

# The effect of investor protection on forced CEO turnover

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## Abstract

**Purpose** – This paper aims to analyze the direct and indirect effects of investor protection on forced CEO turnover.

**Design/methodology/approach** – The authors investigate 5,175 firm-year observations from 16 European countries over 2012–2018, collect data on four national investor protection indicators, identify 196 forced CEO turnovers and use multiple logistic regression models.

**Findings** – The results show that a reduction in the degree of investor protection significantly increases the probability of a forced change of the company's CEO. Furthermore, when the degree of investor protection increases, directors are attributed a lower degree of responsibility in the event of a decline in earnings performance. Therefore, the relation between a decrease in profitability and a forced change of CEO is reduced.

**Research limitations/implications** – The research is focused on countries belonging to the European Economic Area and most of the investor protection indicators are derived from surveys. Concerning policy implications, the findings suggest that regulators should focus on the effective enforcement of investor protection mechanisms.

**Social implications** – The results confirm that characteristics at the country level have an impact on corporate decisions, highlighting the importance of increasing the degree of investor protection as a means of mitigating agency conflicts and improving stewardship.

**Originality/value** – To the best of the authors' knowledge, this study explores a relatively underinvestigated topic as it uses investor protection indicators to jointly evaluate both direct and indirect effects on forced changes of CEO through cross-national research.

**Keywords** Forced CEO turnover, Investor protection, Firm performance, Stewardship

**Paper type** Research paper

## 1. Introduction

Forced CEO turnover stands as one of the most pivotal events with the potential to profoundly impact organizations and their shareholders. It encompasses a complex interplay of contingencies and processes, addressing a crucial facet of managerial stewardship (Cragun *et al.*, 2016). Several studies have delved into comprehending the precursors of CEO dismissals, recognizing the factors that influence management and ownership behaviors (Berns *et al.*, 2021). Within this context, we analyze the key role of investor protection in curtailing the influence of CEOs and ensuring the protection of shareholders' interests, consequently enhancing corporate value (La Porta *et al.*, 2000). Investor protection is a relevant issue in the studies on corporate governance (Leuz *et al.*, 2003; Defond and Hung, 2004; Hu and Kim, 2019), but the influence of investor protection on forced CEO turnovers remains a relatively uncharted territory. In particular, the question of whether an increase in the level of investor protection impacts CEO behavior and enhances managerial stewardship is still open, as is the role of investor protection in altering the way shareholders assess CEO actions and mitigate agency conflicts. These questions harbor substantial implications, both in terms of policy and societal consequences and are steadily gaining prominence (La Porta *et al.*, 2000; Francis and Wang, 2008; Houqe *et al.*, 2012).

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Previous research has furnished evidence that specific circumstances and the corporate governance framework of a firm can be influential factors in determining whether CEOs assume the role of agents or stewards (Le Breton-Miller *et al.*, 2011; Block and Ulrich, 2022). Notably, both agent and stewardship behaviors can coexist within the same organization, influenced by various combinations of coexisting governance structures (Madison *et al.*, 2017). In this regard, monitoring activities, as facilitated by stronger investor protection measures, can be regarded as an additional layer of governance aimed at ensuring that CEOs act in the best interest of ownership (Chrisman *et al.*, 2007).

Therefore, by integrating this line of research, we posit that a heightened level of control exercised by shareholders, coupled with management's perception of an increased risk of replacement due to enhanced investor protection, can serve as a compelling motivator for CEO stewardship. As shareholders who are not satisfied with the work of the directors can press to replace them, the incidence of CEO forced turnover can be considered an effective measure of stewardship level. Therefore, we link the degree of shareholder protection to the role of management stewardship by analyzing the frequency and causes of early CEO turnovers. In other words, we contend that a significant causal relationship exists between the level of investor protection and the probability of early CEO turnover. In an environment where executive managers sense greater oversight, and shareholders feel better shielded, both parties' conduct can be positively influenced, aligning with predictions stemming from agency theory (Jensen and Meckling, 1976; Fama and Jensen, 1983; Eisenhardt, 1989; Chari *et al.*, 2019; Mio *et al.*, 2020; Naz *et al.*, 2022). On one hand, CEOs will find themselves more inclined to elevate their stewardship level and enhance corporate value when they perceive an elevated risk of being replaced in a setting characterized by robust investor protection (Defond and Hung, 2004). On the other hand, shareholders will assign a reduced level of responsibility to CEOs for underwhelming performance when CEO actions are linked to diminished managerial authority, discretion and substantial sway over organizational outcomes. This is especially evident in environments fortified with control mechanisms to ensure heightened investor protection, leading to a more favorable assessment by shareholders (Crossland and Chen, 2013). Consequently, we propose that a heightened alignment of interests and improved mutual relationships will ensue, resulting in a decrease in CEO dismissals.

We test this relation in the European context, in which the increasing significance of this issue in recent years resulted in specific legislation in favor of investor protection. The most significant regulatory acts were the Transparency Directives (2004/109/EC and 2013/50/EU) and the Shareholders Rights Directives (2007/36/EC and 2017/828/EU), motivated by the recognition that shareholders play a crucial role in promoting better corporate governance models, especially considering a perceived lack of shareholder interest in holding management accountable for their decisions and actions (European Commission, 2012). This unique context makes it particularly interesting to investigate the level and effects of investor protection within the European continent.

Thus, our research seeks to substantiate whether the heightened degree of investor protection, advocated by recent European Directives, is indeed associated with an elevated level of CEO stewardship within European firms. Recognizing that managers may exhibit opportunistic behavior in the absence of vigilant oversight and incentives to act in the shareholders' best interests (Jensen and Meckling, 1976; Fama and Jensen, 1983; Miller *et al.*, 2014; Chari *et al.*, 2019; Mio *et al.*, 2020; Naz *et al.*, 2022), we posit that the reinforcement of shareholder influence through stronger investor protection can serve as a significant catalyst for aligning ownership and management interests more effectively.

Compared to previous studies, our work distinguishes itself in several significant ways. First, it examines the effects of investor protection across a wide range of European countries, focusing on recent years. Additionally, it takes into account variables that allow us to capture variations in the level of investor protection over time. This is because investor protection is

measured not only at the individual country level but also separately for each year under consideration. Furthermore, a notable aspect of our study is that it simultaneously investigates both immediate and mediated effects of investor protection. This analysis highlights how the increase in investor protection exerts a significant influence on the determination of forced CEO turnover, both directly by reducing their number and indirectly by reducing the dependence of layoffs on the company's economic performance.

Consequently, the present study contributes to the existing literature from multiple points of view. First, compared to most of the previous works that are based on the analysis of the determinants of the CEO change referred to a single country (Durukan *et al.*, 2012; Dardour *et al.*, 2018; Azzali and Mazza, 2020) and/or without distinguishing between voluntary and forced changes (Defond and Hung, 2004; Hu and Kim, 2019), it provides evidence on the forced turnovers in an international context. Second, integrating studies that have highlighted how investor protection at the country level affects corporate governance at the company level and thus the relationship between CEO changes and performance (Defond and Hung, 2004; Hu and Kim, 2019), this research investigates the relationships between CEO changes of an explicitly forced nature and multiple investor protection measures. Third, to the best of the authors' knowledge, this study explores a relatively underinvestigated topic by jointly assessing both direct and indirect effects on forced CEO turnovers, focusing on the determinants of CEO change and firm performance-CEO dismissal sensitivity, respectively, through the use of investor protection indicators. The overall results highlight the importance of increasing the degree of investor protection as a means of mitigating agency conflicts, increasing CEO's stewardship and favoring more effective corporate management.

