CORPORATE GOVERNANCE AND EARNINGS MANAGEMENT IN FAMILY-CONTROLLED COMPANIES*

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by

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ABSTRACT

The corporate governance literature advances the idea that certain aspects of a board of directors’ structure improve the monitoring of managerial decisions. Among these decisions are a manager’s policies about managing earnings. Prior studies have shown that earnings management in widely held public companies is less prevalent when there is a high level of board independence. However, there is less evidence regarding the effectiveness of board independence on earnings management in family-controlled companies. This issue is particularly interesting as such companies are susceptible to various types of agency concerns. It is the purpose of this study to shed light on the earnings management issue in family-controlled companies characterized by potentially lower board independence and a higher risk of collusion. In this study, board independence is estimated by two parameters: (i) proportion of independent directors on the board; and (ii) lack of CEO/board chairman duality function. Our empirical results provide evidence that the impact of board independence on earnings management is indeed weaker in family-controlled companies. The same result also holds for the lack of CEO/board chairman duality function. Such effects become stronger in cases where the CEO is a member of the controlling family.

KEYWORDS: board independence, CEO duality, earnings management, family-controlled companies, independent directors, Italian companies.
I. INTRODUCTION

This paper provides empirical evidence regarding the impact of board independence on earnings management in family-controlled companies. We hypothesize that in family-controlled companies, the impact of the board on earnings management is weaker due to lower board member independence and the consequent probability of collusion with the dominant family. The empirical findings support this hypothesis, suggesting that board independence is less effective in constraining earnings management in family-controlled companies.

Current literature suggests that – although founding family ownership seems to be associated, on average, with higher earnings quality (e.g., Wang, 2006; Ali et al., 2007) – the extent of earnings management remains an open issue for family-controlled companies. Indeed, Prencipe et al. (2008) show that family-controlled firms do engage in earnings management in order to secure the family’s controlling interests and long-term benefits.¹ Therefore, it is interesting to examine the extent to which board independence limits earnings manipulation in such a setting.

Prior empirical studies indicate that a higher level of board independence reduces earnings management (e.g., Beasley, 1996; Dechow et al., 1996; Klein, 2002). Earnings management occurs when managers' discretion is used to alter financial statements with the aim of misleading stakeholders about the company's performance or influencing

¹ Prencipe et al. (2008) show that family-controlled companies are particularly prone to carry out earnings management in order to avoid covenant violation. These practices are followed because the controlling families defend their controlling position. However, family-controlled companies are less sensitive to income-smoothing strategies. This is the case because such companies tend to focus more on long-term benefits rather than short-term investment or disinvestment strategies.
performance-based contractual outcomes. Most of the earnings management literature focuses on publicly listed, widely held ownership companies, whereas there is a dearth of evidence on the relationship between board independence and earnings management in family-controlled companies. Yet, family-controlled companies are prevalent around the globe (La Porta et al., 1999; Faccio and Lang, 2002; Burkart et al., 2003; Wang, 2006), and are characterized by various types of agency problems. As classified by Villalonga and Amit (2006) and Ali et al. (2007), a substantial portion of agency problems in such companies is attributed to the conflict between the controlling family and its minority shareholders (Type II agency problem), rather than those problems that arise between owners and managers (Type I agency problem). It is suggested that in family-controlled companies, an independent board is able to mitigate Type II agency problem (Anderson and Reeb, 2003, 2004). However, in such companies the controlling family typically plays a crucial role in the governance of the company, e.g., by choosing the members of the board (Johannisson and Huse, 2000). Consequently, the board-monitoring role and its effectiveness may be decreased when the board structure is determined primarily by the controlling family because board members – although formally independent – may collude with the dominant shareholders.

The empirical analysis in this paper is based on a sample of Italian listed companies. The decision to focus on Italian companies is suitable for two main reasons. First, the Italian capital market, like in other European economies, consists of a relatively large proportion of family-controlled companies. Many of these companies are non-financial, and are controlled either by an individual or by family members who are blockholders that own more than 50% of the voting capital. Second, there is anecdotal evidence of the presence of formally independent directors who have fairly close personal relationships with the

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2 For an elaborate discussion, see Healy and Wahlen (1999).
controlling family among Italian listed companies. These characteristics of Italian firms enable us to straightforwardly test the abovementioned hypotheses.

Our empirical results are based on a sample of 249 firm-year observations covering the period of 2003-2004. We apply abnormal working capital accruals (AWCA) as a proxy for earnings management (DeFond and Park, 2001). Board independence is estimated using two parameters: (i) the proportion of independent members on the board; and (ii) lack of CEO/board chairman duality function, with particular attention paid to the case where the CEO is a member of the controlling family. While controlling for other potential determinants of the level of AWCA, we report a weaker effect of independent board members on earnings management in family-controlled companies compared to non-family-controlled companies. This result also holds true for the second measure of board independence (CEO/board chairman non-duality), in particular when the CEO is a member of the controlling family.

These conclusions supplement prior results on board independence and earnings management related to public, widely held companies. Moreover, our conclusions may lead regulators and academics to re-evaluate the effectiveness of some corporate governance models that are applied to family-controlled companies. Our results are also valuable to users of financial statements, suggesting that a company’s ownership structure and its corporate governance characteristics should be taken into account when accounting numbers are used.

The rest of the paper is structured as follows. In Section II, we discuss the role of the board of directors in family-controlled companies. In Section III, the hypotheses are developed and presented. The Italian institutional setting is described in Section IV. The research design is found in Section V. The sample description and empirical results are presented in Section VI. Section VII concludes the paper.
II. BACKGROUND, MOTIVATION AND RESEARCH QUESTIONS

a. Board independence and agency problems

A typical board structure is composed of outside directors and top company officers. Outside directors are appointed by the company's shareholders and are assumed to be acting in order to promote shareholders' interests. Top company officers possess critical information regarding current and future activities and operations, which information is necessary for the decision-making process, performance evaluation and monitoring. However, the inclusion of top management among board members may give rise to a conflict of interest as management may attempt to transfer wealth from stockholders by taking advantage of information asymmetry (Type I agency problem). It is argued that, when the company ownership concentration is low, top management and directors may collude. To mitigate Type I potential agency problem, shareholders seek to structure a board that is able to guarantee an acceptable degree of independence. For example, the board of directors is often required to include a certain number of independent members, i.e., professionals with no management role and no business or ownership ties to the company. Such directors are expected to have an institutional affiliation and expertise and to preserve a professional reputation. Because of this board structure, the risk of collusion with top management is reduced, as independent directors are expected to ensure that the law is respected and to limit agency problems (Fama and Jensen, 1983). Empirical evidence widely supports this theory: the presence of independent directors on the board has been shown to reduce agency costs in various companies’ settings. Lee et al. (1992) provide an example of such a case. They show that independent directors play a crucial role in management buyouts where serious agency problems exist between top managers and shareholders. Actually, the nature of these transactions inherently provides conflicts of interest, since managers simultaneously have the obligation to obtain the highest price for shareholders and a strong incentive to make the acquisition for the lowest possible
price. The results show that the increase in shareholder wealth is significantly higher when the board is dominated by independent directors.

