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## Passing Probation: Earnings Management by Interim CEOs and Its Effect on Their Promotion Prospects

**Guoli Chen**

INSEAD

1 Ayer Rajah Avenue

Singapore 138676

Tel: (+65) 6799 5354

guoli.chen@insead.edu

**Shuqing Luo**

National University of Singapore

15 Kent Ridge Drive

Singapore, 119245

Tel: (+65) 6516 7435

bizlsq@nus.edu.sg

**Yi Tang**

Hong Kong Polytechnic University

Hung Hom, Kowloon, Hong Kong

Tel: (+852) 3400 3645

msytang@polyu.edu.hk

**Jamie Y. Tong**

University of Western Australia

35 Stirling Highway

Crawley WA 6009

Australia

Tel: (+61) 08 6488 3867

Email: jamie.tong@uwa.edu.au

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**Passing Probation:  
Earnings Management by Interim CEOs and Its Effect on Their Promotion Prospects**

**Abstract**

Drawing on CEO succession research and the impression management literature, we examine earnings management by interim CEOs, its impact on interim CEOs' promotion prospects, and the moderating effect of governance mechanisms on the relationship between the two. Based on a sample of 145 interim CEO succession events in U.S. public firms from 2004 to 2008, we find that (1) an interim CEO is more likely than a non-interim CEO to engage in earnings management to improve firm earnings performance ("income-increasing earnings management"); (2) the greater the income-increasing earnings management, the more likely the interim CEO will be promoted to the permanent position; and (3) the relationship between earnings management and the likelihood of interim CEO promotion is weakened when effective internal and external governance mechanisms are in place.

**Key Words:** Interim CEO Succession, Impression Management, Earnings Management, Corporate Governance

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3 *“Being passed over at the end of such a (succession) competition is painful... it hurts, it stings...*  
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6 *it becomes a public embarrassment...” (Korn, 2012).*

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8 — Commenting on the departure of Ross Levinsohn, who served as an interim CEO at Yahoo!  
9 from May to July 2012 and was ultimately not selected for the permanent position.  
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## 11 12 INTRODUCTION

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15 CEO succession is among the most important research topics in the field of strategic  
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17 management (e.g., Beatty & Zajac, 1987; Finkelstein, Hambrick, & Cannella, 2009; Shen &  
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19 Cannella, 2002a, 2002b; Wiersema & Zhang, 2011; Zhang, 2006, 2008; Zhang & Rajagopalan,  
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21 2003). An “interim succession episode” (Ballinger & Marcel, 2010: 264) occurs when a firm is  
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23 unable to transit directly from an outgoing to a new CEO, and thus resorts to an “interim” CEO  
24  
25 to lead the firm until a permanent successor is appointed (Brady, 2006).  
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29 The role of interim CEOs in firm decision making and outcomes has been attracting  
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31 increasing attention (Ballinger & Marcel, 2010; Hymowitz, 2006). Prior studies suggest that  
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33 interim CEOs typically work in more challenging contexts than their peers in normal succession  
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35 occasions, as an interim succession is often considered as an “unplanned” leadership change with  
36  
37 ambiguous strategic directions (Johnson, 2005; Marcel, Cowen, & Ballinger, 2013; Scott, 2009).  
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39 Evidence suggests that interim succession tends to be associated with worse subsequent firm  
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41 performance, largely due to the disruption to strategic decision making and the fragmentation of  
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43 the top management team (Ballinger & Marcel, 2010; Intintoli, Zhang, & Davidson, 2014).  
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45 However, questions such as what really happens during an interim succession episode, how  
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47 likely it is for an interim CEO to be promoted to the permanent position, and what factors  
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49 influence the succession outcome remain largely under-explored. Given the importance of CEO  
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51 succession for firm performance and the fact that CEO selection is among the most important  
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3 board decisions (Finkelstein *et al.*, 2009), it is worth examining more closely the process-related  
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5 questions concerning interim CEO succession.  
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8 Drawing on the CEO succession research (e.g., Ballinger & Marcel, 2010; Shen &  
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10 Cannella, 2002a, 2002b; Zajac & Westphal, 1996; Zhang, 2008) and impression management  
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12 theory (e.g., Goffman, 1959; Leary & Kowalski, 1990; Tedeschi & Melburg, 1984), we posit that  
13  
14 an interim CEO is more likely to actively engage in earnings management to improve firm  
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16 earnings performance (“income-increasing earnings management”) so as to create a positive  
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18 impression on key stakeholders (e.g., the board and shareholders) who are either directly or  
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20 indirectly involved in CEO appointment decisions. Earnings management is essentially an  
21  
22 attempt by top management to influence reported earnings, using within-GAAP (Generally  
23  
24 Accepted Accounting Principles) accounting methods (or changing methods) (Daley & Vigeland,  
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26 1983; Dechow & Skinner, 2000)<sup>1</sup>. It is a deliberate attempt by corporate executives to manage  
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28 firm earnings (Davidson, Jiraporn, & Nemeč, 2004), for example, by recognizing one-time non-  
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30 recurring items, deferring or accelerating expense or revenue transactions, or using other means  
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32 to influence short-term earnings. Such attempts have been suggested as an effective “impression  
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34 management” tactic (Davidson *et al.*, 2004). We argue that income-increasing earnings  
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36 management enhances an interim CEO’s prospect of being promoted to the permanent position  
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38 (i.e., likelihood of interim CEO promotion).  
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48 <sup>1</sup> We focus on “within-GAAP earnings management” which differs from earnings manipulations and earnings  
49 restatements in terms of magnitude, intentions, and the economic significance of the accounting choices and whether  
50 such choices violate GAAP. Earnings manipulations are identified and punished by the Security Exchange  
51 Commission (SEC). They represent the most egregious misstatements in which the financial statements materially  
52 violate GAAP. Earnings restatements relate to accounting irregularities that often include immaterial misstatements  
53 and unintentional errors. While both earnings manipulations and earnings restatements can have serious legal  
54 implications for senior executives (for example, CEOs and CFOs may be prosecuted for engaging in accounting  
55 manipulations) (Feng, Ge, Luo, & Shevlin, 2011), within-GAAP earnings management is associated with minimum  
56 legal consequences and is much easier to get away with (DeFond, 2012). Indeed some executives have admitted that  
57 “they would work aggressively within the confines of GAAP to reduce the perception of uncertainty about their  
58 firms’ prospects” (Graham, Harvey, & Rajgopal, 2005: 50).  
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3 We further investigate whether internal and external governance mechanisms can  
4 moderate the relationship between income-increasing earnings management and interim CEO  
5 promotion. Specifically, we examine whether board functioning captured by its independence, its  
6 ownership profile, its busyness, and its financial/accounting expertise, as well as external  
7 monitoring by financial intermediaries, can mitigate the positive relationship between the extent  
8 of earnings management and the likelihood of interim CEO promotion. We find strong support  
9 for these effects based on a sample of 145 interim CEO succession events in U.S. public firms  
10 from 2004 to 2008.  
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22 Our research contributes to the management literature mainly in the following aspects.  
23 First, we add to the knowledge of CEO succession. Interim CEO succession is not rare. For  
24 example, Ballinger and Marcel (2010) reported that 17 percent of the successions occurring in a  
25 sample of over 2,500 publicly-traded U.S. firms between 1996 and 1998 involved appointing an  
26 interim CEO for a meaningful period of time. In our sample, about 23 percent of the interim  
27 CEOs were eventually promoted to the permanent position. Our results serve to inform both  
28 researchers and practitioners by identifying factors that influence the interim CEO succession  
29 process. While prior CEO succession research has focused on CEOs hired on a permanent basis  
30 (e.g., Cannella & Shen, 2001; Zhang & Rajagopalan, 2004), to our best knowledge, the process  
31 by which an interim CEO gains a permanent position has not been comprehensively examined.  
32 Our paper therefore contributes to the CEO succession literature by explicitly investigating this  
33 important leadership transition and showing what really happens during an interim succession as  
34 well as revealing the factors determining interim CEO promotion.  
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52 Second, we draw from prior research on impression management (Leary & Kowalski,  
53 1990; Davidson et al., 2004) and use the setting of interim CEO succession to emphasize  
54 executives' career incentive to engage in income-increasing earnings management (Graham *et al.*,  
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3 2005), an effective tactic of impression management. Prior research has documented that  
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5 earnings management affects firms' cash flow and stock return (Dechow & Skinner, 2000; Healy  
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7 & Wahlen, 1999), but has not paid enough attention to its role in the context of CEO succession.  
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10 If the interim CEO succession decision is mainly made based on managed reported earnings,  
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12 which may not reflect the firm's true quality, then such a decision may harm the long-term  
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14 interests of shareholders. We therefore also contribute to the corporate governance research by  
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16 highlighting the importance of internal and external governance mechanisms that help prevent  
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18 executives from engaging in opportunistic earnings management in interim successions.  
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## 22 **THEORY AND HYPOTHESES**

### 23 **Interim CEO Succession**

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27 CEO succession has received extensive attention in the strategic management field  
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29 mainly because the associated regime change offers scholars an opportunity to examine the  
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31 internal political struggles and firm performance consequences (see Finkelstein *et al.*, 2009 for a  
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33 review). CEO succession varies in the degree of "planned" activity, ranging from a "relay  
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35 succession"—where the baton of top position is passed to the heir or heiress apparent in a well-  
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37 planned manner (Vancil, 1987; Zhang & Rajagopalan, 2004), to an "interim CEO succession"—  
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39 which is more disruptive as a temporary appointee is hired in the absence of a definitive one  
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41 (Ballinger & Marcel, 2010; Brady, 2006). The last decade has witnessed an increasing number of  
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43 firms using interim succession, as well as a growing research interest in interim CEOs (Ballinger  
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45 & Marcel, 2010; Brady, 2006; Mooney, Semadeni, & Kesner, 2012, 2013). Prior research  
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47 suggests that the decision to employ an interim CEO is usually made under duress, typically  
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49 when the firm does not have a sound succession plan and the board lacks alternative candidates  
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51 (Ballinger & Marcel, 2010). An interim CEO succession is more likely to occur when firm  
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3 performance is weaker, firm size is smaller, and the outgoing CEO is younger and has had a  
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5 shorter tenure (Brady, 2006; Marcel *et al.*, 2013).  
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8 The interim period begins from the moment the interim appointment is announced and  
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10 continues until the board finds a permanent successor, either by promoting the interim CEO or by  
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12 appointing a new one. The interim period is relatively short, ranging from one to four quarters in  
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14 most cases (Ballinger & Marcel, 2010). As a temporary leader, an interim CEO manages the firm  
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16 until the search for a permanent successor is completed and thus faces career uncertainties.  
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18 Meanwhile the interim succession context tends to be more challenging because employees and  
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20 investors may regard the appointment of an interim CEO as visibly disruptive to the succession  
21  
22 process (Ballinger & Marcel, 2010). It may serve as a signal to outsiders that the firm's  
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24 succession planning was inadequate, and may arouse concern over the strategic direction and  
25  
26 future of the firm (Marcel *et al.*, 2013). In the following section we elaborate why interim CEOs  
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28 are more likely to engage in impression management through earnings management.  
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### 33 34 **Interim CEOs and Earnings Management as an Impression Management Tactic**

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36 Impression management has long been recognized as an important aspect of corporate  
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38 leadership (Pfeffer, 1981; Selznick, 1957). Corporate executives actively seek to influence  
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40 stakeholders' reactions to events. By engaging in impression management, corporate executives  
41  
42 can influence an audience's perception of them (Elsbach, Sutton, & Principe, 1998). Impression  
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44 management has been linked to executive compensation (Zajac & Westphal, 1995) and strategic  
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46 change (Fiss & Zajac, 2006). In general, corporate executives manage the informational  
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48 environment in ways that they hope will favourably affect the impressions on their targeted  
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50 stakeholders (Puffer & Weintrop, 1991; Westphal & Graebner, 2010).  
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55 Impression management is particularly relevant in the context of interim CEO succession.  
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57 According to the two-component model of impression management (Leary & Kowalski, 1990),  
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3 impression management involves two discrete processes: *impression motivation* (the extent to  
4 which individuals seek to control how others see them) and *impression construction* (the specific  
5 impressions individuals seek to build). Interim CEO succession serves as an appropriate context  
6 for this theoretical model. Firstly, the context of interim CEO succession fits well with the  
7 *impression motivation* component of this model. As we have explained earlier, an interim  
8 succession is typically considered as an unplanned and disruptive transition and therefore takes  
9 place in a more challenging contextual environment than a normal or well-planned succession  
10 (Marcel *et al.*, 2013). In such a succession context, for example, investors may express their  
11 concerns by selling their shares of the firm, which exerts further pressure on the stock  
12 performance; suppliers may terminate providing resources, and customers may switch to other  
13 alternatives; employees may have lower morale and decide to leave (Ballinger & Marcel, 2010;  
14 Finkelstein *et al.*, 2009). As the temporary leader navigating the firm in such a tough situation, an  
15 interim CEO has the motivation to engage in impression management in order to ease  
16 stakeholders' concerns and to restore their confidence in the future of the firm.

