M.M. to deal with the potentially endogenous issues of all right-hand-side variables. As instruments we use all the independent variables lagged from *t*-1 to *t*-2. To



Source: Authors

**Figure 1.** Research model and hypotheses.

test the validity of the instruments, we run the AR(2) and the Hansen post-estimation test. AR(2) measures the absence of second-order serial autocorrelation in the residuals. We use the Hansen test to test overidentifying restrictions and to assess whether the instruments are exogenously determined.

### 3.2. Sample

Our sample includes 369 companies from six Latin American countries: Argentina, Brazil, Chile, Colombia, Mexico, and Peru. According to the World Bank website, the market capitalisation of listed domestic firms in these countries represents 98% of the whole Latin America region. The period of analysis spans from 2005 to 2020. We exclude financial and non-domestic firms and companies with negative equity because they are subject to specific requirements and accounting standards. To deal with survivorship bias, we include active and non-active firms. We required at least four continuous years to be included in the final sample in order to obtain efficient estimates. We collect data from different sources. We use Refinitiv Eikon to obtain financial and accounting information. C.E.O.s' observable characteristics were hand-collected from annual reports, corporate websites, financial databases, LinkedIn, and business press websites.

The final panel data consists of 3,949 firm-year observations and an average of 10.70 observations per firm. Panel A of [Table 1](#) reports the panel composition. Brazil has the most significant participation in the sample, with 40.62%. Mexico and Chile account for

**Table 1.** Panel composition.

Panel A: Composition of the sample by country-firms																	
Country	Obs.	(%)		Firms	(%)		Av. Obs. Per Firm										
Argentina	457	11.57%		49	13.28%		9.33										
Brazil	1,604	40.62%		142	38.48%		11.30										
Chile	687	17.40%		63	17.07%		10.90										
Colombia	188	4.76%		19	5.15%		9.89										
Mexico	720	18.23%		69	18.70%		10.43										
Peru	293	7.42%		27	7.32%		10.85										
Total	3,949	100.00%		369	100.00%		10.70										

Panel B: Composition of the sample by country-year																	
Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Argentina	19	21	25	24	24	26	22	19	27	28	30	35	41	43	37	36	457
Brazil	50	62	70	98	102	106	108	109	107	108	111	112	112	112	119	121	1,604
Chile	37	43	47	38	38	48	43	50	48	45	42	43	49	44	36	36	687
Colombia	2	3	5	9	12	15	17	17	16	13	13	13	14	12	14	13	188
Mexico	28	33	37	38	39	40	45	45	48	51	52	53	56	54	53	48	720
Peru	12	17	22	21	19	22	21	22	20	18	16	20	19	17	14	13	293
Total	148	179	206	228	234	257	256	262	268	262	261	275	291	282	273	267	3,949

The number of observations is 3,949.

Source: Authors.

18.23% and 17.40%, respectively, while Argentina represents 11.57% of observations. The countries with the fewest observations are Peru and Colombia, with 7.42% and 4.76%, respectively. Panel B of Table 1 shows the composition of the sample by country-year. Table 2 reports the distribution of firms by industrial sectors of each country. As can be seen, the largest industrial sector is manufacturing, with 40.92% of the total sample.

### 3.3. Variables

The literature has used different measures to capture the risk of corporate decisions. Whereas some prior studies proxy corporate risk through operating return volatility or some risky investment policies, such as R&D or firm diversification (Faccio et al., 2016; Yim, 2013; Zhang et al., 2016), the dominant stream of research has used market-based measures with stock price data (Aktas et al., 2021; Ferreira & Laux, 2007; Nguyen, 2011; Peltomäki et al., 2021; Serfling, 2014). Consequently, and following this line, we use stock return volatility and I.R. as measures of risk-taking. This choice is consistent with the literature on emerging economies (Farag & Mallin, 2018; Sayari & Marcum, 2018). To deal with the common problem of low liquidity, we remove stocks that do not trade on at least 80% of business days (Figlioli & Lima, 2019; Leite et al., 2018).<sup>1</sup> We chose the most liquid series for companies with more than one stock series. T.R. is calculated as the annualised standard deviation of daily stock returns over the last year. Daily returns ( $r_{i,t}$ ) are measured as  $(P_{it} - P_{it-1})/P_{it-1}$ , where  $P_{it}$  is the stock price for firm  $i$  on day  $t$ . All prices are denominated in U.S. dollars, and returns are adjusted for dividends and stock splits. I.R. is calculated as the annualised standard deviation of residuals from the Market Model over the last year. We estimated this model as  $R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$ , where  $R_{it}$  is the stock return for firm  $i$  for period  $t$ ,  $R_{mt}$  is the market portfolio return for period  $t$ ,  $\alpha_i$  is the constant term,  $\beta_i$  is a measure of stock

**Table 2.** Distribution of firms by two-digit NAICS Code.

NAICS sector name	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Total
Agriculture, Forestry, Fishing, and Hunting	1	4	5	0	1	1	12
	(2.04%)	(2.82%)	(7.94%)	(0.00%)	(1.45%)	(3.70%)	(3.25%)
Mining, Quarrying, and Oil and Gas Extraction	2	4	1	3	2	8	20
	(4.08%)	(2.82%)	(1.59%)	(15.79%)	(2.90%)	(29.63%)	(5.42%)
Utilities	9	22	11	5	1	3	51
	(18.37%)	(15.49%)	(17.46%)	(26.32%)	(1.45%)	(11.11%)	(13.82%)
Construction	5	12	4	1	8	1	31
	(10.20%)	(8.45%)	(6.35%)	(5.26%)	(11.59%)	(3.70%)	(8.40%)
Manufacturing	22	61	22	6	29	11	151
	(44.90%)	(42.96%)	(34.92%)	(31.58%)	(42.03%)	(40.74%)	(40.92%)
Wholesale Trade	1	4	2	0	0	1	8
	(2.04%)	(2.82%)	(3.17%)	(0.00%)	(0.00%)	(3.70%)	(2.17%)
Retail Trade	1	11	8	2	7	1	30
	(2.04%)	(7.75%)	(12.70%)	(10.53%)	(10.14%)	(3.70%)	(8.13%)
Transportation and Warehousing	2	9	3	1	9	0	24
	(4.08%)	(6.34%)	(4.76%)	(5.26%)	(13.04%)	(0.00%)	(6.50%)
Information	6	4	3	1	8	1	23
	(12.24%)	(2.82%)	(4.76%)	(5.26%)	(11.59%)	(3.70%)	(6.23%)
Professional, Scientific, and Technical Services	0	1	1	0	0	0	2
	(0.00%)	(0.70%)	(1.59%)	(0.00%)	(0.00%)	(0.00%)	(0.54%)
Administrative and Support and Waste Management and Remediation Services	0	1	0	0	0	0	1
	(0.00%)	(0.70%)	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(0.27%)
Educational Services	0	3	0	0	0	0	3
	(0.00%)	(2.11%)	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(0.81%)
Health Care and Social Assistance	0	3	1	0	0	0	4
	(0.00%)	(2.11%)	(1.59%)	(0.00%)	(0.00%)	(0.00%)	(1.08%)
Arts, Entertainment, and Recreation	0	1	1	0	1	0	3
	(0.00%)	(0.70%)	(1.59%)	(0.00%)	(1.45)	(0.00%)	(0.81%)
Accommodation and Food Services	0	2	1	0	3	0	6
	(0.00%)	(1.41%)	(1.59%)	(0.00%)	(4.35)	(0.00%)	(1.63%)
<b>Total</b>	<b>49</b>	<b>142</b>	<b>63</b>	<b>19</b>	<b>69</b>	<b>27</b>	<b>369</b>

This table reports the number (percentage) by the two-digit North American Industry Classification System (NAICS) Code. The number of observations is 3,949.

Source: Authors.

price sensitivity for firm  $i$  to movements in the market, and  $\varepsilon_{it}$  is the error term. As do Figlioli and Lima (2019) and González-Sánchez (2022) we use the main equity market index as a market portfolio: Argentina (Merval), Brazil (Ibovespa), Chile (IPSA), Colombia (IGBC), Mexico (IPC), and Peru (S&P/BVL Peru General).

