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Managerial entrenchment and earnings management

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ABSTRACT

Agency theorists have long contended that managerial entrenchment is detrimental for shareholders, because it protects managers from the discipline of corporate governance. However, as a competing hypothesis, we argue that entrenchment can also provide benefits for the firm's owners: it leads managers to be less myopic in managing earnings to meet short-term financial reporting goals. Our findings are consistent with this prediction as they suggest that, when there are incentives to manipulate firms' performance, entrenched managers are less prone to engage in earnings management activities that hurt shareholders. Specifically, we focus on firms that just meet or marginally beat earnings benchmarks and document a negative association between managerial entrenchment and both the opportunistic use of accruals and the manipulation of real activities. We also show that earnings management is less detrimental to firm value if the manager is entrenched. Finally, we find that these effects of entrenchment on earnings management are only present for firms domiciled in Delaware.

1. Introduction

The evidence that half of all publicly traded US companies and even a larger percentage of Fortune 500 companies are incorporated in Delaware suggests that this state's corporate law provides unique advantages to firms. What scholars, politicians, journalists, investors, and managers are still debating is whether these advantages benefit shareholders or managers (Dyregang et al., 2013). There is a growing consensus among scholars (e.g., Bebchuk and Cohen, 2003; Kacperczyk, 2009; Wang et al., 2016) that, since the second half of the 1990s, several court decisions shifted power from shareholders to managers, as the former relatively friendly-to-takeovers Delaware's regulation was replaced by a legal system in which firms are largely immune to hostile takeovers threats and managers have, therefore, discretion to expropriate shareholders' rents. This new regulatory environment provides, then, an ideal setting to study the benefits and costs of managers' power.

In this paper, we explore the effects of entrenchment on earnings management, and whether these effects are different for firms incorporated in Delaware and for firms elsewhere. According to a long established stream of agency theory literature, managerial entrenchment represents one of the costliest manifestations of the conflict between shareholders and managers (Jensen and Ruback, 1983). Managers, who place great value on control and derive substantial private benefits from it, may try to keep their jobs, even if they are no longer competent or qualified to run the firm, by engaging in a broad array of practices that neutralize the discipline of corporate governance and control mechanisms (Shleifer and Vishny, 1989). "The extent to which managers fail to experience discipline from the full range of corporate governance and control mechanisms" is what we mean by managerial entrenchment (Berger et al., 1997: 1411). There is a variety of entrenchment practices that managers may deploy, such as poison pills, supermajority

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amendments, antitakeover devices, staggered boards, or golden parachutes (Gompers et al., 2003). Other authors (e.g., De Miguel et al., 2004) show that intermediate levels of managerial ownership also act as a takeover deterrence mechanism that promotes managerial entrenchment. The use of these practices reduces the probability of the firm to be taken over—and, thus, to receive valuable offers that may benefit shareholders (Pound, 1987; Ambrose and Megginson, 1992)—and the manager to be subsequently dismissed, which explains why CEO tenure has been used by different authors as a proxy for managerial entrenchment (Fredrickson et al., 1988; Shen, 2003). For these reasons, CEOs' strategies to entrench themselves, such as antitakeover devices (Williamson, 1975; Jensen, 1988; Ambrose and Megginson, 1992) and manager-specific investments (Shleifer and Vishny, 1989), are regarded as important sources of expropriation of shareholders' wealth and inefficient allocation of firms' resources.

However, a competing, yet less developed stream of research in the agency theory literature states that CEOs' entrenchment aligns managers' interests with those of shareholders under certain circumstances. Stein (1989), for example, argues that CEOs that are not entrenched and that, therefore, are under market pressure, tend to behave "myopically" by providing signals of the firm efficiency to the stakeholders through short-term value increases. Thus, market-pressured managers are more likely to choose projects that yield short-term results, at the expense of long-term investments that are expected to provide higher benefits in the long run. The adoption of entrenchment practices may therefore reduce such pressure on the short-term in favor of more value-generating long-term investments. Pugh et al. (1992), for example, show that the level of capital expenditures and R & D investment, which are mainly long-term investments, increased subsequent to the adoption of anti-takeover provisions.

Taking these differing perspectives into account, the present study contributes to this discussion on the consequences of entrenchment for shareholders by analyzing a facet of the agency problem left unexplored in existing literature: the quality of accounting information. We argue that, in the presence of incentives to manipulate firms' performance, more entrenched CEOs are less likely to engage in earnings management practices to achieve short-term objectives. Contrarily, market-pressured CEOs, to appear better able before the eyes of the stakeholders and secure their jobs, are more likely to opportunistically use accruals and/or make inefficient operational decisions to make stakeholders believe that the firm is more profitable and/or more valuable than it really is. We therefore predict that entrenchment will reduce the opportunistic use of accruals as well as the manipulation of real activities when there are incentives to achieve short-term financial reporting goals, such as meeting/beating earnings benchmarks. We also argue that managerial entrenchment leads to earnings management practices that are less detrimental to firm value. This occurs as we expect that entrenched CEOs manipulate earnings in a less opportunistic way because they are more concerned about future firm value than non-entrenched CEOs. As a consequence, entrenched managers are more likely to use the flexibility inherent in accruals and in operational decisions to inform stakeholders about future performance, and not to obfuscate current performance at the expense of decreasing firm value.

Through the comparison between the firms incorporated in Delaware and the firms domiciled elsewhere, our study provides important public policy implications. In particular, our comparative analysis of the effects of entrenchment on earnings management in Delaware vis-à-vis the rest of states can shed new light on the debate about whether Delaware corporate law favors managers or shareholders. If Delaware law reduces shareholder wealth because it increases agency costs, as Bebchuk and Cohen (2003) documents empirically, new federal legislation should be enacted to defend the interests of shareholders. On the contrary, if Delaware law protects managers from the capital market's myopia, it may be in the interest of shareholders of companies incorporated elsewhere to adopt the legal regime of Delaware, as the findings of Daines (2001) suggest.

Using a large US sample for the period 1992 to 2011, we find results that support our expectations: when firms just meet or marginally beat earnings benchmarks, CEOs' entrenchment is negatively associated with both accruals-based and real earnings management to increase current income. We also find that earnings management is less detrimental to firm value when CEOs are more entrenched. These results are consistent with earnings management being used in a less opportunistic and more informative way by more entrenched managers. These two effects only appear, though, when we consider firms domiciled in Delaware. When we run our tests on the pool of firms domiciled in other states, we do not find significant results. We also replicate our main tests using a propensity score matched sample (as firms with entrenched and non-entrenched managers can be different per se in performance and earnings management incentives), and the inferences are not affected.

Our results contribute to prior research in several ways. First, we contribute to the research on the consequences of entrenchment. While most of prior literature shows that entrenchment is detrimental for shareholders (among many others: Morck et al., 1988; McConnell and Servaes, 1990; Claessens et al., 2002; Masulis et al., 2009; Gompers et al., 2010), several voices also claim that entrenched managers feel less pressured by capital markets given their lower career concerns (Stein, 1989). These lower pressures lead, in turn, to reduced myopic behavior. Consistent with this view that entrenchment reduces myopic behavior, we find that entrenched managers in Delaware firms engage less in earnings management (either through accruals or through real activities) to meet or marginally beat earnings benchmarks. We are aware of only two papers that offer related evidence: Zhao and Chen (2009) and Zhao et al. (2012). In Zhao and Chen (2009) they find that earnings management decreased after the passage, in several US states during the 1980s, of second generation takeover laws, and that the effects of these laws on earnings management were short-lived. In Zhao et al. (2012) they focus on a very specific governance variable (staggered boards) and analyze its effect on real earnings management. We add to these two studies taking a more holistic approach, with wider measures of entrenchment, and showing that managerial decisions to influence financial reporting outcomes (either through accruals or through real operations) vary with entrenchment, that entrenchment moderates the impact on firm value of these earnings management practices, and that the impact of entrenchment differs across states.

We also contribute to the literature on the effects of accruals-based and real earnings management. Regarding accruals-based earnings management, early research by Holthausen (1990), Subramanyam (1996) and Guay et al. (1996) argues that accruals-based earnings management is not necessarily negative, as it might be informative. While most of the subsequent literature has focused on

the negative effects of accruals-based earnings management for shareholders, there is also evidence that in some instances accruals-based earnings management can be informative. In particular, [Louis and Robinson \(2005\)](#) show that, in combination with other information sources, abnormal accruals are informative. We contribute to this stream of research showing that entrenched managers in firms domiciled in Delaware are less likely to make accrual choices that decrease future firm value. We interpret this evidence as consistent with entrenched managers making informative instead of opportunistic accrual choices.

Regarding real earnings management, while [Bhojraj et al. \(2009\)](#) find that firms that use real earnings management to meet or beat targets perform worse in the future, [Gunny \(2010\)](#) shows the opposite, that real earnings management in the context of benchmark beating is informative and leads to improved subsequent performance. We contribute to this literature showing that, at least for Delaware firms, entrenchment reduces the use of real earnings management to meet or beat earnings targets, and that, whenever it is carried out by entrenched managers, it seems to be informative, rather than opportunistic, as it is associated with increased future firm value.

