Ownership Structure, Business Group Affiliation, Listing Status, and Earnings Management: Evidence from Korea

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Abstract

Using a large sample of both publicly traded and privately held firms in South Korea (hereafter "Korea"), we investigate whether, and how, the deviation of controlling shareholders' control from ownership, business group affiliation, and listing status differentially affect the extent of earnings management. Our study yields three major findings. First, we find that as the control–ownership disparity becomes larger, controlling shareholders tend to engage more in opportunistic earnings management to hide their behavior and avoid adverse consequences such as disciplinary action. The result of our full-model regression reveals that an increase in the control–ownership wedge by 1 percent leads to an increase in the magnitude of (unsigned) discretionary accruals by 1.3 percent of lagged total assets, ceteris paribus. Second, we find that for our full-model regression, the magnitude of (unsigned) discretionary accruals is greater for group-affiliated firms than for nonaffiliated firms by 0.8 percent of lagged total assets. This result suggests that business group affiliation provides controlling shareholders with more incentives and opportunities for earnings management. Finally, we find that for our full-model regression, the magnitude of (unsigned) discretionary accruals is greater for publicly traded firms than for privately held firms by 1.2 percent of lagged total assets. This result supports the notion that stock markets create incentives for public firms to manage reported earnings to satisfy the expectations of various market participants that are often expressed in earnings numbers.

Keywords Business group; Corporate governance; Earnings management; Listing status

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Structure de propriété, affiliation à des groupes d'affaires, statut quant à la cotation boursière et gestion du résultat : la situation coréenne

Condensé

À partir d'un vaste échantillon d'entreprises coréennes, regroupant à la fois des sociétés ouvertes et des sociétés fermées, les auteurs examinent l'incidence de mesures de la gouvernance propres aux sociétés quant à un aspect important de l'opportunisme des cadres dans la communication d'information financière, soit l'ampleur de la gestion opportuniste du résultat. Ce faisant, ils se concentrent sur trois facteurs propres aux sociétés qui sont réputés avoir une incidence sur le comportement des entreprises coréennes en matière d'information financière : 1) la dissociation entre le contrôle et la propriété exprimés par les droits des actionnaires majoritaires ; 2) leur affiliation avec un groupe d'affaires important ; et 3) leur statut quant à la cotation boursière (société ouverte ou fermée). Les auteurs font porter leurs analyses sur 15 159 observations société-année relatives à la période de neuf ans sur laquelle s'échelonne leur étude (1992–2000). La période couverte par l'échantillon englobe à la fois les périodes antérieure et postérieure à la crise financière asiatique de 1997, ce qui permet aux auteurs de vérifier si cette crise a influé sur le comportement de gestion du résultat et, le cas échéant, comment. Ils utilisent l'ampleur des constatations discrétionnaires (plutôt que leur valeur signée) comme variable de remplacement de l'ampleur de la gestion du résultat pour saisir l'incidence conjuguée de la gestion du résultat à la hausse et à la baisse.