All C.E.O. characteristic variables have been obtained through a systematic process. First of all, we obtain the C.E.O.'s name from annual reports for each company-year. We then use annual reports, corporate press releases, or corporate websites to determine the C.E.O.'s age, tenure, gender, duality, educational background, and nationality. In cases where the C.E.O. has previously worked at the company in the same position, we measure tenure as the cumulative time in the position. If it is impossible to obtain that information, we turn to Refinitiv Eikon or the Bloomberg website, or we search on business press websites. In this case, we need three different websites that confirm the

information, and none that mention otherwise. To obtain the C.E.O.'s master's degree in management (if they have one), we also check LinkedIn. When identifying the C.E.O.'s gender, we rely on their first name. Finally, we drop the observation if we cannot identify this information. Our final sample includes 879 unique C.E.O.s and an average of 4.49 C.E.O.s per company.

C.E.O. Age is measured in years. C.E.O. Tenure is the number of years the C.E.O. has served as the firm's C.E.O. Female C.E.O. is a dummy variable that takes the value of 1 if the C.E.O. is female, and 0 otherwise. C.E.O. Duality is a dummy variable that takes the value of 1 if the C.E.O. is also the Chairman of the Board, and 0 otherwise. To measure the level of education – C.E.O. Master – we use a dummy variable that takes the value of 1 if the C.E.O. has a master's degree in finance, business, economics, or administration, and 0 otherwise.<sup>2</sup> Foreign C.E.O. is a dummy variable that takes a value of 1 if the C.E.O. is foreign, and 0 otherwise. In line with Antia et al. (2010), we measure C.E.O. Career Horizon as  $(\text{CEO Tenure}_{\text{ind } t} - \text{CEO Tenure}_{i t}) + (\text{CEO Age}_{\text{ind } t} - \text{CEO Age}_{i t})$ , where  $\text{CEO Tenure}_{\text{ind } t}$  is the industry median of tenure in year  $t$ ,  $\text{CEO Tenure}_{i t}$  is the tenure of the C.E.O.'s company  $i$  in year  $t$ ,  $\text{CEO Age}_{\text{ind } t}$  is the industry median of age in year  $t$ , and  $\text{CEO Age}_{i t}$  is the age of the C.E.O.'s company  $i$  in year  $t$ . We use the N.A.I.C.S. code to define the industry. Finally, we use Hofstede's (2001) Uncertainty Avoidance Index (U.A.I.) to measure the C.E.O.'s country risk aversion. On a scale of 1–100, the U.A.I. measures the society's tolerance of uncertainty and resistance to the unknown.

We include a series of control variables that could influence corporate risk. R.O.A. is the ratio of net income to total assets. We propose a negative relationship, since non-profitable companies have incentives to undertake riskier projects in order to make up for low profitability (Martino et al., 2020). Size is the natural logarithm of total assets. Larger companies have more resources and greater access to better sources of financing to diversify into unrelated sectors, such that we expect a negative relationship with corporate risk-taking (Anderson & Reeb, 2003). L.E.V. is the ratio of total debt to total assets. Boubaker et al. (2016) state that financial leverage is associated with higher volatility and, therefore, a higher level of risk. Age is the natural logarithm of years after the foundation of the company. We expect a negative relationship, since older companies invest more in stable and conservative projects than younger companies (Anderson et al., 2012). Finally, C.A.P.E.X. is the ratio of capital expenditures to total assets. C.A.P.E.X. is usually associated with investments with low volatility. Therefore, we propose a negative relationship. Table 3 summarises the variables included in the estimates. All continuous variables are winsorised at 1% in both tails to mitigate the influence of outliers.

## 4. Results and analysis

### 4.1. Results

Table 4 presents the mean, standard deviation, minimum and maximum, as well as the 25th, 50th, and 75th percentiles. Our results are comparable with previous evidence for Latin America. Average T.R. is equal to 0.384 – similar to Poletti-Hughes and Briano-Turrent (2019) – while the average I.R. is 0.301. Average C.E.O. Age, C.E.O. Tenure, C.E.O. Master, and Foreign C.E.O. are 54.001 years, 8.678 years, 47.8%, and 13.2%,

**Table 3.** Definition of variables.

Abbreviation	Variables	Measure	Source
<b>Dependent variables (Risk)</b>			
TR	Total Risk	Annualised standard deviation of daily stock returns	Refinitiv Eikon
IR	Idiosyncratic Risk	Annualised standard deviation of residuals from the Market Model	Refinitiv Eikon
<b>CEO characteristics variables</b>			
CEO age	CEO Age	Age of the CEO	Hand collected from annual reports, corporate websites, corporate press releases, Refinitiv Eikon website, Bloomberg website, LinkedIn, and business press websites.
CEO tenure	CEO Tenure	Number of years the CEO has been serving as the company's CEO	
Female CEO	Female CEO	Dummy variable that takes value 1 if the CEO is female, and 0 otherwise	
CEO duality	CEO Duality	Dummy variable that takes value 1 if the CEO is also the Chairman of the Board, and 0 otherwise	
CEO master	Management Master	Dummy variable that takes value 1 if the CEO has a master degree in finance, business, economics, MBA, or administration, and 0 otherwise	Hofstede (2001)
Foreign CEO	Foreign CEO	Dummy variable that takes value 1 if the CEO is foreign, and 0 otherwise.	
CEO career horizon	CEO's Career Horizon	$(CEO\ tenure_{ind,t} - CEO\ tenure_t) + (CEO\ age_{ind,t} - CEO\ age_t)$	
CEO UA Index	CEO's country risk aversion risk	Uncertainty avoidance index of the CEO's country of origin	
<b>Firm-level control variables</b>			
ROA	Profitability	Ratio of net income to total assets	Refinitiv Eikon
Size	Size	Natural logarithm of total assets	
Lev	Financial leverage	Ratio of total debt to total assets	Refinitiv Eikon
Age	Age of the company	Natural logarithm of years after the foundation of the company	
CAPEX	Capital expenditures	Ratio of capital expenditures to total assets	Refinitiv Eikon

Source: Authors.

**Table 4.** Descriptive statistics.

Variables	Mean	Std. Dev.	Min	Max	Quartiles		
					q25	q50	q75
TR	0.384	0.156	0.163	0.890	0.268	0.342	0.490
IR	0.301	0.132	0.139	0.866	0.297	0.301	0.376
CEO age	54.001	8.919	33.345	77.016	48.616	52.761	60.001
CEO tenure	8.678	8.945	0.130	37.942	2.176	5.553	12.699
Female CEO	0.032	0.181	0	1	0	0	0
CEO duality	0.221	0.409	0	1	0	0	0
CEO master	0.478	0.521	0	1	0	0	1
Foreign CEO	0.132	0.339	0	1	0	0	1
CEO career horizon	-3.310	14.540	-57.732	29.789	-10.570	-0.691	6.544
CEO UA Index	83.412	6.630	23.000	98.000	82.000	86.000	86.000
ROA	0.087	0.079	-0.168	0.399	0.041	0.079	0.122
Size	14.466	1.501	10.041	17.904	13.099	14.566	15.338
Lev	0.542	0.175	0.166	0.941	0.420	0.559	0.688
Age	3.801	0.768	0.138	5.581	3.291	3.932	4.467
CAPEX	0.062	0.049	0.001	0.269	0.026	0.051	0.081

The number of observations is 3,949.

Source: Authors.

respectively. These results are comparable with the average values reported by Briano-Turrent et al. (2020) and González and González-Galindo (2022). Average C.E.O. Duality is 22.1%, which lies between the proportions reported by Briano-Turrent and Poletti-Hughes (2017), Cueto (2013) and Gaitán et al. (2018). The average Female C.E.O. presence of 3.2% is slightly lower (4.0%) than found by Gallego and Larrain (2012). Average C.E.O. Career Horizon is -3.310, which means that the C.E.O.'s expected tenure is lower than the industry median. The average C.E.O. UA Index is 83.412, meaning that most C.E.O.s were born in conservative, change-averse or innovation-averse countries that have rigid rules. On average, profitability (R.O.A.) is 8.7%, size (Size) is 14.466 (equal to 1,916 million dollars), financial leverage (L.E.V.) is 54.2%, company age (Age) is 3.801 (equivalent to 44.75 years), and capital expenditures (C.A.P.E.X.) is 6.2%, which are consistent with some recent Latin American studies (Briano-Turrent & Rodríguez-Ariza, 2016; Correa-Garcia et al., 2020; Mardones, 2022; Mellado & Saona, 2020).