The remainder of the paper is organized as follows: Section 2 defines the two earnings management practices that we consider. Section 3 develops the hypotheses. Section 4 describes the data and the research design. Section 5 reports the results. Finally, Section 6 concludes.

2. Earnings management practices

In our analysis about the effects of managerial entrenchment on earnings management practices, we focus on two types of earnings management: the opportunistic use of accruals to increase current earnings, and real activities manipulation to increase current earnings. The basic characteristics of these earnings management practices are described in the next subsections.

2.1. The opportunistic use of accruals

Because accrual accounting is based on assumptions and estimates, CEOs can use accruals to mislead users of financial statements ([Jones, 1991](#); [Dechow and Dichev, 2002](#)). [Walker \(2013\)](#) provides an excellent literature review highlighting the different managerial incentives to manage earnings, and the expected negative consequences of earnings management for firm value.

In our study, we focus on earnings management to meet or marginally beat earnings benchmarks. In particular, in our main tests we focus on earnings management to avoid earnings declines and losses, and in sensitivity tests we study the case of earnings management to avoid earnings surprises (earnings that are lower than analysts' forecasts). The existence of earnings management to meet or beat these targets has been documented extensively in prior literature ([Burgstahler and Dichev, 1997](#); [Degeorge et al., 1999](#); [Brown and Higgins, 2001](#); [Matsumoto, 2002](#); [Burgstahler and Eames, 2003, 2006](#); [Daske et al., 2006](#); [Gore et al., 2007](#); [Myers et al., 2007](#); [Hansen, 2010](#); [Donelson et al., 2013](#); [Burgstahler and Chuk, 2015](#); [Gilliam et al., 2015](#)). These earnings management practices can be explained, at least partly, as a response to the large negative effects, which might not respond to fundamentals, from missing the targets ([Matsunaga and Park, 2001](#); [Skinner and Sloan, 2002](#); [Kinney et al., 2002](#)).

Prior literature also shows that firms that meet or beat the earnings benchmarks receive investors' rewards ([Barth et al., 1999](#); [Kaszniak and McNichols, 2002](#); [Bartov et al., 2002](#); [Brown and Caylor, 2005](#); [Koonce and Lipe, 2010](#)). While some studies show that the rewards disappear for firms that achieve the targets through earnings management ([Keung et al., 2010](#); [Athanasakou et al., 2011](#)), others show that the rewards still exist for these firms ([Bartov et al., 2002](#); [Chen et al., 2016](#)). The existence of these rewards even for firms suspected of managing earnings is consistent with the view that earnings management is not always negative for firm value, and that it can be informative rather than opportunistic. This view that earnings management can be informative is held in studies like [Holthausen \(1990\)](#), [Subramanyam \(1996\)](#), [Guay et al. \(1996\)](#), and [Sankar and Subramanyam \(2001\)](#), and is also in line with the survey evidence in [Graham et al. \(2005\)](#) that managers use the flexibility in accruals to build credibility and inform about the growth prospects of the firm.

In our study, we contribute to this literature through the analysis of whether entrenchment is associated with earnings management (to meet or beat earnings benchmarks) that is more informative, and, therefore, less detrimental to firm value.

2.2. Real activities manipulation

Real activities manipulation is defined as “departures from normal operational practices, motivated by managers desire to mislead at least some stakeholders into believing certain financial reporting goals have been met” ([Roychowdhury, 2006](#): 337). [Roychowdhury \(2006\)](#) identifies three ways to manipulate real activities: the manipulation of sales, the reduction of discretionary expenses, and overproduction. Sales can be manipulated by offering price discounts or more lenient credit terms. Limited price discounts lead to a temporary increase of sales volume, but also to a reduction of cash inflows per sale. More lenient credit terms increase sales volume, but lead to lower cash inflows and increased credit risk. Also, managers can postpone the optimal level of discretionary expenses (such as R & D, advertising, and selling, general and administrative expenses) to increase current earnings, or produce more goods than necessary to lower unitary costs ([Roychowdhury, 2006](#)). All of these operational decisions can help managers to meet their earnings targets. Prior research shows that managers choose between accruals-based and real earnings management depending on their relative benefits and costs. For example, when the scrutiny of auditors and regulators becomes stricter ([Cohen et al., 2008](#); [Zang, 2012](#)), or when firms' accounting systems allow less flexibility in accrual-based manipulation ([Barton and Simko, 2002](#); [Zang, 2012](#)), CEOs tend to manipulate less through accruals and more through real activities.

Some authors argue that real earnings management can be more detrimental to firm value than accruals-based earnings

management. For example, [Cohen and Zarowin \(2010\)](#) show that, during seasoned equity offerings (SEOs), firms are likely to engage in both accruals and real activities manipulation, and that the post-SEO decline in firms' value is more severe after real activities manipulation rather than after accruals manipulation, as real activities manipulation will probably decrease future cash flows. In line with these results, [Bhojraj et al. \(2009\)](#) show that firms that meet earnings targets through real earnings management will suffer decreases in firm value in the long run. However, [Gunny \(2010\)](#) finds that real activities manipulation is positively associated with firm value. She argues this is so as real activities manipulation, which increases current earnings, leads to increases in firms' credibility and reputation.

3. Hypotheses development

In this section, we develop hypotheses about the effects that CEOs' entrenchment has on the opportunistic use of accruals and on real activities manipulation. Then, we describe how we expect entrenchment to moderate the effect of earnings management on firm value.

3.1. CEOs' entrenchment and earnings management

Hostile takeovers are a pivotal mechanism of discipline in liquid capital markets. When the market valuation of firms declines because of insufficient current profit, they become more vulnerable to takeover bids. This threat creates adequate incentives for the manager to generate value for shareholders to deter takeovers ([Jensen and Ruback, 1983](#); [Morck et al., 1988](#)). However, when managers do not generate enough shareholder value, to preserve the benefits of control, different measures may help to deter takeovers. As capital market participants rarely have access to private information of the firm, market-pressured managers have incentives to mask true firm performance as reported in the financial statements. To do so they can engage in a manipulation of either accruals or, as suggested by [Stein \(1989\)](#), real activities, to increase reported performance. In this sense, some research has predicted and empirically validated the idea of managers resorting to earnings management practices as a way of increasing their job security ([Surroca and Tribo, 2008](#)).

The situation is different in the case of entrenched managers. According to the "long-term benefit hypothesis" ([Stein, 1989](#)), the limitation of takeover threats helps reduce the managerial myopia surrounding investment decisions. The main effect of the information asymmetry between managers and investors is that, when pressured by the capital markets, managers tend to emphasize short-term decisions, thereby foregoing long-term, value enhancing investments, in an attempt to increase the stock price and avoid attracting bidders in search for undervalued firms and firm control. This expropriation of shareholders' wealth is unlikely under managerial entrenchment. With substantive antitakeover provisions, any drop in the accounting profits caused by the firm's engagement in value-enhancing projects will not stimulate takeover attempts and the dismissal of the CEO. So, entrenched CEOs will be more likely to keep their jobs without the need to provide signals to the stakeholders about their ability to run the firm. At the same time, antitakeover provisions will prevent the CEO career horizon problem, according to which CEOs with low expectations of remaining in the firm tend to focus on the short-term implications of their strategic investments rather than long-term considerations of firm growth ([Gibbons and Murphy, 1992](#)). Entrenchment will therefore align the interests of shareholders and CEOs. Given this alignment of interests, we expect that entrenched managers are less likely to increase short-term performance through an opportunistic use of accruals or by making inefficient operational decisions that decrease firm value. This discussion leads to our first and second hypotheses:

H1: The opportunistic use of accruals decreases with CEO entrenchment.

H2: Real activities manipulation decreases with CEO entrenchment.

3.2. Entrenchment, earnings management and firm value

Although the previous two hypotheses suggest that the manipulation of earnings is less prevalent among entrenched managers, even in contexts of scant capital market pressure over management some degree of earnings management can be observed. The question is, therefore, if investors will react differently to signals of earnings management depending on whether managers are entrenched or not. Whether managerial entrenchment affects capital markets perception of earnings management is an issue that has not been tackled in prior research. However, two competing views can be derived from extant scholarship. On the one hand, part of the literature argues that CEOs' entrenchment leads to an inefficient allocation of firms' resources ([Shleifer and Vishny, 1989](#)). Thus, under this view, firm value is expected to decrease after entrenched CEOs' earnings management to meet/beat earnings benchmarks because investors could interpret that entrenched managers would influence reported earnings for rent extraction purposes. This interpretation seems unlikely, however, because, as agency researchers have already suggested (e.g., [Jensen and Ruback, 1983](#); [Shleifer and Vishny, 1989](#)), entrenched managers can make use of more direct ways of expropriating shareholder value (e.g., enjoying a quiet life, overstaffing, building empires, enjoying perquisite consumption, stealing from the firm) than managing earnings. A more likely, competing argument follows from the "long-term benefit hypothesis" mentioned above. As suggested, entrenched managers are less concerned about short-term objectives and can better focus on long-term strategies, which are expected to be more profitable on the long-run. Accordingly, under this view, earnings management may have an informative component for firm shareholders: investors may interpret entrenched CEOs' attempts to increase earnings to meet/beat earnings benchmarks through financial reporting choices and operational decisions as a signal about positive future earnings expectations, thereby revising prices upwards.