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37 More importantly, we argue that interim CEOs also have personal career incentives to  
38 gain the permanent position, and therefore are motivated to manage what others (e.g., the boards  
39 and investors) think of them. Specifically, despite their short tenure and lack of full authority  
40 over strategic decisions, interim CEOs are in the top position and exercise power over the  
41 allocation of financial resources, the approval of corporate budgets, and the conveyance of  
42 strategies and earnings to analysts (Ballinger & Marcel, 2010; Finkelstein *et al.*, 2009). In other  
43 words, they have reached the top of the corporate ladder and can reap the accompanying social  
44 and financial benefits (such as respect, compensation, perks and power); but the role is by nature  
45 temporary, and failing to eventually secure the permanent position can be both disappointing and  
46 embarrassing (Korn, 2012). By contrast, promotion to the permanent position comes with a huge  
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3 pay rise, higher social status, and the access to the elite circle (Finkelstein *et al.*, 2009; Lazear &  
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5 Rosen, 1981; O'Reilly, Main, & Crystal, 1988). Thus it is reasonable to expect that few people  
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7 would want to remain a temporary leader, and that a significant portion of interim CEOs would  
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9 have their sights set on the permanent position.<sup>2</sup>  
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13 In sum, interim CEOs have the motivation to engage in impression management for the  
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15 benefits of firm to relieve concerns on the unplanned succession events, and for their personal  
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17 benefits to enhance the future career prospects. Once the motivation is in place, the interim CEO  
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19 will use various tactics to create a certain favorable impression on the key audiences, which  
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21 include the board and shareholders who will ultimately make the CEO selection decision. The  
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23 process of creating a certain impression on others is known as *impression construction*, the  
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25 second component of Leary and Kowalski's (1990) model.  
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29 One obvious means to impress the stakeholders is through delivering improved firm  
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31 performance (whether substantive or symbolic), because CEOs are generally evaluated and  
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33 compensated on the basis of how well their firms perform financially (Core, Holthausen, &  
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35 Larcker, 1999; Greiner & Bhambri, 1989; Westphal & Fredrickson, 2001). Even though firm  
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37 performance may not be directly attributed to the actions of individual CEOs, the bias arising  
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39 from the "romance of leadership" may still prompt key stakeholders to blame the CEOs for  
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41 deteriorating performance or credit them with improved performance (Meindl, Ehrlich, &  
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43 Dukerich, 1985). However, interim CEOs may have limited discretion to initiate major strategic  
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45 shifts (Ballinger & Marcel, 2010), and are usually unwilling to make important decisions because  
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47 they lack the full authority to do so (Mooney *et al.*, 2012; Scott, 2009). In addition, their  
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55 <sup>2</sup> It is reasonable to assume that the interim CEOs are more motivated on average than the non-interim CEOs  
56 because the latter are already in permanent positions and there are significant differences in the expected tenure  
57 between these two groups of CEOs. As we will discuss later, we also consider the role of cross-sectional variations  
58 in motivations for interim CEOs in predicting the extent of earnings management during the interim period.  
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3 temporary status makes it difficult to obtain cooperation from other top management team  
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5 members (Hambrick, 1994). Furthermore, the use of temporary position title may increase the  
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7 potential for infighting among top management team members, and in turn hinder the  
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9 implementation of strategic change. Even if interim CEOs do manage to initiate change, their  
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11 relatively short tenure means that their new strategy would not have sufficient time to generate  
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13 significant outcomes (Shen & Cannella, 2002a, 2002b; Zajac, 1990). For these reasons, we  
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15 expect interim CEOs to engage in earnings management as an impression construction tactic to  
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17 enhance their image in the eyes of the board and shareholders (Davidson *et al.*, 2004).  
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22 Earnings management is defined as discretionary choices made by corporate executives  
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24 using within-GAAP accounting methods to influence firm earnings performance (Davidson *et al.*,  
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26 2004; DeFond & Park, 1997; Healy & Wahlen, 1999). For instance, they may use a less  
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28 conservative estimation method to reduce the amount of bad debt expenses so that earnings  
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30 would appear higher. Prior research has found that firm characteristics such as performance, size,  
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32 and growth opportunities are associated with earnings management (DeFond & Park, 1997;  
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34 Healy & Wahlen, 1999). Executives may engage in earnings management to meet capital market  
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36 expectations and valuations, or to increase executive compensation (Teoh, Welch, & Wong, 1998;  
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38 Watts & Zimmerman, 1990). Earnings management can expose firms to both benefits and costs.  
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40 For example, a firm that manages its earnings to consistently report earnings improvement would  
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42 have a higher market value (Barth, Elliott, & Finn, 1999), but the firm risks damaging its  
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44 reputation in terms of disclosure transparency and truthful reporting (Graham *et al.*, 2005).  
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51 Prior research has directly linked earnings management to impression management, as  
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53 earnings management enables executives to manage others' impression on them by framing the  
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55 firm's performance in better light (Davidson *et al.*, 2004; Gardner & Martinko, 1988; Godfrey,  
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57 Mather, & Ramsay, 2003; Healy & Wahlen, 1999; Merkl-Davies & Brennan, 2007). For instance,  
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3 Davidson and his colleagues (2004) have studied earnings management as a particular tactic for  
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5 impressing key stakeholders, and documented that CEOs engaged in earnings management in  
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7 order to meet the high expectations of positive results. As with other impression management  
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9 tactics such as verbal rhetoric and symbolic change (Westphal & Graebner, 2010, Westphal &  
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11 Zajac, 1994), earnings management does not substantively modify the firm's strategy, nor change  
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13 the basic parameters of operation. Existing research suggests that managers in general have a  
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15 large degree of influence over reported earnings (Bergstresser & Philippon, 2006; Healy &  
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17 Wahlen, 1999). This is because it is difficult for regulatory institutions such as the Securities and  
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19 Exchange Commission to detect earnings management (Graham *et al.*, 2005). In addition, the  
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21 monitoring boards are generally not involved in the routine administration of firms (such as  
22  
23 checking the accounting numbers in the reporting process), as they are mainly responsible for  
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25 reviewing major policy choices or corporate decisions (such as mergers and acquisitions)  
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27 (Finkelstein *et al.*, 2009). Hence executives such as interim CEOs can get away with income-  
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29 increasing earnings management to create a favourable impression on their stakeholders.  
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36 By contrast, while new CEOs in normal successions (non-interim peers) may have similar  
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38 incentives to manage earnings upward, they may also choose to manage earnings downward for  
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40 other reasons. For instance, reporting lower earnings helps deflate the share price of the firm and  
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42 stock options will be granted at a lower exercise price (McAnally, Srivastava, & Weaver, 2008).  
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44 These CEOs may also choose to smooth earnings by dampening current (high) earnings and  
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46 recording them in subsequent periods if the operating environment is expected to become tougher  
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48 (Healy, 1985; Trueman & Titman, 1988). In addition, they may take a "big bath" by managing  
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50 earnings downward so that they can blame the firms' poor performance on their predecessors and  
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52 take credit for any future performance improvement (Walsh, Craig, & Clarke, 1991). These  
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54 incentives for the non-interim peers to manage earnings downward are less applicable to the  
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3 interim CEOs during their interim tenure because the succession is more disruptive, and they are  
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5 competing against other candidates for the top job.  
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8 To summarize, by integrating the two-component model of impression management with  
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10 the research on interim CEO succession as well as the earnings management literature (e.g.,  
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12 Ballinger & Marcel, 2010; Davidson *et al.*, 2004; Leary & Kowalski, 1990), we propose that  
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14 interim CEOs need to impress stakeholders quickly, and they are more eager to demonstrate their  
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16 capabilities to improve firm performance. Therefore, interim CEOs are more likely to resort to  
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18 income-increasing earnings management. Based on the above reasoning, we posit that:  
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22 *Hypothesis 1. Interim CEOs are more likely to engage in income-increasing*  
23 *earnings management than non-interim CEOs.*  
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### 26 **Earnings Management and Interim CEO Promotion**

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28 The purpose of engaging in impression management for corporate executives is to gain  
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30 approval from key stakeholders, including boards, investors, financial intermediaries, and the  
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32 media. Empirical studies suggest that once a positive image is established, the executive will  
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34 enjoy various benefits. For example, in a study of illegitimate actions by social movement  
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36 organizations, Elsbach and Sutton (1992) documented the use of impression management tactics  
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38 by leaders to gain endorsement and support from key constituents. Westphal and Graebner (2010)  
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40 found that a firm's verbal impression management directed toward investment analysts resulted  
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42 in a more favourable subsequent appraisal of the firm. More recently, Westphal, Park, McDonald,  
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44 and Hayward (2012) found that CEOs can help their peers avoid bad press by making positive  
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46 statements about their leadership and strategy.  
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52 In our context, we argue that interim CEOs are in general more likely to engage in  
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54 impression management—specifically income-increasing earnings management—to relieve  
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56 stakeholders' concerns and improve their own promotion prospects. By doing so, interim CEOs  
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3 can make a positive impression on key stakeholders who may be either directly or indirectly  
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5 involved in CEO appointment decisions. Although the CEO appointment decision is ultimately  
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7 made by the board, and so it is the board that the interim CEO needs to impress the most, it is  
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9 also to the interim CEO's advantage to impress members of the financial community such as  
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11 analysts and institutional investors (Westphal & Graebner, 2010), as they may be able to  
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13 influence the board's decisions (Dyck & Zingales, 2002; Wiersema & Zhang, 2011). For  
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15 example, Wiersema and Zhang (2011) found that investment analysts can significantly influence  
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17 the board's evaluation of the CEO through their stock recommendations.  
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22 To appeal to these key audiences, as described earlier, interim CEOs may resort to  
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24 earnings management. For instance, some interim CEOs may "massage" the earnings figures  
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26 more aggressively to avoid losses; others may manage financial reporting policy more vigorously  
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28 to increase reported earnings. All these are done with a view to make the firms' financial  
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30 performance look better. Given that performance tends to be attributed to the leader (Meindl *et*  
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32 *al.*, 1985), the interim CEO will be the one the key stakeholders congratulate should they find the  
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34 firm's performance satisfactory. These key stakeholders will subsequently be more likely to see  
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36 the interim CEO as qualified for the top job. As a result, those interim CEOs who actively engage  
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38 in income-increasing earnings management have a better chance of being promoted to the  
39  
40 permanent position. So we posit that:  
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46 *Hypothesis 2. The greater an interim CEO engages in income-increasing earnings*  
47 *management, the higher the likelihood the CEO will be promoted to the*  
48 *permanent position.*  
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### 50 **Moderating Effects of Governance Mechanisms**