Table 5 reports the correlation matrix. All control variables note a significant relationship with the two risk-taking measures, which justifies their inclusion in the regression models. We found no high correlations between the independent variables, except for the correlations between C.E.O. Age, C.E.O. Tenure, and C.E.O. Career Horizon. Statistically, older C.E.O.s are more likely to have longer tenures and shorter career horizons. Therefore, we do not jointly include these three measures in the regression models. In turn, multicollinearity should not be a major issue in our estimations and in fact we also estimate the Variance Inflation Factor (V.I.F.) to test for the absence of multicollinearity. All regressions present a V.I.F. post-estimation test of below 2.

We now examine the association between a C.E.O.'s characteristics and corporate risk-taking using the G.M.M. technique to estimate Equation (1). In Table 6, we report the results concerning the C.E.O.'s age and tenure. In Columns 1 and 3, we use the T.R. measure, while in Columns 2 and 4, we use I.R. Columns 1 and 2 show a non-linear, inverse U-shaped relationship between corporate risk-taking and C.E.O. Age. On the one hand, the linear coefficients of C.E.O. Age are positive and

**Table 5.** Correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) TR	1.000														
(2) IR	0.904***	1.000													
(3) CEO	-0.011	-0.021	1.000												
age	-0.037*	-0.039**	0.471**	1.000											
tenure	-0.050**	-0.042*	-0.096***	-0.050**	1.000										
(5) Female CEO	0.209**	0.159***	0.226**	0.333***	0.003*	1.000									
duality	-0.012	-0.019	-0.142***	-0.145***	-0.031	-0.036*	1.000								
master	-0.024	-0.028	-0.079***	-0.241***	-0.025	-0.039*	0.058***	1.000							
(8) Foreign CEO	0.028	0.037**	-0.837***	-0.844***	0.084***	-0.322***	0.186**	0.183***	1.000						
horizon	0.022	0.013	-0.022	0.074***	0.036*	0.027	0.047**	-0.356***	-0.017	1.000					
index	-0.114***	-0.186**	0.087***	0.103***	0.049**	0.060***	-0.059***	0.007	-0.111***	0.005	1.000				
(11) ROA	-0.329**	-0.468***	0.053**	0.012	-0.150***	-0.064***	0.095***	0.109***	-0.021	-0.161***	-0.014	1.000			
(12) Size	0.102***	0.104**	-0.139***	-0.028*	-0.038	0.022	0.078***	-0.079***	0.103***	0.074***	-0.198***	0.220***	1.000		
(13) Lev	-0.063**	-0.045**	0.112***	0.108***	0.005*	-0.078**	0.041**	-0.129***	-0.071**	0.060***	-0.036**	0.052**	0.012	1.000	
(14) Age	-0.010	-0.076**	-0.053***	-0.027	-0.029	-0.009*	-0.059**	0.057***	0.026	-0.098***	0.176**	-0.005	-0.058***	-0.102***	1.000
(15) CAPEX															

This table presents the correlation coefficients \*\*\*, \*\*, and \* for 1%, 5% and 10% significance levels. The number of observations is 3,949.

Source: Authors.



**Table 6.** CEO age, CEO tenure and corporate risk-taking.

Variables	(1) TR	(2) IR	(3) TR	(4) IR
CEO age	0.0084*** (0.0023)	0.0055*** (0.0020)		
CEO age <sup>2</sup>	-0.0001*** (0.0000)	-0.0001*** (0.0000)		
Extreme point CEO age	45.4960***	46.0432**		
CEO tenure			-0.0160*** (0.0027)	-0.0112*** (0.0019)
CEO tenure <sup>2</sup>			0.0005*** (0.0001)	0.0003*** (0.0001)
Extreme point CEO tenure			17.0532***	16.9178***
ROA	-0.1647*** (0.0125)	-0.2458*** (0.0207)	-0.1183*** (0.0240)	-0.0608*** (0.0168)
Size	-0.0643*** (0.0026)	-0.0565*** (0.0024)	-0.0569*** (0.0059)	-0.0488*** (0.0032)
Lev	0.0569*** (0.0130)	0.0430*** (0.0113)	0.0801*** (0.0305)	0.1119*** (0.0188)
Age	-0.0066 (0.0075)	-0.0206*** (0.0032)	-0.0139 (0.0162)	-0.0305** (0.0124)
CAPEX	-0.0882*** (0.0185)	-0.2446*** (0.0217)	-0.1029*** (0.0383)	-0.2347*** (0.0348)
Constant	0.9907*** (0.0716)	0.8635*** (0.0656)	1.0502*** (0.1005)	1.0647*** (0.0632)
Observations	3,949	3,949	3,949	3,949
AR(2) <i>p</i> -value	0.39	0.58	0.13	0.20
Hansen test ( <i>x</i> <sup>2</sup> )	188.88	186.11	146.96	150.42
F-test	5,016.0***	3,099.1***	274.70***	167.75***
Lind-Mehlum CEO Age	2.62	2.01		
Lind-Mehlum CEO Tenure			4.51	4.26

Estimated coefficients (standard errors) from Equation (1) using the two-step system GMM. \*\*\*, \*\* and \* for 1%, 5% and 10% significance levels. All the regressions include country, time and industry dummy variables. AR(2) is a test for second-order serial correlation. Hansen is the test of over-identifying restrictions. F-stat is a test for the joint significance of the independent variables.

Source: Authors.

significant at the 1% level. On the other hand, the quadratic coefficients of C.E.O. Age are negative and significant at the 1% level. As a result, we confirm the decrease in risk aversion of younger C.E.O.s and the increase in the conservatism of older C.E.O.s as they age, with the inflexion point being between 45 and 46 years.<sup>3</sup> We use the Lind and Mehlum (2010) test to check the non-monotonic relationship. Furthermore, at C.E.O. Age levels close to the mean (54 years), the marginal effect is around -0.0016 (Column 1) and -0.0009 (Column 2), which is economically significant.<sup>4</sup> In other words, a one standard deviation increase in C.E.O. Age is associated with a 9.15% (6.08%) decrease in the standard deviation of T.R. (I.R.).<sup>5</sup>

Columns 3 and 4 report the estimates of C.E.O. Tenure. We find that the linear (quadratic) coefficient of C.E.O. Tenure is negative (positive) and statistically significant at 1%, thus supporting a U-shaped relationship between C.E.O. Tenure and corporate risk-taking. According to our estimates, the inflexion point of the relation is around 17 years. The Lind and Mehlum (2010) test confirms the non-monotonic relationship. Based on the mean of C.E.O. tenure (8.678 years), the marginal effect is -0.0078 in Column 3, and -0.0054 in Column 4. These results are economically significant. It means that a one standard deviation change in C.E.O. Tenure implies a 44.95% (36.86%) standard deviation decrease in T.R. (I.R.). These results are consistent with the idea that short-tenured

**Table 7.** Female CEO, CEO duality, CEO master, foreign CEO and corporate risk-taking.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	TR	IR	TR	IR	TR	IR	TR	IR
Female CEO	-0.1048*** (0.0350)	-0.0613** (0.0268)						
CEO Duality			0.0842*** (0.0151)	0.0231** (0.0109)	0.0703*** (0.0126)	0.0344*** (0.0123)		
CEO Master								
Foreign CEO								
ROA	-0.1756*** (0.0237)	-0.1066*** (0.0155)	-0.1581*** (0.0224)	-0.0943*** (0.0146)	-0.1515*** (0.0222)	-0.0962*** (0.0162)	0.1384*** (0.0215)	0.0734*** (0.0145)
Size	-0.0664*** (0.0050)	-0.0563*** (0.0033)	-0.0585*** (0.0056)	-0.0540*** (0.0033)	-0.0650*** (0.0051)	-0.0571*** (0.0033)	-0.1688*** (0.0256)	-0.0937*** (0.0177)
Lev	0.0591** (0.0273)	0.1080*** (0.0179)	0.0668** (0.0274)	0.1029*** (0.0180)	0.0677** (0.0276)	0.1018*** (0.0176)	-0.0682*** (0.0052)	-0.0594*** (0.0031)
Age	-0.0114 (0.0148)	-0.0258** (0.0119)	0.0068 (0.0142)	-0.0227** (0.0114)	-0.0248* (0.0146)	-0.0284** (0.0116)	0.0927*** (0.0270)	0.1148*** (0.0197)
CAPEX	-0.0842** (0.0344)	-0.2496*** (0.0351)	-0.0782** (0.0356)	-0.2480*** (0.0352)	-0.1063*** (0.0323)	-0.2524*** (0.0339)	-0.0141 (0.0150)	-0.0276** (0.0116)
Constant	1.2226*** (0.0873)	1.1770*** (0.0552)	1.0631*** (0.0920)	1.1459*** (0.0577)	1.2506*** (0.0887)	1.1858*** (0.0582)	-0.0950*** (0.0347)	-0.2288*** (0.0359)
Observations	3,949	3,949	3,949	3,949	3,949	3,949	3,949	3,949
AR(2) p-value	0.18	0.43	0.22	0.41	0.14	0.43	0.23	0.53
Hansen test ( $\chi^2$ )	155.78	154.87	157.17	155.80	149.86	161.75	149.18	153.23
F-test	344.60***	195.17***	323.49***	202.64***	486.93***	185.54***	420.56***	243.64***

