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The Moderating Role of Ownership Structure on the Relation between Board Independence and Voluntary Financial Disclosure: An Analysis of Italian Listed Company

Luigi Lepore, Sabrina Pisano, Gabriella D'Amore
Parthenope University of Naples, Naples, Italy
Carmela Di Guida
University of Molise, Campobasso, Italy

Voluntary disclosure and corporate governance variables, such as board independence and ownership structure are considered mechanisms useful to reduce information asymmetries between competing parties of the firms. This paper aims at investigating both the relationship between board independence and the quality of voluntary financial disclosure and how previous relationship is moderated by the level of ownership concentration. The analysis has been conducted on a sample of Italian non-financial listed companies. The results show that there is a positive and significant relationship between board independence and the quality of voluntary financial disclosure provided by companies. In addition, the findings reveal that ownership concentration plays a relevant moderating role in previous relationship. The results highlight the necessity to consider the interaction effects of different governance mechanisms, when studying corporate governance effectiveness.

Keywords: board independence, financial disclosure quality, ownership structure

Introduction

Voluntary disclosure is an important mechanism for management to communicate its activities and firm performance to outside investors. Literature has almost unanimously recognized the contribution that voluntary disclosure produces for the reduction of the information asymmetries and conflicts of interest potentially arising between competing parties of the firms (Healy & Palepu, 2001; Zattoni et al., 2017; Bushman & Smith, 2001).

Previous studies on voluntary disclosure investigated both management motives for making voluntary disclosure and its effects on the capital market. Empirical research on the determinants of voluntary disclosure has resulted in two streams of studies: those that focused on the impact of firm specific characteristics (such as size, leverage, profitability, and so on) on voluntary disclosure, and those that investigated the influence of corporate governance variables (such as board composition, board independence, ownership structure, and so on) on voluntary disclosure (Chau & Gray, 2010). Our paper contributes to the second stream of research, investigating the role played by board independence on the quality of voluntary disclosure provided by firms.

Luigi Lepore, Ph.D., associate professor, Department of Law, Parthenope University, Naples, Italy.
Sabrina Pisano, Ph.D., associate professor, Department of Law, Parthenope University, Naples, Italy.
Gabriella D'Amore, Ph.D., research fellow, Department of Law, Parthenope University, Naples, Italy.
Carmela Di Guida, Ph.D., student, Department of Law, University of Molise, Campobasso, Italy.

Scholars emphasized the crucial importance of adopting an independent board of directors (Bell, Moore, & Filatotchev, 2012) for reducing the information asymmetries between competing parties and improving firm performance. Theoretical and empirical research unanimously highlighted that boards with a majority of non-executive and independent directors are crucial both for preventing expropriating behavior by top management and controlling shareholders and for participating in the strategy formation and execution (Zattoni et al., 2017; Hillman & Dalziel, 2003; Zattoni & Cuomo, 2010). Inspired by these considerations, for more than a decade, regulators across the globe emphasized the crucial importance for each company of adopting an independent board of directors, enshrining the need for board independence in corporate governance regulations and codes (Zattoni et al., 2017; Johanson & Ostergren, 2010).

We analyzed the financial information voluntarily released by companies, because this type of data is relevant for investors' decisions. Moreover, differently from previous studies we measured the quality of voluntary financial disclosure released by companies, rather than exclusively focus on an unidimensional measure, such as the quantity (Beattie, McInnes, & Fearnley, 2004).

The second aim of the study is to investigate how the relationship between board independence and the quality of voluntary financial disclosure is moderated by ownership concentration. As highlighted by literature (Lepore, Paolone, Pisano, & Alvino, 2017), each corporate governance mechanism provides its own effectiveness while interacting with other internal and institutional governance mechanisms. Therefore, to evaluate the effectiveness of board independence on voluntary disclosure, it becomes essential to analyse its interaction with other governance variables, particularly ownership concentration. The latter, in fact, acquires increasing importance as corporate governance control mechanism (Connelly, Hoskisson, Tihanyi, & Certo, 2010): Interacting with other corporate governance mechanisms, ownership concentration can influence corporate governance effectiveness in protecting shareholder rights (Demsetz & Lehn, 1985; Shleifer & Vishny, 1997).

We conducted our analysis on a sample of Italian non-financial listed companies and found that there is a positive and significant relationship between board independence and quality of voluntary financial disclosure provided by companies. In addition, our findings suggest that ownership concentration plays a relevant moderating role in the relationship between this kind of disclosure and board independence, highlighting the necessity to consider the interaction effects of different governance mechanisms, when studying corporate governance effectiveness. The remainder of the paper is organized as follows: The next section reviews the literature to form the basis for the hypotheses development. Section 3 describes the sample selection process and the research design. Section 4 reports and discusses the results of the study. Finally, Section 5 presents the conclusions and limitations of the study.

Literature Review and Hypotheses Development

Board Independence and Voluntary Disclosure

The relationship between corporate governance and disclosure has always been a phenomenon of interest for scholars and regulators (Bushman & Smith, 2001).

During the 20th century, the financial markets development, the separation between ownership and control, and the increased role of institutional investors, brought to an increasing complexity of contexts where firms operate, characterized by uncertainty, dynamism, information asymmetries, conflicts, and opportunistic behaviours of the subjects involved in the distribution of the value (Zattoni, 2015).

These changes led to a growing research interest on which mechanism is more effective in reducing information asymmetries and in ensuring best performances. Among all the mechanisms, literature focused particular attention to corporate voluntary disclosure, recognizing almost unanimously its contribution in reducing the information asymmetries and agency conflicts of interest arising from insiders and outside investors (Healy & Palepu, 2001), and thus in increasing the business value and performance (Bushman & Smith, 2001).

According to the agency theory (Jensen & Meckling, 1976), the agency problems arise because outside investors do not play an active role in the management of the company in which they invest. The agent, which has better access to the firm's private information than outside investors and whose actions are unobservable by the principal, can engage in activities to enhance his personal goals. Outside investors, therefore, face moral dilemmas because they cannot accurately evaluate and determine the value of decisions made. In this situation, the agent can decide to voluntarily provide information to outside investors, in order to enhance the value of the firm by reducing the costs of the agency relationship (Barako, Hancock, & Izan, 2006). In other words, the agent has incentives to provide information about its activities, instead of leaving to the outside shareholders the task to investigate about them, because the bonding costs borne to disclose such information are lower than the monitoring costs borne by the principals to control its activities. According to Healy and Palepu (2001), the credibility of management is enhanced from disclosing more information and this increases the trust of outside investors, generating higher stock price and better stock performances.