Another mechanism to increase board independence is to separate the chairman of the board from the company’s chief executive officer (CEO), thus avoiding “CEO duality.” From an agency theory perspective, under CEO duality, the board considerably weakens its ability to monitor management objectively. Jensen (1993) raises an objection to such a structure and suggests a complete separation between the two functions (CEO non-duality). Because the function of the chairman is to run board meetings and supervise the process of hiring, firing, evaluating and compensating the CEO and top managers, it is important to separate the two positions if the board aims to be an effective monitoring device. Indeed, Kong-Hee and Buchanan (2008) show that CEO duality leads to reduced company risk-taking propensity and serves managerial risk minimization preferences. They also report that some traditional managerial behaviour control mechanisms are ineffective when CEO duality exists. In a prior study, Worrell et al. (1997) show that upon the announcement of CEO duality, the stock market adversely reacts to the news, supporting the claim that CEO duality weakens the monitoring role of the board. CEO duality has also been linked to other signs of ineffective governance, such as in the cases of hostile takeovers (Morck, Shleifer and Vishny, 1988) or in the cases of the use of “poison pills” (Mallette and Fowler, 1992).

b. Board independence and earnings management

Board independence also affects the reliability of financial reporting. Loebbecke et al. (1989) and Bell et al. (1991) suggest that an environment of weak internal control creates more opportunities for management to carry out accounting fraud and manipulation. Since the board is both part of the internal control environment and is responsible for establishing other control systems, a more independent board is expected to reduce
accounting manipulation and to improve the reliability of financial reports. Empirical evidence generally supports the expectation that board independence reduces earnings management and fraudulent accounting (e.g., Beasley, 1996; Dechow et al., 1996; Klein, 2002).

c. Family control, agency problems and earnings management

The abovementioned studies suggest that board independence reduces earnings management and manipulation in widely held public companies.

This paper focuses on family controlled companies. It is suggested that the traditional owner-manager agency conflict (Type I agency problem) is mitigated within listed family-controlled companies (Demsetz and Lehn, 1985; Anderson and Reeb, 2003, 2004; Villalonga and Amit, 2006). Ali et al. (2007) identifies several characteristics of family-controlled companies that reduce Type I agency problem. In particular, families are more likely to have a strong incentive to monitor managers than are atomistic shareholders since the former typically hold undiversified portfolios and primarily invest in their companies. Second, families tend to be involved in and have a good knowledge of their business, which involvement enables them to better monitor managers. Third, since families tend to have longer investment horizons than other shareholders, they diminish possible myopic decisions by managers. Given these characteristics, in family-controlled companies, the incentive for the managers to carry out earnings management in order to conceal opportunistic behaviour to the detriment of shareholders is expected to decrease. However, the controlling position of the family leaves them with a substantial power to siphon private benefits at the expense of other shareholders, such as engagement in

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3 Family-controlled companies are defined as companies in which one or more families linked by kinship, close affinity or solid alliances directly or indirectly hold a sufficiently large share of the voting capital to control major decisions (see Astrachan and Shanker, 2003; Corbetta and Minichilli, 2005).

4 By “family,” we refer to cases where there are blockholders who belong to a single family and/or where there are multiple families controlling a company.
related-party transactions (Anderson and Reeb, 2003) or managerial entrenchment (Shleifer and Vishny, 1997). This gives rise to Type II agency problem: the conflict of interest that arises between the controlling family and the minority shareholders. More specifically, the minority shareholders can be expropriated by opportunistic behaviour on the part of the controlling family and related managers who, in many cases, are members of the same family (Morck et al., 1988; Schulze et al., 2001; Morck and Yeung, 2003). Several studies have documented the presence of Type II agency problem (e.g., Demsetz and Lehn, 1985; Claessence et al., 2000; DeAngelo and DeAngelo, 2000; Morck et al., 2000; Faccio and Lang, 2002; Anderson et al., 2009). From this point of view, earnings management can be used to mislead users of external financial reports and conceal opportunistic activities carried out by the dominant family to the detriment of minority shareholders. Both the academic literature and the financial press report anecdotal evidence on the methods used by controlling families to manage earnings opportunistically for the sake of fostering the family’s interests, such as to increase family members’ bonuses or to reduce dividends to minority shareholders (Wang, 2006).

To summarize, in family-controlled companies, Type I agency problems become less relevant, while Type II agency problems emerge. Given the fact that the two effects move in opposite directions, the ultimate effect, in terms of earnings management, is not certain (i.e., it may increase or decrease). Prior empirical evidence shows that, among US-listed firms, companies managed or controlled by founding families tend to have a higher level of earnings quality (Wang, 2006; Ali et al., 2007). However, this finding does not imply that earnings management is not an issue for family-controlled companies. Indeed, recent evidence from other countries (e.g., Prencipe et al., 2008) suggests that family-controlled companies continue to engage in earnings management activities in order to protect the family controlling position and the related benefits.
This paper aims at providing evidence on the relationship between board independence and earnings management in family-controlled companies whose corporate governance settings are characterized by peculiar agency relationships.

It should be noted that the current paper compares the effect of board independence on earnings management in these two kinds of governance settings (family and non-family controlled companies), assuming that both types of company engage in earnings management – although to a different degree or for different purposes, as discussed above.

III. HYPOTHESIS DEVELOPMENT

The previous section discusses characteristics, sources of possible agency problems and concerns stemming from corporate governance systems that are related to family-controlled companies. In this section, we develop testing hypotheses to shed light on these issues and concerns. We analyze board independence in terms of two separate board characteristics: (i) the proportion of independent members on board; and (ii) the lack of CEO-Chairman duality. Based on the above discussion, it is prior studies’ belief that both characteristics are correlated with lower earnings management. However, we hypothesize that in family-controlled companies, these two corporate governance parameters are not as effective in reducing earnings management as they are in non-family-controlled companies. We base this hypothesis on the fact that, in many cases, boards of family-controlled companies include members of the controlling family. Moreover, due to its controlling power, the dominant family is able to influence appointments of top managers as well as board members. The selection process of top management and board members is likely to be based on networking and personal ties (Johannisson and Huse, 2000). As a consequence, even if formally independent, board members may have implicit ties to the controlling family; therefore, independence in form does not imply independence in

5 For example, Anderson and Reeb (2004) report that during the period of 1992-1999, about 20% of board members in US family-controlled firms are members of the controlling family.
substance. The familiarity of board members with the controlling family and the lack of substantial independence may potentially lead to collusion and to a lower level of monitoring of the board with regard to decisions taken by the dominant shareholders, including accounting policies and, therefore, earnings management.