This is in line with the literature that suggests that, in certain cases, accruals-based earnings management can be informative and not necessarily detrimental to firm value (Holthausen, 1990; Subramanyam, 1996; Guay et al., 1996; Sankar and Subramanyam, 2001). It is also in line with real earnings management being informative in certain scenarios (Gunny, 2010).

Given the discussion above, our last hypothesis is as follows:

H3: Earnings management is less detrimental to firm value when CEOs are more entrenched.

3.3. Delaware corporate law

Although the large percentage of public companies incorporated in Delaware has been always presented as evidence that Delaware corporate law favors managers over shareholders, several studies provide arguments and findings to support the opposite: that Delaware law actually benefits shareholders. With data from the 1980s until the reforms of the mid-1990s, Daines (2001) and Subramanian (2004) show that the Delaware's mild antitakeover statute facilitated the sale of public firms and encouraged takeovers by imposing shorter delays to hostile bids and by prohibiting extreme managerial defensive tactics against takeovers. Examining the period after the Delaware's legal shift in takeover protection, Kacperczyk (2009) and Wang et al. (2016) also find that Delaware-incorporated firms are more profitable than those inscribed elsewhere. In both studies, Delaware law benefited public corporations because takeover defenses allowed managers, who otherwise would be under increased pressure from capital markets, to focus on more long-term decisions with more potential to create shareholder value. We extend the idea that managers' entrenchment allows for a long-term focus on firm decisions, without the threat of losing control of the company or their own jobs. Our expectation is, then, that all of the Hypotheses 1 through 3 will manifest themselves in a stronger way in Delaware than in other states, or even only in Delaware.

4. Data, variable definitions, and methods

4.1. Data

We obtain the accounting data from Compustat. Firms in regulated industries (SIC codes between 4400 and 5000) and financial institutions (SIC codes between 6000 and 6500) were excluded. To collect data about firms' corporate governance and managerial entrenchment, we merge Compustat data with Execucomp, which contains data starting from 1992. This yields a sample of 24,589 firm-year observations. To gather data about entrenchment, we merge the resulting sample with the G-index (Gompers et al., 2003) and the E-index (Bebchuk et al., 2009). The G-index and the E-index are available only for the years 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006. For the years with missing data, we use the value of the index corresponding to the most recent year for which the information is available, assuming that corporate governance characteristics tend to be stable over time (Gompers et al., 2003). This reduces the sample to 19,194 firm-year observations. We drop firm-year observations without data to compute all our earnings management proxies. To use the same sample throughout all our tests, we use only firm-year observations with available data to run our main tests. After winsorizing variables at 1% and 99% as it is common to avoid the effects of outliers, the final sample, which covers the period 1992 to 2011, includes 7,349 firm-year observations, corresponding to 958 different firms. 4,525 firm-year observations correspond to firms domiciled in Delaware. The details about the construction of the sample are in Table 1.

4.2. Research design

To test the association between CEO entrenchment and earnings management in the presence of incentives to manipulate (H1 and H2), we use the following model, which we estimate separately for firms domiciled in Delaware and elsewhere:

$$\begin{aligned} Manipulation_{i,t} = & \alpha + \beta_1 Bench_{i,t} + \beta_2 Entrenchment_{i,t-1} + \beta_3 Bench_{i,t} \times Entrenchment_{i,t-1} + \beta_4 CorpGov_{i,t-1} + \beta_5 Oindex_{i,t-1} \\ & + \sum \beta_j Controls_{j,t} + \epsilon_{i,t} \end{aligned} \quad (1)$$

We estimate Eq. (1) with firm and year fixed-effects to control for unobservable firm heterogeneity correlated with independent variables (Bascle, 2008). To avoid dependence of standard errors across years for a given firm (time-series dependence) and across firms for a given year (cross-sectional dependence), we cluster standard errors by firm and year (Petersen, 2009; Gow et al., 2010; Thompson, 2011). The variable *Manipulation* is, alternatively, a proxy for the opportunistic use of accruals to increase current

Table 1
Derivation of the sample, 1992 to 2011.

Firm-years after merging data from Compustat and Execucomp	24,589
Firm-years after merging available data with the G-index and the E-index	19,194
Firm-years with available data to compute earnings management proxies	9,132
Firm-years after truncation of most extreme 1 percent observations and with both lag and lead values used in Eqs. (1) and (2)	7,349
Number of different firms in the sample of 7,349 firm-year observations	958
Firm-years with more entrenched managers (out of 7,349 firm-year observations)	1,195
Firm-years incorporated in Delaware (out of 7,349 firm-year observations)	4,525

earnings and a proxy for real activities manipulation. The variable *Bench* represents the incentive to manipulate. It is an indicator variable that is set equal to 1 if either net income divided by total assets is between 0 and 0.01, or the change in net income divided by total assets between time $t-1$ and time t is between 0 and 0.01, and it is set equal to 0 otherwise (Gunny, 2010). In sensitivity tests we also consider the case of marginal beaters of analysts' forecasts. *Entrenchment* is an indicator variable capturing CEO entrenchment. We describe in detail how we measure the variable *Entrenchment* in the Section 4.4 below. The interaction between the variables *Bench* and *Entrenchment* captures the effect of entrenchment on earnings management strategies in firms just meeting/beating earnings benchmarks. *Corp_Gov* is an internal corporate governance index. *O_index* is the difference between the G-index elaborated by Gompers et al. (2003) and the Entrenchment index (Bebchuk et al., 2009) included in our entrenchment proxy. *Controls* designate the control variables.

To study whether entrenchment moderates the effect of earnings management on firm value, we estimate the following model, separately for Delaware and non-Delaware firms, and also separately for terciles of each of our earnings management proxies:

$$\Delta AdjMtoB_{i,t} = \alpha + \beta_1 Bench_{i,t} + \beta_2 Entrenchment_{i,t-1} + \beta_3 Bench_{i,t} \times Entrenchment_{i,t-1} + \beta_4 CorpGov_{i,t-1} + \beta_5 Oindex_{i,t-1} + \sum \beta_j Controls_{j,i,t} + \varepsilon_{i,t} \quad (2)$$

$\Delta AdjMtoB_{i,t}$ is the change from year $t-1$ to year t of the adjusted market-to-book ratio. The adjusted market-to-book ratio is computed as the difference between the market-to-book ratio, computed as the market value of equity (annual Compustat data item #25) to the book value of equity (annual Compustat data item #199*annual Compustat data item #60), and the median of the market-to-book ratio, computed by year and industry. As operating performance indicators, previous research used accounting-based (e.g., Gunny, 2010), market-based (e.g., Guay et al., 1996), or both (e.g., Bhojraj et al., 2009) types of measures. In our main tests we use a market-based measure of performance, the market-to-book ratio, because of its greater ability to capture the firm's potential for shareholder value creation. Contrarily, accounting-based measures of performance are typically more short-term oriented, are historical and, hence, backward-looking, and are subject to the manipulation by firm managers (Watts and Zimmerman, 1990). Therefore, market-based measures of performance, such as the market-to-book ratio, are more useful in capturing the long-run value of the firm.¹ We expect the variable of interest, the interaction term *Bench*×*Entrenchment*, to have a positive association with market value. This positive association would be consistent with high levels of earnings management in suspect firms being informative, and therefore not detrimental to firm value when managers are more entrenched. We also expect this effect to appear mainly in Delaware firms.²

4.3. Measurement of earnings management practices

We separately estimate two different earnings management proxies: The opportunistic use of accruals to increase current earnings and real activities manipulation.

We measure the opportunistic use of accruals to increase current earnings through the sign and magnitude of accruals over time. Givoly and Hayn (2000) argue that conservatism would lead to a larger amount of negative accruals. Thus, following Garcia Lara et al. (2009), we expect that more aggressive firms, which use accruals in a persistent way to increase current earnings, will present less negative accruals. This idea is in line with the bloated balance sheet argument in Barton and Simko (2002). Given this, we use as a proxy for the opportunistic use of accruals to increase current earnings the three-year average of total accruals centered at year t . Accruals are computed as the difference between net income before extraordinary items and cash flows from operations (annual Compustat data item #18 – annual Compustat data item #308), and are scaled by average total assets (annual Compustat data item #6). The higher the proxy (*ACC*), the greater the opportunistic use of accruals to increase current earnings.

We alternatively measure the opportunistic use of accruals through the Dechow and Dichev (2002) model. In particular, we estimate the following equation:

$$\Delta WC_{i,t} = b_0 + b_1 CFO_{i,t-1} + b_2 CFO_{i,t} + b_3 CFO_{i,t+1} + \varepsilon_{i,t} \quad (3)$$

All the variables in Eq. (3) are scaled by beginning total assets. ΔWC is change in working capital from year t to year $t-1$. Working capital is computed as current assets (annual Compustat data item #4) minus current liabilities (annual Compustat data item #5), excluding short-term debts (annual Compustat data item #34). *CFO* is operating cash flow (annual Compustat data item #308). The Dechow and Dichev (2002) model relates changes in working capital to past, present, and future operating cash flow. The residuals computed by year and by industry from Eq. (3) represent the accruals that are unrelated to past, present and future cash flow realizations. To obtain a firm-year indicator of accruals quality, we use the signed value of the residuals (*ACC2*). The higher the residuals, the higher the manipulation of accruals to increase current earnings.