Section 2 provides background information on related research and illustrates the research hypotheses. Section 3 describes the research design and methodology. Section 4 presents and discusses the empirical results. Section 5 provides robustness tests. Section 6 draws conclusions.

## 2. Literature review and hypotheses development

### 2.1 Conceptual background

The replacement of a CEO due to inadequate economic performance and the impact of top management characteristics on corporate value (Assenga *et al.*, 2018; Vieira, 2018; Al-Matari, 2019; Kao *et al.*, 2019; Merendino and Melville, 2019; Wang *et al.*, 2019) is one of the most significant corporate governance tools available to maximize the efficiency of the relationship between the principals (owners) and the agents (managers). This tool limits the self-serving behavior of CEOs and is in the best interest of the company, according to agency theory (Jensen and Meckling, 1976; Eisenhardt, 1989; Crossland and Chen, 2013; Panda and Leepsa, 2017; Hendrastuti and Harahap, 2023).

Most previous studies have found clear evidence of a negative association between CEO changes and corporate income performance, although they were not focused on the analysis of forced CEO turnover across multiple countries. Some works have focused on analyzing CEO changes in a single country, regardless of the turnover cause (Rachpradit *et al.*, 2012; Visintin *et al.*, 2015; Huang *et al.*, 2020; Ghosh *et al.*, 2021; Chijoke-Mgbame *et al.*, 2023). Other studies have examined companies in multiple states but did not distinguish between voluntary and forced CEO changes (Defond and Hung, 2004; Lel and Miller, 2008; Hu and Kim, 2019). However, other research has only studied forced CEO changes but limited the analysis to companies in a single country (Kang and Shivasani, 1995; Pi and Lowe, 2011; Durukan *et al.*, 2012; Dardour *et al.*, 2018; Ghosh and Wang, 2019; Dragotà *et al.*, 2020).

Building on the agency theory, which asserts that managers rationally maximize their utility at the expense of owners (Jensen and Meckling, 1976; Fama and Jensen, 1983; Eisenhardt, 1989; Panda and Leepsa, 2017; Mio *et al.*, 2020; Hendrastuti and Harahap, 2023), and stewardship theory, which assumes that managers are stewards who act in line with the

chairman's goals (Davis *et al.*, 1997; Karns, 2011; Keay, 2017), this work seeks to integrate these two opposing perspectives (Martynov, 2009; Chen *et al.*, 2016; Martin and Butler, 2017; Madison *et al.*, 2017). This is made possible by the fact that both theories focus on individual-level behaviors and corporate-level mechanisms that drive corporate outcomes (Madison *et al.*, 2016), allowing for a tendential reconciliation of agency theory and stewardship theory.

In any case, it is the same agency theory, on which our study is based, that assumes that specific conditions can induce managers to exhibit steward-like behaviors. Investor protection is precisely the element that bridges agency and stewardship, as we consider the control mechanisms associated with investor protection as significant factors and motivational incentives that can lead to stewardship behaviors, influencing the psychology of the CEO (Hernandez, 2012; Chen *et al.*, 2016; Melis and Nijhof, 2018; Banerjee *et al.*, 2020).

Previous research has shown that strong investor protection is an institutional factor that characterizes corporate governance at the national level (La Porta *et al.*, 2000; Hung, 2001). As such, it can influence the behavior of companies and their respective shareholders from multiple perspectives (Leuz *et al.*, 2003; Francis and Wang, 2008; Houqe *et al.*, 2012). In a system characterized by adequate investor protection, the risks of shareholder expropriation, especially of minorities are reduced (Jensen and Meckling, 1976; Chari *et al.*, 2019; Mio *et al.*, 2020; Naz *et al.*, 2022).

In the literature, the significant effects of investor protection are analyzed in various ways, such as with reference to impacts on the ownership structure of companies, the development of financial markets, the real economy, earnings quality and earnings management (La Porta *et al.*, 2000; Hung, 2001; Leuz *et al.*, 2003; Francis and Wang, 2008; Houqe *et al.*, 2012).

According to the predictions of agency theory, an adequate investor protection system reduces managerial discretion and opportunistic behavior by administrators, aligning their actions with the needs of the shareholders involved (Defond and Hung, 2004). In such a scenario, it is less likely that shareholders blame CEOs for unsatisfactory economic results (Crossland and Chen, 2013).

In particular, Defond and Hung (2004), although they do not distinguish between voluntary and forced replacements, found that strong law enforcement, characteristic of greater investor protection, significantly reduces the probability of CEO turnover. They also discovered that CEO turnover is more likely to be associated with poor stock returns in countries with strict law enforcement when stock prices are more informative.

Similarly, Crossland and Chen (2013) studied why CEOs are considered more accountable for poor corporate performance in some countries than in others. They found evidence, mainly focusing on the periods before the mandatory introduction of IAS/IFRS in the European area, that CEOs are more likely to be fired following poor corporate performance in countries where managerial discretion is high, such as when investor protection is weaker. They also found that the sensitivity of CEO dismissal to corporate performance is stronger where corporate performance measures are more meaningful, and where the CEO labor market is more developed.

Moving beyond this topic, our study evaluates both the direct and indirect effects on forced CEO turnovers associated with alternative indicators of investor protection over a multi-year period following the mandatory introduction of IAS/IFRS in the European area. This work presupposes that the influence of stronger national-level investor protection measures guides the stewardship behaviors of executive leaders, which are reflected in a lower rate of forced CEO turnover.

## 2.2 Research hypotheses

Previous research has identified a negative correlation between investor protection and CEO turnovers. However, these studies fail to distinguish between forced and voluntary

turnover and rely on generalized investor protection indicators for each year in their analysis. In particular, [Hu and Kim \(2019\)](#) and [Defond and Hung \(2004\)](#) both observe a negative connection between investor protection and CEO changes, although this is not the primary focus of their research hypotheses. In contrast, [Kaplan and Minton \(2012\)](#) hypothesize a positive association between the two variables, presuming that stronger shareholder rights and power could lead to more turnovers, but they also uncover a negative relationship between investor protection and CEO changes. This unexpected finding lacks substantial explanation by the authors but serves as the central hypothesis of our research.

This paper operates under the assumption that both profitability and investor protection impact the likelihood of early CEO turnover. Past studies have demonstrated that investor protection deters managers from engaging in opportunistic and inefficient behaviors while encouraging increased participation in financial markets ([La Porta et al., 2000](#); [Defond and Hung, 2004](#)). Our research takes an approach that delves into the connection between investor protection, measured at the national level and disaggregated for each year of analysis and the forced replacement of CEOs.

Regarding the hypothesized sign of the relationship between the two variables, one could argue that firms in countries with stronger investor protection are more likely to adopt governance mechanisms and control systems that successfully change CEOs. This suggests a positive association between early CEO turnover and investor protection level, also taking into account that having greater strength, shareholders may be more inclined to replace executive managers ([Defond and Hung, 2004](#); [Kaplan and Minton, 2012](#)).

On the other hand, firm ownership may have less need to forcibly replace the CEO if they feel more protected. As agency theory predicts, higher levels of control, such as that derived from strong investor protection, may affect management behavior, inducing a better degree of stewardship and alignment with shareholders' interests ([Jensen and Meckling, 1976](#); [Bebchuk, 2005](#)). This should reflect in a reduction of early CEO turnovers. The power to remove directors is an important mechanism for ensuring that CEOs are well-selected and have a significant incentive to serve shareholders' interests, as they fear replacement by unsatisfied owners ([Bebchuk, 2007](#)). In other words, when principals have more power and information to verify agent behavior, agents are more likely to behave in the interests of the principals ([Fama and Jensen, 1983](#); [Eisenhardt, 1989](#)). On the contrary, loosening constraints on executive managers may mean that they are systematically less shareholder-oriented and focus more on maximizing their own interests rather than firm value ([Roe, 2001](#); [Bebchuk et al., 2002](#); [Roe, 2006](#)), thereby increasing the likelihood of replacement by dissatisfied owners. Evidence of previous research supports the notion that a higher level of investor protection attenuates agency conflicts and tends to prevent forced CEO turnovers ([Hu and Kim, 2019](#)).