Accordingly, we formulate the first hypothesis as follows:

\[ HP_1: \text{In family controlled companies, the proportion of independent board members has a weaker effect on the magnitude of earnings management than in non-family-controlled companies.} \]

Similarly, when the appointments of the CEO and the chairman of the board are both significantly influenced by the controlling family, the extent of formal separation does not necessarily result in a separation in substance. This is even more likely to be the case when one or both of the positions are held by members of the controlling family. The lack of such separation may lead to potential collusion and, consequently, to a lower level of monitoring of the board chairman on the controlling family decisions.

This assessment leads to the second hypothesis:

\[ HP_2: \text{CEO non-duality has a weaker effect on the magnitude of earnings management in family-controlled companies than in non-family-controlled companies.} \]

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6 One may suggest, however, that the hypothesized phenomena occur as a consequence of the fact that the controlling family is a dominant stockholder and that any type of dominant shareholder may have a similar impact on the management and board composition. A priori, one cannot refute such a claim, but one may expect that such an effect is more pronounced in family-controlled companies than in non-family controlled companies characterized by the presence of other types of dominant shareholders. Indeed, typically in non-family-controlled companies, dominant shareholders are institutions, such as a financial institution or the government, which are not closely involved with corporate activities and whose board representatives are characterized by a higher turnover rate. Such representatives tend to be less personally involved in the management of the company. Therefore, the focus of our discussion is on family-controlled companies.
Although our argument relies on the potential collusion between board members (including the board chairman, in the case of CEO non-duality) and the controlling family, one may provide an alternative explanation for a weaker effect of board independence on earnings management, assuming a less opportunistic perspective. As noted above, controlling families have better knowledge and a stronger incentive to monitor managers than do atomistic shareholders (e.g., Ali et al., 2007). Consequently, in family-controlled companies, the incentive for the managers to manage earnings in order to conceal opportunistic behaviour to the detriment of shareholders is expected to decrease. This leads to a potential lower demand (by the investors) for board monitoring. Therefore, the independent board members (or the board chairman) tend to exercise less pressure to constrain earnings management. Such an effect is a consequence of the lower relevancy of Type I agency problem in family-controlled firms (as discussed in the previous section). However, we do not believe this to be the main determinant of the lower effectiveness of the board independence on earnings management. In fact, while on the one hand there may be a lower demand for board monitoring, on the other hand the investors are well aware of Type II agency problem; therefore, they still demand an effective level of monitoring to the board. As the two effects tend to lead in opposite directions, we expect the collusion argument to prevail and to be the likely explanation for the lower effect of board independence on earnings management in family-controlled companies.

IV. FAMILY COMPANIES AND CORPORATE GOVERNANCE IN ITALY

To test our hypotheses, we use a sample of Italian-listed firms. Italy is characterised by a relatively high proportion of listed companies that are family-controlled. A 2000 survey of Italian large companies (including both listed and unlisted companies) shows that about 47% of the Italian companies are family-controlled (Zattoni, 2006). A more recent survey
(2003) of listed non-financial Italian companies reports that 67% of these firms are classified as family-controlled companies (Corbeta and Minichilli, 2005). Apart from the large number of listed family firms (which is common to many other countries), Italy is particularly suited for the test of our hypotheses as the issue of form vs. substance with regard to board independence and the related risk of collusion between the dominant shareholders and board members is highly relevant. Past and recent Italian financial press is rich with compelling evidence regarding the presence of personal or indirect business relationships between formally independent directors and dominant families (or related companies), suggesting that the risk of collusion between the former and the latter is an actual one (e.g., Il Mondo, 2003, 2004; De Rosa, 2004; Incorvati, 2004; Dilena, 2006; Castellarin and Valentini, 2008; Zingales, 2008; Puledda, 2009). Such cases do exist despite the fact that regulation on corporate governance devotes attention to the topic of board independence. In particular, the responsibilities and functions of boards of directors in Italy are governed by the Italian Civil Code. Board members are appointed in shareholders’ annual meetings. The law is silent on both the number of directors on the board and its composition.\footnote{Moreover, according to Italian regulations, during the analyzed period, there were no requirements for any board members to be selected by minority shareholders.} Nonetheless, in 1999, Borsa Italiana (the Italian Stock Exchange) adopted the Corporate Governance Code (CGC), which was revised twice – first in 2002 and again in 2006. Formally, the CGC contains non-binding guidelines for corporate governance structures designed to protect shareholders’ interests. \textit{De facto}, it is a “code of best practice” to which companies are invited to refer to improve their corporate governance systems. The CGC states that an “adequate” number of members should be “independent.”\footnote{Since this paper provides empirical evidence on corporate governance and earnings management in 2003 and 2004, we focus on the 2002 version of the CGC.} Independent directors are explicitly defined as non-executive (i.e., outside) directors who: (i) have no direct or indirect business relationships with the company, its subsidiaries, its managers, its executive directors or its controlling
shareholders that could affect their decision autonomy; (ii) do not own controlling interests in the company either directly or indirectly as part of a formal agreement with other shareholders that would provide control or significant influence over the company; and (iii) are not immediate family members of the company’s executive directors or any other individuals who are in the condition described in (i) or (ii) above.

Consistent with the law, the CGC states that board members are to be appointed by the shareholders’ meeting, usually on the basis of a list proposed by the dominant shareholders (if any). In addition, the CGC clarifies that independent directors may also be proposed by the dominant shareholders, as long as the former meet the independence criteria described above. Moreover, the CGC recognizes agency problems related to CEO duality and its implications on the effectiveness of the board’s functioning, but it does not issue specific guidelines on CEO duality, essentially leaving it to the discretion of the companies.

It is clear from the abovementioned rules that the CGC provides non-binding guidelines rather than strict criteria on how to design the corporate governance structure. Therefore, Italian-listed companies keep some flexibility in designing their governance systems.\(^9\)

Moreover, it is clear from the above that dominant shareholders have a significant power in deciding the board of directors’ composition, including the appointment of independent directors, which casts doubts on the issue of whether the chosen board members are actually independent.

\(^9\) Despite these shortcomings, the CGC has a relevant impact on Italian-listed companies’ corporate governance because listed companies are required to publish an annual report on their corporate governance structure where they must explicitly state whether they comply with the CGC guidelines, and, if not, the reason for non-compliance. As a consequence, in order to preserve their reputation and to avoid adverse market reactions, all companies declare their compliance with the CGC – at least to some extent.
V. RESEARCH DESIGN

a. The Sample

A sample composed of non-financial companies listed on the Milan Stock Exchange (MSE) was selected covering the years 2003 and 2004.\textsuperscript{10} Financial companies were excluded from this study as their financial reports differ from non-financial companies. The sample was selected over a period preceding the adoption of the International Financial Standards (IFRS) in order to avoid complexities related to the transition to IFRS and implications of its adoption.\textsuperscript{11} Given the relatively small size of the Italian stock market, the number of non-financial companies listed on the MSE is 137 and 140 in 2003 and 2004, respectively. Financial reporting data are taken from \textit{Aida} database, which provides historical records for listed and unlisted Italian companies. However, because of missing data and dual listing status of companies (which may be affected by other exchanges’ disclosure requirements), the sample is restricted to 122 and 127 companies in the years 2003 and 2004, respectively. Table I provides the detailed description of the final sample composition.