Depuis la crise de 1997, de précédentes recherches ont traité de l'incidence de la gouvernance sur la performance des sociétés durant la période entourant la crise. Les chercheurs ont cependant accordé assez peu d'attention à l'incidence des facteurs de gouvernance propres aux sociétés tels que la dissociation contrôle-propriété, l'affiliation à des groupes d'affaires et le statut quant à la cotation boursière, bien que l'opportunisme des cadres dans la communication d'information financière ou l'opacité des informations connexes ait souvent été évoqué comme principal élément déclencheur de la crise. Les auteurs se penchent sur cette question en s'appuyant sur des données coréennes, l'encadrement institutionnel en Corée offrant un contexte parfaitement approprié à l'étude de la relation, *à l'échelon des sociétés*, entre la gouvernance et la gestion du résultat, et cela pour les raisons suivantes. Premièrement, la structure de propriété de maintes sociétés coréennes est clairement caractérisée par un large fossé entre le contrôle (les droits de vote) et la propriété (les droits aux flux de trésorerie) des actionnaires de contrôle, ce qui est considéré comme une importante source de problèmes de délégation dans la majorité des marchés émergents. Ce fossé crée des incitatifs qui poussent les actionnaires de contrôle à détourner les ressources de l'entreprise dans leur propre intérêt, aux dépens des actionnaires minoritaires. Deuxièmement, une grande proportion des sociétés coréennes, tant ouvertes que fermées, sont affiliées à des groupes d'affaires appelés *chaebols*. Les faits démontrent que les chaebols coréens ont tendance à se livrer couramment à la gestion du résultat par l'intermédiaire d'opérations entre apparentés ou de détournement d'actifs au sein du groupe, en particulier au cours de la période postérieure à la crise. Les chercheurs ont cependant recueilli jusqu'à maintenant peu de données systématiques permettant d'établir si l'affiliation à un groupe d'affaires influe sur la gestion opportuniste du résultat et, le cas échéant, comment. Troisièmement, la Corée est l'un des rares pays où d'abondantes données sur la structure de propriété

et l'affiliation à des groupes d'affaires sont du domaine public pour un vaste éventail de sociétés fermées et de sociétés ouvertes. Dans la présente étude, les auteurs tirent profit de ces caractéristiques institutionnelles et de la disponibilité de données sur la gouvernance propres aux sociétés pour analyser la relation à l'échelon des sociétés entre la gouvernance et la gestion opportuniste du résultat.

Les constatations des auteurs sont sommairement les suivantes. Premièrement, ils observent que lorsque le fossé contrôle-propriété s'élargit, les actionnaires de contrôle ont tendance à gérer le résultat publié de façon plus audacieuse, afin de dissimuler les conséquences négatives de leur comportement intéressé. Les résultats de leurs régressions pour l'ensemble du modèle révèlent qu'un élargissement du fossé de 1 pour cent entraîne une augmentation de l'ampleur des constatations discrétionnaires de 1,3 pour cent de la valeur de l'actif total au début de la période précédente, toutes choses étant égales par ailleurs. Deuxièmement, ils constatent que les sociétés associées à un groupe d'affaires s'engagent dans la gestion opportuniste du résultat de façon plus intensive que les sociétés qui ne sont pas associées à un groupe de ce genre. En particulier, les résultats des régressions pour l'ensemble du modèle montrent que l'ampleur des constatations discrétionnaires est plus grande de 0,8 pour cent de la valeur de l'actif total au début de la période précédente pour les sociétés affiliées à un chaebol par rapport à celles qui ne le sont pas. Cet écart observé de 0,8 pour cent est significatif à un niveau inférieur au seuil de 1 pour cent. Ce résultat semble indiquer que l'affiliation à un groupe d'affaires incite davantage les actionnaires de contrôle à gérer le résultat, et leur en fournit davantage l'occasion, par l'intermédiaire des décisions relatives aux constatations discrétionnaires. Enfin, les auteurs constatent que les sociétés ouvertes ont tendance à s'engager dans la gestion du résultat plus que les sociétés fermées, observation confirmant l'idée selon laquelle la manipulation du cours des actions motiverait la gestion du résultat. Les résultats des régressions pour l'ensemble du modèle révèlent que l'ampleur des constatations discrétionnaires est plus grande de 1,2 pour cent de la valeur de l'actif total au début de la période précédente pour les sociétés ouvertes que pour les sociétés fermées. L'écart observé de 1,2 pour cent est non seulement statistiquement significatif à un niveau inférieur au seuil de 1 pour cent, mais il est aussi économiquement significatif, compte tenu de la moyenne et de la médiane du rendement de l'actif de 3,6 pour cent et de 2,7 pour cent respectivement, pour l'ensemble de l'échantillon durant toute la période étudiée. Ce résultat confirme l'hypothèse selon laquelle les marchés boursiers créent des incitatifs qui poussent les sociétés ouvertes à gérer le résultat publié pour répondre aux attentes de divers participants au marché, attentes qui sont souvent exprimées sous forme de données relatives au résultat.