On the basis of previous considerations, it emerges that corporate voluntary disclosure by management is crucial for the efficient functioning of the capital markets, reducing the information asymmetries and conflicts from the agent (management/dominant shareholders) and outside investors (minority shareholders/lenders), and protecting investors interests. This brought many scholars to focus their research interests on the identification of the determinants of corporate voluntary disclosure (Healy & Palepu, 2001; Li & Qi, 2008).

Most researches investigated the role played by independent directors sitting on the board in affecting the level and quality of corporate voluntary disclosure.

The board of directors is delegated by shareholders to take decisions (Patelli & Prencipe, 2007). However, its effectiveness as control mechanism depends on its degree of independence. If board members are also managers of the company, the probability of collusion and the distraction of shareholders' values are behind the corner (Fama & Jensen 1983). In order to reduce the risks of collusion with the top management or controlling shareholders, board usually include a number of independent members that are professionals whose affiliation with the company is only their directorship that means they have no ties with the ownership neither management role. According to Fama (1980) independent directors play a crucial role in the monitoring activities of the board: A higher proportion of independent directors would result in more effective monitoring of boards and limit the opportunistic behavior by top management and/or dominant shareholders (Fama & Jensen, 1983; Hillman & Dalziel, 2003; Zattoni & Cuomo, 2010). In fact, independent directors have reputational concerns that could induce them to act in the interest of all stakeholders (Fama & Jensen, 1983), rather than exclusively operating in the shareholders' interests (Armstrong, Guay, & Weber, 2010; Lim, Matolcsy, & Chow, 2007). As a consequence, the monitoring of corporate boards by independent directors will bring corporate boards to become more responsive to outside investors, among others enhancing the comprehensiveness and quality of disclosures (Chau & Gray, 2010; Forker, 1992; Ho & Wong, 2001; Lim et al., 2007).

On the basis of these considerations, for more than a decade, legislators and regulators around the world have reiterated the crucial importance of the independence of the board, highlighting the need for regulatory texts, regulations, and codes on corporate governance (Johanson & Ostergren, 2010).

The relevance of the board independence is highlighted also in the Italian Self-Regulation Code issued by the Italian stock exchange, which proposes to listed companies to have at least two independent directors sitting on the board in order to provide an independent judgment[1], and suggests companies characterized by the presence of controlling owners having directors independent from the largest shareholders, in order to induce executive directors to operate in the interests of all stakeholders, such as creditors (Codice di Autodisciplina, 2018, Art. 3—Comment).

Although the degree of board independence is a highly desirable feature, empirical research that has investigated the relationship between board independence and corporate voluntary disclosure found mixed results. Most studies have found a positive relationship (Akhtaruddin, Hossain, Hossain, & Yao, 2009; Cerbioni & Parbonetti, 2007; Chau & Gray, 2010; Chen & Jaggi, 2000; Cheng & Courtnenay, 2006; Cuadrado-Ballesteros, Rodríguez-Ariza, & García-Sánchez, 2015; Donnelly & Mulcahy, 2008; Garcia-Sanchez et al., 2014; Jaggi, Allini, Macchioni, & Zagaria, 2018; Karamanou & Vafeas, 2005; Liao, Luo, & Tang, 2015; Lim et al., 2007; Patelli & Prencipe, 2007; Pavlopoulos, Magnis, & Iatridis, 2017; Yunus, Elijido-Ten, & Abhayawansa, 2016), supporting one of the major roles of the board: its control functions (Fama, 1980). As previously explained, independent directors are perceived as a tool for monitoring management behavior, resulting in more voluntary disclosure of corporate information (Chau & Gray, 2010; Forker, 1992; Ho & Wong, 2001; Lim et al., 2007). However, there are also some authors (Barako, 2007; Barako et al., 2006; Eng & Mak, 2003; Gul & Leung, 2004; Haniffa & Cooke, 2005; Tejedo-Romero, Rodrigues, & Craig, 2017) that have found a negative impact. According to Williamson (1983), a negative relation between board independence and voluntary disclosure suggests the presence of a substitution hypothesis. In other words, when one mechanism is present, the other is less necessary; this because the author considers both board monitoring and disclosures as mechanisms to control and reduce agency conflicts. However, another motivation for the negative relation between board independence and voluntary disclosure could be that independent directors are not really independent (Li & Qi, 2008). Finally, there are authors (Bueno, Marcon, Pruner-da-Silva, & Ribeirete, 2018; Forker, 1992; Ho & Wong, 2001; Haniffa & Cooke, 2002; Leung & Horwitz, 2004; Michelon, Bozzolan, & Beretta, 2015; Miras-Rodríguez, Martínez-Martínez, & Escobar-Pérez, 2019; Prado-Lorenzo & Garcia-Sanchez, 2010; Prado-Lorenzo, Gallego-Alvarez, & Garcia-Sanchez, 2009; Wan-Hussin, 2009) who have not detected any influence.

Contrasting evidences could also be due to the variety of the institutional context analyzed, the measure of independence used or the content of disclosure investigated. Regarding the measure of independence, the majority of the studies proxied board independence by a legal/formal indicator, given by sharing the number of independent members with the total number of board members (Chen & Jaggi, 2000; Ho & Wong, 2001; Lim et al., 2007). Rather than use the proportion of independent directors, most studies made a distinction between executive and non-executive (outside) directors and proxied board independence using the proportion of outside directors to the total number of directors on the board (Forker, 1992; Haniffa & Cooke, 2002, 2005;

[1] In Italian listed companies belonging to FTSE-Mib index, at least one-third of the board should be composed of independent directors.

Eng & Mak, 2003; Gul & Leung, 2004). If, on one side, these measures are objective, easily calculated and comparable, they hide potential pitfalls, especially in the case of busy directors, elected in several boards that potentially could be in conflict of interest. In order to better understand the substantial independence of directors, Prado-Lorenzo et al. (2009) measured board independence using the proportion of independent board members who represent the interests of the minority shareholders; however, they did not find a significant relation with voluntary disclosure.