(Insert Table I about here)

b. Variables definitions and estimates

We apply abnormal working capital accruals (AWCA) as a proxy for earnings management (DeFond and Park, 2001).\textsuperscript{12} AWCA is defined as the difference between the company’s realized working capital and the working capital required to support its operations.\textsuperscript{13}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
Year & Number of Companies & Description \\
\hline
2003 & 122 & \\
2004 & 127 & \\
\hline
\end{tabular}
\caption{Sample Composition}
\end{table}

\textsuperscript{10} Although the analysis covers the years 2003 and 2004, we also collected 2002 corporate financial data to compute the earnings management measures.

\textsuperscript{11} Note that there are no “early adopters” of IFRS in our sample.

\textsuperscript{12} Given the number of companies listed on MSE and the considerable changes in disclosure rules over prior years, the application of alternative measures of earnings management requiring time-series data and a sufficient number of companies related to the same industry classification could not be used.
subsequent year sales level. Expected working capital is estimated by the historical relationship between working capital and sales. Based on prior research suggesting that management has the most discretion over working capital accruals (Becker et al., 1998; Ashbaugh et al., 2003; Carey and Simnett, 2006), our measure of earnings management (AWCA) is estimated as:

\[
AWCA_{t,i} = WC_{t,i} - [(WC_{t-1,i}/S_{t-1,i}) \times S_{t,i}],
\]

where the subscripts \( t \) and \( i \) designate the year of estimation for the \( i \)-th company; and \( S \) and \( WC \) represent sales and non-cash working capital, respectively. \( WC \) is computed as (current assets – cash and short-term investments) – (current liabilities – short-term debt). Absolute value of AWCA is used in our tests as we focus on analyzing earnings management per se rather than income-increasing or income-decreasing decisions. This approach is consistent with prior studies and is considered to be more appropriate in tax-oriented reporting regimes where managers may be motivated to manipulate earnings in either direction (Warfield et al., 1995; Becker et al., 1998; Francis et al., 1999; Bartov et al., 2000; Klein, 2002).

Testing the above hypotheses requires classification of three main additional variables: (i) company status: family-controlled or non-family-controlled; (ii) relative number of independent board members; and (iii) CEO status: dual or non-dual.

These variables are estimated by the following procedures: A family-controlled company is defined as a company in which the majority of the voting power is held by one or more families linked by kinship, close affinity or solid alliances directly or indirectly. To identify family-controlled companies empirically, we adopt the Italian classification suggested by Corbetta and Minichilli (2005). Accordingly, they classify a company as family-controlled when the dominant family (or families) either holds (directly or
indirectly) more than 50% of the equity capital or exhibits control over the strategic
decisions of the company without possessing a majority of the equity capital, considering
all available information, such as the composition of the board, top executives, voting
power, etc. A dummy variable (FAM) dichotomizes the sample to distinguish between the
two types of companies. For a family-controlled company, the value of the dummy is set
to 1; for a non-family-controlled company, it is set to 0. Since there is no clear evidence as
to the extent of earnings management practices in Italian family-controlled companies
compared to non-family-controlled companies, no signed effect is assumed for the
correlation between FAM and AWCA.\textsuperscript{13}

Following prior studies (e.g., Beasley, 1996; Dechow et al., 1996; Chen and Jaggi, 2000;
Klein, 2002; Park and Shin, 2004; Peasnell et al., 2005; Patelli and Prencipe, 2007) the
intensity of independence of the board (INDIR) is measured as a ratio of independent
directors out of the total number of board members. The name and the number of
independent directors are disclosed by each company in its annual corporate governance
report. The identification of independent members by each company is based on the
definition provided by the CGC (see Section IV). Only those members who meet all the
requirements stated by the CGC can be declared as independent. The persistence of such
requirements is periodically verified by the board of directors as a whole. Therefore, our
proxy for independence is based on the compliance with CGC requirements as declared
by the company. The fact that independence is in a way self-declared by the company
increases the risk of a detachment between independence-in-substance and independence-
in-form, especially in cases in which a dominant family exercises a strong influence on
the board of directors (who is in charge of verifying the existence of formal independence
requirements).

\textsuperscript{13} Prencipe et al. (2008) show that incentives to carry out earnings management for Italian-listed family firms
differ from those related to non-family-controlled companies. Note, however, that their study focuses on a
specific type of accrual – capitalization of R&D costs – and does not analyse the general extent of earnings
management in family and/or non-family companies.
A dummy variable (NODUAL) is set to distinguish between companies in which the CEO does not carry a dual function and those in which she does. NODUAL is set to 1 for the former case and 0 for the latter.

In order to test our hypotheses, we run the following regression models:

\[
AWCA_{t,i} = \beta_0 + \beta_1 FAM_{t,i} + \beta_2 INDIR_{t,i} + \beta_3 NODUAL_{t,i} + \beta_4 (FAM_{t,i} \times INDIR_{t,i}) \\
+ \beta_5 (FAM_{t,i} \times NODUAL_{t,i}) + \beta_6 AUD_{t,i} + \beta_7 INST_{t,i} + \beta_8 BDSIZE_{t,i} + \beta_9 SIZE_{t,i} \\
+ \beta_{10} LEV_{t,i} + \beta_{11} ROA_{t-1,i} + \beta_{12} CFO_{t,i} + \beta_{13} NEG_{t-1,i} + \beta_{14} SALEGR_{t,i} \\
+ \text{fixed effects} + \epsilon_{t,i}, \quad (1)
\]

\[
AWCA_{t,i} = \beta_0 + \beta_1 INDIR_{t,i} + \beta_2 NODUAL_{t,i} + \beta_3 AUD_{t,i} + \beta_4 INST_{t,i} + \beta_5 BDSIZE_{t,i} + \\
\beta_6 SIZE_{t,i} + \beta_7 LEV_{t,i} + \beta_8 ROA_{t-1,i} + \beta_9 CFO_{t,i} + \beta_{10} NEG_{t-1,i} + \beta_{11} SALEGR_{t,i} \\
+ \text{fixed effects} + \epsilon_{t,i} \quad (2)
\]

where the subscripts \( t \) and \( i \) designate the time and observation, respectively;

\( AWCA \) is the absolute value of abnormal working capital accruals normalised by the year’s sales;

\( FAM \) designates a company-type dummy (family-controlled company = 1, otherwise = 0);

\( INDIR \) stands for the percentage of independent members on the board of directors;

\( NODUAL \) is a CEO dummy (CEO different from the chairman of the board = 1, otherwise = 0);