There are many indicators of investor protection used in the literature. In our contribution, we focus on three indicators that are particularly relevant, as identified by [Houqe et al. \(2012\)](#): judicial independence, the strength of auditing and accounting standards and minority investor protection. We calculate these indicators at the country level for each year included in our analysis. In addition, we introduce a further indicator of shareholder protection based on whether the company operates in an Anglo-Nordic country. Previous studies have shown that countries in the common law area and the Nordic region have higher levels of investor protection compared to those in the Latin and German areas ([La Porta et al., 1998](#); [La Porta et al., 2000](#); [Xia and De Beelde, 2020](#)).

Similarly to what has been done in previous studies ([Houqe et al., 2012](#); [Hu and Kim, 2019](#)), we believe it is appropriate to analyze the impacts of each indicator separately, as each of them represents different aspects of investor protection. Some indicators reflect general system characteristics associated with the level of investor protection (the level of judicial

independence and the strength of auditing and accounting standards). Others express specific features of corporate governance (the level of minority investor protection), while some are related to the belonging to the Anglo-Nordic country group or not.

Given these assumptions, we hypothesize the presence of a negative causal relationship between the level of investor protection and forced CEO turnovers.

We propose the following sub-hypotheses for each investor protection indicator:

- H1a.* Forced CEO change is negatively dependent on the level of judicial independence.
- H1b.* Forced CEO change is negatively dependent on the strength of auditing and accounting standards.
- H1c.* Forced CEO change is negatively dependent on the level of minority investor protection.
- H1d.* Forced CEO change is negatively dependent on the operational activity of firms in the Anglo-Nordic countries.

In addition to analyzing the direct relationship between national investor protection levels and forced CEO turnovers, we want to investigate the indirect effects of stronger ownership on early changes of top executive management. Specifically, we want to examine how investor protection affects the sensitivity of CEO dismissal to firm performance across countries.

When investor protection is high, shareholders perceive directors to have less power and the degree of managerial discretion that can be used in their choices is reduced (Jensen and Meckling, 1976; Crossland and Hambrick, 2011). With reduced managerial discretion, there is a reduced direct attribution of responsibility to managers for unsatisfactory economic performance. Owners and the board of directors are less likely to negatively evaluate the effectiveness of the CEO, resulting in a lower likelihood of CEO firings (Shen and Cho, 2005; Crossland and Chen, 2013). Prior research has found that the relationship between forced CEO changes and economic performance decreases when the level of ownership dispersion is reduced, a factor associated with a greater degree of managerial discretion (Crossland and Chen, 2013).

In contrast, when investor protection is reduced, the discretionary power of directors enlarges, information asymmetry rises and the perception of greater managerial discretion and responsibility for the CEO increases. This, in turn, increases the probability of early CEO changes as he is considered more responsible for the company's results. Prior research has shown a stronger association between forced CEO changes and profitability as the value of indicators reflecting the managerial discretion level increases (Crossland and Chen, 2013).

Some previous works have examined the specific relationships between investor protection and CEO turnover, without differentiating between voluntary and forced turnover. They found evidence that when investor protection decreases, the probability of CEO change becomes more associated with cash flow performance and less associated with accrual earnings (Hu and Kim, 2019). The association between CEO turnover and low performance is increased in the presence of stronger institutions to guarantee the application of laws, but not in the presence of more extensive legislation on investor protection (Defond and Hung, 2004).

Therefore, we believe that the sensitivity of forced CEO changes to a company's income performance decreases as the degree of investor protection increases.

As a consequence, we formulate the following four sub-hypotheses, corresponding to each investor protection index previously considered:

- H2a.* The dependence of forced CEO changes on profitability decreases as judicial independence increases.
- H2b.* The dependence of forced CEO changes on profitability decreases as the strength of auditing and accounting standards increases.

*H2c.* The dependence of forced CEO changes on profitability decreases as the minority investor protection increases.

*H2d.* The dependence of forced CEO changes on profitability decreases if the company belongs to the Anglo-Nordic countries area.

### 3. Research design and methodology

#### 3.1 Sample and data

Our sample consists of all listed firms, excluding financial firms, from 16 European Economic Area (EEA) countries with available data. The EEA represents an internal market governed by the same basic rules, aiming to enable goods, services, capital and people to move freely in an open and competitive environment. The countries considered in our sample are Austria, Belgium, Germany, Denmark, Spain, Finland, France, Greece, Ireland, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal and Sweden.

We collected firm data from 2012 to 2018, covering a seven-year period, using two databases: Datastream for economic, financial and stock market data, and Boardex for corporate governance data, including CEO data. After excluding firm-years with missing necessary data and financial statements with negative book value of equity, the final sample consists of 5,175 firm-year observations from 16 countries over 2012–2018.

We have not considered subsequent years to avoid the impact of the COVID-19 pandemic from 2019 onwards on the data, especially concerning the choice to retain or replace the CEO, as done in similar previous studies (Chijoke-Mgbame *et al.*, 2023). This is also considering that, with reference to the years affected by the effects of the pandemic, CEOs cannot reasonably be held accountable for any negative economic outcomes in the same way as it can occur in normal periods. Consequently, it does not seem justifiable to reliably test causal relationships of this nature during the periods affected by COVID-19. To confirm these assumptions, studies from international organizations and specialized press articles (The Conference Board, 2020; Parsons *et al.*, 2020; Segal, 2021) provide relevant empirical evidence confirming the significant impact of the COVID-19 pandemic on the CEO turnover rate.

Moreover, we manually collected national investor protection indicators from the yearly Global Competitiveness Reports by the World Economic Forum and Doing Business Reports by the World Bank for each country in our sample.

Regarding CEO data, we identified CEO turnover in a given year compared to the previous year and classified each turnover as forced or voluntary, similar to previous studies (Kang and Shivdasani, 1995; Pi and Lowe, 2011; Durukan *et al.*, 2012; Dardour *et al.*, 2018; Dragotà *et al.*, 2020). We analyzed the information provided by companies, press reports, news media and other available data on the internet. We classified turnovers as forced if the CEO was fired, forced out or resigned due to policy differences or some other equivalent reasons (Jenter and Kaanan, 2015; Kang *et al.*, 2018). If the reason for the change was unclear, we used CEO age as the residual assessment factor (Kaplan and Minton, 2012). We assumed departures for CEOs below age 64 as forced turnovers, as this was the 2018 average normal retirement age across OECD countries for individuals with a full career for both men and women (OECD, 2019).