Estimated coefficients (standard errors) from Equation (1) using the two-step system GMM. \*\*\*, \*\* and \* for 1%, 5% and 10% significance levels. All the regressions include country, time and industry dummy variables. AR(2) is a test for second-order serial correlation. Hansen is the test of over-identifying restrictions. F-stat is a test for the joint significance of the independent variables.

Source: Authors.

C.E.O.s at first increasingly avoid risk. Nevertheless, long-tenured C.E.O.s have increasingly more specific knowledge and social ties, which leads to greater firm riskiness.

Table 7 reports the estimates of the remaining relationships. The estimates for Female C.E.O.s are negative and statistically significant, irrespective of the measure of risk used. In terms of economic significance, companies with a Female C.E.O. are associated with a 67.18% (46.44%) standard deviation decrease in T.R. (I.R.). We thus confirm that female C.E.O.s take less risk than their male counterparts. In Columns 3 and 4 of Table 7, we report a positive and significant relationship between C.E.O. Duality and corporate risk-taking. The magnitude of the relationship is by no means trivial. Firms have a 53.97% (17.50%) standard deviation increase of T.R. (I.R.) when the same person holds the C.E.O. and Chairman of the Board positions. Our evidence suggests that the concentration of power in the hands of a single executive supports risky decision-making. The estimates in Columns 5 and 6 are related to the C.E.O.'s educational background. The coefficients of C.E.O. Master are positive and statistically significant. Having a C.E.O. with a master's degree in business leads to a 45.06% (26.06%) change in the standard deviation of T.R. (I.R.). Therefore, the C.E.O.'s education is positively related to risk because C.E.O.s with a business-related master's degree can better manage risky decisions. The last results of Table 7 are related to C.E.O. culture. The coefficient of Foreign C.E.O.s is positively related to corporate risk-taking. These results are statistically and economically significant. Companies with a foreign C.E.O. are associated with an 88.72% (55.61%) standard deviation increase in T.R. (I.R.).

The coefficients of the control variables are consistent with previous literature. Except for firm age in Columns 1 and Column 3, all the control variables are statistically significant. R.O.A. has a significant negative impact on risk measures since unprofitable firms might invest in risky projects in an effort to improve their financial performance. Size is mainly negatively related to risk because large companies can diversify their activities to reduce risk. As expected, the relationship between risk and financial leverage (L.E.V.) is positive. Finally, C.A.P.E.X. is negatively related to T.R. and I.R. because companies decrease their risk by investing in low-risk projects, such as C.A.P.E.X. investments, instead of projects with uncertain cash flow, such as R&D investments.

All the models report the tests of joint validity of the selected instruments (Hansen test) and the test of second-order autocorrelation of the residuals. The Hansen test reports that instruments are exogenously determined. In addition, we present the p-value of AR(2), and we confirm the absence of second-order correlation with the error term of the estimates. Finally, all the models report tests of the joint significance of coefficients (F test) at 1% level.

Table 8 presents two additional findings. Columns 1 and 2 test the relationship between C.E.O. Career Horizon and corporate risk-taking. As do Antia et al. (2010), we use the industry-adjusted career horizon measure. The coefficients are positive and statistically significant, which means that C.E.O.s who are about to retire or be dismissed, i.e., with a short career horizon, avoid risky projects for fear of losing their reputation (Chakraborty et al., 2007; McClelland et al., 2012). These results show that a one standard deviation increase in C.E.O. Career Horizon increases the standard deviation of T.R. (I.R.) by 11.18% (14.32%).

**Table 8.** CEO career horizon, CEO UA Index and corporate risk-taking.

Variables	(1)	(2)	(3)	(4)
	TR	IR	TR	IR
CEO career horizon	0.0012*** (0.0004)	0.0013*** (0.0004)		
CEO UA Index			-0.0025*** (0.0010)	-0.0017*** (0.0006)
ROA	-0.1350*** (0.0246)	-0.0695*** (0.0173)	-0.1540*** (0.0247)	-0.0899*** (0.0158)
Size	-0.0621*** (0.0049)	-0.0517*** (0.0034)	-0.0632*** (0.0054)	-0.0567*** (0.0032)
Lev	0.0657** (0.0262)	0.1053*** (0.0184)	0.0851*** (0.0290)	0.1157*** (0.0187)
Age	-0.0265* (0.0147)	-0.0325** (0.0125)	-0.0101 (0.0158)	-0.0233** (0.0118)
CAPEX	-0.1238*** (0.0376)	-0.2639*** (0.0367)	-0.1279*** (0.0384)	-0.2273*** (0.0364)
Constant	1.2098*** (0.0889)	1.1461*** (0.0641)	1.3990*** (0.1345)	1.3151*** (0.0941)
Observations	3,949	3,949	3,949	3,949
AR(2) p-value	0.28	0.31	0.12	0.35
Hansen-Test	154.10	155.37	152.09	157.79
F-test	462.27***	150.44***	413.86***	207.95***

Estimated coefficients (standard errors) from Equation (1) using the two-step system GMM. \*\*\*, \*\* and \* for 1%, 5% and 10% significance levels. All the regressions include country, time and industry dummy variables. AR(2) is a test for second-order serial correlation. Hansen is the test of over-identifying restrictions. F-stat is a test for the joint significance of the independent variables.

Source: Authors.

We go one step further and examine what impact the culture of the C.E.O.'s nationality has on corporate risk. For this purpose, we focus on the U.A.I. proposed by Hofstede (2001). Managers in countries with high U.A.I. are afraid of the consequences of failure (Mihet, 2013) and do not want to jeopardise their source of wealth (Kanagaretnam et al., 2011). Columns 3 and 4 of Table 8 show that the C.E.O. The U.A.I. is negative and statistically significant. C.E.O.s from countries with high U.A.I. prefer to make less risky decisions. It should be noted that Latin American cultures have high rates of uncertainty avoidance and a low tolerance for the unknown (Boubakri & Saffar, 2016; Sacristán-Navarro et al., 2022). An increase in C.E.O. U.A.I. from the 25th percentile to the 75th percentile is associated with a 6.41% (5.15%) standard deviation decrease in T.R. (I.R.).

## 4.2. Analysis and discussion

This article aims to disentangle the impact of the most controversial C.E.O. variables on corporate risk-taking. We find evidence to support the idea that a C.E.O.'s characteristics have a strong explanatory power on financial outcomes. Our main results reject prior evidence that C.E.O. age and C.E.O. tenure have a linear relationship with corporate risk-taking.

We first confirm the idea that in the case of younger C.E.O.s, ageing increases risk because they have better cognitive abilities to manage risky financial decisions. In addition, younger C.E.O.s are willing to signal to the market their ability to manage risky projects (Farag & Mallin, 2018; Peltomäki et al., 2021; Zhang et al., 2016). However, C.E.O.s may start worrying about their retirement and avoid reputation-ruining risks at

a specific time. Therefore, among old C.E.O.s, ageing increases the desire to maintain the status quo in their professional careers. Our second results report a U-shaped quadratic relationship between C.E.O. tenure and corporate risk-taking. Although new C.E.O.s arrive with fresh ideas, they are afraid of jeopardising their main source of wealth and are concerned that their specific knowledge may be obsolete. However, as the years go by, this relationship becomes positive because the C.E.O. has more and more experience and has already earned the trust of the board of directors and shareholders. In this sense, long-tenured C.E.O.s have more specific social networking ties, experience and knowledge that allows them to make riskier decisions (Naseem et al., 2020).