Previous studies investigated different types of information; this because the influence of corporate governance variables on voluntary disclosure may vary by information type. The majority of previous researches mainly focused on voluntary non-financial disclosure, such as corporate social responsibility (Cuadrado-Ballesteros et al., 2015; Garcia-Sanchez et al., 2014; Prado-Lorenzo et al., 2009), intellectual capital (Cerbioni & Parbonetti, 2007; Tejedo-Romero et al., 2017), integrated reporting (Pavlopoulos et al., 2017), and greenhouse gas emissions (Prado-Lorenzo & Garcia-Sanchez, 2010). To the best of our knowledge, few studies investigated financial information, although this type of data has decision relevance to investors. For this reason, this paper focuses on financial information voluntarily provided by companies.

With specific regards to the studies that investigated financial information, Chen and Jaggi (2000) analysed mandatory disclosure. Other studies (Akhtaruddin et al., 2009; Barako et al., 2006; Chau & Gray, 2010; Donnelly & Mulcahy, 2008; Eng & Mak, 2003; Gul & Leung, 2004; Lim et al., 2007) investigated voluntary financial disclosure, together with other type of information; however, often they reported the results of the regressions for the aggregate value of the disclosure index developed, but did not show the results for the specific category of financial information. Exclusively, Barako (2007) reported the result disaggregated for each category of the voluntary disclosure index developed, finding that the proportion of non-executive directors sitting on the board negatively influences the release of voluntary financial information.

In addition of previous consideration, most previous studies developed disclosure index aiming at measure the quantity of information released by companies. However, these indices are not able to evaluate all the dimensions of disclosure quality, because they are unidimensional measures (Beattie et al., 2004). For this reason, the measurement of the quality of disclosure is recognized as a relevant question that is still open (Cole & Jones, 2005; Healy & Palepu, 2001) and the need to develop more effective measures for disclosure quality is emphasized in literature (Core, 2001).

In this study, we overcome these limits by investigating the effect of board independence on the management decision to voluntarily disclose financial information, developing a disclosure index that exclusively consider financial information and measure the quality of data released.

Another variable that can differently affect the voluntary disclosure released by companies is the ownership concentration. In fact, the effectiveness of board independence in helping to increase the disclosure quality may vary depending on the level of corporate ownership concentration.

The Moderating Role of Ownership Structure

Most previous studies regarding the relationship between board independence and voluntary disclosure have usually studied this association without considering the moderating role played by other corporate governance mechanisms, such as ownership structure. The level of ownership concentration is an important variable that cannot be ignored when studying previous relationship. In fact, although the majority of disclosure research sustains that shareholders prefer more disclosure of timely information, there are studies documenting the presence of different signs of the association between ownership structure and voluntary disclosure, it depends on the level of ownership concentration.

Research has often used agency theory to investigate how ownership structure affects the level of voluntary disclosure in order to mitigate the agency problems (Eng & Mak, 2003; Oliveira, Lima Rodrigues, & Craig, 2006; Barako, 2007; Huafang & Jianguo, 2007; Li & Qi, 2008; Jiang & Habib, 2009; Samaha, Dahawy, Hussainey, & Stapleton, 2012; Lan, Wang, & Zhang, 2013; Pisano, Lepore, & Lamboglia, 2017). However, the importance of the agency problem is not the same in concentrated and widely held firms. As Fama and Jensen (1983) proposed, in fact, the potential for conflicts between principals and agents is greater for firms characterized by high ownership diffusion. Consequently, the amount of information disclosed by companies to mitigate such conflicts is likely to be greater in widely held firms (Raffournier, 1995), because more monitoring is required (Fama & Jensen, 1983). In other words, when the ownership is diffused, the release of voluntary disclosure permits shareholders to monitor the management actions, reducing the agency problems between shareholders and management (Type I of agency problem). In fact, through voluntary communication, management can signal acting from a long-term perspective or in the best interests of all owners, and shareholders can use this disclosure to efficiently control its activities (monitoring hypothesis) (Jensen & Meckling, 1976; Hossain, Tan, & Adams, 1994; Ho & Wong, 2001; Chau & Gray, 2002). Several studies have confirmed the presence of a positive relation between ownership concentration and voluntary disclosure (Hossain et al., 1994; Haniffa & Cooke, 2002; Huafang & Jianguo, 2007), supporting the monitoring hypothesis.

In contrast, firms with high levels of ownership concentration are characterized by less information asymmetry between the management and shareholders, because large shareholders typically have access to the information that they need and can provide an active governance system, which is difficult for smaller and less-informed investors (Cormier, Magnan, & Van Velthoven, 2005). However, in these contexts, voluntary disclosure could fail as a good governance mechanism, because dominant block holders might manipulate the extent of disclosures to maximize private benefits at the expense of minority shareholders (expropriation hypothesis). Thus, in companies characterized by high levels of ownership concentration, there is no concrete separation between ownership and control and, typical, agency conflicts are those between majority and minority shareholders (Type II of agency problem) (Maury & Pajuste, 2005). In such contexts, the research has usually suggested and found a negative relationship between ownership concentration and voluntary disclosure, supporting the expropriation hypothesis (Chau & Gray, 2002; Cormier et al., 2005; Brammer & Pavelin, 2006; Alsaeed, 2006; Patelli & Prencipe, 2007; Lan et al., 2013; Pisano et al., 2017).

Finally, there are also many other empirical studies failing to find a statistically significant relationship between ownership concentration and voluntary disclosure (Mak, 1991; Craswell & Taylor, 1992; Raffournier, 1995; Eng & Mak, 2003; Donnelly & Mulcahy, 2008).

On the basis of previous considerations, it emerges that the influence of board independence on voluntary disclosure is not the same in every context where companies operate. In fact, in countries where corporations are characterized by high levels of ownership concentration, such as continental European countries, the independent directors should monitor the opportunistic behavior of dominant shareholders, rather than top management, because in these firms, there is no concrete separation between ownership and control and the top management is a direct emanation of the controlling shareholder (Connelly et al., 2010). In other words, in these contexts, the decision-making power is effectively exercised by dominant shareholders, rather than by the board of directors which, as pointed out by Connelly et al. (2010), is strongly influenced by the controlling shareholder. The board of directors, in other words, is a direct expression or strongly depends on the dominant shareholder who holds de facto the decision-making power. As a result, the monitoring function exercised by independent directors on the dominant shareholders, as well as on the management, loses its effectiveness.