\( FAM \times INDIR \) is an interaction variable representing the joint effects of \( FAM \) and \( INDIR \);

\( FAM \times NODUAL \) is the designation of the interaction effect between \( FAM \) and \( NODUAL \);

\( AUD \) is the audit committee dummy (company with an audit committee = 1, otherwise = 0);

\( INST \) is an institution dummy variable (institutional investors with ownership of at least 5% of the capital = 1, otherwise = 0);

\( BDSIZE \) designates the size (number) of board members;
SIZE is the company size (measured in natural logarithm of total assets); 
LEV stands for the financial leverage of the company, i.e., the ratio of financial liabilities 
to total assets; 
ROA stands for the return on assets of the prior period calculated as operating income 
divided by lagged total assets; 
CFO designates the cash-flow from operations scaled by lagged total assets; 
NEG is a lag negative earnings dummy variable (company reported negative income 
before extraordinary items during the prior period = 1, otherwise = 0); 
SALEGR is the growth rate in sales from t-1 to t; and 
Fixed effects are year and industry fixed effects.

Model (1) is estimated for the whole sample while Model (2) is separately estimated for 
the family-controlled and non-family-controlled sub-samples. 
Following the discussion above suggesting that board independence and lack of duality 
decrease the extent of earnings management, we expect both INDIR and NODUAL to be 
negatively correlated with AWCA. However, since our study aims at testing the effect of 
board independence on earnings management in family-controlled vs. non-family-
controlled companies, we need to distinguish the effect of the board in each of the two 
settings. In order to do so, we first introduce in our regression (Model 1) two interaction 
variables between FAM and the variables INDIR and NODUAL, respectively. The 
coefficients of such interaction variables indicate the differential marginal effect of INDIR 
and NODUAL in family-controlled companies vs. non-family-controlled companies. As 
we hypothesize that the effect of the board is weaker in family-controlled companies, we 
expect the interaction variables’ coefficients to have positive signs that partially 
compensate for the negative signs of the variables INDIR and NODUAL, respectively. 
Therefore, the net effect of INDIR and NODUAL on earnings management in family-
controlled companies will be given by the sum of the coefficients of \( \text{INDIR} \) and \( \text{INDIR} \times \text{FAM} \) for board independence, and \( \text{NODUAL} \) and \( \text{NODUAL} \times \text{FAM} \) for the lack of duality. To further validate our results and to assist with their interpretation, we also run two separate regressions (Model 2) with the test and control variables for the family and non-family sub-samples, respectively. In this case, we expect the coefficients of the variables \( \text{INDIR} \) and \( \text{NODUAL} \) to be negative and smaller for the family sub-sample than for the non-family sub-sample. This implies that the effect of board independence and lack of duality in constraining earnings management is weaker in family-controlled companies than in non-family-controlled companies.

In order to isolate the effect of our test variables and to reduce the risk of endogeneity, we control for a number of other potential determinants of AWCA. First, it is argued that for many companies, an audit committee (or internal control committee) composed of members of the board of directors supervises the internal control processes. Since such a committee also carries responsibilities related to external auditors and the accounting process (PricewaterhouseCoopers, 1999), then they are expected to positively affect the reliability of the accounting information and thus are assumed to reduce earnings management (Beasley, 1996; Klein, 2002; Bédard et al., 2004). Therefore, the variable \( \text{AUD} \) is introduced to the model as a control variable and is defined as a dummy variable assuming the value of 1 if the company has an audit committee and 0 otherwise.\(^{14}\) An additional control variable (\( \text{INST} \)) is used to control for possible effects of institutional investors on companies reporting quality. Institutions are considered to be sophisticated investors and are therefore more skilled in interpreting financial reports and able to detect earnings management more easily (Peasnell et al., 2005). Thus, when such sophisticated investors have significant ownership in a company, management runs a higher risk that

\(^{14}\) Several studies examine the composition of the audit committee and in particular pay attention to its degree of independence rather than to its sheer existence. However, in the current study, domestic regulations (Italian CGC) require that an audit committee be composed of a majority of independent directors; therefore, one cannot expect high variation in the composition of the audit committee once it is formed.
questionable practices will be exposed. Hence, the variable INST assumes the value of 1 when institutional investors own 5% or more of the company’s share capital. We also control for the board size (BDSIZE) because prior studies suggest that board size may affect earnings quality although the direction in which it is affected is not clear (Dechow et al., 1996; Fuerst and Kang, 2000; Peasnell et al., 2005 and Beasley and Salterio, 2001). Thus, the correlation expected between board size and earnings management cannot be determined. To reduce the possibility of endogeneity and misspecification of the model (and based on earlier studies), we incorporate additional control variables. In particular, we control for other “traditional” determinants of earnings management (company size: SIZE; leverage: LEV; cash-flow from operation: CFO; return on assets: ROA; and reported negative earnings: NEG). Prior studies show that large companies tend to have lower accruals because they are more closely scrutinized than are small companies (Klein, 2002; Park and Shin, 2004; Bèdard et al., 2004). Thus, company size (SIZE) is included in the model. Financial leverage (LEV) is controlled for because, on the one hand, highly leveraged companies may have an additional incentive for earnings management to avoid debt covenant violations (DeFond and Jiambalvo, 1994). On the other hand, companies that are unable to obtain waivers and thus are forced to renegotiate or restructure their debt may avoid earnings management (Jaggi and Lee, 2002). Therefore, the sign of this variable is unclear. We include the prior year’s return on assets (ROA) in the model to control for extreme performance, which may affect the level of accruals (McNichols, 2000; Kothari et al., 2005). We also include the cash-flow from operations (CFO) and a dummy variable indicating whether the company reported a negative income before extraordinary items in the prior period (NEG). Both of these variables have previously been related to the magnitude of earnings management; thus, they are commonly used in earlier studies. Given the definition of AWCA used in this study and its likelihood to be
correlated with growth, we also include sales growth (SALEGR) as an additional control variable. Finally, we include dummy variables to control for the type of industry and year.

VI. EMPIRICAL RESULTS

a. Descriptive Statistics

Table II presents descriptive statistics of the sampled data. First, note that 69% of our sample is composed of family-controlled companies, confirming the fact that this type of company is prevalent among Italian-listed companies.\(^{15}\)

![Insert Table II about here](image)

Examining the two sub-samples of Table II (family-controlled and non-family-controlled companies), we observe that the average size of earnings management (AWCA) is slightly higher for non-family-controlled companies (0.19 vs. 0.15); the difference is statistically insignificant.

Table II also shows that the average percentage of independent directors is 38%.\(^{16}\) However, consistent with prior results (Corbetta and Salvato, 2004), the breakdown of the total sample reveals that the proportion of independent directors in family-controlled companies is significantly (at the 1% level) lower than in non-family-controlled companies (34% vs. 45%, respectively). The sample’s CEO non-duality is observed in

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\(^{15}\) It is worth mentioning that about 40% of the non-family-controlled sample is composed of formerly state-controlled companies (or governmental agencies); i.e. a large portion of the non-family-controlled companies were born through the Italian government privatization process.