We measure real activities manipulation through a proxy that includes reductions of discretionary expenses and overproduction

¹ While Bhojraj et al. (2009) use both the market-to-book ratio and ROA, in our main tests we use the market-to-book ratio as ROA can be influenced by short term effects, while market-to-book captures better long term firm value. For example, a new investment might yield negative earnings in the first periods, while overall being positive NPV. Also, earnings management can have effects both on the numerator and the denominator of ROA, and the effects on the denominator might survive several periods. In any case, we replicate our tests with ROA and results are in line with those obtained with the market-to-book ratio.

² Because, in the second half of the 1990s, several court decisions increased takeover protection in Delaware, we also run Eqs. (1) and (2) using Delaware and non-Delaware firm-year observations only from 1996 to 2011. Results are in line with those reported in the main tables, though, for Delaware firms, the coefficients of the variable of interest, *Bench*×*Entrenchment*, are generally larger than those obtained using the sample starting from 1992.

(Roychowdhury, 2006; Zang, 2012).³ Managers can reduce reported expenses and increase reported earnings by reducing discretionary expenses, which are generally expensed in the same period in which they are incurred.

Following Roychowdhury (2006) we estimate normal levels of discretionary expenses as follows:

$$\frac{DISEXP}{TA_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{TA_{t-1}} \right) + \alpha_2 \left(\frac{REV_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (4)$$

where *DISEXP* is discretionary expenses, which are the sum of R&D (annual Compustat data item #46), advertising (annual Compustat data item #45), and SG & A expenses (annual Compustat data item #189),⁴ *TA* is total assets (annual Compustat data item #6), and *REV* is net sales (annual Compustat data item #12). The abnormal levels of discretionary expenses are measured through the residuals for each industry (2-digit SIC code) and year from Eq. (4). Because the lower the unexpected level of discretionary expenses, the higher their opportunistic reduction, we multiply the residuals by minus one. Thus, higher values of the residuals indicate higher manipulation of discretionary expenses.

Regarding overproduction, it captures two effects. On the one hand, managers can produce more goods than necessary to lower the cost of goods sold (COGS) and, thus, to increase reported operating margins. On the other hand, overproduction can capture also sales manipulation (Roychowdhury, 2006). To estimate the normal levels of production costs we use the following model (Roychowdhury, 2006):

$$\frac{PROD_t}{TA_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{TA_{t-1}} \right) + \alpha_2 \left(\frac{REV_t}{TA_{t-1}} \right) + \alpha_3 \left(\frac{\Delta REV_t}{TA_{t-1}} \right) + \alpha_4 \left(\frac{\Delta REV_{t-1}}{TA_{t-1}} \right) + \varepsilon_t \quad (5)$$

where *PROD* is production costs, defined as the sum of COGS (annual Compustat data item #41) in year *t* and the change in inventories (annual Compustat data item #3) from year *t* – 1 to year *t*, *TA* is total assets (annual Compustat data item #6), and *REV* is net sales (annual Compustat data item #12). Overproduction is measured through the residuals for each industry (2-digit SIC code) and year from Eq. (5).

Our proxy for real activities manipulation (RAM) is computed as the sum of the proxies for the reduction of discretionary expenses and for overproduction (Zang, 2012).

4.4. Measurement of entrenchment

To measure entrenchment, we use a dummy variable that incorporates three different characteristics associated with managerial entrenchment. The use of a dummy variable that includes three different dimensions of entrenchment is expected to decrease the noise that these individual proxies might contain if used alone (Larcker et al., 2007). The three proxies that are included in our dummy variable of entrenchment are: CEO tenure, the entrenchment index proposed by Bebchuk et al. (2009), and managerial ownership. We describe next how we measure each of these three dimensions of entrenchment.

CEO tenure. CEOs' entrenchment increases over time (Shen, 2003). At the beginning of their tenure, CEOs need to develop their leadership skills to meet the demands of their new jobs. Later, the probability of managerial opportunism increases. Fredrickson et al. (1988) argue that early vulnerability occurs when CEO tenure is less than, or equal to, three years. After three years, CEOs start gaining power and becoming more entrenched. Thus, we construct a dummy variable taking value 1 if CEO tenure is greater than 3 years, and 0 otherwise.

Entrenchment index. Starting from the popular G-index elaborated by Gompers et al. (2003), Bebchuk et al. (2009) investigate the importance of the twenty-four provisions included in the G-index and conclude that six of these provisions (staggered boards, limits to shareholders amendments of bylaws, supermajority requirements for mergers, supermajority requirements for charter amendments, poison pills, and golden parachutes) are mainly responsible for the associations between the G-index and firm value. They then propose a new index, which they call Entrenchment index, or E-index, that includes only these six provisions and that ranges between 0 and 6. The higher the value, the more entrenched the managers. We use this index as a dimension of CEOs' entrenchment by computing a dummy variable that takes the value of 1 if the E-index is greater than 3, and 0 otherwise.

Managerial ownership. Previous literature (De Miguel et al., 2004) argues that CEOs are more entrenched at an intermediate level of managerial ownership. When CEOs' ownership is below a lower bound, capital markets can force CEOs to satisfy shareholders' interests. If CEOs' ownership is higher than an upper bound, managers' interests are likely to be aligned with those of shareholders. Using as a proxy for managerial ownership the number of shares owned by CEOs through firms' compensation mechanisms, divided by the firms' number of common shares outstanding, we replicate the model of De Miguel et al. (2004), which relates firm value to managerial ownership. Size, leverage and investments are used as control variables. We obtain that firm value decreases in the range between 18.08% and 50.06% of CEOs' ownership. Managerial ownership values within this range correspond to the entrenchment area. Thus, we construct a dummy variable that takes the value of 1 if the proportion of CEOs' shares over total shares of the firm falls into this range, and 0 otherwise.

Finally, we define our variable *Entrenchment* as a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies defined above are equal to 1, and 0 otherwise.

³ In our main tests, we do not include the manipulation of sales, measured through abnormal cash flows, because it is a noisy proxy. Sales manipulation leads to negative abnormal cash flows, but the manipulation of discretionary expenses leads to positive abnormal cash flows. The overall effect is thus ambiguous and difficult to interpret (Roychowdhury, 2006; Zang, 2012).

⁴ If SG & A expenses are available, advertising and R&D expenses are set equal to zero if they are missing (Cohen et al., 2008).

4.5. Measurement of internal corporate governance and other control variables

Given the advantages of indexes over single measures, we also construct a composite measure of internal corporate governance, which includes two dimensions: board independence and CEO non-duality.

Board independence. Our proxy for board independence is related to the presence of independent directors on the board. Previous literature shows that the composition of the board influences board decisions. Weisbach (1988) observes that the presence of independent directors is positively associated with boards' decisions of CEOs' removal. Byrd and Hickman (1992) find that in successful tender offers, bidding firms with a majority of outside directors perform better than those with a majority of inside directors. Thus, we use a dummy variable that takes the value of 1 if the ratio of the number of executives who are not members of the board, divided by the total number of executives, is greater than 0.5, and 0 otherwise.

Non-duality. CEO duality (the same person holds the positions of CEO and chairperson of the board) tends to favor CEO entrenchment and, as a consequence, CEOs' opportunistic behavior that reduces shareholders' wealth (Jensen and Meckling, 1976). Therefore, as indication of good internal governance, we measure CEO non-duality through a dummy variable that takes the value of 1 if the CEO and chairperson positions are not held by one individual, and 0 otherwise.

Our composite corporate governance index (*Corp_Gov*) is the sum of the previous two dummy variables. Thus, *Corp_Gov* can take a value between 0 and 2.

We use other control variables that have been found in prior research to influence earnings management. To control for the other antitakeover provisions that are part of the G-index but that are not included in the E-index, we include in the model these other provisions (*O-index*), computed as the difference between the G-index and the E-index for each firm-year observation. Big audit firms constrain the opportunistic use of accruals (Cohen and Zarowin, 2010; Zang, 2012), and are likely to lead CEOs to manipulate more through real activities (Zang, 2012). We also control, as in Zang (2012), for the effect of big audit firms. In particular, we include a dummy variable (*Big 8*) that takes the value of 1 if the firm is audited by one of the Big 8 firms, and 0 otherwise. To take into account firms' financial structure (DeFond and Jiambalvo, 1994; Minton and Schrand, 1999) we use leverage, computed as the ratio of total liabilities (annual Compustat data item #181) to total assets (annual Compustat data item #6). We use current ROA, measured as the ratio of income before extraordinary items (annual Compustat data item #18) to beginning total assets (annual Compustat data item #6), to control for firms' current performance, which can partly determine current earnings management (Kothari et al., 2005), and future operating performance (Bens et al., 2002). We also control for firm size, measured through the logarithm of total assets (annual Compustat data item #6), as larger firms face larger political costs (Watts and Zimmermann, 1990) and are likely to manage earnings to reduce undesired visibility. Firm size is also likely to positively influence future firm value (Berger and Ofek, 1995). Riskier firms are expected to manage earnings more to conceal their real risk. As proxies for risk we use the standard deviation of operating cash flows (annual Compustat data item #308) scaled by beginning total assets, and computed over three-year rolling windows. We measure firms' growth through the percentage change in sales (annual Compustat data item #12) to take into account the incentives growth opportunities may provide to manage earnings (Skinner and Sloan, 2002; Graham et al., 2005) and their effects on future firms' value. Finally, we include in our empirical tests the market share, computed as the ratio between the firm's sales (annual Compustat data item #12) and the total sales in the same 3-digit SIC industry code (Harris, 1998), as market share influences earnings management decisions (Zang, 2012) and future firm value.