In addition, we study other C.E.O. characteristics that might impact corporate policy riskiness. The evidence in Table 7 concerning Hypothesis 3 partially confirms the results of Datta et al. (2021), Faccio et al. (2016), and La Rocca et al. (2020), who point out that female C.E.O.s are more conservative and less overconfident than male C.E.O.s. Faccio et al. (2016) add that female C.E.O.s undertake sub-optimal risky projects because it is more difficult for women to find senior management positions. Similarly, La Rocca et al. (2020) indicate that female C.E.O.s prefer financial decisions which are related to lower risk, such as short-term debt financing. Therefore, we believe there are gender-based decision-making differences which affect corporate risk. We also find evidence regarding the positive relationship between C.E.O. duality and corporate risk-taking (Hypothesis 4), which could be the result of duality endowing the C.E.O. with the freedom and confidence to mitigate suboptimal risk-taking decisions. Our empirical results also add evidence to the scarce literature on C.E.O.s' education and firm outcomes and show that holding a master's degree in business-related topics is positively associated to corporate risk-taking. Farag and Mallin (2018), King et al. (2016), and Naseem et al. (2020) confirm that C.E.O.s with a specialised educational background in business play a key role in risky corporate decision-making because they are more receptive to innovation projects and have accumulated more knowledge. As regards the impact of C.E.O. nationality, we show that foreign C.E.O.s – unlike domestic C.E.O.s – have more knowledge and better financing conditions that allow them to participate in risky projects. Therefore, we report that C.E.O. nationality significantly influences corporate risk-taking. These results concur with Kim et al. (2020) and Li et al. (2013), who find that a country's cultural factors – and in particular uncertainty aversion – impact risky corporate decision-making. We thus confirm that the culture of the C.E.O.'s country of origin does indeed matter.

We also report some additional results concerning a C.E.O.'s career horizon using an industry-adjusted measure (Hypothesis 7). Our results confirm that the relationship between the C.E.O.'s career horizon and the company's risk-taking is conditional on the dynamism of the company's industrial sector (Antia et al., 2010; McClelland et al., 2012). We also show that myopic C.E.O.s with short careers tend to prefer short-term projects with faster returns. For instance, Matta and Beamish (2008) report that C.E.O.s who are approaching retirement avoid risky decisions such as international acquisitions in order not to jeopardise their reputation. These suboptimal risk-taking decisions are due to the fact that the C.E.O.'s horizon is shorter than the company's life (Antia et al., 2010).

## **5. Conclusions, contributions, implications, and future research possibilities**

### **5.1. Main findings**

We have developed an empirical framework to disentangle the effects of C.E.O.s' observable traits on corporate risk-taking in Latin American companies. Our first finding indicates that the relationship between C.E.O. age and risk-taking is non-linear and inverted U-shaped. This result means that ageing improves the ability of younger C.E.O.s (who are under 45 years of age) to learn and adapt quickly to complex environments but that it causes a greater preference for the status quo among older C.E.O.s. The second set of results shows that the relationship between C.E.O. tenure and risk-taking is also non-linear but U-shaped. In other words, as tenure increases, young C.E.O.s become more entrenched and avoid risky decisions. Nevertheless, when C.E.O. tenure reaches a threshold (around 17 years), the benefits of long tenure outweigh the costs, and risk-taking increases.

We also find that C.E.O. gender matters in risk-taking, such that female C.E.O.s take fewer risks than their male counterparts. Furthermore, our results show that when the C.E.O. holds the Chairman of the Board position or has a business-related master's degree, the risk of the firm increases. We document that foreign C.E.O.s take riskier decisions. We further analyse this relationship in the cultural framework and find that C.E.O.s from countries with greater uncertainty avoidance take less risky decisions. Finally, our evidence highlights the relevance of career horizon because it shows that C.E.O.s nearing retirement are more risk-averse.

### **5.2. Contributions**

Our research makes a number of contributions. First, on the theoretical side, our results lend support to the Upper Echelon Theory. Taken together, our results challenge the classical theory that C.E.O.s are homogenous individuals who do not have the power to influence the company's financial decisions. In turn, we complement the dominant agency theory approach and show that a C.E.O.'s observable characteristics have explanatory power vis-à-vis corporate risk-taking.

Second, by using a hand-collected dataset of 879 unique C.E.O.s and 369 non-financial firms from six Latin-American countries, we expand the literature, which has mostly focused on other contexts. This region is characterised by a high concentration of ownership – mainly in the hands of families – and weak investor protection. In turn, our results shed light on a number of emerging countries to which prior research has paid scant attention. Third, we contribute to the debate on the effect of two closely related C.E.O. traits: age and tenure. Whereas longer tenure has usually been associated with older age, we introduce a non-linear specification and find that C.E.O. age and C.E.O. tenure affect risk-taking in opposite directions. Therefore, we refine the measure of C.E.O. traits by showing that C.E.O. age and C.E.O. tenure are not two sides of the same coin but complementary sides of the same person. Fourth, our research also makes a methodological contribution since we use different market-based measures of risk-taking. In turn, we use an external measure of corporate risk-taking that cannot be managed directly by the C.E.O. and is assessed by capital market participants.

### **5.3. Implications**

Our work could offer helpful clues to researchers, practitioners, and policymakers alike. Academics and researchers may be interested in understanding the relationship between C.E.O. characteristics and firm risk and in this regard, we provide them with some fresh evidence in the context of emerging economies. In so doing, we shed some light on the little-known debate concerning what impact C.E.O. profile has on organisational outcomes in the Latin American context. We also provide evidence on the profile of the C.E.O., who is most likely to have myopic risk aversion or to generate managerial entrenchment.

At the same time, our results should be welcomed by shareholders, practitioners and participants in capital markets since we uncover some mechanisms which they can use to improve corporate governance and to promote risky but profitable financial decisions. In an environment of concentrated ownership, large dominant shareholders must develop an optimal governance structure in which the interests of all stakeholders are aligned. Our results provide valuable information regarding the profile of the C.E.O. who does not take under-optimal risks.

All of this evidence can also be helpful to policymakers, who can find in our research some guidelines to improve codes of good governance. Most of these codes are inspired by the ‘comply-or-explain’ principle. Thus, legal and financial authorities could improve the risk appetite or moderate corporate risk-taking by suggesting the optimal profile of firms’ decision-makers so as to attain the right level of corporate risk. Moreover, given the importance of C.E.O.s’ personal traits, corporate report content could be redefined in order to provide some additional information on top managers.

### **5.4. Directions for future research**

Our work is not without limitations, such that further research is needed in the future. Several variables may play a mediating role between C.E.O. traits and risk-taking. For example, compensation can alleviate managerial risk aversion and could be taken into account in future research (Blanes et al., 2020; McClelland et al., 2012; Rehman et al., 2021). Another direction is the interaction between managerial traits and governance structures such as ownership structure, the board of directors, etc. Some studies might therefore address whether the relationship between risk-taking and C.E.O. traits is affected by ownership concentration, large shareholder identity, or the composition of the board of directors. For example, C.E.O.s in family firms are a key issue, such that it is necessary to investigate the impact of C.E.O. profile that encourages corporate risk-taking in this type of firm. Furthermore, we only analyse corporate risk-taking, yet this decision must be looked at together with performance. In turn, another promising topic would be to examine whether more risk-taking by certain C.E.O.s also translates into greater corporate profitability. Finally, the international framework could be expanded by considering some legal and institutional characteristics of each country (in addition to uncertainty aversion), such as the protection of investors’ rights or the society’s long-term orientation.