En résumé, les résultats exposés par les auteurs indiquent que l'ampleur de la gestion du résultat est en relation significative avec les trois caractéristiques de la gouvernance propres aux sociétés, soit le fossé contrôle-propriété, l'affiliation à un groupe d'affaires et le statut quant à la cotation boursière, une fois contrôlés les autres facteurs propres aux sociétés. Les résultats résistent aux différentes mesures des constatations discrétionnaires, aux différentes périodes d'échantillonnage (antérieure ou postérieure à la période de crise) et aux différentes méthodes d'estimation.

Les conclusions des auteurs viennent enrichir la documentation existante pour différentes raisons. Plusieurs chercheurs ont récemment entrepris d'étudier l'incidence de la gouvernance sur la gestion du résultat dans un contexte transnational, à l'aide de variables

de gouvernance à l'échelle des pays. Ces études s'appuyant sur des données nationales, les analyses dont elles font état écartent implicitement les variations intersociétés que pourraient contenir les variables relatives à la gouvernance à l'intérieur d'un pays. L'analyse des auteurs indique, au contraire, que les problèmes de délégation associés à la gouvernance varient selon les sociétés à l'intérieur d'un même pays, en fonction du fossé contrôle-propriété, de l'affiliation avec un important groupe d'affaires et du statut quant à la cotation boursière, ce qui influe en retour sur les incitatifs auxquels sont soumis les initiés et les occasions de gestion du résultat qui s'offrent à eux. L'usage de données propres aux sociétés à l'intérieur d'un même pays fournit donc des indications supplémentaires quant au rôle de la gouvernance dans l'influence exercée sur le comportement des initiés en matière d'information financière. En outre, l'usage des données d'un pays unique présente un avantage par rapport à l'utilisation de données transnationales, car la concentration sur un seul pays atténue le problème potentiel d'endogénéité qui peut se poser dans les études transnationales, notamment la possibilité que l'ampleur de la gestion du résultat et la structure de propriété soient toutes deux influencées par certains facteurs institutionnels propres à tout le territoire d'un pays comme la réglementation des valeurs mobilières, les règles en matière d'informations à fournir, les institutions légales et extralégales.

Enfin, peu nombreux sont les chercheurs qui se sont penchés jusqu'à maintenant sur la question de l'affiliation à des groupes d'affaires dans le contexte du comportement des sociétés en matière d'information financière, bien que plusieurs études aient porté sur les coûts et les avantages de l'affiliation à des groupes d'affaires et sur son incidence sur la performance de l'entreprise. À la connaissance des auteurs, leur étude est la première à documenter de façon systématique les éléments établissant l'incidence de l'affiliation à un groupe d'affaires sur la gestion opportuniste du résultat. De plus, les auteurs exposent des faits démontrant que le comportement de gestion du résultat des sociétés ouvertes et des sociétés fermées diffère. Jusqu'à maintenant, les données relatives à l'incidence du statut quant à la cotation boursière sur la gestion du résultat étaient au mieux non concluantes et limitées aux États-Unis et aux pays d'Europe. Compte tenu de ces éléments peu concluants et de la rareté des données internationales sur la question, l'étude des auteurs contribue à la somme des connaissances sur la question en recueillant des preuves que les sociétés ouvertes sont plus audacieuses dans la gestion opportuniste du résultat que les sociétés fermées, dans un marché émergent où l'encadrement légal est lacunaire et la protection des investisseurs est déficiente par rapport aux marchés des États-Unis et de l'Europe.