#### 3.2 Empirical models

Table 1 contains the definitions of all variables used in this study. These include the forced CEO turnover (CEO.TUR), control variables related to company profitability (ROA), firm size (SIZE), capitalization (MV), board size (BOARD) and firm free float (FLOAT). We also consider variables of interest represented by alternative national indices of investor protection calculated for each analyzed year, namely, the judicial independence indicator (JUD.IND), the strength of auditing and accounting standards

**Table 1** Variable definitions and data sources

<i>Variable</i>	<i>Definition</i>	<i>Data source</i>
<i>Dependent variable</i>		
CEO.TUR	Dummy variable equal to one if there is a forced CEO turnover attributed to firm <i>i</i> year <i>t</i> and zero otherwise	BoardEx
<i>Independent control variables</i>		
ROA	Return on assets of firm <i>i</i> in year <i>t</i>	Datastream
SIZE	Total assets of firm <i>i</i> at the end of year <i>t</i>	Datastream
MV	Market value of equity of firm <i>i</i> at the end of year <i>t</i>	Datastream
BOARD	Number of board members of firm <i>i</i> at the end of year <i>t</i>	BoardEX
FLOAT	Percentage of free float of firm <i>i</i> at the end of year <i>t</i>	Datastream
<i>Independent variables of interest</i>		
JUD.IND	Judicial independence index of firm country in year <i>t</i>	World economic forum – global competitiveness reports
STREN.REP	Strength of auditing and accounting standards index of firm country in year <i>t</i>	World economic forum – global competitiveness reports
MIN.PROT	Minority investor protection index of firm country in year <i>t</i>	World bank – doing business reports
ANG	Dummy variable equal to one if the observation concerns an Anglo-Nordic firm and zero otherwise	<a href="#">La Porta et al. (2000)</a> and <a href="#">La Porta et al. (1998)</a>
Source: Authors' own work		

include a country classification distinguishing between the Anglo-Nordic group and other countries (ANG).

We attributed CEO turnover to a specific financial year if it occurred within the 12-month period following the end of that financial year ([Crossland and Chen, 2013](#); [Kang et al., 2018](#)).

All our control variables have been widely used in prior CEO turnover research studies, including ROA ([Pi and Lowe, 2011](#); [Dardour et al., 2018](#)), company size ([Houqe et al., 2012](#); [Crossland and Chen, 2013](#)), market-based measures ([Kang and Shivdasani, 1995](#); [Crossland and Chen, 2013](#)), board size ([Rachpradit et al., 2012](#); [Dragotà et al., 2020](#)) and ownership dispersion ([Pi and Lowe, 2011](#); [Visintin et al., 2015](#)).

As for our independent variable of interests, we focus on alternative national investor protection indicators taken from the global competitiveness reports yearly issued by the world economic forum and the Doing Business Reports yearly issued by the World Bank.

The global competitiveness reports contain the judicial independence (JUD.IND) and strength of auditing and accounting standards (STREN.REP) values. For each country-year, the judicial independence indicator (JUD.IND) shows how independent the judicial system is from influences of the government, individuals or companies. The strength of auditing and accounting standards Index (STREN.REP) measures how strong financial auditing and reporting standards are.

Both values are derived from the Executive Opinion Survey yearly conducted by the World Economic Forum. This Survey captures the opinions of business leaders around the world on a broad range of topics and aims to provide a more accurate assessment of the business environment and of the many drivers of economic development ([World Economic Forum, 2018](#)). The indicators derived from the surveys are used in the calculation of the global competitiveness index for each country,

The Doing Business Reports are yearly published by the World Bank and investigate the regulations that enhance business activity and those that constrain it through a series of quantitative indicators on business regulation and the protection of property rights that can be compared across economies in the world ([World Bank, 2018](#)), including the minority investor protection index (MIN.PROT).



This index (MIN.PROT) measures the protection of minority investors from conflicts of interest through one set of indicators and shareholders' rights in corporate governance through another. The data come from a questionnaire administered to corporate and securities lawyers and are based on securities regulations, company laws, civil procedure codes and court rules of evidence. For each country-year, protecting minority investors score (MIN.PROT) is the sum of the extent of conflict-of-interest regulation index and the extent of shareholder governance index.

The indicators from both Global Competitiveness and Doing Business Reports have long been used by a number of international and nongovernmental organizations and academia for empirical and policy work (Booakay and Cooper, 2015; Avram *et al.*, 2015; Achim, 2018; Alomair *et al.*, 2022). These reports have also been used in research on minority investor protection mechanisms (Dima *et al.*, 2018; Pham and Nguyen, 2022) and CEO turnover (Houqe *et al.*, 2012).

We also include an additional investor protection indicator related to the traditional country classification, which distinguishes between the ANG. According to the findings of La Porta *et al.* (1998) and La Porta *et al.* (2000), country-firm observations belonging to the Anglo-Nordic group are associated with a better level of shareholder protection due to their cultural tradition of greater transparency in financial statements and prevalence of substance over form (Nobes, 1983). Additionally, common law countries within this group allow judges to broadly interpret significant principles, such as fiduciary duty, thus authorizing them to prohibit more forms of minority investor expropriation (La Porta *et al.*, 2000).

Our sample consists of 5,175 firm-year observations, divided between Anglo-Nordic observations (1,379) related to Denmark, Finland, Ireland, Norway and Sweden and German-Latin observations (3,796) related to Austria, Belgium, Germany, France, Greece, Italy, Luxembourg, The Netherlands, Poland, Portugal and Spain.

We begin by examining descriptive statistics arising from our analysis and using appropriate tests of significance to obtain early feedback to our assumptions. Subsequently, we conduct correlation analysis by constructing Spearman correlation matrices and particularly checking for negative correlations between forced CEO turnovers and investor protection measures. Finally, we test the fundamental assumptions with multivariate analysis, using a series of logistic regressions corresponding to each hypothesis, where the dependent variable consists of the dummy variable related to forced CEO turnover.

Our first four models test whether CEO change is a function of investor protection, measured by the four alternative indicators discussed above (JUD.IND, STREN.REP, MIN.PROT and ANG). In the subsequent four models, we created interaction terms by multiplying the firm profitability measure (ROA) by each relevant moderating variable expression of the investor protection level (JUD.IND, STREN.REP, MIN.PROT and ANG) to test our hypotheses *H2a*, *H2b*, *H2c* and *H2d*, which predict that the firm economic performance – CEO turnover relationship is weakened if the investor protection decreases.

Below, we introduce our eight logistic regression models, which differ only in the choice of independent variables used to represent the level of investor protection in a country. Following the approach of prior studies (Houqe *et al.*, 2012; Hu and Kim, 2019), we include one investor protection indicator at a time in each regression, also considering that each of them is capable of capturing different profiles associated with a country's level of investor protection.

Logistic regressions – Model 1a:

$$\text{CEO.TUR} = a + b_1 \text{SIZE} + b_2 \text{MV} + b_3 \text{BOARD} + b_4 \text{FLOAT} + b_5 \text{ROA} + b_6 \text{JUD.IND} + e.$$

Logistic regressions – Model 1b:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} \\ + b6 \text{STREN.REP} + e.$$

Logistic regressions – Model 1c:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} \\ + b6 \text{MIN.PROT} + e.$$

Logistic regressions – Model 1d:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} + b6 \text{ANG} + e.$$

Logistic regressions – Model 2a:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} + b6 \text{JUD.IND} \\ + b7 \text{JUD.IND} * \text{ROA} + e.$$

Logistic regressions – Model 2b:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} \\ + b6 \text{STREN.REP} + b7 \text{STREN.REP} * \text{ROA} + e.$$

Logistic regressions – Model 2c:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} \\ + b6 \text{MIN.PROT} + b7 \text{MIN.PROT} * \text{ROA} + e.$$

Logistic regressions – Model 2d:

$$\text{CEO.TUR} = a + b1 \text{SIZE} + b2 \text{MV} + b3 \text{BOARD} + b4 \text{FLOAT} + b5 \text{ROA} + b6 \text{ANG} \\ + b7 \text{ANG} * \text{ROA} + e.$$

Following our hypotheses, *H1a*, *H1b*, *H1c* and *H1d* will receive support if the coefficients associated to each investor protection variable (*b6*) in the first four corresponding regressions are negative and significant, while *H2a*, *H2b*, *H2c* and *H2d* will be confirmed if the coefficients associated to each interaction term between profitability and investor protection indicator (*b7*) in the last four corresponding regressions are positive and significant.