## Acknowledgements

We thank two anonymous referees for their comments on previous versions of the article. We also thank the 2022 Financial Markets and Corporate Governance Conference seminar participants, the 16th Academy of Innovation, Entrepreneurship, and Knowledge (ACIEK) Conference, Paolo Saona (Saint-Louis University, Spain), Philip Jaggs, and the priceless research assistance provided by Katherine Cádiz. Carlos Cid thanks the financial support provided by the National Agency for Research and Development (ANID)/Scholarship Program/*Doctorado Becas Chile/2020* – 72210113. Félix J. López-Iturriaga thanks the Spanish Ministry of Science and Innovation (PID2020-114797GB-I00) for financial support. All the remaining errors are solely the authors' responsibility.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Notes

1. We additionally eliminate days with stock trade less than US\$100.
2. Unlike Beber and Fabbri (2012) and Bertrand and Schoar (2003), our business background includes not only an M.B.A. but also other master's degrees that provide knowledge to control financial decisions, such as a master's degree in finance, business, economics, or administration.
3. We estimate the extreme point by equaling the first derivative of corporate risk-taking to zero with respect to C.E.O. Age:  $\frac{\partial TR}{\partial CEO\ Age} = \beta_1 + 2 \times \beta_2 \times CEO\ Age$ . For instance, Column 1 would be expressed as  $\frac{\partial TR}{\partial CEO\ Age} = 0.0083639 - 2 \times 0.0000919 \times CEO\ Age = 0$ . Thus, solving for C.E.O. Age, the extreme point is approximately 45.50 years. We use the same procedure for the other quadratic terms.
4. In order to measure the economic magnitude of the model coefficients, we scaled by the standard deviation of the dependent variable instead of the mean. See Mitton (2022) for more details. The marginal effect is calculated by using the equation of the first derivative of corporate risk-taking with respect to C.E.O. Age. For example, for Column 1 the marginal is:  $\frac{\partial TR}{\partial CEO\ Age} = 0.0083639 - 2 \times 0.0000919 \times 54.001 = -0.0016$ , where 54.001 is the mean C.E.O. Age. We use the same procedure for the other quadratic terms.
5. This value is calculated as the ratio of the coefficient of the marginal effect of C.E.O. Age multiplied by the standard deviation of C.E.O. Age relative to the standard deviation of Total Risk: 9.15%  $(\frac{-0.0016 \times 8.919}{0.156})$ .

## ORCID

Carlos Cid-Aranda  <http://orcid.org/0000-0002-7597-1173>  
 Félix López-Iturriaga  <http://orcid.org/0000-0003-0875-5283>

## References

- Acharya, V. V., Amihud, Y., & Litov, L. (2011). Creditor rights and corporate risk-taking. *Journal of Financial Economics*, 102(1), 150–166. <https://doi.org/10.1016/j.jfineco.2011.04.001>
- Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of Financial Studies*, 18(4), 1403–1432. <https://doi.org/10.1093/rfs/hhi030>



- Adhikari, B. K., Agrawal, A., & Malm, J. (2019). Do women managers keep firms out of trouble? Evidence from corporate litigation and policies. *Journal of Accounting and Economics*, 67(1), 202–225. <https://doi.org/10.1016/j.jacceco.2018.09.004>
- Aktas, N., Boone, A., Croci, E., & Signori, A. (2021). Reductions in CEO career horizons and corporate policies. *Journal of Corporate Finance*, 66, 101862. <https://doi.org/10.1016/j.jcorpfin.2020.101862>
- Allgood, S., & Farrell, K. A. (2003). The match between CEO and firm. *The Journal of Business*, 76(2), 317–341. <https://doi.org/10.1086/367752>
- Anderson, R., Duru, A., & Reeb, D. (2012). Investment policy in family controlled firms. *Journal of Banking & Finance*, 36(6), 1744–1758. <https://doi.org/10.1016/j.jbankfin.2012.01.018>
- Anderson, R., & Reeb, D. (2003). Founding-family ownership, corporate diversification, and firm leverage. *The Journal of Law and Economics*, 46(2), 653–684. <https://doi.org/10.1086/377115>
- Antia, M., Pantzalis, C., & Park, J. C. (2010). CEO decision horizon and firm performance: An empirical investigation. *Journal of Corporate Finance*, 16(3), 288–301. <https://EconPapers.repec.org/RePEc:eee:corfin:v:16:y:2010:i:3:p:288-301> <https://doi.org/10.1016/j.jcorpfin.2010.01.005>
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29–51. [https://doi.org/10.1016/0304-4076\(94\)01642-D](https://doi.org/10.1016/0304-4076(94)01642-D)
- Baltagi, B. H. (2013). *Econometric analysis of panel data*. Chichester, UK: John Wiley & Sons.
- Baxamusa, M., & Jalal, A. (2016). CEO's religious affiliation and managerial conservatism. *Financial Management*, 45(1), 67–104. <https://doi.org/10.1111/fima.12080>
- Beber, A., & Fabbri, D. (2012). Who times the foreign exchange market? Corporate speculation and CEO characteristics. *Journal of Corporate Finance*, 18(5), 1065–1087. <https://doi.org/10.1016/j.jcorpfin.2012.07.004>
- Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics*, 118(4), 1169–1208. <https://doi.org/10.1162/003355303322552775>
- Blanes, F., de Fuentes, C., & Porcuna, R. (2020). Executive remuneration determinants: New evidence from meta-analysis. *Economic Research-Ekonomska Istraživanja*, 33(1), 2844–2866. <https://doi.org/10.1080/1331677X.2019.1678503>
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143. [https://doi.org/10.1016/S0304-4076\(98\)00009-8](https://doi.org/10.1016/S0304-4076(98)00009-8)
- Boubaker, S., Nguyen, P., & Rouatbi, W. (2016). Multiple large shareholders and corporate risk-taking: Evidence from French family firms. *European Financial Management*, 22(4), 697–745. <https://doi.org/10.1111/eufm.12086>
- Boubakri, N., Cosset, J.-C., & Saffar, W. (2013). The role of state and foreign owners in corporate risk-taking: Evidence from privatization. *Journal of Financial Economics*, 108(3), 641–658. <https://doi.org/10.1016/j.jfineco.2012.12.007>
- Boubakri, N., & Saffar, W. (2016). Culture and externally financed firm growth. *Journal of Corporate Finance*, 41, 502–520. <https://doi.org/10.1016/j.jcorpfin.2016.04.003>
- Briano-Turrent, G. d. C., Li, M., & Peng, H. (2020). The impact of family-CEOs and their demographic characteristics on dividend payouts: Evidence from Latin America. *Research in International Business and Finance*, 51, 101086. <https://doi.org/10.1016/j.ribaf.2019.101086>
- Briano-Turrent, G. d. C., & Poletti-Hughes, J. (2017). Corporate governance compliance of family and non-family listed firms in emerging markets: Evidence from Latin America. *Journal of Family Business Strategy*, 8(4), 237–247. <https://doi.org/10.1016/j.jfbs.2017.10.001>
- Briano-Turrent, G. d. C., & Rodríguez-Ariza, L. (2016). Corporate governance ratings on listed companies: An institutional perspective in Latin America. *European Journal of Management and Business Economics*, 25(2), 63–75. <https://doi.org/10.1016/j.redeen.2016.01.001>
- Chakraborty, A., Sheikh, S., & Subramanian, N. (2007). Termination risk and managerial risk taking. *Journal of Corporate Finance*, 13(1), 170–188. <https://doi.org/10.1016/j.jcorpfin.2006.04.001>
- Cline, B. N., & Yore, A. S. (2016). Silverback CEOs: Age, experience, and firm value. *Journal of Empirical Finance*, 35, 169–188. <https://doi.org/10.1016/j.jempfin.2015.11.002>