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52  
53 Although engaging in income-increasing earnings management may have tentative  
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55 benefits for the firm, it may not be in the best interests of shareholders from a long-term  
56  
57 perspective (Graham *et al.*, 2005), especially if the main purpose for such earnings management  
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3 is for the interim CEO's personal benefit of career promotion and when the reported results  
4 substantially deviate from a firm's fundamentals (Davidson *et al.*, 2004; Neu, 1991). Thus,  
5 interim CEOs who rely on impression management to impress key constituents may not actually  
6 be capable of creating value. If a board makes an unwise CEO appointment decision in this way,  
7 it is the shareholders who will ultimately bear the cost. Hence it is important to have proper  
8 monitoring and control mechanisms in place to prevent the board from making distorted CEO  
9 appointment decisions. Next we examine how both internal and external governance mechanisms  
10 may weaken the relationship between income-increasing earnings management and interim CEO  
11 promotion.  
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24 Agency theory research (Eisenhardt, 1989; Jensen & Meckling, 1976) suggests that firms  
25 with appropriately designed governance systems are likely to monitor the activities of corporate  
26 executives more closely and effectively to ensure that they act in the best interests of  
27 shareholders. This line of research has found that CEOs of firms with better governance systems  
28 were more likely to be dismissed when firm performance falls short of expectation (Fredrickson,  
29 Hambrick, & Baumrin, 1988; Wiersema & Zhang, 2011). Similarly, the governance system  
30 strengthens performance-based compensation design such that better governance can reduce the  
31 element of "luck" in CEO compensation (Bertrand & Mullainathan, 2001; Efendi, Srivastava, &  
32 Swanson, 2007), as better governed firms have better monitoring systems to scrutinize  
33 potentially opportunistic behavior by corporate executives (Tosi, Katz, & Gomez-Mejia, 1997).  
34 Thus an effective governance system will dampen the positive effect of income-increasing  
35 earnings management on the likelihood of interim CEO promotion.  
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52 Governance mechanisms may arise either from internal organizational design or from the  
53 external governance environment (Beatty & Zajac, 1994; Bertrand & Mullainathan, 2001; Giroud  
54 & Mueller, 2011; Shleifer & Vishny, 1997; Wiersema & Zhang, 2011). We first consider internal  
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3 governance mechanisms that are related to the characteristics of the board of directors. These  
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5 mechanisms have been documented in prior literature for their effectiveness in monitoring  
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7 executives' activities (Demsetz & Lehn, 1985; Larcker & Tayan, 2011). Specifically, we  
8  
9 examine four dimensions of board functioning—board independence, board ownership profile,  
10  
11 board financial/accounting expertise, and board busyness.  
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15 We expect board independence—measured by the outside director ratio—to reduce the  
16  
17 effect of impression management on the likelihood of interim CEO promotion. Independent  
18  
19 outside directors provide more effective monitoring mainly because they have fewer conflicts of  
20  
21 interests than inside or affiliated directors do (Larcker & Tayan, 2011). Prior research has  
22  
23 suggested that boards with a higher ratio of outside independent directors are better able to keep  
24  
25 managers in check; they also evaluate management proposals more comprehensively and are less  
26  
27 likely to support decisions that could harm shareholders in the long run (Larcker & Tayan, 2011;  
28  
29 Rosenstein & Wyatt, 1990). By contrast, insider-dominated boards are less effective (Beatty &  
30  
31 Zajac, 1994), hence the effect of an interim CEO's impression management will be more  
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33 apparent. Thus, the positive relationship between earnings management and interim CEO  
34  
35 promotion will be weakened when the proportion of outside directors is high.  
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41 *Hypothesis 3a. The higher the outside director ratio, the weaker the association*  
42 *between income-increasing earnings management and the likelihood of interim*  
43 *CEO promotion.*  
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46 We next examine the effect of board ownership (Daily, Dalton, & Rajagopalan, 2003;  
47  
48 Denis, Denis, & Sarin, 1997; Hambrick & Finkelstein, 1995). Board ownership has been cited as  
49  
50 a linchpin of corporate governance (Hambrick *et al.*, 2009). First, higher board ownership  
51  
52 increases the alignment of interests between directors and shareholders (Denis *et al.*, 1997), since  
53  
54 the directors have a larger stake in the company (Mallette & Fowler, 1992). Such interest  
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56 alignment motivates directors to be more vigilant in defending shareholders' interests, in  
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3 monitoring top management activities, and in examining proposals that enhance management  
4 control (Kosnik, 1990). Second, ownership is also a major source of power due to the associated  
5 voting rights, which increases with the portion of total shares held (Finkelstein, 1992; Haynes &  
6 Hillman, 2010; Zald, 1969). Boards with relatively larger equity stakes have greater influence,  
7 monitor, and control over executive activities (Lorsch & MacIver, 1989). For instance, greater  
8 director stock ownership increases the board's influence over the CEO succession process and  
9 enhances the pay-performance sensitivity (Hambrick & Finkelstein, 1995; Westphal, 1999).  
10 Hence, boards with greater ownership have a stronger motivation and more power to monitor  
11 managers. Therefore we posit that:  
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24 *Hypothesis 3b. The higher the board ownership, the weaker the association*  
25 *between income-increasing earnings management and the likelihood of interim*  
26 *CEO promotion.*  
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29 We also consider the financial/accounting expertise of the board. In order to effectively  
30 monitor a manager's behavior, directors must possess the relevant knowledge. The balance of  
31 power between executives and directors tips in favour of the latter when they have the relevant  
32 expertise to evaluate the former's work (Finkelstein, 1992). In our context, "relevant knowledge"  
33 refers to financial/accounting expertise (DeFond, Hann, & Hu, 2005). When more of its members  
34 have financial/accounting expertise, the board would be more likely to notice any managed  
35 component in reported earnings, and when that happens it would have second thoughts about  
36 recommending the promotion of the interim CEO. Thus, we expect that boards with greater  
37 financial/accounting expertise will see through an interim CEO's earnings management more  
38 easily, and thus the presence of such a board will weaken the association between income-  
39 increasing earnings management and interim CEO promotion.  
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55 *Hypothesis 3c. The greater the board's financial/accounting expertise, the weaker*  
56 *the association between income-increasing earnings management and the*  
57 *likelihood of interim CEO promotion.*  
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5 Another important dimension measuring the effectiveness of a board's monitoring  
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7 function is the busyness of the board (Beasley, 1996; Core *et al.*, 1999). When the board  
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9 directors are busy serving on multiple boards, they would have less time for the focal firm and its  
10  
11 governance may be weakened. While the number of directorships appears to be closely linked to  
12  
13 directors' reputational capital and potential access to external resources (Khurana, 2002), existing  
14  
15 research has suggested that holding too many directorships may lower directors' effectiveness as  
16  
17 corporate monitors because of their limited time and energy (Core *et al.*, 1999; Shivdasani &  
18  
19 Yermack, 1999; Zhang, 2008). When a director is committed to too many boards, the amount of  
20  
21 effort and time allocated to each board will be greatly reduced, leading to weaker monitoring. For  
22  
23 instance, studying the 1992 *Forbes* 500 list of the largest corporations, Fich and Shivdasani  
24  
25 (2006) found that firms with busy boards are associated with weak corporate governance and  
26  
27 exhibit poor market performance and low sensitivity of CEO turnover to firm performance.  
28  
29 Consistent with this view, in the U.S., the National Association of Corporate Directors and the  
30  
31 Council for Institutional Investors are calling for limits to be placed on the number of  
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33 directorships a director of a publicly-listed firm is allowed to hold. Therefore, a busier board is  
34  
35 less effective in its monitoring and more likely tricked by an interim CEO intent on creating a  
36  
37 more favourable perspective on the firm through earnings management. In contrast, if the board  
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39 is not too busy and can dedicate sufficient time and effort to its monitoring role, the positive  
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41 relationship between income-increasing earnings management and interim CEO promotion will  
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43 be weakened.  
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52 *Hypothesis 3d. The less busy the board is, the weaker the association between*  
53 *income-increasing earnings management and the likelihood of interim CEO*  
54 *promotion.*  
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3 Recent studies have moved beyond the internal governance systems and started paying  
4 more attention to external governance mechanisms that also help to keep managers in check  
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6 (Bertrand & Mullainathan, 2001; Giroud & Mueller, 2011; Wiersema & Zhang, 2011; Yu, 2008).  
7  
8 A typical external governance mechanism is the external monitoring by financial analysts  
9  
10 (Wiersema & Zhang, 2011; Yu, 2008). Analysts act as informational intermediaries in the capital  
11  
12 market (Healy & Palepu, 2001), and thus they double as external checks on corporate executives  
13  
14 (Yu, 2008). With training in finance and substantial knowledge of the industry, they exert a  
15  
16 monitoring influence by interpreting public information and gathering private information  
17  
18 (Wiersema & Zhang, 2011). As analysts' performance affects their reputation and compensation,  
19  
20 they have an incentive to scrutinize firms' disclosures carefully in order to make more accurate  
21  
22 forecasts. Indeed, Dyck, Morse, and Zingales (2010) concluded that analysts were more effective  
23  
24 in detecting corporate fraud than even the U.S. SEC and auditors. Greater analyst coverage will  
25  
26 likely lead to closer scrutiny of managerial behavior and hence analyst coverage acts as an  
27  
28 important governance mechanism (Wiersema & Zhang, 2011; Yu, 2008). In our context, greater  
29  
30 analyst coverage suggests that executives' activities will come under closer scrutiny from this  
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32 group of industry experts, which will in turn mitigate the positive effect of income-increasing  
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34 earnings management on interim CEO promotion. Thus we posit that:  
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44 *Hypothesis 3e. The greater the analyst coverage, the weaker the association*  
45 *between income-increasing earnings management and the likelihood of interim*  
46 *CEO promotion.*  
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## 48 METHODS

### 49 Sample

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51 Our sample of interim CEO successions was compiled from the records of changes in  
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53 corporate officers and executives in the *Audit Analytics* database. We first identified the  
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55 incumbent and the incoming CEOs for all CEO turnovers in *Audit Analytics*, and then determined  
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3 a change of CEO to be an interim succession if the incoming CEO was explicitly stated as being  
4 an “interim CEO”, or an “acting CEO”, or if there was an explicit announcement that the  
5 executive was to serve as CEO “until a search is completed” (Ballinger & Marcel, 2010). For the  
6 period from 2004 to 2008, we identified a total of 484 interim CEO successions.<sup>3</sup>  
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12 To determine the tenure of each interim CEO, we read the sampled firms’ proxy  
13 statements and the articles via Factiva search engine (www.factiva.com) to identify the date  
14 when an interim CEO was subsequently replaced or when he or she was appointed the permanent  
15 CEO of the firm (i.e., interim CEO promotion). We deleted 48 observations in which the tenure  
16 of the interim CEOs was shorter than 30 days, and 89 cases in which the interim appointments  
17 ceased before the end of their initial fiscal quarters (because we believe that interim CEOs need  
18 to be in office on the reporting date of their initial quarterly financial statements, and have a  
19 minimum 30 days of tenure for them to be able to exert substantial influence on a firm’s  
20 reporting decisions). We then merged the remaining with the *Compustat Quarterly* for the  
21 financial statement variables and coded governance-related variables from the proxy statements.  
22 This process dropped 202 cases because of missing variables.<sup>4</sup> Our final sample contained 145  
23 unique interim CEO successions.  
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### 41 **Measuring Earnings Management**

42 The standard accounting practice for most companies in the U.S. is accrual-based  
43 accounting. Unlike cash-based accounting whereby income or expense is recorded at the time of  
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50 <sup>3</sup> Our sample period began from 2004 because prior to that year, the distribution of the interim appointments in the  
51 *Audit Analytics* database is more sporadic.