#### 4. Empirical results and discussion

In our sample composed of 5,175 firm-year observations that meet our criteria, 196 observations (3.79%) record forced CEO turnovers, while the remaining 4,979 observations do not. [Table 2](#) presents these findings.

Our turnover rate is consistent with previous studies on forced CEO turnovers, such as [Jenter and Kanaan \(2015\)](#) (2.77%), [Kang et al. \(2018\)](#) (2.50%), [Dardour et al. \(2018\)](#) (2.16%) and [Suk et al. \(2021\)](#) (2.34%).

In line with our predictions, Anglo-Nordic countries (1.60% turnover rate) have a lower turnover rate than German-Latin countries (4.58%), as shown by the chi-square test ( $p < 0.001$ ).

[Table 3](#) provides descriptive statistics for our country-level variables, including the mean values of each investor protection indicator for each nation. These values are the mean of the corresponding values separately calculated for each analyzed year from 2012 to 2018.

**Table 2** CEO Forced turnovers – descriptive statistics

Country	No. observations	No. forced CEO turnovers	% forced CEO turnovers
Austria	150	5	3.3
Belgium	205	14	6.8
Denmark	186	10	5.4
Finland	228	2	0.9
France	718	28	3.9
Germany	1,537	71	4.6
Greece	111	5	4.5
Ireland	93	4	4.3
Italy	421	15	3.6
Luxembourg	33	0	0.0
The Netherlands	273	15	5.5
Norway	285	0	0.0
Poland	119	7	5.9
Portugal	27	3	11.1
Spain	202	11	5.4
Sweden	587	6	1.0
Total	5,175	196	3.79

Source: Authors' own work

**Table 3** Country-level variables – descriptive statistics

Country	JUD.IND (mean)	STREN.REP (mean)	MIN.PROT (mean)	ANG
Austria	5.3	5.9	70.0	0
Belgium	5.5	5.6	68.0	0
Denmark	6.3	5.5	72.0	1
Finland	6.6	6.5	62.0	1
France	5.1	5.5	68.0	0
Germany	5.9	5.6	62.0	0
Greece	3.6	4.1	60.2	0
Ireland	6.3	4.9	78.6	1
Italy	3.8	4.2	66.0	0
Luxembourg	6.0	6.1	50.6	0
The Netherlands	6.3	6.1	57.5	0
Norway	6.4	6.2	76.0	1
Poland	4.0	5.0	66.0	0
Portugal	4.4	4.4	62.0	0
Spain	3.8	4.7	66.9	0
Sweden	6.2	6.0	72.0	1
Total countries	5.3	5.4	66.1	–
ANG = 1 Countries	6.4	5.8	72.1	–
ANG = 0 Countries	4.9	5.2	63.4	–

Source: Authors' own work

We observe that the first three indices of investor protection (JUD.IND., STREN.REP and MIN.PROT) vary widely across countries and have higher mean values for the Anglo-Nordic group compared to German-Latin group. These findings support the work of [La Porta et al. \(1998\)](#) and [La Porta et al. \(2000\)](#) and justify our addition of a fourth proxy for the strength of a country's investor protection (ANG).

[Table 4](#) displays descriptive statistics at the firm level for all independent and not dichotomous variables.

We observe reasonably distributed values with a sufficient standard deviation, consistent with previous research ([Hu and Kim, 2019](#)).

**Table 4** Variables of interest – descriptive statistics

Variable	Mean	Median	Min.	Max.	SD
SIZE	7,270,147.545	985,937.000	4,048.000	450,000,000.000	23,944,006.344
MV	4,877,684.117	804,140.000	4,189.900	190,000,000.000	13,532,526.410
BOARD	10.124	9.000	3.000	30.000	4.551
FLOAT	0.590	0.590	0.000	1.000	0.248
ROA	0.021	0.040	-4.429	1.829	0.203
JUD.IND	5.523	5.800	3.100	6.800	0.918
STREN.REP	5.545	5.700	3.700	6.600	0.608
MIN.PROT	66.145	66.000	44.000	80.000	5.312

Note:  $n = 5,175$

Source: Authors' own work

Table 5 presents Spearman correlation coefficients between variables.

Of particular interest, all four variables related to investor protection (JUD.IND, STREN.REP, MIN.PROT and ANG) exhibit a negative and significant correlation with the dummy variable concerning forced CEO turnover (CEO.TUR). As predicted, this provides preliminary evidence on a univariate basis that the probability of CEO dismissal is higher in countries with lower degrees of investor protection.

Moreover, the return on assets ratio (ROA) is negatively and significantly correlated with forced CEO turnover, confirming our assumptions. The probability of CEO change is also significantly correlated with board size (BOARD) with a positive coefficient suggesting that a higher number of directors increases the level of management control.

Not surprisingly, we also note positive and highly significant correlations between each of our four indicators of investor protection. That is, countries with strong judicial independence (JUD.IND) also have strong enforcement of auditing and accounting standards (STREN.REP) and strong protection of minority shareholders' interests (MIN.

**Table 5** Correlations matrix

Variable	CEO.TUR	SIZE	MV	BOARD	FLOAT	ROA	JUD.IND	STREN.REP	MIN.PROT	ANG
CEO.TUR	1	0.004	0.006	0.049***	0.005	-0.033**	-0.043***	-0.035**	-0.036***	-0.069***
SIZE	0.004	1	0.706***	0.440***	0.021	0.023*	-0.036***	-0.030**	-0.056***	-0.103***
MV	0.006	0.706***	1	0.420***	0.090***	0.093***	0.016	0.026*	-0.027*	-0.054***
BOARD	0.049***	0.440***	0.420***	1	-0.027**	0.078***	-0.133***	-0.143***	-0.152***	-0.272***
FLOAT	0.005	0.021	0.090***	-0.027**	1	-0.041***	0.186***	0.151***	0.034**	0.189***
ROA	-0.033**	0.023*	0.093***	0.078***	-0.041***	1	0.003	-0.016	-0.022	0.044***
JUD.IND	-0.043***	-0.036***	0.016	-0.133***	0.186***	0.003	1	0.848***	0.075***	0.525***
STREN.REP	-0.035**	-0.030**	0.026*	-0.143***	0.151***	-0.016	0.848***	1	0.048***	0.437***
MIN.PROT	-0.036***	-0.056***	-0.027*	-0.152***	0.034**	-0.022	0.075***	0.048***	1	0.621***
ANG	-0.069***	-0.103***	-0.054***	-0.272***	0.189***	0.044***	0.525***	0.437***	0.621***	1
	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000

Notes: Each box shows: Spearman Correlation and Sig. (two-tailed). No. observations: 5,175 \*\*\*significant at the 0.01 level; \*\*significant at the 0.05 level; \*significant at the 0.1 level

Source: Authors' own work

PROT.) (Houqe *et al.*, 2012), and the probability of their belonging to the Anglo-Nordic area increases (La Porta *et al.*, 1998; La Porta *et al.*, 2000).

Table 6 reports multivariate tests of the determinants of forced CEO turnovers, including the significance level of individual coefficients.

Each model corresponds to a specific hypothesis and is assigned the same number. Models 1a to 1d include all control variables and one of our alternative investor protection proxies. Models 2a to 2d incorporate the interaction term between firm performance and the relevant moderating variable used to measure investor protection.