\(^{16}\) Note that only in 16% of the sampled companies do independent directors represent a majority of the board members.
59% of the companies, with an insignificant difference between the two sub-samples (60% vs. 55% for family-controlled and non-family-controlled companies, respectively).\textsuperscript{17}

(Insert Table III about here)

A Spearman rank correlation matrix is presented in Table III. There are two segments in the table: above and below the diagonal. Above the diagonal we report the rank correlations between the variables in the non-family-controlled companies, whereas below the diagonal are the correlations between the variables of the family-controlled sample. There are some interesting differences in correlations between specific variables for the two sub-samples. In particular, the earnings management measure (AWCA) is negatively and significantly correlated with the percentage of independent board members (INDIR). The correlation coefficient between the AWCA and INDIR is -0.279 for the non-family-controlled sample and -0.108 for the family-controlled sample. This preliminary observation lends some support to the claim in our first hypothesis (H\(_1\)). A similar result may be observed with regard to the correlation between AWCA and the CEO non-duality (NODUAL) variables in the two sub-samples. This correlation coefficient for the non-family-controlled sample is -0.212 and is -0.156 for the family-controlled sample. This result hints at the validity of our second hypothesis (H\(_2\)).

As further evidence of CEO duality, Figure 1 illustrates the extent to which the separation of roles affects earnings management in both family-controlled (Panel A) and non-family-controlled (Panel B) companies. The figure plots the cumulative distribution of earnings management for each class of company holding category and plots the earnings management distributions for companies whose CEO is also the chairman of the board.

\textsuperscript{17} In addition, there is a significant (at the 1% level) difference of the financial leverage (LEV) between the two sub-samples (28% vs. 19%). Such a difference is consistent with Prencipe et al. (2008), who suggest that controlling families tend to resort to debt financing rather than to issuing equity in order to avoid dilution of their holdings and control over the company and to reduce takeover risk.
(duality) and where there is a separation between these roles (non-duality). In Panel B (non-family-controlled companies), we observe clear First Degree Stochastic Dominance of the non-duality sample over that of duality, where the non-duality sample reports less earnings management. This is not the case in Panel A (family-controlled companies), where no clear dominance of either of the two categories is evident.

(Insert Figure 1 about here)

In the next part of this section of the paper, we carry out multivariate analyses for a better test of the hypotheses H1 and H2.

b. Multivariate Analysis

The results of multivariate analyses are reported in Table IV.

(Insert Table IV about here)

**Full Sample Regression**

Model 1 presents the results of the basic model (equation 1) where the sample includes both family-controlled and non-family-controlled companies. In Model 1, the sign of the FAM coefficient is negative, suggesting that earnings management tends to be lower in family-controlled companies than in non-family-controlled companies. This result is

---

18 First degree stochastic dominance (FSD) implies that a probability distribution A dominates probability distribution B for all possible outcomes x (i.e., $F_A(x) \leq F_B(x)$, for all x). That is, the cumulative probability distributions of the two functions do not intersect (for more details, see Levy and Falk, 1989).

19 Because of the significance of the correlations between the independent variables, as reported in Table III, we check for potential multicollinearity between these variables prior to applying equation (1). The results of these tests detect no potential or severe multicollinearity issues to be concerned with (all VIF values fall below 3).

20 We also apply a Tobit model instead of an OLS procedure and find no qualitative difference in the results.
consistent with recent empirical evidence on US-listed companies (e.g., Wang, 2006; Ali et al., 2007). However, although family-controlled companies seem to engage less in earnings management than do non-family-controlled companies, this does not imply that the former do not carry out earnings management (Prencipe et al., 2008). Therefore, we focus now on whether and how the corporate governance mechanisms impact the level of earnings management in family- and non-family-controlled companies. First, note that the coefficients of INDIR and NODUAL under the heading Model 1 are negative (-0.210 and -0.531, respectively) and are significant at the 1% level. These results are consistent with prior literature, showing that both the presence of independent directors and the separation between the CEO and the board chairman tend to reduce earnings management. Turning our attention to the interaction variables, we observe that the FAM*INDIR coefficient is positive (0.507) and significant at the 5% level. Moreover, the sum of the two coefficients ($\beta_2 + \beta_4 = -0.024$) – an indication of the total effect of board independence on earnings management in family-controlled companies – is not significantly different from 0 (t-value = -1.280). This result validates hypothesis H1, suggesting that in family-controlled companies, the presence of independent members on the board of directors is less effective in reducing earnings management. Stated differently, independent board members in family-controlled companies do not significantly reduce earnings management. Regarding CEO non-duality, note that the coefficient of the interaction variable FAM*NONDUAL is small and insignificantly different from zero. This implies that the effectiveness of the separation of these roles in family-controlled companies is similar to that of non-family-controlled companies. Therefore, H2 should be rejected.

**Family and Non-family Sub-sample Regressions**

For robustness purposes and better interpretation of results beyond those related to Model 1, we run two separate regressions for family-controlled and non-family-controlled
companies. To this end, we estimate equation (2), for which the results are reported in Table IV under the headings Models 2 and 3, respectively.

Our hypotheses would be validated when the (negative) coefficient of INDIR and NODUAL are closer to zero in the family-controlled regression (Model 2) than in the non-family-controlled regression (Model 3). Regarding INDIR, we observe that in both regressions, these coefficients are negative, but that the coefficient is larger in absolute value in Model 3 than in Model 2 (-0.437 vs. -0.202, respectively; the difference is significant at the 1% level with \( t = 7.733 \)), consistent with the results reported in Model 1: that is, for family-controlled companies, the negative effect of independent directors on earnings management is weaker than in non-family-controlled companies. With respect to the impact of the variable NODUAL, notice that the coefficient is negative in both models and its absolute size is larger in Model 3 than in Model 2 (-0.202 vs. -0.147, respectively). This result is inconsistent with that of Model 1 (the coefficients are statistically different at the 1% level with \( t = 4.425 \)) and provides support to the second hypothesis regarding non-duality (HP2); i.e. the separation of the CEO from the board chairman is less effective in constraining earnings management in family-controlled companies than in non-family-controlled companies.