En ce qui a trait à l'incidence de l'affiliation à un groupe d'affaires sur la gestion du résultat, les auteurs ciblent dans leur analyse le comportement de gestion du résultat ou le comportement en matière d'information financière des différentes sociétés appartenant à un groupe d'affaires, plutôt que le comportement de groupes d'affaires ou de chaebols. En d'autres termes, les auteurs, dans leur analyse, s'intéressent peu au comportement de gestion du résultat au niveau du groupe. L'examen du comportement en matière d'information financière au niveau du groupe et des différences à cet égard entre les groupes fournirait des indications supplémentaires utiles à la compréhension des facteurs qui déterminent le comportement des groupes dans leur ensemble en matière d'information financière. Compte tenu du manque de données sur la gestion du résultat au niveau des groupes d'affaires, il conviendrait de poursuivre les recherches dans cette voie.

1. Introduction

Using a large sample of Korean firms that includes both publicly traded and privately held companies, we examine the effect of firm-specific corporate governance measures on an important aspect of managerial opportunism in financial reporting — that is, the extent of opportunistic earnings management. Our analysis focuses on three firm-specific factors that are deemed to affect the financial reporting behavior of Korean firms: (1) the diversion of firm resources by controlling shareholders; (2) a firm's affiliation with a large business group; and (3) a firm's listing status (that is, publicly traded versus privately held). We perform our analyses on 15,159 firm-year observations over the nine-year period 1992–2000. Our sample period includes periods both before and after the 1997 Asian financial crisis, which allows us to check whether the crisis affected earnings-management behavior. We use the magnitude of discretionary accruals (rather than the signed level of discretionary accruals) as a proxy for the extent of earnings management to capture the combined effect of both income-increasing and income-decreasing earnings management.

Since the 1997 crisis, several studies have examined the effect of corporate governance on firm performance around the time of the crisis (e.g., Johnson, Boone, Breach, and Friedman 2000a; Mitton 2002; Joh 2003). However, these studies have paid little attention to the financial reporting effect of firm-specific governance factors such as the control–ownership divergence, business group affiliation, and listing status (although managerial opportunism in financial reporting and the associated disclosure opacity have often been cited as major factors that may have triggered the crisis). In this paper, we examine the issue using Korean data because institutional environments in Korea offer an ideal setting for examining the firm-level relation between corporate governance and earnings management, for the following reasons. First, the corporate ownership structure of many Korean firms is characterized by a large wedge between control (voting rights) and ownership (cash flow rights) of controlling shareholders, which is considered a major source of agency problems in most emerging markets. This wedge creates incentives for controlling shareholders to divert firm resources for their private benefit at the expense of minority shareholders (Johnson, La Porta, Lopez-De-Silanes, and Shleifer 2000b; Bertrand, Mehta, and Mullainathan 2002).[1] Second, a large number of both publicly traded and privately held firms in Korea are affiliated with business groups known as chaebols. Previous research finds that chaebols play an important role in determining the economic performance of Korean firms (e.g., Chang and Hong 2000; Joh 2003). Furthermore, anecdotal evidence shows that Korean chaebols tend to engage in large-scale earnings management through related-party transactions or intra-group asset diversion, in particular during the post-crisis period.[2] To our knowledge, however, previous research has documented little systematic evidence on whether business group affiliation affects opportunistic earnings management. Third, Korea is one of the few countries in which detailed data on ownership structure and business group affiliation are publicly available for a large sample of privately held firms as well as publicly traded firms. In this

paper, we take advantage of these institutional features and the availability of firm-specific governance data to investigate the firm-level relation between corporate governance and opportunistic earnings management.