Across all eight regressions, the value of Nagelkerke R Square is similar to those found in previous related works (Rachpradit *et al.*, 2012; Dikolli *et al.*, 2014; Hu and Kim, 2019; Wu and Zhang, 2019).

Before testing our specific hypotheses, we first note the impact of firm accounting performance on CEO dismissal. Models 1a to 1d shows that ROA is a significant negative predictor of CEO dismissals, confirming the findings of previous research (Durukan *et al.*, 2012; Dardour *et al.*, 2018).

Our first set of hypotheses (*H1a*, *H1b*, *H1c* and *H1d*) are supported by strong and robust evidence. In each corresponding model, the coefficient associated with the measure of a country's investor protection is significantly and negatively associated with the dependent dummy variable concerning forced CEO turnovers. As expected, based on agency theory predictions, a lower degree of investor protection at the national level reduces the CEO's stewardship, thereby increasing the probability of CEO dismissal at the firm level. This is also consistent with the assumptions of the managerial power approach, which predicts that the greater the CEO's power, as is the case when investor protection is lower, the larger his rents will tend to be due to the association between managerial influence and excess returns obtained using positional advantages (Shleifer and Vishny, 1986; Bebchuk and Fried, 2004).

Our study builds on previous research that finds evidence of opportunistic behavior among managers in environments with weak investor protection (Hung, 2001; Bebchuk, 2005; Roe, 2006). We extend this literature by examining the consequences of weak investor protection on management stewardship, specifically the likelihood of CEO dismissal. In other words, stronger investor protection, which reduces management opportunism (Jensen and Meckling, 1976; Fama and Jensen, 1983; Eisenhardt, 1989), leads to greater alignment between CEO activity and shareholder interests, thereby reducing the incidence of turnovers (Defond and Hung, 2004; Hu and Kim, 2019).

Regarding our subsequent hypotheses (*H2a*, *H2b* and *H2d*), our findings show highly significant coefficients in the predicted direction. The corresponding models of logistic regressions (2a, 2b and 2d) indicate positive coefficients associated with the interaction term between firm accounting performance and investor protection measure (JUD. IND\*ROA, STREN.REP\*ROA and ANG\*ROA, respectively). As predicted, the relationship between firm performance and the probability of CEO dismissal becomes weaker, or less negative, in countries where investor protection is stronger.

This is because high levels of investor protection reduce the perceived degree of managerial discretion (Jensen and Meckling, 1976), and shareholder expectations that a CEO is personally responsible for firm performance outcomes also decrease, as found in previous literature (Crossland and Chen, 2013).

Concerning our *H2c*, the corresponding regression model shows a positive coefficient (as predicted) but is not statistically significant for the interaction term between performance and investor protection, here represented by the level of protection of minority shareholders' interests (MIN.PROT\*ROA). One possible explanation for these findings is that this protection index specifically refers to the role of minority shareholders, who have less decisive influence on whether or not to change the CEO, so the actual consequences of

**Table 6** Logistic regressions

Variable	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
		Model 1a			Model 1b			
SIZE	0.000	0.939	0.332	1.000	0.000	0.909	0.340	1.000
MV	0.000	0.000	0.986	1.000	0.000	0.000	0.997	1.000
BOARD	0.062***	13.383	0.000	1.064	0.061***	13.391	0.000	1.063
FLOAT	0.290	0.911	0.340	1.336	0.235	0.607	0.436	1.264
ROA	-0.626***	7.195	0.007	0.535	-0.629***	7.344	0.007	0.533
JUD.IND [H1a(-)]	-0.221***	8.388	0.004	0.802	-0.267**	5.163	0.023	0.766
STREN. REP [H1b(-)]								
MIN. PROT								
ANG								
JUD.IND*ROA								
STREN.REP*ROA								
MIN.PROT*ROA								
ANG*ROA								
CONSTANT	-2.826	36.529**	0.000	0.059	-2.523***	13.809	0.000	0.080
No. observations		5,175				5,175		
Nagelkerke R-square		0.019				0.017		
		Model 1c			Model 1d			
SIZE	0.000	0.860	0.354	1.000	0.000	0.961	0.327	1.000
MV	0.000	0.007	0.933	1.000	0.000	0.009	0.926	1.000
BOARD	0.058***	12.552	0.000	1.060	0.044***	6.907	0.009	1.045
FLOAT	0.138	0.220	0.639	1.148	0.351	1.395	0.238	1.420
ROA	-0.637***	7.452	0.006	0.529	-0.596**	5.895	0.015	0.551
JUD.IND								
STREN. REP								
MIN. PROT [H1c(-)]	-0.031**	4.567	0.033	0.970	-1.010***	18.293	0.000	0.364
ANG [H1d(-)]								
JUD.IND*ROA								
STREN.REP*ROA								
MIN.PROT*ROA								
ANG*ROA								
CONSTANT	-1.892	3.606	0.058	0.151	-3.693***	195.105	0.000	0.025
No. observations		5,175				5,175		
Nagelkerke R-square		0.016				0.029		

(continued)

**Table 6**

Variable	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
		Model 2a				Model 2b		
SIZE	0.000	0.884	0.347	1.000	0.000	1.009	0.315	1.000
MV	0.000	0.001	0.978	1.000	0.000	0.004	0.947	1.000
BOARD	0.062***	13.411	0.000	1.064	0.062***	13.887	0.000	1.064
FLOAT	0.267	0.772	0.380	1.306	0.197	0.428	0.513	1.218
ROA	-6.389**	5.068	0.024	0.002	-14.087***	7.130	0.008	0.000
JUD.IND	-0.243***	9.804	0.002	0.784	-0.320***	7.287	0.007	0.726
STREN.REP								
MIN.PROT								
ANG								
JUD.IND*ROA [H2a(+)]	1.034**	3.905	0.048	2.812	2.368**	6.429	0.011	10.681
STREN.REP*ROA [H2b(+)]								
MIN.PROT*ROA								
ANG*ROA								
CONSTANT	-2.694***	32.193	0.000	0.068	-2.214***	10.416	0.001	0.109
No. observations		5,175				5,175		
Nagelkerke R-square		0.022				0.021		
		Model 2c				Model 2d		
SIZE	0.000	0.905	0.341	1.000	0.000	0.852	0.356	1.000
MV	0.000	0.003	0.958	1.000	0.000	0.000	0.999	1.000
BOARD	0.059**	12.911	0.000	1.061	0.045***	7.137	0.008	1.046
FLOAT	0.130	0.196	0.658	1.139	0.328	1.215	0.270	1.388
ROA	-6.394	2.051	0.152	0.002	-0.832***	9.251	0.002	0.435
JUD.IND								
STREN.REP								
MIN.PROT	-0.031**	4.802	0.028	0.969	-0.1091***	18.612	0.000	0.336
ANG								
JUD.IND*ROA								
STREN.REP*ROA								
MIN.PROT*ROA [H2c(+)]	0.084	1.637	0.201	1.087	2.080**	3.863	0.049	8.008
ANG*ROA [H2d(+)]					-3.691***	194.146	0.000	0.025
CONSTANT	-1.840**	3.397	0.065	0.159				
No. observations		5,175				5,175		
Nagelkerke R-square		0.018				0.032		

Notes: \*\*\* Significant at the 0.01 level; \*\* significant at the 0.05 level

Source: Authors' own work

their assessment of management behavior could depend on the role played by controlling shareholders.