52 <sup>4</sup> The detailed breakdown of the 202 cases that were dropped is as follows: 55 firms not covered by *Compustat*; 142  
53 firms with missing financial items (such as operating cash flow, account receivable etc.) used to calculate earnings  
54 management and other control variables (mainly because the SEC requires less detailed line-item disclosure for 10-Q  
55 quarterly statements); and 5 cases with missing governance-related variables. Untabulated results suggest that our  
56 final sample firms were statistically more profitable (measured by ROA) than those dropped, but the difference in  
57 firm size was not statistically significant. While we are unable to assess the direction of the bias this may introduce  
58 to our findings, the conclusion we draw from our study should be interpreted with caution.  
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3 the cash transaction, accrual-based accounting recognizes income when it is earned and expense  
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5 when it is incurred, regardless of when the actual cash transaction occurs. The difference  
6  
7 between the time at which cash is actually received or paid and the time at which income or  
8  
9 expense is recorded creates non-discretionary and discretionary differences in reported  
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11 accounting earnings and balance sheet accounts (Dechow, Sloan, & Sweeney, 1995; Healy &  
12  
13 Wahlen, 1999). While non-discretionary accruals are mandatory expenses/assets that have yet to  
14  
15 be realized, executives have extensive control over the discretionary accruals which affect the  
16  
17 reported earnings. For example, they may boost reported sales revenue by loosening the controls  
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19 on credit sales, or they may delay recognition of losses from uncollectible receivables by  
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21 establishing different levels of allowances for bad debts.  
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27 Accounting scholars have developed different accrual models to measure a manager's  
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29 extent of earnings management under accrual-based accounting (e.g., Dechow & Dichev, 2002;  
30  
31 Dechow *et al.*, 1995; Francis, LaFond, Olsson, & Schipper, 2005; Holthausen, Larcker, & Sloan,  
32  
33 1995; Jones, 1991; Kothari, Leone, & Wasley, 2005). In our study we applied one of the most  
34  
35 commonly used measures to capture the extent of income-increasing earnings management—  
36  
37 *discretionary accruals* (Dechow *et al.*, 1995; Jones, 1991; McNichols & Wilson, 1988).<sup>5</sup>  
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41 Our measure of discretionary accruals was based on Dechow *et al.*'s (1995) modification  
42  
43 of Jones' (1991) model. Under this model, a company's total accruals are expressed as the  
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45 difference between reported earnings and cash flow. The non-discretionary component of total  
46  
47 accruals increases with sales growth, assets growth, and depreciation expenses which are  
48  
49 dependent on the total value of the company's property, plant and equipment. The difference  
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51 between total accruals and its non-discretionary component is the discretionary accruals. A  
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57 <sup>5</sup> We also used loss avoidance as an alternative measure of earnings management in a robustness check. We discuss  
58 the details in our Additional Analyses section.  
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3 positive value of this measure suggests that accounting accruals are used to boost accounting  
4  
5 earnings, while a negative value suggests accounting accruals are used to deflate earnings. The  
6  
7 higher the value of discretionary accruals is, the greater the extent of income-increasing earnings  
8  
9 management. Appendix A illustrates our estimation of discretionary accruals.  
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11

### 12 **Models Predicting Income-increasing Earnings Management (H1)**

14  
15 Hypothesis 1 suggests that interim CEOs are more likely to engage in income-increasing  
16  
17 earnings management than non-interim CEOs. Our hypothesis would be supported if we observe  
18  
19 an increase in earnings management during the interim period compared to the non-interim  
20  
21 period in the same firm. However, one may argue that such an increase could be driven by the  
22  
23 general effect of CEO turnover or the contextual environment immediately before the succession  
24  
25 for our sample firms. To test Hypothesis 1 in a more rigorous way, for each of our sample firm  
26  
27 with interim CEO appointment (termed as “treatment firms” hereafter), we first identified a  
28  
29 unique control firm that was in a comparable succession environment but experienced a normal  
30  
31 CEO succession (termed as “control firms” hereafter). We then examined how changes in  
32  
33 earnings management after appointing interim CEOs in the treatment firms differ from those in  
34  
35 the control firms during the same period. In such a difference-in-differences (DID) analysis, the  
36  
37 earnings management behaviour of the control firms serves as counterfactuals of the treatment  
38  
39 firms. As a result, we are able to control for the general effect of CEO turnover on changes in  
40  
41 earnings management, and attribute the difference in earnings management behaviour between  
42  
43 the treatment firms and the control firms to the effect of interim CEO appointment.  
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51 More specifically, we used a propensity score matching (PSM) procedure to identify the  
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53 comparable control firms (Dehejia & Wahba, 2002; Li, 2013). We first compiled a list of firms  
54  
55 that were in the same industry (two-digit SIC code) as the treatment firms, and experienced a  
56  
57 normal CEO succession in the same period (i.e., the appointment date is within one month before  
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3 or after the interim CEO succession date of the treatment firm) from the *Audit Analytics* database.  
4  
5 This process generated a total of 1,206 firms. Then we pooled these firms with the treatment  
6  
7 firms, and followed prior research to build a probit model (Appendix B) by using firm size, firm  
8  
9 performance, firm age, departing CEO's age, departing CEO's tenure, unplanned CEO turnover  
10  
11 due to dismissal, death, health and other reasons to predict the propensity of a firm to appoint an  
12  
13 interim CEO (e.g., Ballinger & Marcel, 2010). Based on the estimated propensity score, for each  
14  
15 of the 145 treatment firms with interim succession, we identified one unique control firm that had  
16  
17 the closest propensity score as the treatment firm, but chose not to appoint an interim CEO.<sup>6</sup> We  
18  
19 could not identify a control firm for 7 of the 145 treatment firms with interim succession. Thus  
20  
21 our final sample for testing Hypothesis 1 consists of 138 firms with interim CEO succession and  
22  
23 138 matching control firms with normal succession. To test the success of our matching process,  
24  
25 we conducted an additional analysis to compare the differences of the distribution of the  
26  
27 covariates used to predict interim CEO appointment between the treatment and control firms  
28  
29 (Dehejia & Wahba, 2002; Li, 2013). Results in Appendix C show that, after the PSM procedure,  
30  
31 the differences became very small and insignificant, suggesting our matching procedure was  
32  
33 reasonably successful.  
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41 *Explanatory variables.* The DID analysis used two indicator variables to test the  
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43 differences in the dependent variables between the treatment firms and the control firms, as well  
44  
45 as between the interim period and the non-interim period. The first one was *firms with interim*  
46  
47 *CEO succession*, a dummy variable that is equal to one for treatment firms experiencing interim  
48  
49 CEO succession, and zero for control firms experiencing normal succession. The second  
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51 indicator variable was *interim period*. For the treatment firms, this variable was coded as one if  
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57 <sup>6</sup> Our results remain quantitatively the same when we used the criteria that the absolute difference of the estimated  
58 propensity score between the treatment firms and the control firms are less than 0.05 (calliper matching).  
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3 the observations were within the period starting from the date when a CEO was appointed in an  
4 interim capacity to the date when he or she was either replaced or promoted to permanent CEO.  
5  
6 The interim period ranged from one to eleven quarters, with an average of three quarters. *Interim*  
7  
8 *period* was coded as zero if the observations were within the non-interim periods which were up  
9  
10 to eight quarters prior to the fiscal month of the interim appointment date and up to eight quarters  
11  
12 after the replacement/promotion of the interim CEO.<sup>7</sup> For each of the control firms, its  
13  
14 counterfactual interim period was coded in the same way as its corresponding treatment firm. For  
15  
16 instance, if the treatment firm has three quarters as the interim period, its corresponding control  
17  
18 firm will have the same three matching quarters as its interim period, coded as one. Similarly, the  
19  
20 non-interim periods for the control firms are matching quarters corresponding to their treatment  
21  
22 firms. Our final sample for H1 testing has a total of 3,864 firm-quarter observations, comprising  
23  
24 365 interim quarters and 1,567 non-interim quarters for the 138 treatment firms, with the same  
25  
26 number of matching quarters for the control firms.  
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34 Following prior DID research (Meyer, 1995), we then included an interaction term  
35  
36 between *firm with interim CEO succession* and *interim period*, and used this interaction term to  
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38 test Hypothesis 1. The coefficient on this interaction term captures the changes in earnings  
39  
40 management behavior during the interim periods relative to the non-interim periods that are  
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42 incremental to the corresponding changes of the control firms.  
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46 ***Control variables.*** We controlled for a list of firm-level variables. The first two were *firm*  
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48 *size* (measured by the log-transformed value of total assets) and *firm performance* (measured by  
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50 accounting performance—return on assets (ROA), and stock market performance—the abnormal  
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52 market return over the prior quarter). Larger firms tend to have a systematically lower  
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57 <sup>7</sup> We also tested four quarters prior to the interim appointment date and four quarters after the replacement/  
58 promotion date in our robustness tests. We obtained similar results.  
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3 discretionary accruals than smaller firms, and firms with better performance are less motivated to  
4 engage in earnings management (Healy & Wahlen, 1999; Reynolds & Francis, 2000). We also  
5 controlled for *firm growth* (measured by sales growth) and *leverage* (measured by total liabilities  
6 divided by total assets), because high-growth firms have relatively stronger incentives to meet  
7 earnings benchmarks, and high-leverage firms are more inclined to manage earnings upward to  
8 avoid covenant violations (Healy & Wahlen, 1999). We also controlled for the effect of financial  
9 distress using Altman's (1968) *Z-score* as the proxy. Finally, we included a dummy variable  
10 indicating whether the interim period is the *fourth quarter* of the year because there are  
11 intertemporal constraints on earnings management in the fourth quarter but not on other quarters.  
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24 We used a list of variables to control for pre-succession contextual conditions that may  
25 also influence a firm's earnings management behavior. These variables were *pre-succession firm*  
26 *performance* (ROA and stock market performance) and *unplanned CEO turnover due to*  
27 *dismissal* (a binary variable coded as one if the incumbent CEO was dismissed; For instance, the  
28 incumbent was disclosed as being fired or ousted, having resigned unexpectedly or immediately  
29 due to poor performance ), *due to death* (coded as one if the CEO turnover was due to death),  
30 and *due to health or other reasons* (coded as one if the CEO turnover was due to health or other  
31 reasons such as family reasons, pursuing personal interests). The reasons for the turnover of the  
32 incumbent CEO were collected from *Audit Analytics*, and supplemented by information from  
33 Factiva news article search. In addition, we also controlled for the characteristics of the new  
34 CEOs. These were *New CEO close to retirement age* (a dummy variable coded as one if the new  
35 CEO was aged 65 or above, and zero otherwise), *New CEO with CFO background* (a dummy  
36 variable coded as one if the new CEO was previously a CFO, and zero otherwise), and *New CEO*  
37 *as pre-succession director on the board* (a dummy variable coded as one if the new CEO was a  
38 board member of the firm before the appointment, and zero otherwise). These CEO  
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3 characteristics also influence the extent of earnings management. For instance, *New CEO close*  
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5 *to retirement age* influences the interim CEO's motivation to get promoted because old people  
6  
7 tend to be less interested in the permanent CEO position and therefore are less likely to engage in  
8  
9 earnings management; *New CEOs with CFO background* may be more adept at managing  
10  
11 reported earnings. We also controlled for the new CEO origin – *New CEOs being an outsider*,  
12  
13 coded as one if the new CEO was hired from outside the organization, and zero otherwise (Zajac  
14  
15 & Westphal, 1996).  
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20 We also followed Zhang and Rajagopalan (2003) to add a variable indicating the  
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22 *competitiveness of external CEO labor market*, measured by the log-transformed total number  
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24 of firms in a focal firm's primary industry (two-digit SIC code) whose sales at  $t-1$  were equal to  
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26 or larger than half of the focal firm's sales. The greater the number of such firms, the more  
27  
28 potential CEO candidates exist in the external labor market, and the greater the competition for  
29  
30 the CEO position (Zhang & Rajagopalan, 2003). This may in turn increase an interim CEO's  
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32 motivation to manage earnings upward.  
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36 We further controlled for the potential effects of a list of governance variables on a firm's  
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38 earnings management behavior (Klein, 2002; Yu, 2008). These variables were *board*  
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40 *independence* (measured by the ratio of outside directors on the board), *board ownership*  
41  
42 (measured by the percentage of shares held by the board), and *board financial/accounting*  
43  
44 *expertise* (measured by the proportion of directors with finance or accounting background). We  
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46 also controlled for *non-busy board*. To measure this variable, we first defined a director as a  
47  
48 busy director if he or she holds three or more directorships (Fich & Shivdasani 2006; Larcker &  
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50 Tayan, 2011). *Non-busy board* was then measured by one minus the proportion of busy directors  
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52 on the board. Data on directors were obtained from the company's proxy statements and the  
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54 *BoardEx* database. We also controlled for *analyst coverage* as an external governance  
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3 mechanism (Wiersema & Zhang, 2011; Yu, 2008), measured by the number of analysts covering  
4 the firm. Data for this variable were obtained from the *I/B/E/S* database.  
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8 Finally, we also used a two-stage Heckman selection model to address the potential  
9 selection bias because some firms had interim successions while others did not. While the  
10 counterfactual model and PSM discussed earlier were used to adjust observable covariates that  
11 may explain the difference of the earnings management across the treatment and control firms,  
12 the Heckman two-stage model was used to adjust the estimation bias due to sample censoring or  
13 selection (Li, 2013). The first-stage model was the regression presented in Appendix B where the  
14 likelihood of interim CEO succession was predicted. To successfully control for estimation bias,  
15 we need at least one independent variable that is associated with the dependent variable in the  
16 first-stage model, but not related to the dependent variable in the second-stage model (Larcker &  
17 Rusticus, 2010). This variable was the *departing CEO age*. Previous studies have documented  
18 that it is negatively related to interim succession (Ballinger & Marcel, 2010), but not  
19 theoretically related to the earnings management under the new (interim) CEOs (Healy &  
20 Wahlen, 1999). Based on the first-stage regression, we calculated the inverse Mills ratio (*IMR*)  
21 and included it in our second stage models to test H1.<sup>8</sup>  
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#### 40 41 **Models Predicting Interim CEO Promotion (H2, H3a–H3e)** 42