On the contrary, in countries where companies' equity is dispersed among a large number of small non-active investors, there is a concrete separation between ownership and control of the firm and the top management effectively exercises a concrete decision-making power. In these contexts, since there is no dominant shareholder that can effectively influence it, the decision-making power is in the hands of the board of directors. Therefore, independent directors, if their number is consistent, could exercise the function of monitoring more effectively, preventing the management opportunistic behaviours.

Hypotheses development. This manuscript investigates the relationship between board independence and voluntary disclosure in a specific country, i.e., Italy with regard to the quality of voluntary financial disclosure.

Independent directors are perceived as a tool for monitoring management behavior (Fama & Jensen, 1983; Hillman & Dalziel, 2003; Zattoni & Cuomo, 2010), resulting in more voluntary disclosure of corporate information (Chau & Gray, 2010; Forker, 1992; Ho & Wong, 2001; Lim et al., 2007). According to Fama and Jensen (1983), the larger the proportion of independent on the board, the more effective it will be in monitoring managerial opportunism, and companies can be expected to have more voluntary disclosures (Ho & Wong, 2001). Thus, we expect that independent directors exert greater influence on management decisions to voluntarily disclose information to outside investors when their proportion is higher.

To investigate the influence of the presence of independent directors on the board to the quality of voluntary financial disclosure, it is hypothesized that:

H_1: The proportion of independent directors to the total directors on the board is positively associated with the quality of voluntary financial disclosure.

Moreover, considering that the effectiveness of board independence in helping to increase the disclosure quality may vary depending on ownership structure, we also investigate the moderating role played by ownership concentration in previous relationship. In the Italian context, the risk that firm value will be expropriated by majority shareholders from minority shareholders is particularly significant, because of the high levels of ownership concentration, low counterweight power of minority shareholders and low level of shareholder protection due to judicial system inefficiency (Lepore et al., 2017).

We expected that the distribution of power among shareholders would play a pivotal role in influencing firms' voluntary financial disclosure. Therefore, we tested the following hypothesis:

H_2: The relationship between board independence and the quality of voluntary financial disclosure is moderated by the level of ownership concentration.

Research Design and Methodology

Sample Selection and Data Source

The sample consisted of 235 Italian companies chosen from non-financial firms listed on the Italian stock exchanges on December 31, 2016. Bank and insurance companies were excluded from the sample because they draw up their financial statements according to different regulations. We gathered both accounting and financial data and information on ownership structures from the Bureau Van Dijk Orbis database. We obtain data on corporate board characteristics from corporate governance report of each firm. Our original sample was composed of all non-financial firms listed in 2016 (263 companies). We excluded 28 of these companies from further analysis because they did not provide information on ownership structures and accounting and financial data.

Variables

Table 1 summarizes all of the model variables and provides more information on their characterization, measurement, and data sources.

Table 1

Variable Description and Data Source

Variables	Description	Measurement	Data source
FKPI_Vol_Discl	Quality of voluntary financial disclosure	Sum of the quantity of FKPIs released and the attributes disclosed for each FKPI	Annual report
BoInd	Board independence	Number of independent directors divided by the total number of board members	Corporate Governance report
OwnConc	Concentration ratio—Herfindahl index of ownership concentration	Sum of squares of the percentage of shares held by the first three largest shareholders = [(Votes 1)^2 + (Votes 2)^2 + (Votes 3)^2]	ORBIS database
*BoInd*OwnConc*	Interaction variable	Two-way interaction term. *OwnConc* and *BoIndep* are defined above	ORBIS database
RoleDual	CEO/Chairman duality	1 if the company's chairman of the board is also the CEO and 0 otherwise	Corporate Governance report
BoardMeetings	Number of board meetings	Total number of board meetings during the years	Corporate Governance report
BoSize	Board size	Number of board directors with voting rights	Corporate Governance report
ExecDirect	Executive directors	Percentage of executive directors on the board	Corporate Governance report
Big4	Big4 dummy	Variable is equal to 1 for firm that have a Big4 audit company and 0 otherwise	Corporate Governance report
Size	Firm size	Natural logarithm of total assets	ORBIS database
Lev	Leverage	Long term debt divided by total assets	ORBIS database
Perf	Market-based performance	Natural logarithm of Tobin's Q, measured as the market value of assets divided by the book value of total assets	ORBIS database
GS	Growth sales	Growth rate of sales	ORBIS database

Dependent variable. Our dependent variable is an unweighted index, named *FKPI_Vol_Disc*, that measures the quality of voluntary financial information disclosed by sampled companies in their annual report, through different Financial Key Performance Indicators (FKPIs), in order to communicate to stakeholders their level of stability, solvency, liquidity, and profitability.

We measured the quality of voluntary financial disclosure in terms of both quantity of information released and attributes of the data provided. We measured the quantity in terms of number of FKPIs released by companies. To select the FKPIs that companies should disclose in their annual report we referred to the guidance issued by the Italian professional standards setter (Consiglio Nazionale dei Dottori Commercialisti e degli Esperti Contabili) to help firms in drawing up their management discussion and analysis statement[2]. We

[2] After the issuing of Directive 51/2003/UE, European companies should voluntarily disclose financial information in their management discussion and analysis statement. In the guidance issued by the Italian professional standards setter, there are examples of FKPIs that companies should provide.

identified 25 items (ROE, ROA, ROI, ROS, EBIT, EBITDA, Debt to Equity, Debt to Assets, Current Ratio, Quick Ratio, etc.). With respect to the attributes of the financial information released, we referred to the recommendation CESR/05-178b. According to previous recommendation, in addition to the actual value, for each FKPI companies should provide the following information: (1) the value assumed in the past year; (2) the prevision for the future year; (3) the average value the FKPI has in the sector where each company operates; (4) a narrative description of the FKPI; and (5) a graph or table. Thus, for each FKPI, we computed the number of attributes disclosed by firm: If the firm provided no information on the attributes, we assigned the score of 0; if the firm released all the attributes, we assigned the score of 5.

Thus, our unweighted index is equal to the sum of the quantity of information released by each company and the attributes.

$$FKPI\_Vol\_Disc_i = \text{Quantity}_i + \text{Attributes}_i$$

The *FKPI_Vol_Disc* assigned to firm *i* is equal to the sum of FKPIs disclosed (Quantity_i) and the attributes provided for each FKPI by company *i* (Attributes_i).