Our major findings are as follows. First, we find that as the control–ownership wedge becomes larger, controlling shareholders tend to manage reported earnings more aggressively to hide their self-serving behavior and avoid adverse consequences such as disciplinary action. The results of our full-model regressions reveal that an increase in the wedge by 1 percent leads to an increase in the magnitude of discretionary accruals by 1.3 percent of lagged total assets, ceteris paribus. Second, we find that group-affiliated firms engage more intensely in opportunistic earnings management than do nonaffiliated firms. In particular, the results of our full-model regressions show that the magnitude of discretionary accruals is greater for chaebol-affiliated firms than for nonaffiliated firms by 0.8 percent of lagged total assets. This observed difference of 0.8 percent is significant at less than the 1 percent level. This result suggests that business group affiliation provides controlling shareholders with greater incentives and more opportunities for earnings management through discretionary accrual choices. Finally, we find that publicly traded firms tend to engage in earnings management to a greater extent than privately held firms, a finding consistent with a view of stock price manipulation as a motive for earnings management (Jensen 2004). The results of our full-model regressions reveal that the magnitude of discretionary accruals is greater for publicly traded firms than for privately held firms by 1.2 percent of lagged total assets. The observed difference of 1.2 percent is not only statistically significant at less than the 1 percent level but also economically significant in light of the mean and median return on assets (ROA) of 3.6 percent and 2.7 percent, respectively, for our full sample during the entire sample period. This result supports the notion that stock markets create incentives for public firms to manage reported earnings to satisfy the expectations of various market participants, which are often expressed in earnings numbers.

Our results add to the existing literature in the following way. Several researchers have recently begun to examine the effect of corporate governance on earnings management in a cross-country setting (e.g., Leuz, Nanda, and Wysocki 2003; Gul, Tsui, Su, and Rong 2002). These studies typically rely on country-level corporate governance variables developed by La Porta et al. (La Porta, Lopez-De-Silanes, Shleifer, and Vishny 1997, 1998; La Porta, Lopez-De-Silanes, and Shleifer 1999; La Porta, Lopez-De-Silanes, Shleifer, and Vishny 2000a, b). For example, Leuz et al. (2003) document an inverse relation between earnings management and investor protection, using cross-country data from 31 countries. Because they use country-level data, their analysis implicitly assumes away possible cross-firm variations in corporate governance variables within a country. In contrast, our analysis indicates that agency problems associated with corporate governance vary across firms within a country depending on the control–ownership wedge, a firm's affiliation with a large business group, and a firm's listing status, which in turn affects corporate insiders' incentives and opportunities for earnings management. The use of within-

country, firm-specific data thus provides additional insights into the role of corporate governance in influencing corporate insiders' financial reporting behavior.

Our study is related to the recent study by Haw, Hu, Hwang, and Wu 2004. They show a positive relation between the extent of earnings management and the control–ownership wedge by using firm-level data in a cross-country setting.[3] The use of data from a single country has an advantage over using cross-country data in that focusing on a single country alleviates a concern over potential endogeneity problems that may arise in cross-country studies. For example, in such studies, there is the possibility that the extent of earnings management and the ownership structure are jointly influenced by country-wide, institutional factors such as security regulations, disclosure rules, and legal and extralegal institutions.

Finally, few previous studies have investigated the issue of business group affiliation in the context of firms' financial reporting behavior, although there are several studies that address the costs and benefits of business group affiliation and its impact on corporate performance (e.g., Khanna and Palepu 2000a, b; Chang and Hong 2000). To our knowledge, our study is the first to document systematic evidence on the impact of business group affiliation on opportunistic earnings management. In addition, we provide evidence on differences in earnings-management behavior between publicly traded firms and privately held firms. The evidence to date on the effect of listing status on earnings management is at best mixed, and is limited to the United States and European countries.[4] Given the inconclusive evidence and the scarcity of international evidence on the issue, our study contributes to this literature by documenting evidence that publicly traded firms are more aggressive in opportunistic earnings management than privately held firms in an emerging market where legal environments are weak and investor protection is poor relative to U.S. and European markets.

The rest of the paper is organized as follows. Section 2 develops our hypotheses. Section 3 specifies our empirical model. Section 4 explains procedures used for measuring the extent of earnings management. Section 5 discusses sample and data sources, provides descriptive statistics, and presents the results of our univariate tests. Section 6 reports the results of our multivariate tests. Section 7 examines the effect of the 1997 Asian financial crisis on our results and discusses potential endogeneity problems. In addition, this section reports the results of additional robustness checks. Section 8 summarizes and concludes.