43 We tested our hypotheses on interim CEO promotion (H2, H3a–H3e) using discrete-time  
44 event history analysis, an established method for analysing dynamic processes when the outcome  
45 of the process is a discrete event (Allison, 1984; Yamaguchi, 1991). This analysis estimates logit  
46 models of dichotomous outcomes for pooled time series data where the same units are observed  
47 at multiple intervals. It allows us to estimate the likelihood of an event occurring (i.e., interim  
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57 <sup>8</sup> We thank one anonymous reviewer for the suggestion to include the IMR term using the Heckman two-stage  
58 model in our DID analyses.  
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3 CEO promotion) in any of the discrete time periods (i.e., any quarter during the interim period).  
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5 This method is appropriate for our study because it takes into account the effect of time (i.e.,  
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7 interim CEO tenure) in the estimation in addition to the outcome of the event (i.e., interim CEO  
8  
9 promoted or not). For each firm with interim CEO succession, the observation window starts  
10  
11 from the quarter when the interim CEO succession was announced and ends in the quarter when  
12  
13 the interim CEO was promoted or was replaced by a permanent one. Thus for a total of 145 firms  
14  
15 with interim CEO succession, we have 383 firm-quarters for testing H2 and H3a–H3e.  
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19 Our dependent variable *interim CEO promotion* was coded as one if an interim CEO was  
20  
21 appointed permanent CEO at Quarter  $t$ , and zero otherwise. Our independent variable *earnings*  
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23 *management* was measured by discretionary accruals at Quarter  $t-1$ . Our moderating variables  
24  
25 are the governance mechanisms. For internal governance mechanisms, we focused on *board*  
26  
27 *independence*, *board ownership*, *board financial/accounting expertise* and *non-busy board*. For  
28  
29 external governance mechanisms, we focused on the extent of *analyst coverage* (Wiersema &  
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31 Zhang, 2011; Yu, 2008). The operationalization of these moderating variables has been explained  
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33 in an earlier section.  
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39 ***Control variables.*** We controlled for a list of CEO and firm characteristics that may  
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41 influence the likelihood of interim CEO promotion. They were *outsider interim CEO* (coded as  
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43 one if the interim CEO was hired from outside the firm), *interim CEO duality* (coded as one if  
44  
45 the interim CEO also acted as the chair of the board), *interim CEO age* (the log-transformed age  
46  
47 of the interim CEO), *interim CEO with CFO background*, and *interim CEO as pre-succession*  
48  
49 *director on the board*. Firm characteristics at Quarter  $t-1$  were *firm size*, *firm performance*  
50  
51 (ROA and stock market return), *firm growth*, and *leverage*. We also controlled for *external CEO*  
52  
53 *labor market competitiveness* at  $t-1$ , and the *IMR* generated from the Heckman-two stage model  
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55 discussed above. The measurement of these variables has been explained in the earlier section.  
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3 It was also important to control for the pre-succession contextual conditions using *pre-*  
4 *succession firm performance* (ROA and stock market return) and *unplanned CEO turnover due*  
5 *to dismissal, death, health and other reasons*. Finally, we included a *search committee* variable,  
6 coded as one if there was a search committee for the permanent CEO according to the company's  
7 disclosure in the proxy statement and press release articles via Factiva.com news search.  
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## 15 RESULTS

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17 Panels A and B of Table 1 present the descriptive statistics of and correlations among the  
18 variables used in this study. A further check of the variance inflation factor (VIF) of the variables  
19 (including the interaction terms) shows a maximum of 4.41 for VIF, suggesting our model did  
20 not have a serious multicollinearity problem (Cohen, Cohen, West, & Aiken, 2003).  
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27 ===== Insert Table 1 here =====  
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29 Table 2 reports the DID analysis for testing Hypothesis 1. Models 1 and 2 use firm- and  
30 year-fixed effects, whereas Models 3 and 4 use industry- and year-fixed effects as a robustness  
31 test because the effects of those time-invariant firm-level variables (e.g., pre-succession  
32 performance, incoming CEO characteristics, IMR) are dropped from the firm-fixed effects  
33 models. In addition to the interaction effects, Models 5 and 6 report the split sample analysis as a  
34 further illustration of our DID analyses indicating that *interim period* has different effects on  
35 earnings management behavior for the treatment firms and the control firms.  
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45 Model 1 includes all control variables and Model 2 adds the interaction between *firms*  
46 *with interim succession* and *interim period* to test Hypothesis 1. Results of Model 2 show that  
47 the interaction term is positively significant ( $\beta = 0.005, p < .01$ ). This suggests that interim CEOs  
48 were more likely to manage earnings upward in the interim periods than in non-interim periods  
49 and the control firms. Therefore Hypothesis 1 is supported. In terms of economic magnitude, our  
50 coefficient suggests that interim CEOs in interim periods increased their earnings management  
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3 by 0.005, which is about 35.7% higher than the corresponding changes for the control firms. We  
4  
5 find similar results supporting our hypothesis in Models 3 and 4 which include industry- and  
6  
7 year-fixed effects. Model 5 shows that the coefficient on *Interim Period* for the treatment firms  
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9 is positive and significant ( $\beta = 0.004, p < .05$ ), suggesting that interim CEOs are more likely to  
10  
11 engage in income-increasing earnings management during the interim period. By contrast, the  
12  
13 corresponding coefficient for the control firms is negative and significant ( $\beta = -0.006, p < .01$ ),  
14  
15 which is consistent with prior literature that new CEOs in normal succession context tend to take  
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17 “big bath” to *reduce* current earnings during their early days of the tenure in order to “save” for  
18  
19 future use so as to show performance improvement in future periods (e.g., Walsh *et al.*, 1991). In  
20  
21 sum, the significant yet different signs on the coefficients for *Interim period* in Models 5 and 6  
22  
23 are consistent with the results presented in models 1-4, supporting H1.  
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29 ===== Insert Table 2 here =====  
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32 Table 3 shows results of the discrete-time event history models predicting the likelihood  
33  
34 of interim CEO promotion. Model 1 includes all control variables and our independent  
35  
36 variable—income-increasing earnings management measured by accounting accruals—to test  
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38 Hypothesis 2. Models 2–6 add the interaction terms between earnings management and each  
39  
40 governance variable (i.e., *board independence*, *board ownership*, *board financial/accounting*  
41  
42 *expertise*, *non-busy board* and *analyst coverage*) separately to test Hypotheses 3a–3e. Model 7 is  
43  
44 the full model including all these interaction terms.  
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49 Results of Model 2 to Model 6 show consistent positive coefficients on our measure of  
50  
51 earnings management, supporting Hypothesis 2. In terms of the marginal effect of our coefficient  
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53 estimates on the likelihood of interim CEO promotion, the positive coefficient of 0.665 ( $p < .01$ )  
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55 on earnings management in the full Model 7, for example, suggests that increasing earnings  
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3 management by one standard deviation above the sample mean while holding all other variables  
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5 at their mean values, will increase the probability of interim CEO promotion by 6.1%.  
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8 Results of Models 2–6 show that the coefficients of the five interaction terms are all  
9  
10 negative and significant. Three out of five interaction effects remain significant in the full Model  
11  
12 7 (i.e.,  $\beta = -0.119$ ,  $p < .05$  for *earnings management \* board financial/accounting expertise*,  $\beta$   
13  
14 =  $-0.508$ ,  $p < .05$  for *earnings management \* non-busy board*, and  $\beta = -0.012$ ,  $p < .01$  for  
15  
16 *earnings management \* analyst coverage*). Taken together, we find general support for H3c,  
17  
18 H3d and H3e in which we argue that board financial/accounting expertise, non-busy board and  
19  
20 analyst coverage weaken the effect of earnings management on interim CEO promotion.<sup>9</sup>  
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24 We use the full model (Model 7) to illustrate the economic significance of the coefficients  
25  
26 on these interaction terms. For H3c, increasing earnings management by one standard deviation  
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28 above its sample mean results in an 18.9% increase in the likelihood of interim CEO promotion  
29  
30 when the board financial/accounting expertise is low (25<sup>th</sup> percentile value of *board*  
31  
32 *financial/accounting expertise* in our sample), yet the same increase in earnings management  
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34 results in only a 3.0% increase in the likelihood of interim CEO promotion when the board  
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36 financial/accounting expertise is high (75<sup>th</sup> percentile value). Similarly, for H3d, when earnings  
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38 management is increased by one standard deviation from its sample mean, there is a 10.3%  
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40 increase in the likelihood of interim CEO promotion when the board is very busy (i.e., 25<sup>th</sup>  
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42 percentile value of *non-busy board*); the corresponding increase is only 3.4% when the board is  
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44 not so busy (i.e., 75<sup>th</sup> percentile value of *non-busy board*). Finally for H3e, increasing earnings  
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46 management by one standard deviation from its mean value enhances the likelihood of interim  
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53 <sup>9</sup> Researchers have suggested that it may be difficult to interpret the sign and statistical significance of the interaction  
54 terms in logit or probit models (Ai & Norton, 2003; Norton, Wang, & Ai, 2004; Wiersema & Bowen, 2009). We  
55 therefore followed the procedure suggested by Norton *et al.* (2004) and used the STATA command “inteff” to graph  
56 the interaction effects and the distribution of z-statistics for each of our moderating hypotheses. The graphs show  
57 that the interaction effects are negative at most of data points in our sample, and the z-statistics distributions suggest  
58 that they are significant at  $p < .05$  in most cases. These graphs are available upon request.  
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3 CEO promotion by 15.2% for low levels of analyst monitoring (25<sup>th</sup> percentile value of *analyst*  
4 *coverage*), yet the corresponding increase is only 3.5% for high levels of analyst monitoring (75<sup>th</sup>  
5 percentile value).  
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10 ===== Insert Table 3 here =====  
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### 12 **Additional Analyses**