After identifying the FKPIs and their attributes, we analyzed the annual reports drawn up for the year 2016 by each company and we collected data on each FKPI. In particular, we first measured the quantity of FKPIs released by each company (Quantity). The Quantity indicator can range from 0 (in case of no disclosure of FKPIs) to 25 (when the company disclosed all the FKPIs identified). Then, for each FKPI released, we gathered the following attributes: The value assumed in the past year, the prevision for the future year, and the average value the KPI have in the sector where each company operates, a narrative description of the value recorded by the FKPI and the presence of a graph or table. For each of these attributes, a score of 1 was assigned to each FKPI if the company discloses that attribute and a score of 0 otherwise. In this way, the minimum and maximum value for each FKPI was respectively 0, if no information was disclosed and 5 if all the attributes were disclosed. At the end, summing all the value calculated for each of the 25 FKPIs (Quantity and Attributes), we obtained the final value of our *FKPI_Vol_Disc* index that potentially ranges from 0 to 150 for each firm.

Independent and moderating variables. Our independent variable is the level of board independence (*BoInd*). As in many previous researches (Chen & Jaggi, 2000; Ho & Wong, 2001; Lim et al., 2007), the board independence was measured as the percentage of independent directors sitting on the board. Our moderating variable is ownership concentration (*OwnConc*), measured using the Herfindhal index concentration. This variable has been used in previous studies (Li & Qi, 2008; Maury & Pajuste, 2005) to compute the concentration of voting rights held by the largest shareholders. We measured *OwnConc* as the sum of the squares of the percentage of shares held by the three largest shareholders. Higher values of *OwnConc* correspond to higher concentrations of power in the hands of the largest shareholders and, as a consequence, lower contestability of their power. We also included the interaction term (*BoInd*OwnConc*) computed as the multiplicative effect between *BoInd* and *OwnConc*, to analyze the presence of interaction effects between the two governance mechanisms.

Control variables. We used two different categories of controls variables that are respectively related to governance characteristics and firm characteristics. Both categories represent factors influencing voluntary disclosure (Chau & Gray, 2010). Considering that other board characteristics, different from the independence level, are also important in defining the disclosure behavior of the firm, we inserted in the analysis some variables that can better describe the board structure and processes. First, we included board size (*BoardSize*), computed as the number of board members, and expected to find a positive association with voluntary disclosure, considering that more directors can play their monitoring role better, reducing the information asymmetry between competing parties (Cheng & Courtenay, 2006). Second, we included the variable that measure the role duality (*RoleDual*), that is the concentration of power of chief executive officer (CEO) and chairman of the board in the hands of just one person. It is a dummy variable coded 1, if the firm's chairman of the board is also the CEO and 0 otherwise. We predicted that it is negatively related to voluntary disclosure, assuming that this power concentration reduces the monitoring role played by the board of directors, increasing the agency costs (Ho & Wong, 2001; Pisano, Lepore, & Agrifoglio, 2015). Third, we included the variable measuring the percentage of executive directors on the board (*ExecDirect*) and predicted that it is negatively related to the disclosure level, assuming that the power of executive directors reduces the monitoring role potentially played by independent members of the board (Cheng & Courtenay, 2006). Fourth, we considered the board meetings (*BoardMeetings*), calculated as the number of board meetings during the year, and expected to find a positive association with voluntary disclosure, hypothesizing that directors play their monitoring role better if they meet each other frequently (Adams & Ferreira, 2009). Indeed, board meetings and the attendance at these meetings are important channels through which directors obtain firm-specific information and fulfill their monitoring role. According to Manfredi et al. (2014), the frequency of board meetings together with their attendance behaviors are all variables that have an impact on firm performance, particularly during a crisis period. Finally, we included a variable that is equal to 1 for firm that has a Big4 audit company and 0 otherwise (*Big4*). We predicted a positive relation with disclosure, assuming that a Big4 audit company can stimulate a more transparent and accountable behavior of the company (Barako et al., 2006).

The second category of control variable is related to firm-specific characteristics. The variables included are: firm size (*Size*); leverage (*Lev*); performance (*Perf*), and growth sales (*GS*). Previous studies found that these variables affect voluntary disclosure (Anderson, Mansi, & Reeb, 2004; Ashbaugh-Skaife, Collins, & LaFond, 2006; Sengupta, 1998). We measured firm size as the natural logarithm of total assets and predicted to find a positive association with the disclosure level: Larger firms are expected to provide more information to satisfy investor demand for information, considering that they support lower average costs of collecting and disseminating information than smaller firms (Cerbioni & Parbonetti, 2007). We computed leverage as the long term debt divided by total assets and predicted to have a positive association with voluntary disclosure because, according to Jensen and Meckling (1976), firms with higher leverage have more incentive to disclose information voluntarily because they hope to reduce agency costs with long-term and short-term creditors. We included performance, measured as the natural logarithm of market-based Tobin's Q (market value of assets divided by the book value of total assets) and predicted to have a positive relationship with our dependent variable because companies characterized by high profitability could have incentives to make more corporate disclosures (Raffournier, 1995) to underscore their good performance to investors. Finally, we measured growth sales as growth rate of sales and expected to find a positive relationship with voluntary disclosure, because faster growing companies are expected to use voluntary disclosure to reduce the information asymmetry between managers and investors (Cerbioni & Parbonetti, 2007).

Empirical Model

Figure 1 shows the research model we used to analyze the effect of board independence on financial KPI and the moderating role ownership concentration could play on that relationship.

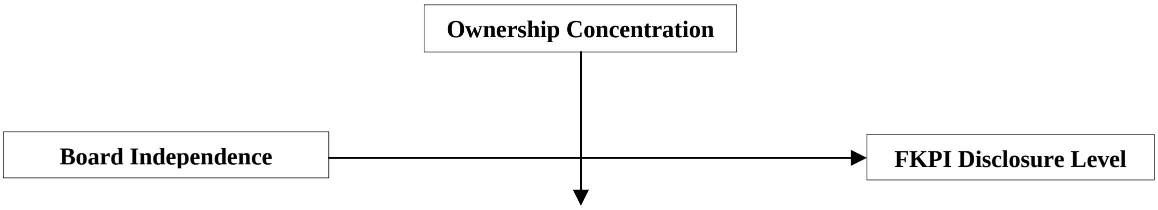

Figure 1. Research model.