- Canyon, M. J., Haß, L. H., Vergauwe, S., & Zhang, Z. (2019). Foreign experience and CEO compensation. *Journal of Corporate Finance*, 57, 102–121. <https://doi.org/10.1016/j.jcorpfin.2017.12.016>
- Correa-Garcia, J. A., Garcia-Benau, M. A., & Garcia-Meca, E. (2020). Corporate governance and its implications for sustainability reporting quality in Latin American business groups. *Journal of Cleaner Production*, 260, 121142. <https://doi.org/10.1016/j.jclepro.2020.121142>
- Croci, E., del Giudice, A., & Jankensgård, H. (2017). CEO age, risk incentives, and hedging strategy. *Financial Management*, 46(3), 687–716. <http://www.jstor.org/stable/45091072> <https://doi.org/10.1111/fima.12166>
- Cueto, D. C. (2013). Substitutability and complementarity of corporate governance mechanisms in Latin America. *International Review of Economics & Finance*, 25, 310–325. <https://doi.org/10.1016/j.iref.2012.07.008>
- Datta, S., Doan, T., & Toscano, F. (2021). Top executive gender, board gender diversity, and financing decisions: Evidence from debt structure choice. *Journal of Banking & Finance*, 125, 106070. <https://EconPapers.repec.org/RePEc:eee:jbfin:v:125:y:2021:i:c:s0378426621000285>
- Davidson, W., Xie, B., Xu, W., & Ning, Y. (2007). The influence of executive age, career horizon and incentives on pre-turnover earnings management. *Journal of Management & Governance*, 11(1), 45–60. <https://EconPapers.repec.org/RePEc:kap:jmggtv:v:11:y:2007:i:1:p:45-60> <https://doi.org/10.1007/s10997-007-9015-8>
- Díez-Esteban, J. M., Farinha, J. B., & García-Gómez, C. D. (2019). Are religion and culture relevant for corporate risk-taking? International evidence. *BRQ Business Research Quarterly*, 22(1), 36–55. <https://doi.org/10.1016/j.brq.2018.06.003>
- Elsaid, E., & Ursel, N. D. (2011). CEO succession, gender and risk taking. *Gender in Management: An International Journal*, 26(7), 499–512. <https://doi.org/10.1108/17542411111175478>
- Faccio, M., Marchica, M.-T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, 39, 193–209. <https://doi.org/10.1016/j.jcorpfin.2016.02.008>
- Fang, Y., Francis, B., & Hasan, I. (2018). Differences make a difference: Diversity in social learning and value creation. *Journal of Corporate Finance*, 48, 474–491. <https://doi.org/10.1016/j.jcorpfin.2017.11.015>
- Farag, H., & Mallin, C. (2018). The influence of CEO demographic characteristics on corporate risk-taking: Evidence from Chinese IPOs. *The European Journal of Finance*, 24(16), 1528–1551. <https://doi.org/10.1080/1351847X.2016.1151454>
- Ferreira, M., & Laux, P. (2007). Corporate governance, idiosyncratic risk, and information flow. *The Journal of Finance*, 62(2), 951–989. <https://doi.org/10.1111/j.1540-6261.2007.01228.x>
- Ferris, S. P., Javakhadze, D., & Rajkovic, T. (2017). CEO social capital, risk-taking and corporate policies. *Journal of Corporate Finance*, 47, 46–71. <https://doi.org/10.1016/j.jcorpfin.2017.09.003>
- Ferris, S. P., Javakhadze, D., & Rajkovic, T. (2019). An international analysis of CEO social capital and corporate risk-taking. *European Financial Management*, 25(1), 3–37. <https://doi.org/10.1111/eufm.12156>
- Figlioli, B., & Lima, F. G. (2019). Stock pricing in Latin America: The synchronicity effect. *Emerging Markets Review*, 39, 1–17. <https://doi.org/10.1016/j.ememar.2019.03.002>
- Gaitán, S., Herrera-Echeverri, H., & Pablo, E. (2018). How corporate governance affects productivity in civil-law business environments: Evidence from Latin America. *Global Finance Journal*, 37, 173–185. <https://doi.org/10.1016/j.gfj.2018.05.004>
- Gallego, F., & Larrain, B. (2012). CEO compensation and large shareholders: Evidence from emerging markets. *Journal of Comparative Economics*, 40(4), 621–642. <https://doi.org/10.1016/j.jce.2012.02.003>
- González, C., & González-Galindo, A. (2022). The institutional context as a source of heterogeneity in family firm internationalization strategies: A comparison between U.S. and emerging market family firms. *International Business Review*, 31(4), 101972. <https://doi.org/10.1016/j.ibusrev.2021.101972>

- González-Sánchez, M. (2022). Asset pricing models in emerging markets: Factorial approaches vs. information stochastic discount factor. *Finance Research Letters*, 46, 102394. <https://doi.org/10.1016/j.frl.2021.102394>
- Graham, J. R., Harvey, C. R., & Puri, M. (2013). Managerial attitudes and corporate actions. *Journal of Financial Economics*, 109(1), 103–121. <https://doi.org/10.1016/j.jfineco.2013.01.010>
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *The Academy of Management Review*, 9(2), 193–206. <https://doi.org/10.2307/258434>
- Hartnell, C. A., Kinicki, A. J., Lambert, L. S., Fugate, M., & Doyle Corner, P. (2016). Do similarities or differences between CEO leadership and organizational culture have a more positive effect on firm performance? A test of competing predictions. *The Journal of Applied Psychology*, 101(6), 846–861. <https://doi.org/10.1037/apl0000083>
- Hoang, T. T., Nguyen, C. V., & Van Tran, H. T. (2019). Are female CEOs more risk averse than male counterparts? Evidence from Vietnam. *Economic Analysis and Policy*, 63, 57–74. <https://doi.org/10.1016/j.eap.2019.05.001>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations* (Vol. 41). Sage Publications.
- Huang, J., & Kisgen, D. J. (2013). Gender and corporate finance: Are male executives overconfident relative to female executives? *Journal of Financial Economics*, 108(3), 822–839. <https://doi.org/10.1016/j.jfineco.2012.12.005>
- Jiang, F., Jiang, Z., Kim, K. A., & Zhang, M. (2015). Family-firm risk-taking: Does religion matter? *Journal of Corporate Finance*, 33, 260–278. <https://doi.org/10.1016/j.jcorpfin.2015.01.007>
- Kanagaretnam, K., Lim, C. Y., & Lobo, G. J. (2011). Effects of national culture on earnings quality of banks. *Journal of International Business Studies*, 42(6), 853–874. <https://doi.org/10.1057/jibs.2011.26>
- Khan, W. A., & Vieito, J. P. (2013). Ceo gender and firm performance. *Journal of Economics and Business*, 67, 55–66. <https://doi.org/10.1016/j.jeconbus.2013.01.003>
- Kim, K.-H., Al-Shammari, H. A., Kim, B., & Lee, S.-H. (2009). CEO duality leadership and corporate diversification behavior. *Journal of Business Research*, 62(11), 1173–1180. <https://doi.org/10.1016/j.jbusres.2008.10.017>
- Kim, S., Sambharya, R. B., & Yang, J. S. (2016). Do CEOs exercise managerial discretion to save their jobs? *Journal of Management & Governance*, 20(1), 179–200. <https://doi.org/10.1007/s10997-014-9300-2>
- Kim, W. S., Kiyamaz, H., & Oh, S. (2020). Do country-level legal, corporate governance, and cultural characteristics influence the relationship between insider ownership and dividend policy? *Pacific-Basin Finance Journal*, 64, 101457. <https://doi.org/10.1016/j.pacfin.2020.101457>
- King, T., Srivastav, A., & Williams, J. M. (2016). What's in an education? Implications of CEO education for bank performance. *Journal of Corporate Finance*, 37, 287–308.
- Kitchell, S. (2009). CEO characteristics and technological innovativeness: A Canadian perspective. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, 14, 111–121. <https://doi.org/10.1111/j.1936-4490.1997.tb00123.x>
- La Rocca, M., Neha, N., & La Rocca, T. (2020). Female management, overconfidence and debt maturity: European evidence. *Journal of Management and Governance*, 24(3), 713–747. <https://doi.org/10.1007/s10997-019-09479-9>
- Leite, A. L., Klotzle, M. C., Pinto, A. C. F., & da Silva, A. F. (2018). Size, value, profitability, and investment: Evidence from emerging markets. *Emerging Markets Review*, 36, 45–59. <https://doi.org/10.1016/j.ememar.2018.04.006>
- Li, K., Griffin, D., Yue, H., & Zhao, L. (2013). How does culture influence corporate risk-taking? *Journal of Corporate Finance*, 23, 1–22. <https://doi.org/10.1016/j.jcorpfin.2013.07.008>
- Lind, J. T., & Mehlum, H. (2010). With or without U? The appropriate test for a U-shaped relationship. *Oxford Bulletin of Economics and Statistics*, 72(1), 109–118. <https://doi.org/10.1111/j.1468-0084.2009.00569.x>