5. Results

5.1. Descriptive statistics

Table 2 shows the descriptive statistics. The variable *Entrenchment* has a mean of 0.1626. The number of firm-year observations reporting a value of *Entrenchment* equal to 1 is 1,195, corresponding to the 16.26% of the sample. Out of these 1,195 firm-year observations, 13 firm-year observations include all the three entrenchment characteristics. Among the three entrenchment characteristics, managerial ownership is the one that has less firm-year observations reporting a value of 1 (256 firm-year observations, corresponding to the 3.48% of the entire sample). The E-index reports a value equal to 1 in 1,553 firm-year observations (21.13% of the sample), and CEO tenure is equal to 1 in 5,514 firm-year observations (75.03% of the sample). The variable *Bench* is equal to 1 in 1,293 firm-year observations, corresponding to the 17.59% of the entire sample. The variable *Corp_gov* is skewed right, meaning that most of the firms hold only one of the two corporate governance characteristics that we consider. In particular, 2,672 firm-year observations, corresponding to the 36.36% of the sample, have a value of *Corp_gov* equal to 2.

Table 3 reports the correlation matrix. *Entrenchment* has a significant and negative correlation with our measure of the opportunistic use of accruals according to Givoly and Hayn (2000) (*ACC1*), and a negative but not significant correlation with the Dechow and Dichev (2002) proxy for the opportunistic use of accruals (*ACC2*). The correlation between *Entrenchment* and the proxy for real activities manipulation (*RAM*) is positive but not significant. Also, *Entrenchment* is negatively correlated with *Corp_gov*, meaning that stronger internal corporate governance is likely to lead to less entrenched CEOs. The variable *Bench* has a positive and significant correlation with all our three earnings management proxies. The composite index for internal control (*Corp_Gov*) has a negative and significant correlation with *ACC1* and with *RAM*, while the correlation with *ACC2* is negative, but not significant at conventional levels. This suggests that stronger corporate governance characteristics are likely to reduce managers' ability to manipulate earnings. The current market-to-book ratio has a negative and significant correlation with *ACC1* and *RAM*, while its correlation with *ACC2* is not significant.

Table 2
Descriptive statistics.

Variables	25 th percentile	Mean	Median	75 th percentile	Standard deviation
CFO	0.0649	0.1167	0.1119	0.1666	0.1077
TACC	−0.0996	−0.0664	−0.0590	−0.0254	0.0924
Leverage	0.4837	1.1358	0.9373	1.513	1.1608
Market-to-book	1.4446	2.8265	2.2013	3.4509	2.3106
ACC1	−0.0647	−0.0066	−0.0221	0.0290	0.1677
ACC2	−0.0522	−0.0014	0	0.0520	0.1576
RAM	−0.1878	−0.0294	0.0068	0.1997	0.6650
Bench	0	0.1759	0	0	0.3808
Entrenchment	0	0.1626	0	0	0.3690
Corp_gov	1	1.2855	1	2	0.6002

The number of firm-year observations is 7,349. *CFO* is operating cash flow, scaled by beginning total assets; *TACC* is total accruals, scaled by beginning total assets; *Leverage* is the ratio between total liabilities and total assets; *Market-to-book* is the market-to-book ratio, computed as the ratio between the market value of equity and the book value of equity; *ACC1* is the opportunistic use of accruals, computed through a three-year average of total accruals centered at year *t*; *ACC2* is the opportunistic use of accruals, computed as in the Dechow and Dichev (2002) model. *RAM* is real activities manipulation, which includes the reduction of discretionary expenses and overproduction (Zang, 2012); *Bench* is a dummy variable equal to 1 if either net income divided by total assets is between 0 and 0.01, or the change in net income divided by total assets between time *t* − 1 and time *t* is between 0 and 0.01, and 0 otherwise; *Entrenchment* is a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies (CEO tenure, Entrenchment index, and managerial entrenchment) are equal to 1, and 0 otherwise; *Corp_gov* is a composite measure that is the sum of two dummy variables for internal corporate governance characteristics (board independence and CEO non-duality).

Table 3
Correlation matrix.

	CFO	TACC	Leverage	Market-to-book	ACC1	ACC2	RAM	Bench	Entrenchment
CFO	1								
TACC	−0.2228	1							
Leverage	−0.0745	0.0273	1						
Market-to-book	0.3492	−0.0066	0.1263	1					
ACC1	−0.1148	−0.0646	−0.0976	0.1369	1				
ACC2	0.0070	0.0871	−0.0176	−0.0007	−0.0340	1			
RAM	−0.1430	0.0504	0.0450	−0.1493	0.0055	0.0011	1		
Bench	0.0091	0.0773	0.0442	−0.0266	0.0124	0.0385	0.0294	1	
Entrenchment	−0.0165	0.0453	0.0582	−0.0453	−0.0265	−0.0081	0.0142	0.0327	1
Corp_gov	−0.0079	−0.0830	−0.0484	0.0067	−0.0494	−0.0085	−0.0470	−0.0394	−0.1156

Pairwise Spearman correlations. Correlations in bold are significant at the 10% level.

The number of firm-year observations is 7,349. *CFO* is operating cash flow, scaled by beginning total assets; *TACC* is total accruals, scaled by beginning total assets; *Leverage* is the ratio between total liabilities and total assets; *Market-to-book* is the market-to-book ratio, computed as the ratio between the market value of equity and the book value of equity; *ACC1* is the opportunistic use of accruals, computed through a three-year average of total accruals centered at year *t*; *ACC2* is the opportunistic use of accruals, computed as in the Dechow and Dichev (2002) model. *RAM* is real activities manipulation, which includes the reduction of discretionary expenses and overproduction (Zang, 2012); *Bench* is a dummy variable equal to 1 if either net income divided by total assets is between 0 and 0.01, or the change in net income divided by total assets between time *t* − 1 and time *t* is between 0 and 0.01, and 0 otherwise; *Entrenchment* is a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies (CEO tenure, Entrenchment index, and managerial entrenchment) are equal to 1, and 0 otherwise; *Corp_gov* is a composite measure that is the sum of two dummy variables for internal corporate governance characteristics (board independence and CEO non-duality).

5.2. The effect of managerial entrenchment on earnings management

Table 4 shows results from Eq. (1), which tests Hypotheses 1 and 2. Panel A reports results for Delaware firms, while Panel B reports the coefficients of interest for non-Delaware firms. Out of the 7,349 available firm-year observations, 4,525 correspond to firms domiciled in Delaware, and 2,824 to firms domiciled elsewhere. Table 4, Panel A, reports results from estimating Eq. (1) for each earnings management proxy (*ACC1*, *ACC2*, and *RAM*) and including only Delaware firms. The variable *Bench* has a positive and significant association with all the three earnings management proxies, consistent with marginal benchmark beaters using earnings management (either through accruals or through real activities) to meet the earnings benchmark. Regarding the main coefficient of interest, the interaction term *Bench*×*Entrenchment*, it has a negative and significant coefficient with all the three earnings management proxies (coeff. −0.0185, p-value 0.085 for *ACC1*, coeff. −0.0520, p-value 0.011 for *ACC2*, and coeff. −0.1587, p-value 0.058 for *RAM*), consistent with Hypothesis 1 that entrenched managers resort to a lower extent to earnings management practices to meet or beat earnings benchmarks. In Panel B we use the sample of non-Delaware firms. In this case we fail to find a significant effect of entrenchment on earnings management practices. This is also in line with our expectations and with the arguments of Kacperczyk (2009) and Wang et al. (2016) that, in absence of takeover defenses, managers of Delaware firms are subject to more pronounced pressures from the market for corporate control.

Table 4
The association between CEO entrenchment and earnings management.

VARIABLES	ACC1 _t	ACC2 _t	RAM _t
Panel A: Delaware firms			
Intercept	-0.3154* (0.070)	0.1842** (0.013)	-0.3586 (0.611)
Bench _t	0.0170* (0.053)	0.0247** (0.033)	0.0448* (0.078)
Entrenchment _{t-1}	-0.0058 (0.514)	-0.0109 (0.245)	0.0951* (0.091)
Bench _t * Entrenchment _{t-1}	-0.0185* (0.085)	-0.0520** (0.011)	-0.1587* (0.058)
Corp_Gov _{t-1}	-0.0115† (0.140)	-0.0221† (0.172)	-0.0199 (0.657)
O_index _{t-1}	0.0092 (0.168)	-0.0081 (0.200)	0.0183 (0.508)
Big 8 _t	-0.1790† (0.110)	-0.1451 (0.272)	-0.3384 (0.222)
Leverage _t	-0.0015 (0.692)	-0.0013 (0.671)	0.0209* (0.022)
ROA _t	-0.1933** (0.022)	0.1216** (0.014)	0.0493 (0.691)
Total assets (ln) _t	0.0397 (0.147)	-0.0020 (0.859)	-0.0046 (0.943)
CFO (stand. dev.) _t	0.1873 (0.258)	0.3110* (0.065)	0.4933 (0.355)
Growth _t	0.0847 (0.215)	-0.0137 (0.136)	-0.1917** (0.022)
Market share _t	-0.0910* (0.059)	-0.0011 (0.965)	-0.0995 (0.315)
Observations	4,525	4,525	4,525
R ²	0.436	0.129	0.317
Panel B: non-Delaware firms			
Bench _t	0.0019 (0.560)	0.0159** (0.035)	0.0565† (0.148)
Entrenchment _{t-1}	-0.0067 (0.482)	-0.0067 (0.431)	0.0835† (0.152)
Bench _t * Entrenchment _{t-1}	0.0030 (0.657)	-0.0196 (0.234)	-0.0543 (0.253)
Controls	YES	YES	YES
Observations	2,824	2,824	2,824
R ²	0.497	0.147	0.332

The values in brackets represent two-tailed p-value significance levels.