Regarding other variables, we note highly significant and positive coefficients associated with board size (BOARD), providing evidence that a larger board increases the likelihood of forced CEO turnover (Wiersema and Zhang, 2011; Liu, 2014). A higher number of directors offers more knowledge and expertise, increasing the overall amount of information available and affecting the level of management control (Chemmanur and Fedaseyeu, 2018; Dragotà *et al.*, 2020; Jatana, 2023).

## 5. Robustness tests

To determine the robustness of our results, we conducted several additional analyses.

First, similar to the robustness tests performed in related previous studies (Defond and Hung, 2004; Houqe *et al.*, 2012), we repeated the same analyses by excluding observations from countries with a high number of observations and countries with a low number of observations from the sample to ensure that these representativeness issues did not influence the outcomes.

In our case, compared to the initial sample of 5,175 observations, we eliminated observations from countries with more than 1,000 observations (Germany) and countries with fewer than 100 observations (Ireland, Luxembourg and Portugal). Consequently, the observations were reduced to 3,485, and the results of the respective logistic regressions are presented in Table 7.

The results of this robustness test confirm all the previous findings. *H1* is once again confirmed for each of the four investor protection indicators (JUD.IND, STREN.REP, MIN.PROT and ANG). In each regression model (1a, 1b, 1c and 1d), the coefficients associated with the investor protection measure are significantly and negatively associated with the dependent variable on forced CEO turnovers, consistent with our respective assumptions (*H1a*, *H1b*, *H1c* and *H1d*). *H2* is again confirmed for all investor protection indicators except the indicator related to minority shareholders (MIN.PROT) (*H2c*). In the regression models corresponding to JUD.IND, STREN.REP and ANG (2a, 2b and 2d), positive coefficients significantly associated with the interaction variable between corporate accounting performance and the investor protection measure emerge, as assumed (*H2a*, *H2b* and *H2d*). As previously observed, the regression Model (2c) corresponding to *H2c* shows a positive but not significant coefficient associated with the interaction variable between performance and the level of protection of minority shareholders, considering as highlighted in the previous section, that the role of the latter may have a lesser influence on the CEO turnover decision.

Second, similar to what was done in related previous studies (Defond and Hung, 2004), we repeated the same analyses using different investor protection indicators, specifically indicators that simultaneously consider multiple specific factors (Hu and Kim, 2019), i.e. cumulative indicators that sum the values of the individual indicators previously considered.

As a result, we constructed additional regressions, going through several steps.

First, as shown in Table 8, we performed the same calculations using a new investor protection indicator (JUD.IND + STREN.REP + MIN.PROT + ANG), which is the sum of the four individual indicators previously considered separately.

The results are in line with the previous findings, as *H1* is fully confirmed. Regarding *H2*, while a coefficient with the expected positive sign associated with the interaction variable between corporate accounting performance and the level of investor protection is found, no significant relationship emerges. This result may be influenced by the impact of the



**Table 7** Logistic regressions deleting countries with large or little numbers of observations

Variable	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
		Model 1a				Model 1b		
SIZE	0.000	0.037	0.847	1.000	0.000	0.017	0.896	1.000
MV	0.000	0.165	0.684	1.000	0.000	0.093	0.760	1.000
BOARD	0.092***	9.635	0.002	1.097	0.098***	11.092	0.001	1.103
FLOAT	-0.107	0.068	0.794	0.898	-0.150	0.134	0.714	0.861
ROA	-0.695***	7.564	0.006	0.499	-0.693***	7.605	0.006	0.500
JUD.IND [H1a(-)]	-0.221**	5.462	0.019	0.802	-0.271**	4.130	0.042	0.763
STREN.REP [H1b(-)]								
MIN.PROT								
ANG								
JUD.IND*ROA								
STREN.REP*ROA								
MIN.PROT*ROA								
ANG*ROA								
CONSTANT	-3.080***	22.523	0.000	0.046	-2.789***	11.170	0.001	0.061
No. observations		3.485				3.485		
Nagelkerke R square		0.029				0.028		
		Model 1c				Model 1d		
SIZE	0.000	0.009	0.923	1.000	0.000	0.169	0.681	1.000
MV	0.000	0.016	0.899	1.000	0.000	0.168	0.682	1.000
BOARD	0.112***	15.376	0.000	1.119	0.076***	6.565	0.010	1.079
FLOAT	-0.326	0.667	0.414	0.722	0.019	0.002	0.963	1.019
ROA	-0.713***	7.934	0.005	0.490	-0.637**	5.678	0.017	0.529
JUD.IND								
STREN.REP								
MIN.PROT [H1d(-)]	-0.046**	6.374	0.012	0.955	-1.036***	14.494	0.000	0.355
ANG [H1d(-)]								
JUD.IND*ROA								
STREN.REP*ROA								
MIN.PROT*ROA								
ANG*ROA								
CONSTANT	-1.221	0.925	0.336	0.295	-3.862***	90.610	0.000	0.021
No. observations		3.485				3.485		
Nagelkerke R square		0.030				0.042		

(continued)

**Table 7**

Variable	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
		Model 2a				Model 2b		
SIZE	0.000	0.006	0.941	1.000	0.000	0.034	0.854	1.000
MV	0.000	0.080	0.778	1.000	0.000	0.150	0.699	1.000
BOARD	0.093***	9.764	0.002	1.097	0.099***	11.499	0.001	1.105
FLOAT	-0.165	0.161	0.688	0.848	-0.207	0.257	0.612	0.813
ROA	-9.155***	6.671	0.010	0.000	-15.510***	7.315	0.007	0.000
JUD.IND	-0.258***	7.092	0.008	0.773				
STREN.REP					-0.329**	6.029	0.014	0.720
MIN.PROT								
ANG								
JUD.IND*ROA [H2a(+)]	1.553**	5.330	0.021	4.724				
STREN.REP*ROA [H2b(+)]					2.607***	6.577	0.010	13.564
MIN.PROT*ROA								
ANG*ROA								
CONSTANT	-2.865	18.945	0.000	0.057	-2.449***	8.534	0.003	0.086
No. observations		3,485				3,485		
Nagelkerke R square		0.038				0.035		
		Model 2c				Model 2d		
SIZE	0.000	0.007	0.931	1.000	0.000	0.060	0.807	1.000
MV	0.000	0.025	0.875	1.000	0.000	0.059	0.808	1.000
BOARD	0.112***	15.314	0.000	1.118	0.076***	6.647	0.010	1.079
FLOAT	-0.354	0.788	0.375	0.702	-0.036	0.008	0.929	0.965
ROA	-10.570	2.579	0.108	0.000	-0.922***	9.407	0.002	0.398
JUD.IND								
STREN.REP								
MIN.PROT	-0.047***	6.802	0.009	0.954	-1.142***	15.165	0.000	0.319
ANG								
JUD.IND*ROA								
STREN.REP*ROA								
MIN.PROT*ROA [H2a(+)]	0.142	2.203	0.138	1.153				
ANG*ROA [H2d(+)]					2.445**	5.041	0.025	11.525
CONSTANT	-1.084	0.721	0.396	0.338	-3.844	90.355	0.000	0.021
No. Observations		3,485				3,485		
Nagelkerke R square		0.033				0.048		

Notes: \*\*\* Significant at the 0.01 level; \*\* significant at the 0.05 level

Source: Authors' own work

**Table 8** Logistic regressions with comprehensive investor protection indicators

Variable	Model 1				Model 2			
	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
SIZE	0.000	0.910	0.340	1.000	0.000	0.956	0.328	1,000
MV	0.000	0.000	0.993	1.000	0.000	0.001	0.971	1,000
BOARD	0.055***	11.040	0.001	1.057	0.057***	11,522	0.001	1,058
FLOAT	0.178	0.364	0.546	1.195	0.162	0.303	0.582	1,176
ROA	-0.650***	7.684	0.006	0.522	-8,685*	2,812	0.094	0.000
JUD.IND + STREN.REP + MIN.PROT + ANG [H1(-)]	-0.039***	8.780	0.003	0.962	-0.040***	9,184	0.002	0.961
JUD.IND + STREN.REP + MIN.PROT + ANG * ROA [H2(+)]					0.100	2,338	0.126	1,106
CONSTANT	-0.885	0.694	0.405	0.413	-0.805	0.570	0.450	0.447
No. observations		5,175				5,175		
Nagelkerke R-square		0.019				0.021		

**Notes:** \*\*\*Significant at the 0.01 level; \*significant at the 0.1 level  
**Source:** Authors' own work

component represented by the minority shareholder indicator (MIN.PROT), given our previous findings suggesting their lesser influence on the CEO change decision.