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15 We conducted a few additional analyses to show the robustness of our findings. First, we  
16 used *loss avoidance* (a company's propensity to avoid reporting losses) as an alternative measure  
17 of earnings management. DeGeorge, Patel, and Zeckhauser (1999) and Burgstahler and Dichev  
18 (1997) provided evidence that managers use accounting discretion to avoid reporting small losses.  
19 While one may argue that managers have an incentive to avoid reporting losses of any magnitude,  
20 large losses are difficult to hide. Small losses, however, are relatively easier to be managed to  
21 avoid. Following Burgstahler and Dichev (1997), Leuz, Nanda, and Wysocki (2003), and  
22 Roychowdhury (2006), we coded loss avoidance as one if after-tax earnings scaled by total assets  
23 fell in the interval of 0 to 0.5%, and zero otherwise. We found consistent results with *loss*  
24 *avoidance* as an alternative measure of earnings management: interim CEOs were more likely to  
25 avoid reporting losses ( $\beta = 0.006, p < .05$ ); interim CEOs who avoided reporting losses were  
26 more likely to be promoted to the permanent CEO position ( $\beta = 0.251, p < .01$ ), and this  
27 relationship could be mitigated when effective governance mechanisms are in place (e.g.,  $\beta = -$   
28  $0.849, p < .01$  for *earnings management \* board financial/accounting expertise*; and  $\beta = -$   
29  $0.022, p < .05$  for *earnings management \* analyst coverage*).  
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51 Second, when developing the hypotheses, we implicitly assumed that interim CEOs in  
52 general have motivation to get promoted to the permanent position, which affects their earnings  
53 management behavior during the interim period. If our argument is right, we would expect to  
54 find a stronger effect for interim CEOs who have stronger motivation than those with weaker  
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3 motivation. To explore this conjecture, we conducted an additional test to examine the cross-  
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5 sectional variations of the effect of interim CEOs on the extent of earnings management  
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7 depending on their backgrounds. Specifically, we first identified interim CEOs who were  
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9 arguably less motivated to get promoted (“less-motivated interim CEOs”) – who are close to  
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11 retirement (measured as interim CEO aged above 65). Then we split the full sample into two  
12  
13 subsamples: one with less-motivated interim CEOs and their corresponding matching firms (N  
14  
15 =618), and the other with “more-motivated interim CEOs” and their matching firms (N = 3,246).  
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17 If the incentives to be promoted are what drive interim CEOs’ earnings management behavior,  
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19 we would expect to find a stronger effect in the “more-motivated interim CEOs” subsample than  
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21 in the “less-motivated interim CEOs” subsample. Our conjecture was supported. Specifically, we  
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23 ran the analysis with the same variables in Table 2. We found that the interaction term between  
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25 *firm with interim CEO succession* and *interim period* is positive and significant ( $\beta = 0.005, p$   
26  
27  $< .01$ ) in the “more-motivated interim CEOs” subsample, but negative and insignificant in the  
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29 “less-motivated interim CEOs” subsample ( $\beta = -0.003, p = .72$ ).  
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37 Finally, although our results suggest that interim CEOs who engaged more aggressively  
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39 in earnings management were more likely to be promoted to the permanent position, an  
40  
41 alternative explanation could be that our earnings management measure actually captured an  
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43 interim CEO’s unobservable capability. In other words, an interim CEO who managed earnings  
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45 upward could simply be more capable than one who did not, and therefore was more likely to be  
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47 promoted. If this argument holds, we would expect firms with higher earnings management  
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49 during the interim period to perform better in the future. In an additional analysis, we examined  
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51 firm performance in a one- to three-year post-interim time frame and found that firms promoting  
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53 their interim CEOs did not subsequently outperform those that did not promote their interim  
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3 CEOs. The results suggest that the positive relationship between earnings management and the  
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5 likelihood of interim CEO promotion is not due to unobservable CEO capability.  
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## 8 **DISCUSSIONS**

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10 Interim CEO successions have been attracting increasing attention in the strategic  
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12 management research (e.g., Ballinger & Marcel, 2010; Mooney *et al.*, 2012). Nevertheless, little  
13  
14 is known about how a motivated interim CEO goes about improving his or her chance of being  
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16 promoted to the permanent position, and how firms respond to such efforts. Grounded in the  
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18 CEO succession literature and impression management theory, our study reveals that interim  
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20 CEOs may actively manage their impressions on key stakeholders by engaging in income-  
21  
22 increasing earnings management, thereby improving their promotion prospects when the interim  
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24 period ends. We further find that both internal and external governance mechanisms such as  
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26 board non-busyness, board financial/accounting expertise and analyst coverage can mitigate the  
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28 above relationship.  
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### 33 **Theoretical Implications**

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36 Our findings have important implications for management research. First, although  
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38 existing research has extensively examined the topic of CEO succession (e.g., Beatty & Zajac,  
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40 1987; Wiersema, 2002; Zhang, 2006; Zhang & Rajagopalan, 2003), little research has been  
41  
42 conducted on interim CEOs who serve in a temporary capacity before the board makes a  
43  
44 permanent appointment (Ballinger & Marcel, 2010). Indeed the appointment of interim CEOs  
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46 has been shown to have important performance implications for firms (Hymowitz, 2006; Intintoli  
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48 *et al.*, 2012). Our understanding of CEO succession may be incomplete due to the paucity of  
49  
50 studies examining the succession process for interim CEOs and how these CEOs behave  
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52 compared to their non-interim peers. The findings of this study therefore complement the  
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54 research stream on CEO succession by explicitly revealing how an interim CEO may use certain  
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3 managerial tactics to improve his or her promotion prospects. The evidence that interim CEOs do  
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5 resort to earnings management to improve their promotion prospects should inspire researchers  
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7 to further explore the extent to which such tactics are used by executives in other situations.  
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10         Second, our findings serve to enrich impression management theory, which has been  
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12 shown to be particularly relevant in the context of corporate executives (Westphal & Graebner,  
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14 2010; Zajac & Westphal, 1995), especially the context of CEO succession (Graffin *et al.*, 2011).  
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16 Among others, earnings management is a feasible tool for CEOs to manage their impressions on  
17  
18 key stakeholders such as shareholders and boards (Davidson *et al.*, 2004). The use of earnings  
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20 management by interim CEOs as a way to enhance their promotion prospects is a novel  
21  
22 application of impression management theory in the context of CEO succession. Our findings  
23  
24 demonstrate the usefulness of impression management when an interim CEO wants to win over  
25  
26 key stakeholders. Strategic leadership researchers may find it fruitful to apply and extend the  
27  
28 constructs from impression management theory to related topics such as executive decisions and  
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30 actions, executive appraisal, search, and staffing, and top management team dynamics  
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32 (Finkelstein *et al.*, 2009).  
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38         Our study also has important implications for corporate governance research. Existing  
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40 research has identified factors that could curb entrenched executive behavior (e.g., Jensen &  
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42 Meckling, 1976). Our findings suggest that although board characteristics do not have a strong  
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44 direct influence on the *extent* of earnings management (except for the board's  
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46 financial/accounting expertise in Table 2), they do reduce the *effectiveness* of earnings  
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48 management by weakening the association between earnings management and the likelihood of  
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50 interim CEO promotion (Table 3). Meanwhile, we show that in addition to the traditional board  
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52 "structure" (such as board independence and ownership) variables, board expertise and  
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54 commitment (i.e., non-busyness) matter significantly. As earnings management is closely related  
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3 to accounting activities, directors can better detect managers' opportunistic behavior when they  
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5 possess financial or accounting expertise, and when they can devote more time to the focal firm.  
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8 Our research also considers such governance mechanisms as external monitoring by investment  
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10 analysts. Corporate governance researchers might be persuaded to incorporate such additional  
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12 factors into the analytical landscape.  
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15 In addition, our findings have implications for the earnings management literature. Prior  
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17 research has documented that incoming CEOs are more likely to take a "big bath" to manage  
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19 earnings downward so that they can report higher earnings in future periods during their tenure  
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21 (Walsh *et al.*, 1991). Our study shows that the "big bath" effect does not hold for interim CEOs.  
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24 In fact, interim CEOs would rather engage in income-increasing earnings management during the  
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26 interim period to increase their own promotion prospects. These novel findings therefore enrich  
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28 our knowledge of earnings management.  
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### 31 **Managerial Implications**

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34 Our findings have important practical implications. The last decade has witnessed an  
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36 increasing number of interim successions, partially due to a growing number of CEO dismissals,  
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38 the more challenging and turbulent external environment, and the limited amount of time a board  
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40 has to find a corporate savior (Finkelstein *et al.*, 2009; Khurana, 2002; Mooney *et al.*, 2012). A  
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42 smooth CEO succession is important for a firm's continued success (Beatty & Zajac, 1987;  
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44 Zhang, 2008), but according to a survey conducted by Corporate Leadership Council in 2004, only  
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46 20% of the 276 large firms surveyed were satisfied with their top-managemnt succession  
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48 processes (Charan, 2005). Indeed, many firms do not even have a CEO succession plan in place  
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50 (Miles & Bennett, 2009) and so they must resort to a temporary succession arrangement when  
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52 the occasion arises. Our paper highlights the associated cost of hiring an interim CEO.  
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3 The interim CEOs may have neither the time nor the resources to formulate strategic  
4 decisions or implement strategic actions (Ballinger & Marcel, 2010). What they do have, at least  
5 for many of them, is the motivation to get promoted. To create a good impression on the people  
6 responsible for CEO appointment, i.e. the key stakeholders, interim CEOs may resort to earnings  
7 management to make firm performance appear better. By doing so, their promotion prospects are  
8 improved. However, promoting such interim CEOs to the permanent position may not be in the  
9 best interests of shareholders as they may in fact be incapable of leading the firm. Therefore  
10 firms should think very carefully before appointing an interim CEO. Our paper emphasizes the  
11 importance of having a CEO succession plan in place. This could mean developing a pipeline of  
12 executive talent, keeping potential CEO candidates in sight, and implementing a leadership  
13 development program (Finkelstein *et al.*, 2009; Zhang & Rajagopalan, 2010).  
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29 If an interim CEO succession is unavoidable, the firm and its board should aim to achieve  
30 a clear and realistic target during the interim period. Importantly, the promotion decision should  
31 not be based purely on symbolic performance. Moreover, the firm should equip itself with better  
32 internal corporate governance systems or adopt effective external governance mechanisms to  
33 better monitor the interim CEO's behavior. As our findings suggest, internally, the firm should  
34 appoint directors who possess the necessary knowledge and expertise to assess the interim CEO's  
35 ability or directors who are more committed; externally, the firm should aim for greater coverage  
36 and monitoring by investment analysts.  
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### 48 **Limitations and Future Research Direction**

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50 Our study certainly has its limitations. First, although it is reasonable to assume that a  
51 firm is primarily concerned with improving its financial performance and therefore an interim  
52 CEO will use earnings management as a tactic to impress the firm's stakeholders to improve his  
53 or her promotion prospects, it is also possible that the firm may hire a CEO with international  
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3 experience or a track record of product innovation in the interim capacity to achieve other  
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5 strategic priorities such as overseas market entry or product revamp. Future studies can examine  
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7 whether the interim CEO does adapt to a firm's specific needs.  
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10 Second, our paper focuses on earnings management as one of the many impression  
11 management tactics an executive could use. Other impression management tactics include  
12 introducing symbolic policies (Westphal & Zajac, 1994), exhibiting ingratiation behavior toward  
13 key stakeholders (Westphal & Stern, 2007), or directing verbal impression management toward  
14 them (Westphal & Graebner, 2010). Due to the limitations of archival data, we were unable to  
15 consider all such tactics in this study. Future research could employ survey-type studies to test  
16 how different impression management tactics work, either independently or jointly, in the  
17 context of interim CEO succession.  
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29 On a final note, our sample contains only U.S. public firms, but many interim CEO  
30 successions take place in unlisted firms (such as family firms) and in emerging economies. Their  
31 leadership successions and governance issues may be very different from those in public firms in  
32 the western context (Chung & Luo, 2013). Similarly, executive successions in emerging  
33 economies may have very different characteristics and implications from those in developed  
34 economies (cf. Tsui, 2007). Only with additional evidence from these contexts will we know  
35 whether our findings are generalizable.  
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**TABLE 1**  
**Panel A: Descriptive Statistics of and Correlations among the Variables Used in Predicting Income-increasing Earnings Management**  
**(For Testing H1)**