The model is estimated with firm and year fixed effects, and with clustered standard errors by firm and year.

ACC1 is the opportunistic use of accruals, computed through a three-year average of total accruals centered at year t ; ACC2 is the opportunistic use of accruals, computed as in the Dechow and Dichev (2002) model; RAM is real activities manipulation, which includes the reduction of discretionary expenses and overproduction (Zang, 2012); Bench is a dummy variable equal to 1 if either net income divided by total assets is between 0 and 0.01, or the change in net income divided by total assets between time $t - 1$ and time t is between 0 and 0.01, and 0 otherwise; Entrenchment is a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies (CEO tenure, Entrenchment index, and managerial entrenchment) are equal to 1, and 0 otherwise; Corp.gov is a composite measure that adds one for each observation in which the two dummy variables for internal corporate governance characteristics (board independence and CEO non-duality) takes the value of 1; O_index is computed as the difference between the G -index and the E -index; Big 8 is a dummy variable that takes the value of 1 if firms' auditor is one of the Big 8, and 0 otherwise; Leverage is the ratio between total liabilities and total assets. ROA is the ratio between income before extraordinary assets and beginning total assets; Total assets (ln) is the natural logarithm of firms' total assets; CFO (stand. dev.) is the standard deviation of operating cash flows divided by total assets and computed by using rolling firm-specific three-year windows; Growth is the percentage change in sales; Market share is the ratio between firms' sales and total 3-digit SIC codes industry sales.

*** indicates two-tailed significance at 1% level.

** indicates two-tailed significance at 5% level.

* indicates two-tailed significance at 10% level.

† indicates one-tailed significance at, at least, a 10% level.

5.3. The moderating effect of entrenchment on the relation between earnings management and firm value

Table 5 depicts the results for Eq. (2), which tests Hypothesis 3. Once again, we study separately Delaware and non-Delaware firms, and in this case each sample (Delaware and non-Delaware) is split in terciles of each earnings management proxy (with Panel A containing firms with the highest earnings management scores, and Panel C the ones with lower earnings management). The main coefficient of interest is, again, the interaction term $Bench \times Entrenchment$. Table 5, Panel A, reports results for the high earnings management terciles (for each earnings management proxy), for Delaware and non-Delaware firms. As we can see, the coefficient on $Bench \times Entrenchment$ is significantly positive for the sample of Delaware firms, for each of the three earnings management proxies

Table 5

The moderating effect of entrenchment on the relation between earnings management and firm value.

Panel A: High EM	Delaware firms			Non-Delaware firms		
	High ACC1	High ACC2	High RAM	High ACC1	High ACC2	High RAM
	Dependent variable: ΔAdj_MtoB_t			Dependent variable: ΔAdj_MtoB_t		
Bench _t	0.0325 (0.850)	0.1265 (0.483)	0.1149 (0.274)	-0.1721 (0.300)	0.0121 (0.957)	0.1793 (0.239)
Entrenchment _{t-1}	0.0810 (0.772)	-0.1725 (0.524)	0.1273 (0.640)	0.2145 (0.514)	0.0382 (0.910)	-0.1301 (0.554)
Bench _t × Entrenchment _{t-1}	1.1194** (0.018)	0.8326** (0.019)	0.6342† (0.085)	0.2138 (0.468)	0.2022 (0.504)	-0.1999 (0.470)
Controls	YES	YES	YES	YES	YES	YES
Observations	1,508	1,508	1,508	941	941	941
R ²	0.372	0.491	0.430	0.253	0.373	0.293
Panel B: Medium EM	Medium ACC1	Medium ACC2	Medium RAM	Medium ACC1	Medium ACC2	Medium RAM
Bench _t	-0.2651 (0.289)	-0.2111 (0.349)	0.0512 (0.695)	0.0438 (0.664)	0.1763* (0.089)	0.0737 (0.622)
Entrenchment _{t-1}	-0.0308 (0.841)	0.1985† (0.132)	0.2557† (0.083)	0.0083 (0.972)	0.3759* (0.012)	0.2549 (0.359)
Bench _t × Entrenchment _{t-1}	0.6720** (0.014)	0.7270† (0.061)	-0.2447 (0.676)	-0.2038 (0.380)	-0.4032 (0.300)	-0.2589 (0.414)
Controls	YES	YES	YES	YES	YES	YES
Observations	1,508	1,508	1,508	941	941	941
R ²	0.428	0.445	0.391	0.460	0.457	0.323
Panel C: Low EM	Low ACC1	Low ACC2	Low RAM	Low ACC1	Low ACC2	Low RAM
Bench _t	0.1706 (0.206)	-0.0917 (0.694)	-0.3071 (0.299)	0.0912 (0.619)	-0.1540 (0.207)	0.0755 (0.729)
Entrenchment _{t-1}	0.3181 (0.282)	0.2869 (0.471)	-0.0959 (0.814)	-0.1288 (0.479)	-0.3095 (0.287)	0.0667 (0.769)
Bench _t × Entrenchment _{t-1}	-0.4165 (0.429)	0.2719 (0.694)	0.9464 (0.301)	-0.1284 (0.706)	-0.1610 (0.529)	-0.1285 (0.663)
Controls	YES	YES	YES	YES	YES	YES
Observations	1,509	1,509	1,509	942	942	942
R ²	0.390	0.436	0.314	0.352	0.306	0.211

The values in brackets represent two-tailed p-value significance levels.

The model is estimated with firm and year fixed effects, and with clustered standard errors by firm and year.

ΔAdj_MtoB is the change from year $t - 1$ to year t of the adjusted market-to-book ratio. The adjusted market-to-book ratio is computed as the difference between the market-to-book ratio, computed as the market value of equity to the book value of equity, and the median of the market-to-book ratio, computed by year and industry; $Bench$ is a dummy variable equal to 1 if either net income divided by total assets is between 0 and 0.01, or the change in net income divided by total assets between time $t - 1$ and time t is between 0 and 0.01, and 0 otherwise; $Entrenchment$ is a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies (CEO tenure, Entrenchment index, and managerial entrenchment) are equal to 1, and 0 otherwise; The control variables include $Corp_gov$, O_index , $Big\ 8$, $Leverage$, ROA , $Total\ assets$ (ln), CFO (stand. dev.), $Growth$, and $Market\ share$. $Corp_gov$ is a composite measure that adds one for each observation in which the two dummy variables for internal corporate governance characteristics (board independence and CEO non-duality) takes the value of 1; O_index is computed as the difference between the G -index and the E -index; $Big\ 8$ is a dummy variable that takes the value of 1 if firms' auditor is one of the Big 8, and 0 otherwise; $Leverage$ is the ratio between total liabilities and total assets. ROA is the ratio between income before extraordinary assets and beginning total assets; $Total\ assets$ (ln) is the natural logarithm of firms' total assets; CFO (stand. dev.) is the standard deviation of operating cash flows divided by total assets and computed by using rolling firm-specific three-year windows; $Growth$ is the percentage change in sales; $Market\ share$ is the ratio between firms' sales and total 3-digit SIC codes industry sales.

*** indicates two-tailed significance at 1% level.

** indicates two-tailed significance at 5% level.

* indicates two-tailed significance at 10% level.

† indicates one-tailed significance at, at least, a 10% level.

(coeff. 1.194, p-value 0.018 for high levels of ACC1, coeff. 0.8326, p-value 0.019 for high levels of ACC2, and coeff. 0.6342, p-value 0.085 for high levels of RAM). The results indicate that marginal beaters with high levels of earnings management and with entrenched managers are associated with increases in future firm value, and that this positive effect is present only in firms domiciled in Delaware. This is consistent with earnings management being more informative and less opportunistic in firms domiciled in Delaware with more entrenched managers. If we turn to non-Delaware firms, we do not observe any moderating effect of entrenchment on the relation between firm value and earnings management.

Panels B and C report results corresponding to firm-year observations with medium and low levels of earnings management, respectively. In Panel B, for medium levels of earnings management, the coefficient on $Bench \times Entrenchment$ is only significant for the accruals-based earnings management proxies and for Delaware firms only. In Panel C, the association between $Bench \times Entrenchment$ and firm value is not significant at conventional levels for any of the low levels of earnings management proxies. This lack of

Table 6

The effect of entrenchment on earnings management and firm value in Delaware firms, using Bench2 as the earnings benchmark proxy.