Therefore, we performed the same calculations assuming an additional indicator that includes three investor protection indicators (JUD.IND + STREN.REP + ANG), excluding the indicator related to minority shareholders, as shown in Table 9. The results fully confirm the assumptions, as both H1 and H2 are confirmed with robust significance.

Additionally, we calculated variables that sum two indicators (while continuing to exclude the minority shareholder indicator). Table 10 presents the results assuming the variable (JUD.IND + STREN.REP) as the sum of the indicators related to judicial independence and the strength of auditing and accounting standards. In this additional test, all assumptions are once again confirmed, as both H1 and H2 are fully confirmed.

Further regressions, not reported in the text, showed identical results assuming additional combinations of indicators (specifically: STREN.REP + ANG; JUD.IND + ANG).

In summary, the assumption of comprehensive indicators, in their various configurations, considering multiple factors of investor protection jointly, fully confirmed our results.

**Table 9** Logistic regressions with comprehensive investor protection indicators

Variable	Model 1				Model 2			
	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
SIZE	0.000	0.996	0.318	1.000	0.000	0.931	0.334	1.000
MV	0.000	0.010	0.920	1.000	0.000	0.002	0.967	1.000
BOARD	0.058***	11.583	0.001	1.060	0.059***	11,841	0.001	1.060
FLOAT	0.326	1.153	0.283	1.386	0.295	0.940	0.332	1.343
ROA	-0.630***	7.218	0.007	0.532	-8.186**	6.085	0.014	0.000
JUD.IND+STREN.REP + ANG [H1(-)]	-0.145***	11.934	0.001	0.865	-0.161***	13.968	0.000	0.851
JUD.IND+STREN.REP + ANG * ROA [H2(+)]					0.663**	4.948	0.026	1.940
CONSTANT	-2.393***	21.485	0.000	0.091	-2.210***	17.599	0.000	0.110
No. observations		5,175				5,175		
Nagelkerke R square		0.021				0.026		

**Notes:** \*\*\*Significant at the 0.01 level; \*\*significant at the 0.05 level  
**Source:** Authors' own work

**Table 10** Logistic regressions with comprehensive investor protection indicators

Variable	Model 1				Model 2			
	Coefficient	Wald statistics	Significance	Odds ratio	Coefficient	Wald statistics	Significance	Odds ratio
SIZE	0.000	0.940	0.332	1.000	0.000	0.931	0.335	1.000
MV	0.000	0.001	0.979	1.000	0.000	0.000	0.989	1.000
BOARD	0.061***	13.243	0.000	1.063	0.062***	13.416	0.000	1.064
FLOAT	0.277	0.833	0.361	1.319	0.248	0.670	0.413	1.282
ROA	-0.629***	7.299	0.007	0.533	-9.657**	6.155	0.013	0.000
JUD.IND + STREN.REP [ <i>H1(-)</i> ]	-0.132***	7.604	0.006	0.877	-0.149***	9.473	0.002	0.862
JUD.IND+STREN.REP * ROA [ <i>H2(+)</i> ]					0.801**	5.199	0.023	2.229
CONSTANT	-2.577***	21.127	0.000	0.076	-2.372***	17.395	0.000	0.093
No. Observations		5,175				5,175		
Nagelkerke <i>R</i> -square		0.018				0.023		

Notes: \*\*\*Significant at the 0.01 level; \*\*significant at the 0.05 level

Source: Authors' own work

## 6. Conclusions

In this study, we focus on the recent European law context that promotes stronger and more engaged firm owners to argue that investor protection influences both managerial behavior and shareholder assessments of CEO effectiveness, thereby playing a crucial role in CEO dismissal decisions. To investigate underexplored aspects of executive succession, we examine how various indicators of a country's investor protection affect the frequency of forced CEO turnovers and the sensitivity of these turnovers to firm accounting performance in a cross-country sample of European firms.

Our analysis reveals two key findings. First, an increase in investor protection is associated with a significant decrease in the probability of a forced CEO change. Second, we provide evidence that the higher the level of investor protection, the weaker the relationship between early CEO turnover and firm profitability.

Extending the results of previous research through an original analysis that simultaneously considers the significant immediate and mediated effects of the level of investor protection specifically associated with each country and each year under consideration, our study emphasizes the importance of investor protection as a means of reducing agency conflicts arising from the separation of ownership and control. It highlights the significance of investor protection in promoting better stewardship and effective corporate management, as reflected in the recent European Directives on transparency and shareholder rights. Our findings suggest that a high level of investor protection reduces managerial opportunism and the degree of CEO accountability for poor performance as assessed by shareholders (Defond and Hung, 2004; Crossland and Chen, 2013).

Significant implications emerge from the findings of our work, as it highlights how, at an overall look, the efforts made by the European Union to ensure or facilitate better protection of investors have yielded important results, promoting a more effective alignment of interests and a better sharing of objectives between shareholders and CEOs. However, we believe that this regulatory path, which places the protection of investors among the primary objectives of the European Capital Markets Union, should continue. On one hand, there is still the risk of letting one's guard down and thus negating or reducing the positive effects achieved. On the other hand, there seem to be opportunities for progressive improvement in the European regulatory framework.

In this regard, we particularly welcome the very recent approval by the European Commission in 2023 of a package of proposals aimed at creating the necessary conditions to increase retail investors' participation in capital markets (European Commission, 2023). This is intended to ensure that consumers can fully benefit from the investment

opportunities offered and achieve better investment outcomes than is currently the case when participating in the capital markets of the European Union.

Regarding research limitations, we acknowledge that our study focuses on the countries belonging to the EEA. Therefore, future research could investigate how investor protection affects forced CEO turnovers in additional countries and extend the time period of analysis. However, the number of countries included in our work, which is 16, is relative large compared to previous studies that are mainly limited to a single country.

Another potential limitation is related to the measurement of a country's investor protection, as most of our indicators are derived from surveys, although conducted by highly qualified organizations such as the World Economic Forum and World Bank. Nonetheless, it is worth noting that these sources and indexes have been widely used in literature. Additionally, the survey-based method appears appropriate as our analysis focuses on the behavior of individuals as a result of certain provisions and measures adopted by their country. Moreover, the survey recipients potentially include the same shareholders who can decide whether or not to change the CEO.

Our results, confirming that characteristics at the national level have a significant impact on corporate decisions, suggest that regulators should focus on enforcing investor protection mechanisms effectively. A higher level of investor protection not only reduces the risk of expropriation of shareholders, particularly minority shareholders (La Porta *et al.*, 2000) but also induces CEOs to align more with shareholders' interests and leads to better judgment of CEO actions by firm ownership, as our findings reveal. Thus, promoting a more significant mutual stewardship.

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