- Mardones, J. G. (2022). Working capital management and business performance: Evidence from Latin American companies. *Economic Research-Ekonomska Istraživanja*, 35(1), 3189–3205. <https://doi.org/10.1080/1331677X.2021.1986675>
- Martino, P., Rigolini, A., & D'Onza, G. (2020). The relationships between CEO characteristics and strategic risk-taking in family firms. *Journal of Risk Research*, 23(1), 95–116. <https://doi.org/10.1080/13669877.2018.1517380>
- Mata, R., Josef, A. K., Samanez-Larkin, G. R., & Hertwig, R. (2011). Age differences in risky choice: A meta-analysis. *Annals of the New York Academy of Sciences*, 1235, 18–29. <https://doi.org/10.1111/j.1749-6632.2011.06200.x>
- Matta, E., & Beamish, P. W. (2008). The accentuated CEO career horizon problem: Evidence from international acquisitions. *Strategic Management Journal*, 29(7), 683–700. <http://www.jstor.org/stable/20142051> <https://doi.org/10.1002/smj.680>
- McClelland, P. L., Barker, V. L., & Oh, W.-Y. (2012). CEO career horizon and tenure: Future performance implications under different contingencies. *Journal of Business Research*, 65(9), 1387–1393. <https://doi.org/10.1016/j.jbusres.2011.09.003>
- Mellado, C., & Saona, P. (2020). Real earnings management and corporate governance: A study of Latin America. *Economic Research-Ekonomska Istraživanja*, 33(1), 2229–2268. <https://doi.org/10.1080/1331677X.2019.1691930>
- Mihet, R. (2013). Effects of culture on firm risk-taking: A cross-country and cross-industry analysis. *Journal of Cultural Economics*, 37(1), 109–151. <https://doi.org/10.1007/s10824-012-9186-2>
- Mitton, T. (2022). Economic significance in corporate finance. *The Review of Corporate Finance Studies*, 1–42. <https://doi.org/10.1093/rcfs/cfac008>
- Naseem, M. A., Lin, J., Rehman, R. u., Ahmad, M. I., & Ali, R. (2020). Does capital structure mediate the link between CEO characteristics and firm performance? *Management Decision*, 58(1), 164–181. <https://doi.org/10.1108/MD-05-2018-0594>
- Nguyen, P. (2011). Corporate governance and risk-taking: Evidence from Japanese firms. *Pacific-Basin Finance Journal*, 19(3), 278–297. <https://doi.org/10.1016/j.pacfin.2010.12.002>
- Nguyen, P., Rahman, N., & Zhao, R. (2018). CEO characteristics and firm valuation: A quantile regression analysis. *Journal of Management & Governance*, 22(1), 133–151. <https://doi.org/10.1007/s10997-017-9383-7>
- Nielsen, B. B., & Nielsen, S. (2011). The role of top management team international orientation in international strategic decision-making: The choice of foreign entry mode. *Journal of World Business*, 46(2), 185–193. <https://doi.org/10.1016/j.jwb.2010.05.003>
- Palvia, A., Vähämaa, E., & Vähämaa, S. (2015). Are female CEOs and Chairwomen more conservative and risk averse? Evidence from the banking industry during the financial crisis. *Journal of Business Ethics*, 131(3), 577–594. <https://doi.org/10.1007/s10551-014-2288-3>
- Peltomäki, J., Sihvonen, J., Swidler, S., & Vähämaa, S. (2021). Age, gender, and risk-taking: Evidence from the S&P 1500 executives and market-based measures of firm risk. *Journal of Business Finance & Accounting*, 48(9-10), 1988–2014. <https://doi.org/10.1111/jbfa.12528>
- Peng, M. W., Zhang, S., & Li, X. (2007). CEO duality and firm performance during China's institutional transitions. *Management and Organization Review*, 3(2), 205–225. <https://doi.org/10.1111/j.1740-8784.2007.00069.x>
- Peni, E. (2014). CEO and Chairperson characteristics and firm performance. *Journal of Management & Governance*, 18(1), 185–205. <https://doi.org/10.1007/s10997-012-9224-7>
- Poletti-Hughes, J., & Briano-Turrent, G. C. (2019). Gender diversity on the board of directors and corporate risk: A behavioural agency theory perspective. *International Review of Financial Analysis*, 62, 80–90. <https://doi.org/10.1016/j.irfa.2019.02.004>
- Pombo, C., & Taborda, R. (2017). Stock liquidity and second blockholder as drivers of corporate value: Evidence from Latin America. *International Review of Economics & Finance*, 51, 214–234. <https://doi.org/10.1016/j.iref.2017.05.012>
- Rehman, A. u., Ali, T., Hussain, S., & Waheed, A. (2021). Executive remuneration, corporate governance and corporate performance: Evidence from China. *Economic Research-Ekonomska Istraživanja*, 34(1), 3092–3118. <https://doi.org/10.1080/1331677X.2020.1867214>

- Sacristán-Navarro, M., Cabeza-García, L., Basco, R., & Gomez-Anson, S. (2022). It's all about culture! Institutional context and ownership concentration across Europe. *European Management Journal*, 40(2), 194–207. <https://doi.org/10.1016/j.emj.2021.06.001>
- Sah, N. B., Adhikari, H. P., Krolikowski, M. W., Malm, J., & Nguyen, T. T. (2022). CEO gender and risk aversion: Further evidence using the composition of firm's cash. *Journal of Behavioral and Experimental Finance*, 33, 100595. <https://doi.org/10.1016/j.jbef.2021.100595>
- Santiago-Castro, M., & Brown, C. (2011). Corporate governance, expropriation of minority shareholders' rights, and performance of Latin American enterprises. *Annals of Finance*, 7(4), 429–447. <https://EconPapers.repec.org/RePEc:kap:annfin:v:7:y:2011:i:4:p:429-447> <https://doi.org/10.1007/s10436-009-0132-z>
- Sayari, N., & Marcum, B. (2018). Reducing risk in the emerging markets: Does enhancing corporate governance work? *BRQ Business Research Quarterly*, 21(2), 124–139. <https://doi.org/10.1016/j.brq.2018.01.002>
- Serfling, M. A. (2014). CEO age and the riskiness of corporate policies. *Journal of Corporate Finance*, 25, 251–273. <https://doi.org/10.1016/j.jcorpfin.2013.12.013>
- Shaw, J. B. (1990). A cognitive categorization model for the study of intercultural management. *The Academy of Management Review*, 15(4), 626–645. <https://doi.org/10.2307/258685>
- Shen, W. (2003). The dynamics of the CEO-board relationship: An evolutionary perspective. *The Academy of Management Review*, 28(3), 466–476. <https://doi.org/10.2307/30040733>
- Simsek, Z. (2007). CEO tenure and organizational performance: An intervening model. *Strategic Management Journal*, 28(6), 653–662. <http://www.jstor.org/stable/20142467> <https://doi.org/10.1002/smj.599>
- Wade, J. B., O'Reilly, I., Charles, A., & Pollock, T. G. (2006). Overpaid CEOs and underpaid managers: Fairness and executive compensation. *Organization Science*, 17(5), 527–544. <https://doi.org/10.1287/orsc.1060.0204>
- Walters, B. A., Kroll, M. J., & Wright, P. (2007). CEO tenure, boards of directors, and acquisition performance. *Journal of Business Research*, 60(4), 331–338. <https://EconPapers.repec.org/RePEc:eee:jbrese:v:60:y:2007:i:4:p:331-338> <https://doi.org/10.1016/j.jbusres.2006.12.001>
- Xu, X., Li, W., Li, Y., & Liu, X. (2019). Female CFOs and corporate cash holdings: Precautionary motive or agency motive? *International Review of Economics & Finance*, 63, 434–454. <https://doi.org/10.1016/j.iref.2019.05.006>
- Yim, S. (2013). The acquisitiveness of youth: CEO age and acquisition behavior. *Journal of Financial Economics*, 108(1), 250–273. <https://doi.org/10.1016/j.jfineco.2012.11.003>
- Zhang, T., Sabherwal, S., Jayaraman, N., & Ferris, S. P. (2016). The young and the restless: A study of age and acquisition propensity of CEOs of UK firms. *Journal of Business Finance & Accounting*, 43(9-10), 1385–1419. <https://doi.org/10.1111/jbfa.12216>
- Zhou, M., Chen, F., & Chen, Z. (2021). Can CEO education promote environmental innovation: Evidence from Chinese enterprises. *Journal of Cleaner Production*, 297, 126725. <https://doi.org/10.1016/j.jclepro.2021.126725>