	Panel A: Effect on earnings management Dependent variable: EM _t			Panel B: Effect on firm value for firms with high EM Dependent variable: ΔAdj_MtoB _t		
	ACC1 _t	ACC2 _t	RAM _t	ACC1 _t	ACC2 _t	RAM _t
Bench2 _t	0.0159 (0.294)	0.0455 (0.282)	0.1421 (0.205)	0.4104 (0.417)	0.0473 (0.857)	-0.1135 (0.818)
Entrenchment _{t-1}	-0.0047 (0.515)	-0.0212 (0.065)	0.0636 (0.250)	0.3022 (0.338)	-0.1744 (0.575)	-0.1662 (0.356)
Bench2 _t × Entrenchment _{t-1}	-0.0734 [†] (0.182)	-0.0682 [†] (0.169)	-0.2014 [†] (0.118)	1.4741 ^{***} (0.004)	1.8353 ^{***} (0.004)	1.4335 ^{***} (0.000)
Controls	YES	YES	YES	YES	YES	YES
Observations	3,481	3,481	3,481	1,160	1,160	1,160
R ²	0.469	0.150	0.373	0.414	0.448	0.447

The values in brackets represent two-tailed p-value significance levels.

The model is estimated with firm and year fixed effects, and with clustered standard errors by firm and year.

ACC1 is the opportunistic use of accruals, computed through a three-year average of total accruals centered at year t ; ACC2 is the opportunistic use of accruals, computed as in the Dechow and Dichev (2002) model; RAM is real activities manipulation, which includes the reduction of discretionary expenses and overproduction (Zang, 2012); ΔAdj_MtoB is the change from year $t-1$ to year t of the adjusted market-to-book ratio. The adjusted market-to-book ratio is computed as the difference between the market-to-book ratio, computed as the market value of equity to the book value of equity, and the median of the market-to-book ratio, computed by year and industry; Bench2 is a dummy variable that takes the value of 1 if the difference between actual EPS and the consensus forecast is between 0 and 0.01, and 0 otherwise; Entrenchment is a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies (CEO tenure, Entrenchment index, and managerial entrenchment) are equal to 1, and 0 otherwise; The control variables include Corp_gov, O_index, Big 8, Leverage, ROA, Total assets (ln), CFO (stand. dev.), Growth, and Market share. Corp_gov is a composite measure that adds one for each observation in which the two dummy variables for internal corporate governance characteristics (board independence and CEO non-duality) takes the value of 1; O_index is computed as the difference between the G-index and the E-index; Big 8 is a dummy variable that takes the value of 1 if firms' auditor is one of the Big 8, and 0 otherwise; Leverage is the ratio between total liabilities and total assets. ROA is the ratio between income before extraordinary assets and beginning total assets; Total assets (ln) is the natural logarithm of firms' total assets; CFO (stand. dev.) is the standard deviation of operating cash flows divided by total assets and computed by using rolling firm-specific three-year windows; Growth is the percentage change in sales; Market share is the ratio between firms' sales and total 3-digit SIC codes industry sales.

*** indicates two-tailed significance at 1% level.

** indicates two-tailed significance at 5% level.

* indicates two-tailed significance at 10% level.

[†] indicates one-tailed significance at, at least, a 10% level.

significant coefficients is found both in Delaware firms, and in non-Delaware firms.

Finally, we also replicate the results in Table 5 using industry adjusted ROA, as in Gunny (2010), instead of industry adjusted market to book. Inferences are in line with those obtained with the market to book ratio. Overall, the findings of Table 5 give support to Hypothesis 3.

5.4. Alternative measure of earnings benchmark

In our main tests, we identify firms suspect of managing earnings as those that beat prior year earnings by a small margin, or that report a very small profit. In this subsection, and to check the robustness of our results, we focus on firms that beat the analysts' consensus forecast marginally. We obtain data about earnings per share (EPS) analysts' forecasts from I/B/E/S. To compare the EPS analysts' forecast with the actual EPS, we also obtain data about actual EPS from I/B/E/S. Our second proxy for scenarios where earnings management might have taken place to beat targets (Bench2) takes the value of 1 if the difference between actual EPS and the analysts' forecast is between 0 and 0.01 (Ayers et al., 2006; Roychowdhury, 2006), and 0 otherwise. Using this alternative proxy, the sample is reduced to 5,791 firm-year observations. Out of this reduced sample, 217 firm-year observations have a value of Bench2 equal to 1. Also, 922 out of 5,791 firm-year observations correspond to more entrenched CEOs. Finally, out of 5,791 firm-year observations, 3,481 correspond to Delaware firms, while 2,310 correspond to firms domiciled elsewhere.

We then re-run Eqs. (1) and (2) using Bench2 instead of Bench. Table 6 reports results for Delaware firms. In Panel A we show the results of entrenchment on earnings management, and in Panel B we show the moderating effects of entrenchment on the relation between earnings management and firm value. The results are in line with those obtained in the main tables. The coefficient of Bench2 × Entrenchment in Panel A is negative and significant in a one tail test for all earnings management proxies (coeff. -0.0734, p-value 0.182 for ACC1, coeff. -0.0682, p-value 0.169 for ACC2, and coeff. -0.2014, p-value 0.118 for RAM), consistent with the hypothesis that more entrenched firms manage earnings less. In Panel B, Bench2 × Entrenchment has positive and significant associations with firm value for high levels of all our earnings management proxies and for firms domiciled in Delaware (coeff. 1.4741, p-value 0.004 for high levels of ACC1, coeff. 1.8353, p-value 0.004 for high levels of ACC2, and coeff. 1.4335, p-value 0.000 for high levels of RAM), consistent with the hypothesis that entrenchment leads to more informative and less opportunistic earnings management, and, therefore, to earnings management not being detrimental to firm value when managers are entrenched. In unreported tests, when we use the sample of non-Delaware firms, results are also in line with those obtained in our main tests, in that we fail to find any significant effect of entrenchment on earnings management or any moderating effect of entrenchment on the relation

between earnings management and firm value. Finally, we fail to find any significant association between the interaction term $Bench2 \times Entrenchment$ and firm value for medium and low levels of earnings management, regardless of whether firms are domiciled in Delaware or somewhere else.

5.5. Propensity-score matched sample

The results from our prior tests can be affected by endogeneity and self-selection problems. The associations that we find might be attributable to certain differential characteristics of firms with entrenched managers (i.e., profitability, leverage) that lead to a differential earnings management behavior. To appease endogeneity and self-selection concerns, we replicate our prior tests with a propensity score matched sample. Using a propensity-score matching model we are able to generate samples where the main observable characteristics of firms with non-entrenched and entrenched managers are not statistically different. The use of propensity score matching is becoming common in accounting research to cope with this type of concerns. For example, Lawrence et al. (2011) use it to analyze differences in audit quality between big 4 and non big 4 firms controlling for client characteristics.⁵

To create the propensity-score matched samples, we first use a logit model to estimate the probability of entrenchment. In this logit model, we take into account attributes that previous literature considers as influencing the probability of being entrenched. Coughlan and Schmidt (1985) and Warner et al. (1988) find that managerial entrenchment, measured through the likelihood of CEO turnover, is negatively related to firm performance. As in Gunny (2010), we measure firm performance through the adjusted ROA, which is computed as the difference between firm-specific ROA and the median ROA computed by year and by industry. Faleye (2007) controls for CEO age to determine the probability of managerial turnover, which is related to managerial entrenchment. We also include leverage and growth. Given these attributes, and estimating the model by year, the logit model is as follows:

$$Entrenchment_{i,t} = \alpha + \beta_1 Adjusted\ ROA_{i,t} + \beta_2 CEO\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Sales\ Growth_{i,t} + \varepsilon_{i,t} \quad (6)$$

The matching is done at the year level and without replacements. Using model (6), we obtain a propensity-score matched sample of 1,930 firm-year observations, of which 965 correspond to firms with less entrenched CEOs, and 965 correspond to firms with more entrenched CEOs. To validate our propensity-score matched sample, we compute the difference in means of the independent variables in Eq. (6) for both the full sample (7,349 firm-year observations) and the propensity-score matched sample (1,930 firm-year observations), based on non-entrenchment and entrenchment groups. In the full sample, the adjusted ROA, CEO age, and leverage are significantly higher in firms with more entrenched managers. In the propensity-score matched samples, all the firms' characteristics used in Eq. (6) have no significant differences in means across the two subsamples of entrenched and non-entrenched CEOs.

Table 7 shows results from testing the association between managerial entrenchment and both earnings management and firm value using the propensity-score matched sample. The results reported in Table 7 are limited to observations from Delaware firms. In the propensity-score matched sample, there are 1,040 observations referring to Delaware firms, out of the 1,930 firm-year observations obtained through the propensity score matching.