**Non-duality analysis when the CEO is a member of the controlling family**

As the NODUAL results are not univocal, we resort to an additional analysis to further explore the issue. In particular, we consider the case when the CEO is a member of the controlling family. In such a case, the influence of the family on the company’s decisions is likely to be stronger due to the relevant role played by the CEO within the board’s decisional activities. Consequently, the risk of collusion – even in the absence of CEO/board chairman duality – tends to be higher.
We examine this claim by adding two new dummy variables in Model 1: CEOFAM, designating a CEO who is a member of the controlling family, and NONDUAL*CEOFAM, which designates non-duality of the CEO when the CEO is a member of the controlling family. The new model (Model 4) is run only on the sub-sample of family-controlled companies. The sum of the coefficients of NODUAL and NONDUAL*CEOFAM represents the total effect of non-duality when the CEO is a member of the controlling family. The results of Model 4 are presented in Table IV. We observe that indeed the sum of the coefficients NODUAL (-0.275) and NONDUAL*CEOFAM (-0.193) is indeed negative and significantly different from zero (at the 1% level with t = 10.310), although fairly small in magnitude (-0.082). Taken together, these results validate our assertion that non-duality is less effective in family-controlled companies than in non-family-controlled companies, in particular when the CEO is a member of the controlling family.

To summarize, our results imply that: (i) independent board members and designation of different individuals to the positions of CEO and chairman of the board (CEO non-duality) are effective corporate governance mechanisms in reducing earnings management in non-family-controlled companies; (ii) the effectiveness of independent board members is lower for family-controlled companies; and (iii) the effectiveness of the separation between CEO and board chairman is lower for family-controlled companies. This last conclusion holds true in particular for companies whose CEO is a member of the controlling family. These results are consistent with the claim that in family-controlled companies, the board of directors (including the independent directors) tends to collude with the controlling family, whose wishes are presumably known to the board.
It is also interesting to examine some of the coefficients of the control variables in Models 1 - 4 in Table IV. Note the significant coefficients of ROA, CFO, and NEG, and the weak significance of LEV in the full-sample models. Interestingly, however, the coefficient of AUD (a functioning audit committee) is not significant. A possible explanation for this phenomenon is that our sample of companies, as required by law, has a board of statutory auditors. Such a board co-exists with the audit committee. The board of statutory auditors (which includes 3 or 5 members) is appointed by the shareholders, and among its other duties it supervises the appropriateness of organizational, administrative and accounting systems. There is clearly some overlap between the activities of the audit committee and the statutory auditors. Such an overlap limits the marginal effect of an audit committee on financial reporting reliability and can at least partially explain the lack of a significant dependence on this variable.

**c. Robustness and Sensitivity Analyses**

In order to examine the robustness of the results reported in Table IV, we substituted current accruals (CA) as an alternative proxy for earnings management instead of AWCA. Consistent with prior studies, current accruals are defined as the difference between the change in non-cash current assets and the change in non-financial current liabilities. We also replaced the growth rate with the market-to-book value as an alternative proxy for company growth. The results of the regressions (untabulated) remain qualitatively the same, providing support as to the validity of our conclusions on the effectiveness of corporate governance in family-controlled companies.

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21 As ROA and SALEGR present some extreme values, in order to limit the effect of possible outliers, 1% of top and bottom values of both variables have been winsorised.

22 Due to the fact that the market-to-book value was not available for all of our observations, in this case, we run the robustness test on a smaller sample.

23 To check whether dominant shareholders other than families have the same impact on the effectiveness of corporate governance mechanisms, we run another regression only for the non-family-controlled subsample. In this model, we introduce a new dummy variable (DOMIN) that assumes the value 1 in the cases in which there is a dominant shareholder (state or financial institutions) who owns at least 50% of the voting capital of the
VII. CONCLUSIONS

Board independence is known to limit earnings management in typical widely held companies. However, there is less evidence in the current literature as to the effects of board independence on earnings management in family-controlled companies: a setting that potentially may have a higher degree of board dependency and risk of collusion between board members and the dominant family. The purpose of this paper is to shed light on the question of whether board independence constrains earnings manipulation when the company is controlled by a family. The empirical evidence lends support to the hypothesis that, in family-controlled companies, the percentage of independent members on the board of directors (a commonly used proxy for board independence) has a weaker effect on earnings management than in non-family-controlled companies. CEO non-duality is also less effective in reducing earnings management, in particular when the CEO is a member of the controlling family. We conclude that the presence of a family – with its stronger long-term commitment to the company and its influence in the appointment of both top executives and board members – tends to lower board member substantial independence and to reduce board effectiveness in limiting the extent of earnings management.

Our conclusions may lead regulators and academics to re-evaluate the effectiveness of some corporate governance models when applied to family-controlled companies. In particular, our results suggest that special attention should be paid by regulators to the selection of board members. For the benefit of all shareholders, it is important to

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company. Similar to the procedure used in Model 1, DOMIN is interacted with the two corporate governance variables (DOMIN*INDIR and DOMIN*NODUAL). The results (untabulated) show that while the two variables, INDIR and NODUAL, have negative signs with significant coefficients, the two interaction variables with the new dummy DOMIN (DOMIN*INDIR and DOMIN*NODUAL) have insignificant coefficients. These results suggest that, in contrast to the case of family-controlled companies, the generic presence of a dominant shareholder among non-family-controlled companies does not imply per se a decrease in the effectiveness of the board independence in constraining earnings management. Based on this evidence, we can conclude that indeed the results of Model 1 (and Models 2 and 3) are family-control phenomena.
guarantee substantial independence of the board. Our results are also useful to users of financial statements, suggesting that a company’s ownership structure and its corporate governance characteristics should be taken into account when accounting numbers are used.
REFERENCES


Panel A

Cumulative distribution of earnings management in family-controlled firms: the effect of CEO duality

Panel B

Cumulative distribution of earnings management in non-family controlled firms: the effect of CEO duality
Table I. Sample selection