To test the two hypotheses, we used the OLS regression of disclosure on FKPIs on corporate governance variables and firm-specific characteristics. More specifically, we developed the following regression model:

$$\begin{aligned} FKPI\_Vol\_Disc = \; & \alpha + \beta_1 \text{ BoInd} + \beta_2 \text{ OwnConc} + \beta_3 \text{ BoInd*OwnConc} + \beta_4 \text{ RoleDual} + \\ & \beta_5 \text{ BoardMeetings} + \beta_6 \text{ BoSize} + \beta_7 \text{ ExecDirect} + \beta_8 \text{ Big4} + \beta_9 \text{ Size} + \beta_{10} \text{ Lev} + \\ & \beta_{11} \text{ Perf} + \beta_{1e} \text{ GS} + \varepsilon \end{aligned} \quad (1)$$

Empirical Results

Descriptive Statistics and Correlations

Table 2 shows the descriptive statistics for the variables used in our research model to measure the quality of financial voluntary disclosure of sampled companies about the level of stability, solvency, liquidity, and profitability. Table 2 shows mean, standard deviation, minimum and maximum value for both quantity, and attributes indicators and for the overall *FKPIs_Vol_Disc* variable.

Table 2

Descriptive Statistics of Dependent Variable

Variable	Obs	Mean	Std. dev.	Min.	Max.
FKPIs_Vol_Disc	235	21.88085	8.418707	4	56
Quantity	235	12.21277	3.144227	4	23
Attributes					
(1) Past values	235	12.05532	3.147568	1	23
(2) Future target	235	0.6085106	2.091888	0	23
(3) Sector value	235	0.5574468	1.124655	0	7
(4) Comment	235	2.514894	2.560964	0	16
(5) Graph/table	235	6.144681	3.87358	0	15

The sampled companies disclosed, on average, 21.8 information about the FKPIs. The maximum and minimum values are respectively 4 and 56. These findings means that the level of voluntary disclosure on the level of stability, solvency, liquidity, and profitability is relatively low in the sample companies. Considering the typologies of information disclosed about each FKPI, descriptive statistics show that, particularly, companies disclose information about the actual score of the FKPIs (Quantity) and the score assumed in the past year (Attribute 1). The average values are around 12. Information about future target (Attribute 2) and sector value of the FKPIs (Attribute 3) are very rare. Sometimes, companies disclose a narrative description (comment) of the value recorded by the FKPI (Attribute 4) and report a graph or table (Attribute 5). The average values of these last two attributes are respectively 2.51 and 6.14.

Table 3 shows the descriptive statistics for the other variables used in our research model.

Table 3

Descriptive Statistics of Independent, Moderating and Control Variables

Variables	Obs	Mean	Std. dev.	Min.	Max.
BoInd	235	0.4547099	0.1740281	0	0.8181818
RoleDual	235	0.3489362	0.4776511	0	1
BoardMeetings	235	8.72766	4.358198	1	39
BoSize	235	8.702128	2.893515	2	17
ExecDirect	235	0.3003434	0.1825543	0	1
Big4	235	0.7617021	0.4269516	0	1
OwnConc	235	0.3245166	0.1908059	0.0002886	0.8879613
Perf	235	0.7968358	1.062336	0.0034102	11.38
Size	235	19.46157	2.133745	14.11413	25.77053
Lev	235	0.1565166	0.1383878	0	0.6127172
GS	235	0.2794492	2.235408	-0.994406	32.97343
BoInd_X_OwnConc	235	-0.6371882	0.5050923	-2.871.275	0

Regarding the governance attributes, data show that board independence varies widely across our sample from 0 to 81.81%, the mean is 45.47%. In terms of number of independent directors, this means that board independence varies from no one independent directors sitting on the board to 11. Although, therefore, Italian Self-Regulation Code suggests that the board should be composed of at least two independent directors, there are companies in the sample that have no independent directors. The average number of directors on the board (*BoSize*) is 8.7. There is a substantial variability in board size, ranging from a minimum of 2 directors to a maximum of 17 directors. The average value of executive members of the board is 30%. On average, in the 35% of the companies, there is coincidence between the CEO and the chairman of the board. The average number of board meetings is 8.7, the minimum value is 1 and the maximum is 39. A Big4 audit company is present in the 76.17% of the samples companies. Regarding the distribution of companies' ownership in our sample, our data show the peculiar situation that characterizes Italian non-financial listed companies: The ownership concentration of the sample companies is relatively high. The average value of the variable *OwnConc*, measured as the sum of squares of the percentage of shares held by the first three largest shareholders, in fact, is 0.32. The maximum value is 0.8879 and the minimum is 0.0002. The first owner has on average 50.06% of the shares, the second 13.62% and the third 7.19%. The accumulated ownership of the three largest owners is on average 69.32%. Regarding the firm attributes, data show that the average value of the variable used to measure the firm performance (Tobin's Q) is 0.7968; the average value of the Leverage is 0.1565, the average value of GS is 0.2794 and the average value of size is 19.4615. Before doing the regression analysis, we investigated the correlations between the model variables. Table 4 provides the correlation findings. *FKPIs_Vol_Disc* exhibits significant positive correlations with our measure of board independence, with the percentage of executive directors on the board and with our measure of firm performance. Instead, it presents a negative correlation with board size. Moreover, findings show a negative significant correlation between ownership concentration and board size and a positive correlation between ownership concentration and role duality.