Table 7, Panel A, includes the results of estimating Eq. (1) for Delaware observations included in the propensity-score matched sample. The association between the interaction term $Bench \times Entrenchment$ and the opportunistic use of accruals is negative and significant in a one tail test with both $ACC1$ (coeff. -0.0135 , p-value 0.187) and $ACC2$ (coeff. -0.0396 , p-value 0.192). Results are similar when we use RAM as the dependent variable (coeff. -0.2640 , p-value 0.179). We also run Eq. (1) for the non-Delaware firms included in the propensity-score matched sample (890 firm-year observations). In non-Delaware firms, the interaction term $Bench \times Entrenchment$ is not significant at conventional levels, regardless of the earnings management proxy we use as dependent variable (the untabulated coefficients are -0.0087 , p-value 0.598 for $ACC1$; -0.0208 , p-value 0.466 for $ACC2$; and -0.0489 , p-value 0.835 for RAM). These results confirm the negative association between managerial entrenchment and earnings management, and that this association only holds for firms domiciled in Delaware.

Table 7, Panel B, reports results when we run Eq. (2) for Delaware firms included in the propensity-score matched sample with high levels of earnings management. The positive and significant association between $Bench \times Entrenchment$ and firm value is confirmed for Delaware firms with high $ACC1$ (coeff. $= 1.4350$, p-value $= 0.090$) and high RAM (coeff. $= 1.6791$, p-value $= 0.077$). However, the coefficient is not significant at conventional levels for Delaware firms with high $ACC2$. If we replicate the analysis for non-Delaware firms, the interaction between $Bench$ and $Entrenchment$ has no significant association at conventional levels with $\Delta Adj_MtoB_{i,t}$ regardless of the earnings management proxy used to obtain the portfolios of observation. Finally, we run Eq. (2) using, separately, Delaware and non-Delaware observations included in the propensity-score matched sample, and with medium and low levels of earnings management, and the coefficients related to the interaction term $Bench \times Entrenchment$ are not significant at conventional levels in none of the cases.

Taken all these results together, the use of the propensity-score matched sample supports the negative association between managerial entrenchment and earnings management in firms marginally beating earnings benchmarks, and, in general, they also support the moderating effect of entrenchment on the association between earnings management and firm value. As in the case of our main results, these associations only hold in firms domiciled in Delaware.

⁵ Additional examples of studies using propensity score matched samples to resolve these issues include, among others, Armstrong et al. (2010), Boone et al. (2010), Chen et al. (2012), Bryant-Kutcher et al. (2013), Cheng et al. (2013), Clatworthy and Peel (2013), Tang et al. (2013), He et al. (2014).

Table 7

The effect of entrenchment on earnings management and firm value in Delaware firms, using the propensity-score matched sample.

	Panel A: Effect on earnings management Dependent variable: EM _t			Panel B: Effect on firm value for firms with high EM Dependent variable: ΔAdj_MtoB _t		
	ACC1 _t	ACC2 _t	RAM _t	ACC1 _t	ACC2 _t	RAM _t
Bench _t	0.0112 (0.281)	0.0055 (0.796)	−0.0135 (0.795)	−0.2520 (0.631)	0.6896 (0.539)	−0.3678 (0.456)
Entrenchment _{t−1}	−0.0126 [†] (0.163)	−0.0023 (0.906)	0.0536 (0.549)	1.1481 [†] (0.012)	0.1181 (0.893)	0.1246 (0.851)
Bench _t [*]	−0.0135 [†] (0.187)	−0.0396 [†] (0.192)	−0.2640 [†] (0.179)	1.4350 [†] (0.090)	1.6802 (0.371)	1.6791 [†] (0.077)
Controls	YES	YES	YES	YES	YES	YES
Observations	1,040	1,040	1,040	346	346	346
R ²	0.801	0.528	0.558	0.832	0.866	0.792

The values in brackets represent two-tailed p-value significance levels.

The model is estimated with firm and year fixed effects, and with clustered standard errors by firm and year.

ACC1 is the opportunistic use of accruals, computed through a three-year average of total accruals centered at year t ; ACC2 is the opportunistic use of accruals, computed as in the Dechow and Dichev (2002) model; RAM is real activities manipulation, which includes the reduction of discretionary expenses and overproduction (Zang, 2012); ΔAdj_MtoB is the change from year $t - 1$ to year t of the adjusted market-to-book ratio. The adjusted market-to-book ratio is computed as the difference between the market-to-book ratio, computed as the market value of equity to the book value of equity, and the median of the market-to-book ratio, computed by year and industry; Bench is a dummy variable equal to 1 if either net income divided by total assets is between 0 and 0.01, or the change in net income divided by total assets between time $t - 1$ and time t is between 0 and 0.01, and 0 otherwise; Entrenchment is a dummy variable that takes the value of 1 if at least two of the three entrenchment proxies (CEO tenure, Entrenchment index, and managerial entrenchment) are equal to 1, and 0 otherwise; The control variables include Corp_gov, O_index, Big 8, Leverage, ROA, Total assets (ln), CFO (stand. dev.), Growth, and Market share. Corp_gov is a composite measure that adds one for each observation in which the two dummy variables for internal corporate governance characteristics (board independence and CEO non-duality) takes the value of 1; O_index is computed as the difference between the G-index and the E-index; Big 8 is a dummy variable that takes the value of 1 if firms' auditor is one of the Big 8, and 0 otherwise; Leverage is the ratio between total liabilities and total assets. ROA is the ratio between income before extraordinary assets and beginning total assets; Total assets (ln) is the natural logarithm of firms' total assets; CFO (stand. dev.) is the standard deviation of operating cash flows divided by total assets and computed by using rolling firm-specific three-year windows; Growth is the percentage change in sales; Market share is the ratio between firms' sales and total 3-digit SIC codes industry sales.

*** Indicates two-tailed significance at 1% level.

** indicates two-tailed significance at 5% level.

* indicate two-tailed significance at 10% level.

† indicates one-tailed significance at, at least, a 10% level.

5.6. Additional sensitivity checks

We use two alternative proxies for the opportunistic use of accruals. First, we adjust the proxy in our main tests, ACC, by industry. To do so, we calculate the difference between the firm-specific three-year average of total accruals and the average computed by industry. The more positive the value, the more aggressive the firm-specific use of accruals with respect to other firms in the same industry. Second, we use the forward-looking discretionary accruals model of Dechow et al. (2003), computed at the industry-year level, and using the signed values of the residuals. This model extends the Jones (1991) model and explains accruals with change in sales (adjusted by changes in receivables), property plant and equipment and past accruals. These alternative proxies confirm the negative association between managerial entrenchment in firms just meeting/beating earnings benchmarks and the opportunistic use of accruals, and that this association only holds in firms domiciled in Delaware.

Finally, we use alternative proxies for entrenchment. Instead of using a composite index for managerial entrenchment, we include in Eq. (1), alternatively, the three dummy variables that compose our proxy for CEOs' entrenchment (CEO tenure, the E-index, and managerial ownership) at time $t - 1$. These three individual proxies are bound to be noisier than our aggregate index. Untabulated results show that the interaction between Bench and CEO tenure has no significant association with any earnings management proxy, regardless of where the firm is domiciled. The interaction between Bench and the E-index has a negative and significant association with all the three earnings management proxies only in Delaware firms, while this association becomes no longer significant for firms domiciled elsewhere. Finally, both in Delaware and in non-Delaware firms, the interaction between Bench and managerial ownership is not significant for any of our earnings management proxies. Some of these non-significant results are somehow expected, as only a very small percentage of the sample is classified as entrenched using the managerial ownership proxy (3.48% of the full sample), and most firms are classified as entrenched using tenure (75.03% of the full sample). Therefore, the only proxy that provides by itself large cross-sectional variation is the E-index.

6. Summary and conclusions

Although part of the corporate governance literature argues that managerial entrenchment amplifies the conflict of interests between CEOs and shareholders, an alternative stream of research suggests that managerial entrenchment helps align shareholders and managerial interests, reducing managerial "myopia". Following this alternative stream of literature, we argue that more entrenched and less entrenched managers differ in their earnings management behavior.

To examine these ideas, we study takeover deterrence mechanisms in the United States. Specifically, our research focuses on an empirical setting—firms incorporated in Delaware—that provides a unique context to study the effects of managerial entrenchment on firm decisions, including decisions about earnings management, because Delaware corporate law allowed managers to increase their protection against hostile takeovers and, therefore facilitated their extraction of shareholder rents.

In this setting, we show that, when there are incentives to manipulate earnings, such as meeting or marginally beating earnings benchmarks, more entrenched CEOs are less likely to engage in an opportunistic use of accruals and in real activities manipulation to achieve financial reporting goals. We also show that the opportunistic use of accruals and real earnings management in firms just meeting/beating earnings benchmarks are less detrimental to firm value if managers are more entrenched. This result supports the argument that more entrenched CEOs, being less pressured by capital markets and other stakeholders, are likely to manage reported earnings in a way that is more informative and less detrimental for shareholders.

By examining different institutional contexts, our findings also have clear public policy implications. In particular, we compare firms domiciled in Delaware with firms domiciled elsewhere and we find that the effects of entrenchment in reducing earnings management and in increasing firm value only hold in Delaware. These results suggest that corporate laws that allow managers to isolate from external takeover threats through the implementation of different entrenchment measures may have favorable effects on shareholder wealth. Overall, our results show that entrenchment is not always detrimental for shareholders' interests, and that it leads to less myopic managerial behavior in the form of reduced accruals-based and real earnings management to meet or beat earnings targets.

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