Variable	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(1) Earnings management (discretionary accruals)	-0.02	0.07																								
(2) Firm size	5.72	1.95	-0.01																							
(3) Firm performance (ROA)	-0.01	0.05	-0.17	0.26																						
(4) Firm performance (Market return)	0.05	0.11	0.03	-0.14	-0.16																					
(5) Firm growth	0.02	0.47	0.02	-0.04	0.01	-0.02																				
(6) Leverage	0.15	0.21	0.04	0.23	-0.02	-0.02	-0.02																			
(7) Altman's Z-score	3.61	5.73	-0.07	-0.09	0.21	-0.07	0.13	-0.30																		
(8) Fourth quarter	0.24	0.42	-0.18	0.01	-0.04	0.04	-0.02	0.03	0.00																	
(9) External CEO labor market comp.	4.23	1.18	0.02	-0.42	-0.09	0.09	-0.07	-0.18	0.00	0.01																
(10) Board independence	0.81	0.10	0.01	0.19	0.02	-0.02	-0.04	0.06	-0.13	-0.01	-0.07															
(11) Board ownership	0.12	0.19	0.03	-0.06	-0.02	0.01	-0.01	-0.07	-0.02	-0.01	0.15	-0.06														
(12) Board financial/accounting expertise	0.32	0.18	-0.05	0.01	0.05	0.02	-0.02	0.14	-0.07	-0.02	-0.08	-0.14	0.07													
(13) Non-busy board	0.85	0.16	0.04	0.37	0.05	-0.03	-0.02	0.05	-0.12	0.00	-0.11	-0.02	0.04	0.05												
(14) Analyst coverage	3.31	2.86	0.02	0.12	0.03	-0.05	-0.01	-0.03	0.05	-0.01	-0.01	0.02	-0.02	-0.01	0.04											
(15) Unplanned CEO turnover due to death	0.01	0.11	0.03	0.08	0.01	-0.02	-0.00	-0.01	-0.01	-0.00	-0.04	0.04	-0.05	0.01	0.04	-0.01										
(16) Unplanned CEO turn. due to health & others	0.05	0.10	0.04	0.07	0.02	-0.00	-0.00	0.19	-0.05	-0.01	-0.09	-0.01	-0.05	0.04	0.02	-0.01	-0.01									
(17) Unplanned CEO turnover due to dismissal	0.17	0.23	0.06	0.04	-0.12	0.00	0.12	0.08	0.05	-0.00	-0.07	0.00	0.04	0.01	0.03	-0.00	-0.03	-0.03								
(18) Pre-succession performance (ROA)	0.02	0.02	0.11	-0.18	-0.20	0.07	0.01	-0.05	-0.11	-0.00	0.12	-0.07	-0.02	-0.10	-0.05	-0.03	0.05	0.02	-0.11							
(19) Pre-succession perf. (Mkt return)	-0.01	0.04	-0.15	0.23	0.26	-0.09	-0.04	0.06	0.01	0.00	-0.22	0.09	0.04	0.10	-0.00	0.03	-0.05	-0.04	-0.03	-0.49						
(20) Incoming CEO being an outsider	0.24	0.32	0.01	-0.04	0.00	-0.00	-0.03	-0.01	0.01	-0.00	0.19	0.00	-0.03	-0.01	0.03	-0.02	-0.11	0.00	-0.21	-0.08	0.07					
(21) Incoming CEO with CFO background	0.05	0.02	-0.02	-0.03	-0.03	-0.00	-0.01	-0.03	-0.03	-0.02	-0.02	0.06	-0.02	0.02	0.07	0.01	-0.02	-0.02	0.10	-0.07	0.13	-0.03				
(22) Incoming CEO as pre-succ. director	0.27	0.30	0.02	0.03	-0.06	0.01	-0.01	-0.03	-0.04	0.00	0.12	0.05	0.01	-0.02	0.07	0.01	-0.04	-0.04	-0.09	0.16	-0.06	0.34	-0.08			
(23) Incoming CEO close to retirement	0.16	0.36	-0.02	0.08	0.04	0.00	-0.02	0.11	-0.05	0.05	0.04	0.08	-0.01	0.10	0.06	-0.08	-0.01	-0.08	-0.04	-0.03	0.08	0.07	-0.03	0.03		
(24) Firm with interim succession	0.50	0.50	0.01	-0.15	-0.09	0.03	0.03	-0.07	-0.01	-0.01	0.04	0.03	-0.19	-0.05	-0.10	-0.02	0.03	-0.00	-0.01	-0.02	0.01	0.00	-0.00	0.01	-0.02	
(25) Interim period	0.19	0.28	0.06	-0.10	-0.07	0.02	0.04	-0.09	0.05	-0.05	0.07	-0.06	0.01	-0.04	-0.06	0.06	0.01	-0.03	-0.01	0.06	-0.11	-0.03	-0.00	0.03	-0.48	0.38

Note: N=3,864 (firm-quarter),  $p < 0.05$  if the |coefficient| is great than 0.04

**Panel B: Descriptive Statistics of and Correlations among the Variables Used in Predicting Interim CEO Promotion  
(For Testing H2 and H3a–H3e)**

Variable	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) Interim CEO promotion	0.09	0.22																							
(2) Outside interim CEO	0.09	0.29	0.09																						
(3) Interim CEO duality	0.46	0.48	0.19	-0.01																					
(4) Interim CEO age	4.04	0.17	-0.12	0.10	0.08																				
(5) Firm size	5.85	1.73	0.01	-0.09	0.15	0.24																			
(6) Firm performance (ROA)	-0.01	0.05	0.09	0.02	0.03	0.10	0.35																		
(7) Firm performance (Mkt return)	0.04	0.07	0.02	-0.00	-0.03	-0.14	-0.21	-0.09																	
(8) Firm growth	0.02	0.24	0.02	-0.04	-0.06	-0.02	0.02	0.07	0.02																
(9) Leverage	0.17	0.18	-0.06	0.04	0.03	0.20	0.23	0.05	-0.00	-0.00															
(10) External CEO labor mkt comp.	4.29	0.75	-0.04	0.12	0.04	0.05	-0.11	-0.08	0.07	0.08	-0.03														
(11) Board independence	0.78	0.12	-0.04	-0.13	0.07	-0.10	0.10	0.01	-0.03	0.04	0.04	0.03													
(12) Board ownership	0.11	0.19	-0.04	-0.08	-0.25	-0.10	-0.15	-0.09	-0.02	0.03	0.06	-0.23	0.00												
(13) Board financial/accounting expertise	0.35	0.16	-0.10	-0.17	-0.08	-0.14	-0.08	0.14	-0.02	0.04	-0.02	0.06	0.22	-0.11											
(14) Non-busy board	0.84	0.18	0.01	-0.03	-0.25	-0.28	-0.43	-0.09	0.07	-0.03	-0.20	0.01	-0.19	0.06	0.15										
(15) Analyst coverage	3.59	3.11	0.41	0.09	0.15	-0.10	0.09	0.07	0.10	0.03	-0.01	0.03	0.07	-0.09	-0.08	-0.00									
(16) Search committee	0.84	0.36	0.01	-0.02	0.15	0.27	0.20	0.16	0.00	-0.02	0.07	-0.04	0.06	-0.00	-0.12	-0.06	-0.04								
(17) Unplanned CEO turnover due to death	0.01	0.18	0.07	-0.06	-0.15	0.11	0.08	0.04	-0.04	0.00	-0.08	-0.02	-0.00	0.15	-0.02	0.11	-0.05	0.08							
(18) Unplan CEO turn. due to health & others	0.06	0.08	0.08	-0.03	-0.03	0.01	0.11	0.02	-0.02	0.02	0.21	-0.13	-0.07	0.10	0.03	-0.05	-0.04	0.04	-0.01						
(19) Unplanned CEO turn. due to dismissal	0.20	0.16	0.01	-0.05	-0.05	-0.07	0.01	-0.14	0.02	0.08	0.14	-0.04	0.04	-0.07	0.10	0.06	-0.03	-0.36	-0.03	-0.01					
(20) Pre-succession firm perf. (ROA)	-0.01	0.04	0.04	-0.01	-0.27	0.02	0.15	0.22	-0.05	-0.04	-0.02	-0.17	-0.16	0.10	-0.06	0.14	0.06	-0.08	0.08	0.04	-0.00				
(21) Pre-succession firm perf. (Mkt return)	0.02	0.02	0.00	0.04	-0.00	-0.08	-0.30	-0.30	0.08	-0.01	-0.06	0.10	0.08	-0.01	-0.14	-0.08	-0.04	0.08	-0.08	-0.04	-0.03	-0.25			
(22) Interim CEO with CFO background	0.03	0.14	0.13	-0.05	-0.07	-0.07	-0.14	0.03	0.02	-0.01	-0.01	-0.08	-0.04	0.05	0.08	-0.02	-0.05	0.01	-0.03	-0.01	0.08	0.13	-0.04		
(23) Interim CEO as pre-succ director	0.15	0.31	-0.01	0.03	0.19	0.05	0.03	-0.09	-0.05	-0.08	-0.05	0.09	0.06	-0.19	0.04	-0.10	0.03	0.06	-0.06	-0.03	-0.05	-0.09	0.15	-0.05	
(24) Earnings management (discretionary accruals)	-0.01	0.05	0.14	0.01	0.02	0.02	-0.01	0.03	0.02	0.04	0.06	-0.01	0.10	0.02	-0.02	-0.02	0.08	-0.07	-0.07	-0.02	-0.01	-0.20	0.06	0.01	0.05

Note: N=383 (firm-quarter),  $p < 0.05$  if the |coefficient| is great than 0.09

**TABLE 2**  
**DID Analysis to Predict Income-increasing Earnings Management**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5 (Treatment)	Model 6 (Control)
Firm size	-0.007*** (0.000)	-0.007*** (0.000)	-0.008*** (0.001)	-0.008*** (0.001)	-0.014*** (0.002)	-0.010*** (0.001)
Firm performance (ROA)	0.001 (0.011)	0.001 (0.011)	0.002 (0.012)	0.002 (0.012)	0.003 (0.015)	0.002 (0.018)
Firm performance (stock market return)	0.006 (0.005)	0.005 (0.005)	0.005 (0.006)	0.005 (0.006)	0.010 (0.007)	-0.002 (0.005)
Firm growth	0.000 (0.000)	0.000 (0.000)	0.000* (0.000)	0.000 (0.000)	-0.001 (0.001)	0.002 (0.006)
Leverage	0.000 (0.003)	-0.000 (0.003)	0.001 (0.003)	0.001 (0.003)	-0.002 (0.007)	0.003 (0.004)
Altman's Z-score	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000* (0.000)	-0.000 (0.000)
Fourth quarter	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.007*** (0.001)	-0.011*** (0.001)
External CEO labor market competitiveness	0.009*** (0.001)	0.009*** (0.001)	0.010*** (0.001)	0.010*** (0.001)	0.019*** (0.004)	0.005*** (0.001)
Board independence	-0.014 (0.008)	-0.013 (0.008)	-0.012 (0.007)	-0.012 (0.008)	-0.010 (0.008)	-0.012 (0.008)
Board ownership	-0.010 (0.007)	-0.010 (0.007)	-0.009 (0.006)	-0.009 (0.006)	-0.005 (0.005)	-0.002 (0.004)
Board financial/accounting expertise	-0.009** (0.003)	-0.009*** (0.003)	-0.014*** (0.003)	-0.014*** (0.003)	-0.021*** (0.006)	-0.014*** (0.003)
Non-busy board	-0.003 (0.003)	-0.003 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.004 (0.006)	-0.005 (0.003)
Analyst coverage	-0.002*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.004*** (0.001)	-0.002** (0.001)
Pre-succession firm performance (ROA)			-0.016 (0.017)	-0.016 (0.017)		
Pre-succession firm performance (stock market return)			0.004 (0.006)	0.004 (0.006)		
Unplanned CEO turnover due to dismissal			0.015*** (0.003)	0.014*** (0.003)		
Unplanned CEO turnover due to death			0.013*** (0.003)	0.013*** (0.003)		
Unplanned CEO turnover due to health and other reasons			0.017*** (0.004)	0.018*** (0.004)		
Incoming CEO close to retirement age			-0.004*** (0.001)	-0.003* (0.001)		
Incoming CEO being outsider			-0.001 (0.001)	-0.001 (0.001)		
Incoming CEO with CFO background			0.002* (0.001)	0.002* (0.001)		
Incoming CEO as pre-succession director on the board			0.002 (0.002)	0.002 (0.002)		
IMR			0.008*** (0.001)	0.008*** (0.001)		
Firm with interim succession			-0.000 (0.002)	-0.001 (0.002)		
Interim period	-0.005*** (0.001)	-0.007*** (0.001)	-0.003*** (0.001)	-0.005*** (0.001)	0.004* (0.002)	-0.006** (0.002)
Firm with interim succession * Interim period		0.005** (0.002)		0.004* (0.002)		
Constant	0.087*** (0.008)	0.088*** (0.008)	0.028** (0.012)	0.028* (0.012)	0.153*** (0.024)	0.074*** (0.013)
Fixed firm effects	Yes	Yes	No	No	Yes	Yes
Fixed industry effects	No	No	Yes	Yes	No	No
Fixed year effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,864	3,864	3,864	3,864	1,932	1,932
Adjusted R <sup>2</sup>	0.42	0.43	0.37	0.38	0.52	0.53

Robust standard errors reported in parentheses. \*, \*\*, \*\*\* for  $p < .05$ ,  $p < .01$ , and  $p < .001$ , respectively (two-tailed tests).