Table 4

Correlation Matrix

	FKPIs_Vol_Disc	*BoInd*	*OwnConc*	*RoleDual*	*Meetings*	*BoSize*	*ExecDirect*	*Big4*	*Performance*	*Size*	*Leverage*	*GS*	*BoInd*OwnConc*
FKPIs_Vol_Disc	1												
BoInd	0.1548*	1											
	0.0176												
OwnConc	-0.0659	0.0803	1										
	0.3142	0.2198											
RoleDual	0.0550	-0.1209	0.1872*	1									
	0.4012	0.0642	0.0040										
Meetings	-0.0746	0.2329*	-0.0508	-0.1307*	1								
	0.2546	0.0003	0.4386	0.0453									
BoSize	-0.1471*	-0.0447	-0.2754*	-0.2739*	0.1142	1							
	0.0241	0.4958	0.0000	0.0000	0.0807								
ExecDirect	0.1555*	-0.2631*	0.0149	0.2654*	-0.2180*	-0.2686*	1						
	0.0170	0.0000	0.8203	0.0000	0.0008	0.0000							
Big4	-0.0388	0.0722	-0.0912	-0.1144	-0.0603	0.3021*	-0.0780	1					
	0.5535	0.2702	0.1633	0.0801	0.3575	0.0000	0.2336						
Performance	0.1314*	-0.0513	0.0849	0.0331	-0.0061	-0.0473	0.0336	0.0748	1				
	0.0442	0.4340	0.1945	0.6137	0.9257	0.4709	0.6086	0.2532					
Size	-0.0494	0.0740	-0.2777*	-0.2626*	-0.0080	0.5546*	-0.2284*	0.4772*	-0.1578*	1			
	0.4509	0.2584	0.0000	0.0000	0.9024	0.0000	0.0004	0.0000	0.0154				
Leverage	0.0097	0.1366*	-0.1103	-0.1824*	0.0353	0.3083*	-0.1290*	0.0557	-0.2278*	0.3117*	1		
	0.8823	0.0364	0.0917	0.0050	0.5898	0.0000	0.0482	0.3953	0.0004	0.0000			
GS	0.0525	-0.0211	0.1501*	0.0858	-0.0573	-0.0758	-0.0392	0.0100	-0.0077	-0.0757	-0.0724	1	
	0.4234	0.7481	0.0213	0.1899	0.3819	0.2470	0.5503	0.8787	0.9064	0.2475	0.2690		
*BoInd*OwnConc*	-0.0163	0.5307*	0.8453*	0.0853	0.0859	-0.2390*	-0.1282*	-0.0582	0.0467	-0.2273*	-0.0241	0.0955	1
	0.8041	0.0000	0.0000	0.1924	0.1895	0.0002	0.0497	0.3746	0.4757	0.0004	0.7135	0.1443	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Regression Analysis

Table 5 shows our regressions results, providing evidence for the hypotheses developed. In Model Regression (1), we analyzed the effect of control variables on the quality of voluntary financial disclosure. In Model Regression (2), we measured the direct effect of board independence on our dependent variable, whereas in Model Regression (3), we included the interaction term (*BoInd*OwnConc*), in order to assess the moderating effect of ownership concentration on the relationship between *FKPIs_Vol_Disc* and *BoInd*. The explanatory power of the regressions varied from 14.4 to 19.4 percent.

Table 5
Regressions

Variables	(1) Control variables only	(2) Direct effect of *BoInd*	(3) Interaction effects between *OwnConc* and *BoInd*
BoInd		8.206424**	18.847279***
		2.31	2.94
OwnConc			11.127235
			1.18
*BoInd*OwnConc*			-35.184755*
			-1.94
RoleDual	-0.1162772	0.0395836	0.21660424
	-0.09	0.03	0.18
Meetings	-0.07276061	-0.1376546	-0.1376785
	-0.54	-1.01	-1.02
BoSize	-0.35221534	-0.2518781	-0.28795782
	-1.43	-1.01	-1.16
ExecDirect	5.7700468*	7.602762**	6.1510875*
	1.70	2.20	1.79
Big4	-0.50753216	-0.8278428	-0.76285963
	-0.33	-0.55	-0.51
Performance	1.3876494**	1.387971***	1.4338219***
	2.57	2.60	2.71
Size	0.05467713	0.0448793	-0.15831607
	0.14	0.12	-0.42
Leverage	3.1729885	2.292004	2.2196463
	0.67	0.49	0.48
GS	0.15211354	0.1781508	0.1964114
	0.60	0.71	0.79
_cons	22.438944**	17.00388*	18.023416*
	2.49	1.84	1.9
N	235	235	235
F-statistic	1.47	1.66	1.84
Probability > F	0.0790	0.0307	0.0093
r^2	0.14402459	0.1653	0.19391313

Notes. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Findings of Model Regression (2) confirm our first hypothesis, showing a significant positive relationship between board independence and the quality of voluntary financial disclosure.

More specifically, in Model Regression (2), the coefficient of *BoInd* was statistically significant better than a 5 percent level for explaining variations in *FKPIs_Vol_Disc* (b = 8.206, p < 0.05). The positive coefficient was consistent with our expectation, emphasizing that companies presenting more independent board of directors tend to disclose high quality financial information. So, the higher the percentage of independent directors sitting on the board is, the higher the financial disclosure quality and corporate transparency are. This means that the information asymmetry between majority and minority shareholders decreases when the percentage of independent director rises. In other words, board independence acts as a good corporate governance mechanism stimulating voluntary disclosure.

These results are in line with the findings of previous studies (Akhtaruddin et al., 2009; Cerbioni & Parbonetti, 2007; Chau & Gray, 2010; Chen & Jaggi, 2000; Cheng & Courtnenay, 2006; Cuadrado-Ballesteros et al., 2015; Donnelly & Mulcahy, 2008; Garcia-Sanchez et al., 2014; Jaggi et al., 2018; Karamanou & Vafeas, 2005; Liao et al., 2015; Lim et al., 2007; Patelli & Prencipe, 2007; Pavlopoulos et al., 2017; Yunus et al., 2016) that showed board independence is a good corporate governance mechanism, able to stimulate higher level of voluntary disclosure. Thus, our findings support the control function of independent directors (Fama, 1980). Our choice to specifically focus on the quality of voluntary financial disclosure is coherent with the "governance role of financial accounting information" (Bushman & Smith, 2001). Financial information released by companies, in fact, play several relevant functions that contribute to govern the company, and the effectiveness of these governance functions largely depends on the quality of the information provided by companies, rather than on the quantity. At first, through quality disclosure, the board of directors has an important information feed-back to exercise its monitoring function on investment selection activities realized by the management and consequently to prevent the expropriation behaviour (Bushman & Smith, 2001). Furthermore, the quality of the financial information also supports the monitoring function played by the stock markets, increasing their efficiency and reducing uncertainty. In practice, informed and well-functioning stock markets can facilitate corporate acquisitions that replace less performing managers, whose simple threat can improve managerial incentives and reduce opportunistic behavior (Scharfstein, 1988; Stein, 1988). In the light of these considerations, our results could be interpreted considering that the higher the board independence is, the higher the quality of voluntary financial disclosure is and, consequently, better both board of directors and stock markets can exercise their monitoring functions.