<table>
<thead>
<tr>
<th></th>
<th>Year 2003 Observations</th>
<th>Year 2004 Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies listed on the Milan Stock Exchange</td>
<td>214</td>
<td>213</td>
</tr>
<tr>
<td>Less: Financial companies</td>
<td>(77)</td>
<td>(73)</td>
</tr>
<tr>
<td>Non-financial companies</td>
<td>137</td>
<td>140</td>
</tr>
<tr>
<td>Less: Dual listed companies</td>
<td>(5)</td>
<td>(5)</td>
</tr>
<tr>
<td>Less: missing/invalid accounting or corporate governance data</td>
<td>(10)</td>
<td>(8)</td>
</tr>
<tr>
<td><strong>Final Sample</strong></td>
<td><strong>122</strong></td>
<td><strong>127</strong></td>
</tr>
<tr>
<td>Variable definitions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AWCA = absolute value of abnormal working capital accruals, scaled by the sales of the year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAM = dummy variable (family-controlled company = 1, else = 0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDIR = percentage of independent members on the board of directors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NODUAL = dummy variable (CEO different from the chairman of the board=1, else=0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUD = dummy variable (company has an audit committee=1, else=0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INST = dummy variable (institutional investors own at least 5% of the capital =1, else=0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDSIZE = number of directors on board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE = natural logarithm of total assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV = ratio of financial liabilities to total assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA = return on assets of the prior period, calculated as operating income divided by total assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO = cash flow from operations, scaled by lagged total assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEG = dummy variable (company reported a negative income before extraordinary items in the prior period = 1, else = 0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALEGR = growth rate in sales from t-1 to t</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table III. Spearman rank correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>AWCA</th>
<th>INDIR</th>
<th>NODUAL</th>
<th>AUD</th>
<th>INST</th>
<th>BDSIZE</th>
<th>SIZE</th>
<th>LEV</th>
<th>ROA</th>
<th>CFO</th>
<th>NEG</th>
<th>SALEGR</th>
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</thead>
<tbody>
<tr>
<td>AWCA</td>
<td>-0.279**</td>
<td>-0.212*</td>
<td>-0.092</td>
<td>-0.017</td>
<td>-0.070</td>
<td>-0.070</td>
<td>-0.135</td>
<td>-0.471***</td>
<td>-0.095</td>
<td>0.270**</td>
<td>-0.222*</td>
<td></td>
</tr>
<tr>
<td>INDIR</td>
<td>-0.108</td>
<td>0.028</td>
<td>-0.169</td>
<td>-0.069</td>
<td>0.049</td>
<td>0.387***</td>
<td>0.148</td>
<td>0.294***</td>
<td>0.164</td>
<td>-0.429***</td>
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</tr>
<tr>
<td>NODUAL</td>
<td>-0.156**</td>
<td>0.026</td>
<td>0.158</td>
<td>-0.210*</td>
<td>0.251**</td>
<td>0.067</td>
<td>0.170</td>
<td>-0.051</td>
<td>0.048</td>
<td>0.155</td>
<td>0.113</td>
<td></td>
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<tr>
<td>AUD</td>
<td>0.034</td>
<td>0.036***</td>
<td>0.142*</td>
<td>-0.328***</td>
<td>0.162</td>
<td>0.220*</td>
<td>0.116</td>
<td>0.217*</td>
<td>0.204*</td>
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<tr>
<td>INST</td>
<td>0.167**</td>
<td>0.017</td>
<td>-0.039</td>
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<td>-0.017</td>
<td>-0.166</td>
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<td>BDSIZE</td>
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<td>0.055</td>
<td>0.190**</td>
<td>0.292***</td>
<td>0.196**</td>
<td>0.185</td>
<td>-0.064</td>
<td>0.103</td>
<td>0.020</td>
<td>-0.148</td>
<td>-0.006</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.029</td>
<td>0.235***</td>
<td>0.145*</td>
<td>0.182**</td>
<td>0.226***</td>
<td>0.509***</td>
<td>0.244*</td>
<td>0.294***</td>
<td>0.152</td>
<td>-0.317***</td>
<td>0.090</td>
<td></td>
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<tr>
<td>LEV</td>
<td>-0.166**</td>
<td>0.077</td>
<td>-0.046</td>
<td>0.008</td>
<td>0.056</td>
<td>0.051</td>
<td>0.218***</td>
<td>-0.036</td>
<td>0.100</td>
<td>0.006</td>
<td>-0.060</td>
<td>-0.127</td>
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<tr>
<td>ROA</td>
<td>-0.384***</td>
<td>0.054</td>
<td>0.008</td>
<td>0.039</td>
<td>0.015</td>
<td>0.206***</td>
<td>0.391***</td>
<td>-0.036</td>
<td>0.507***</td>
<td>0.507***</td>
<td>0.061</td>
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<tr>
<td>CFO</td>
<td>-0.054</td>
<td>0.065</td>
<td>-0.009</td>
<td>0.039</td>
<td>0.022</td>
<td>0.277***</td>
<td>0.303***</td>
<td>0.011</td>
<td>0.486***</td>
<td>-0.393***</td>
<td>0.044</td>
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<tr>
<td>NEG</td>
<td>0.032</td>
<td>0.069</td>
<td>-0.137*</td>
<td>-0.134*</td>
<td>-0.028</td>
<td>-0.175**</td>
<td>-0.257***</td>
<td>0.221***</td>
<td>-0.627***</td>
<td>-0.355***</td>
<td>0.071</td>
<td></td>
</tr>
<tr>
<td>SALEGR</td>
<td>0.189**</td>
<td>0.067</td>
<td>-0.097</td>
<td>0.028</td>
<td>0.037</td>
<td>0.095</td>
<td>0.071</td>
<td>0.020</td>
<td>0.046</td>
<td>0.195**</td>
<td>-0.178**</td>
<td></td>
</tr>
</tbody>
</table>

Values below the diagonal are related to the sub-sample of family-controlled companies. Values above the diagonal are related to the sub-sample of non-family-controlled companies.

All significance levels are two-tailed.

***Significant at the 1% level
**  Significant at the 5% level
*    Significant at the 10% level

Variable definitions:
AWCA = absolute value of abnormal working capital accruals, scaled by the sales of the year
FAM = dummy variable (family-controlled company = 1, else = 0)
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CFO = cash flow from operations, scaled by lagged total assets
NEG = dummy variable (company reported a negative income before extraordinary items in the prior period = 1, else = 0)
SALEGR = growth rate in sales from t-1 to t
Table IV. The Effects of Board Independence and CEO Duality in Family-Controlled and Non-family Controlled Companies (dependent variable AWCA)

<table>
<thead>
<tr>
<th>Expected sign</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant</td>
<td>Coefficient</td>
<td>t-value</td>
<td>FAM</td>
</tr>
<tr>
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<td>?</td>
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```
\begin{array}{llllll}
\text{Adjusted } R^2 & 0.366 & 0.364 & 0.496 & 0.376 \\
\text{F-Statistic} & 6.300 & 5.047 & 4.439 & 6.331 \\
\text{Prob.} & 0.000 & 0.000 & 0.000 & 0.000 \\
\text{N. Obs.} & 249 & 171 & 78 & 249
\end{array}
```

All significance levels are one-tailed if a sign is predicted, two-tailed otherwise.

*** Significant at the 1% level
** Significant at the 5% level
* Significant at the 10% level

**Variable definitions:**
AWCA = absolute value of abnormal working capital accruals, scaled by the sales of the year
FAM = dummy variable (family-controlled company = 1, else = 0)
INDIR = percentage of independent members on the board of directors
NODUAL = dummy variable (CEO different from the chairman of the board=1, else=0)
AUD = dummy variable (company has an audit committee=1, else=0)
INST = dummy variable (institutional investors own at least 5% of the capital =1, else=0)
BDSIZE = number of directors on board
SIZE = natural logarithm of total assets
LEV = ratio of financial liabilities to total assets
ROA = return on assets of the prior period, calculated as operating income divided by total assets
CFO = cash flow from operations, scaled by lagged total assets
NEG = dummy variable (company reported a negative income before extraordinary items in the prior period = 1, else = 0)
CEOFAM = dummy variable (CEO member of the controlling-family =1, else=0)
SALEGR = growth rate in sales from t-1 to t
All regressions include year and industry fixed effects. Results are omitted for readability.