TABLE 3: Discrete-time Event History Analysis to Predict Interim CEO Promotion

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Outsider interim CEO	1.357 (0.747)	1.349 (0.748)	1.408 (0.744)	1.374 (0.751)	1.340 (0.731)	1.261 (0.881)	1.133 (0.862)
Interim CEO duality	2.886*** (0.410)	2.977*** (0.417)	2.906*** (0.419)	2.883*** (0.409)	2.972*** (0.414)	3.410*** (0.617)	3.731*** (0.745)
Interim CEO age	-1.958** (0.688)	-2.074** (0.689)	-1.955** (0.683)	-1.986** (0.692)	-2.011** (0.687)	-3.055*** (0.823)	-3.122*** (0.850)
Interim CEO with CFO background	2.806* (1.173)	3.072** (1.046)	3.284** (1.193)	2.861* (1.129)	2.695* (1.288)	5.150*** (1.251)	5.945** (1.920)
Interim CEO as pre-succ. director	-0.084 (0.759)	-0.121 (0.758)	-0.041 (0.761)	-0.085 (0.765)	-0.133 (0.766)	0.177 (0.753)	0.210 (0.747)
Firm size	-0.446 (0.486)	-0.418 (0.512)	-0.389 (0.490)	-0.454 (0.470)	-0.427 (0.482)	-0.235 (0.581)	-0.369 (0.429)
Firm performance (ROA, t-1)	0.560** (0.203)	0.566** (0.199)	0.567** (0.200)	0.555** (0.208)	0.574** (0.210)	0.925*** (0.250)	0.980*** (0.267)
Firm performance (Mkt return, t-1)	3.778 (2.514)	3.350 (2.500)	3.959 (2.480)	3.899 (2.611)	3.751 (2.315)	4.928 (2.672)	5.498* (2.585)
Firm growth	-0.715 (1.150)	-0.719 (1.141)	-0.673 (1.108)	-0.684 (1.166)	-0.801 (1.199)	-1.600 (1.385)	-2.024 (1.414)
Leverage	-1.230 (2.196)	-1.087 (2.200)	-1.134 (2.182)	-1.218 (2.191)	-1.033 (2.132)	-1.949 (2.934)	-1.216 (2.969)
External CEO labor market comp.	-0.309 (0.258)	-0.294 (0.252)	-0.396 (0.260)	-0.300 (0.262)	-0.323 (0.262)	-0.298 (0.291)	-0.493 (0.365)
Pre-succession performance (ROA)	7.574 (7.971)	7.727 (7.901)	7.373 (8.102)	7.901 (8.116)	7.683 (7.895)	8.231 (11.066)	8.167 (10.080)
Pre-succession performance (stock market return)	3.841 (2.783)	4.053 (2.731)	4.651 (2.743)	3.880 (2.782)	4.491 (2.996)	9.833* (3.948)	10.758* (4.187)
Unplanned CEO turnover due to dismissal	0.485 (1.372)	0.342 (1.389)	0.475 (1.357)	0.501 (1.368)	0.369 (1.350)	0.641 (1.281)	0.587 (1.176)
Unplanned CEO turnover due to death	2.639** (0.865)	2.710** (0.842)	2.637** (0.873)	2.636** (0.865)	2.752** (0.848)	3.498*** (0.942)	3.832*** (0.898)
Unplanned CEO turnover due to health and other reasons	3.159* (1.405)	3.248* (1.371)	3.208* (1.354)	3.150* (1.402)	3.148* (1.366)	3.147* (1.322)	3.122* (1.310)
Search committee	-0.295 (0.815)	-0.436 (0.829)	-0.349 (0.798)	-0.248 (0.821)	-0.393 (0.776)	-0.437 (0.759)	-0.310 (0.730)
IMR	0.052 (0.034)	0.051 (0.032)	0.052 (0.034)	0.053 (0.034)	0.052 (0.033)	0.047 (0.033)	0.049 (0.033)
Board independence	-0.061 (1.544)	0.308 (1.615)	0.224 (1.623)	-0.029 (1.538)	-0.177 (1.529)	-0.224 (2.015)	-1.049 (1.933)
Board ownership	0.629 (1.492)	0.652 (1.499)	0.535 (1.532)	0.638 (1.493)	0.595 (1.491)	0.214 (2.482)	-0.421 (2.976)
Board financial/accounting expertise	-0.849 (1.409)	-0.809 (1.405)	-0.970 (1.377)	-0.703 (1.436)	-0.822 (1.373)	-1.023 (1.420)	-1.410 (1.761)
Non-busy board	1.543 (1.159)	1.602 (1.165)	1.642 (1.145)	1.506 (1.187)	1.770 (1.179)	2.142 (1.338)	2.117 (1.556)
Analyst coverage	0.492* (0.197)	0.499* (0.197)	0.502** (0.192)	0.491* (0.196)	0.523* (0.206)	0.747*** (0.214)	0.920*** (0.232)
Earnings management (EM, measured by discretionary accruals)	0.208** (0.059)	0.370* (0.156)	0.258* (0.109)	0.432* (0.214)	0.313** (0.101)	0.277* (0.133)	0.665** (0.201)
EM * Board independence (H3a)		-0.723* (0.351)					-0.930 (0.845)
EM * Board ownership (H3b)			-0.059* (0.032)				-0.083 (0.094)
EM * Board financial expertise (H3c)				-0.106** (0.031)			-0.119* (0.053)
EM * Non-busy board (H3d)					-0.525* (0.311)		-0.508* (0.232)
EM * Analyst coverage (H3e)						-0.014*** (0.003)	-0.012** (0.003)
Observations	383	383	383	383	383	383	383
Year dummy variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood ratio	-75.38	-74.96	-75.21	-75.32	-74.86	-71.98	-70.72

Robust standard errors reported in parentheses. \*, \*\*, \*\*\* for  $p < .05$ ,  $p < .01$ , and  $p < .001$  respectively (two-tailed tests).



### Appendix A: Calculating Discretionary Accruals

Our discretionary accrual measure is calculated based on the modified Jones (1991) model. We first estimate equation (1) below by industry-quarter at the Fama-French (1997) 48 industry level.

$$TA_{j,t} = k_1 * \frac{1}{Assets_{j,t-1}} + k_2 \frac{(\Delta REV_{j,t} - \Delta AR_{j,t})}{Assets_{j,t-1}} + k_3 \frac{PPE_{j,t}}{Assets_{j,t-1}} + \varepsilon_t \quad (1)$$

where

$TA_{j,t}$  = Firm  $j$ 's total accruals in quarter  $t$ . It is calculated as earnings before extraordinary items minus operating cash flows, deflated by firm  $j$ 's total assets at the beginning of quarter  $t$ .

$Assets_{j,t-1}$  = Firm  $j$ 's total assets at the beginning of quarter  $t$ .

$\Delta REV_{j,t}$  = Firm  $j$ 's change in revenues between quarter  $t-1$  and quarter  $t$ .

$\Delta AR_{j,t}$  = Firm  $j$ 's change in accounts receivable between quarter  $t-1$  and quarter  $t$ .

$PPE_{j,t}$  = Firm  $j$ 's gross value of property, plant and equipment in quarter  $t$ ;

$\varepsilon_t$  = Error term.

The industry- and quarter-specific parameter estimates obtained from equation (1) are then used to estimate firm-specific non-discretionary accruals (NA) as a percentage of lagged total assets as follows:

$$NA_{j,t} = \hat{k}_1 \frac{1}{Asset_{j,t-1}} + \hat{k}_2 \frac{(\Delta REV_{j,t} - \Delta AR_{j,t})}{Asset_{j,t-1}} + \hat{k}_3 \frac{PPE_{j,t}}{Asset_{j,t-1}} \quad (2)$$

where

$\hat{k}_1$  to  $\hat{k}_3$  = Coefficient estimates from equation (1).

Our discretionary accrual measure is the difference between total accruals ( $TA_{j,t}$ ) and non-discretionary accruals ( $NA_{j,t}$ ).

### Appendix B: Predicting the Likelihood of Interim CEO Appointment

Variable	Dependent variable: <i>INTERIM_CEO_APPOINTMENT</i>
Firm Size	-0.012 (0.027)
Firm performance (ROA)	-0.678 (0.920)
Firm performance (Market return)	0.040 (0.548)
Firm age	-0.081 (0.122)
Unplanned CEO departure due to dismissal	0.989** (0.317)
Unplanned CEO departure due to death	1.376* (0.658)
Unplanned CEO departure due to health and other reasons	0.455 (0.443)
Departing CEO's tenure	-0.123* (0.061)
Departing CEO's age	-0.281** (0.076)
Constant	0.137 (0.341)
Fixed industry effects	Yes
Observations	1,351
Pseudo R <sup>2</sup>	0.24

Standard errors are in the parentheses. \*, \*\*, \*\*\* for  $p < .05$ ,  $p < .01$ , and  $p < .001$ , respectively (two-tailed tests)

### Appendix C: Comparison of Propensity Score and Covariates Before vs. After the PSM Process

Variables	Characteristics before the matching (N=1,351)			Characteristics after the matching (N=276)		
	Treatment firms (N=145)	Candidate control firms (N=1,206)	t-test statistics	Treatment firms (N=138)	Matching Control firms (N=138)	t-test statistics
Propensity score	0.137	0.097	7.37***	0.137	0.125	1.24
Firm size	5.831	5.688	1.06	5.832	5.728	0.15
Firm performance (ROA)	-0.009	-0.014	0.85	-0.009	-0.013	0.73
Firm performance (Market return)	0.045	0.051	0.31	0.044	0.052	0.49
Firm age	2.333	2.397	0.79	2.328	2.297	0.32
Unplanned CEO turnover due to dismissal	0.181	0.089	3.18***	0.188	0.152	0.58
Unplanned CEO turnover due to death	0.014	0.003	2.64**	0.014	0.007	0.83
Unplanned CEO turnover due to health and other reasons	0.051	0.033	0.74	0.051	0.058	0.18
Departing CEO's tenure	1.476	1.658	2.65**	1.485	1.486	0.02
Departing CEO's age	3.700	3.916	4.56***	3.694	3.760	0.81

Note: (1) \*, \*\*, \*\*\* for  $p < .05$ ,  $p < .01$ , and  $p < .001$ , respectively (two-tailed tests)

(2): The above analysis tests the differences between the means of the propensity scores and the distribution of the covariates (i.e., independent variables) used to predict interim CEO appointment between the treatment firms and the control firms before and after conducting the one-to-one matching process. As shown in the above table, many of these differences are statistically significant before the matching process (i.e., comparison between 145 treatment firm and 1,206 candidate control firms). By contrast, after the propensity score matching, these differences between the treatment firms and the control firms become very small and are statistically insignificant. These results suggest that our matching process is successful in identifying comparable firms with similar firm characteristics. As a note, we were unable to identify a match firm for seven of our treatment firms; as a result, the number of treatment firms reduces from 145 to 138 firms.

### Biographical Sketches

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Guoli Chen is Assistant Professor of Strategy at INSEAD. He received his Ph.D. in strategic management from Pennsylvania State University. His research examines CEOs, top management teams and their influence on firms' strategic choices, as well as corporate governance and CEO-board dynamics. He also studies organizational growth, renewal and corporate development activities.

Shuqing Luo is Assistant Professor in the Department of Accounting at National University of Singapore (NUS) Business School. She received her Ph.D. in accounting from University of Pittsburgh. Her main research interests include corporate disclosure and reporting practices, as well as how corporate reporting practices affect real decisions.

Yi Tang is Assistant Professor in the Department of Management and Marketing, Hong Kong Polytechnic University. He received his Ph.D. from Hong Kong University of Science and Technology. His recent research focuses on how corporate executives' psychological biases affect firm decision and performance.

Jamie Y. Tong is Assistant Professor in Accounting and Finance Discipline of UWA Business School, University of Western Australia. She received her Ph.D. in Accounting from Hong Kong Polytechnic University. Her current research areas include accounting quality, corporate governance, R&D investment and research productivity assessment.