In Model Regression (3), the interaction term *BoInd*OwnConc* was statistically significant, indicating that the positive relation between board independence and the quality of voluntary financial disclosure is stronger when there is a lower level of ownership concentration. Thus, a more equal distribution of share and voting rights among shareholders could increase the positive effect of board independence on the level of external accountability and transparency of the company. The result is coherent with the assumption that companies presenting more concentrated ownership tend to disclose lower levels of information, because largest shareholder have private channels to obtain this data (Cormier et al., 2005). Furthermore, our result is in line with the findings of previous studies (Chau & Gray, 2002; Cormier et al., 2005; Brammer & Pavelin, 2006; Alsaeed, 2006; Patelli & Prencipe, 2007; Lan et al., 2013; Pisano et al., 2017) that supported the expropriation hypothesis.

Literature has almost unanimously recognized the contribution that independent board of directors and corporate disclosure produce for the reduction of the information asymmetries and conflicts of interest potentially arising between competing parties of the firms (Zattoni et al, 2017); however, the effectiveness of these mechanisms has often been investigated without considering the specific characteristics that companies analyzed have in term of ownership concentration. Indeed, the influence of board independence on voluntary disclosure is not the same in company widely owned or concentrated. In fact, in corporations characterized by high levels of ownership concentration, the *de-facto* decision-making power is effectively exercised by dominant shareholders, rather than by the board of directors or management which, as pointed out by Connelly et al. (2010), are strongly influenced by the controlling shareholder. As a result, the monitoring function exercised by independent directors on the management could lose its effectiveness. In other words, independent directors should monitor the opportunistic behaviour of dominant shareholders, rather than top management, but probably they lack the necessary power to exercise this monitoring function in concentrated companies. On the contrary, in companies whose equity is dispersed among a large number of small non-active investors, there is a real separation between ownership and control of the firm and both the top management and the board effectively exercises a more concrete decision-making power. In these contexts, therefore, independent directors could exercise the function of board monitoring more effectively, preventing the management opportunistic behaviours. Our results have highlighted an important interaction between ownership concentration and board independence, emphasizing that they could serve as substitute mechanisms of corporate governance. Thus, the results are coherent with the idea that the monitoring function exercised by independent directors on the management could lose its effectiveness in concentrated companies. In other words, the result is coherent with the assumption that companies presenting more concentrated ownership tend to disclose lower levels of information (Cormier et al., 2005), because the independent directors lack the necessary power to stimulate the management to disclose higher quality financial disclosure and to effectively monitor the dominant shareholders.

Conclusions, Limitations and Future Perspectives

Our study had two aims: First, we analyzed the quality of financial information voluntarily released by Italian non-financial listed companies in their annual report for the year 2016; second, we investigated if and how the relationship between the quality of voluntary financial disclosure and board independence is moderated by firm ownership concentration.

Our findings revealed that the level of voluntary disclosure about the firm stability, solvency, liquidity, and profitability is relatively low in the sample companies. In particular, sampled companies focus their disclosure on both the actual score of the financial key performance indicators and the score assumed in the past year, whereas the information about future target and sector value of the FKPIs are very rare. Results also reveal that sometimes companies disclose a narrative description of the value recorded by the FKPI and report a graph or a table.

Regarding the relationship between board independence and voluntary financial disclosure, findings confirmed our first hypothesis, showing that board independence acts as a good corporate governance mechanism, stimulating voluntary disclosure in the Italian context. The significant positive relationship between board independence and the quality of voluntary financial disclosure is in line with findings of previous studies emphasizing that companies presenting more independent board of directors tend to disclose high quality financial information (Cerbioni & Parbonetti, 2007; Chau & Gray, 2010; Chen &Jaggi, 2000; Cheng & Courtnenay, 2006; Cuadrado-Ballesteros et al., 2015; Garcia-Sanchez et al., 2014; Jaggi et al., 2018; Patelli & Prencipe, 2007; Pavlopoulos et al., 2017; Yunus et al., 2016).

Furthermore, our findings confirmed the second hypothesis, indicating that the positive relation between board independence and the quality of voluntary financial disclosure is stronger when there is a lower level of ownership concentration. This means that a more equal distribution of voting rights among shareholders could increase the positive effect of board independence on the level of external accountability and transparency of the company. The result is coherent with the literature sustaining that companies presenting more concentrated ownership tend to disclose lower levels of information, because largest shareholder has private channels to obtain this data (Cormier et al., 2005). This result, in fact, is in line with the findings of previous studies that supported the expropriation hypothesis (Chau & Gray, 2002; Cormier et al., 2005; Brammer & Pavelin, 2006; Alsaeed, 2006; Patelli & Prencipe, 2007; Lan et al., 2013; Pisano et al., 2017).

This study contributes to the academic literature in two ways. First, differently from many previous studies, we measured the voluntary financial disclosure in terms of both quantity and quality (attributes of the data provided) of information released, rather than exclusively focusing on a unidimensional measure, such as the quantity. To analyze the voluntary financial disclosure, in fact, we developed an unweighted disclosure index for measuring the quality of that disclosure through different FKPIs, that can be used in future studies. Second, our study considered the relation between board independence and voluntary financial disclosure as mechanisms of corporate governance, without underestimating the role of ownership concentration in that relationship, where literature has often investigated their effectiveness without considering the specific characteristics companies have in term of ownership structure.

Our results have implications for various actors. The reluctance of Italian companies to disclose quality information acts as a force opposing the growing pressure for internationalization and global transparency. This behaviour could discourage potential investors when undertaking investment decisions. Thus, this result could be useful for management and owners of the company in defining the financial source strategy. Furthermore, these results should be considered by regulators at both the national and international levels in their process of determining policy for accounting standards. Moreover, these findings could be useful for legislators, that should not underestimate the role of ownership concentration and its interaction with other corporate governance mechanisms in defining the characteristics of the control mechanisms to implement in the company, because corporate governance are costly initiative.

However, this study has some limitations, so further research is necessary. The sample includes only companies listed in Italy in the year 2016, so the results may not be generalized to companies listed in other countries. Therefore, future studies need to analyse a wider context, including other countries and a bigger period, which may improve the generalizability of the results. In addition, an interesting study would be to analyse the relationship between board independence, disclosure, and ownership concentration, using as dependant variable the level of both voluntary financial disclosure and voluntary non-financial disclosure provided by company via traditional media, such as annual reports, or by new social media or websites. The comparison could be useful to identify possible differences or similarities and understand the reasons behind them.

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