2. Hypotheses development

In this section, we discuss three firm-specific factors that explain cross-sectional variations in managerial opportunism — ownership structure, business group affiliation, and listing status — and develop three hypotheses regarding their effects on the extent of earnings management.

Ownership structure and earnings management

A growing body of literature on corporate governance has documented that corporate ownership is concentrated in the hands of controlling shareholders around the

world (e.g., Claessens, Djankov, and Lang 2000; La Porta et al. 1999; Lemmon and Lins 2003). This concentration of ownership is in contrast to the description of corporate ownership by Berle and Means 1932, who focused on the agency conflict between professional managers and outside investors in widely held firms. Instead, in an environment of concentrated ownership, the central agency problem arises from conflicts of interest between minority shareholders and controlling shareholders, who typically have voting rights in excess of their cash flow rights. This wedge between controlling shareholders' voting rights and cash flow rights motivates controlling shareholders to pursue their own interests at the expense of minority shareholders (Johnson et al. 2000b; Claessens, Djankov, Fan, and Lang 2002). In addition, a lack of strong legal protection of minority investors in many emerging economies exacerbates the expropriation of minority investors by controlling shareholders. As the control–ownership wedge widens, controlling shareholders' incentives to expropriate firm resources for private gain increase as the benefit from expropriation becomes larger relative to the associated cost (Lemmon and Lins 2003; Joh 2003; Baek, Kang, and Park 2004). This self-serving behavior undermines corporate earnings performance.

The expropriation of minority investors, if detected, prompts outside intervention by regulators and investors, leading to a loss of reputation for and disciplinary action against controlling shareholders (Leuz et al. 2003; Haw et al. 2004). Thus, controlling shareholders are likely to hide their private control benefits by taking advantage of flexibility and discretion over accounting choices (Fan and Wong 2002). In other words, firms with a high control–ownership wedge have stronger incentives to engage in opportunistic earnings management to mask their non-value-maximizing behavior than firms with a low wedge. To provide empirical evidence, we test the following hypothesis in alternative form:

HYPOTHESIS 1. *The magnitude of earnings management is positively related to the wedge between control and ownership, other things being equal.*

Business group affiliation and earnings management

Diversified business groups are a ubiquitous organizational form in most emerging markets (Khanna and Palepu 2000a, b; Guillen 2002; Lins and Servaes 2002). Corporate Korea is characterized by the prevalence of large business groups called chaebols. Chaebols play a dominant role in many aspects of the Korean economy.[5] The Korea Fair Trade Commission (KFTC) defines a chaebol as a group of companies in which more than 30 percent of the shares are owned by the group's controlling shareholders and its affiliated companies. Like many other business groups in emerging markets, chaebols can be viewed as a collection of both public and private companies in a wide range of industries that are typically controlled by members of a founding family.[6] Firms affiliated with chaebols have extensive business ties with other firms in the same group, and are connected with each other through reciprocal shareholding agreements and a web of cross-debt guarantees among member firms. Although the role of group affiliation has been the subject of previous

studies, the evidence on the benefits and costs of group affiliation is mixed. To our knowledge, previous research has paid little attention to the effect of business group affiliation on financial reporting behavior in general and earnings management in particular.

On the one hand, business groups can create value by allowing affiliated firms to allocate capital and managerial resources more efficiently within the same group in an environment where external capital and labor markets are underdeveloped. Hoshi, Kashyap, and Scharfstein (1991) and Shin and Park (1999) find that firms affiliated with Japanese keiretsus (a type of business group) and Korean chaebols, respectively, have easier access to investment capital than stand-alone, independent firms. Khanna and Palepu (2000a) find that Indian business groups add value to affiliated firms by creating internal markets that supplement inefficient external markets. Business groups can also benefit member firms by facilitating risk sharing through the transfer of resources from one affiliate (for example, a well-performing firm) to another (for example, a poorly performing firm) during times of financial distress. Consistent with the above view, Friedman, Johnson, and Mitton (2003) provide evidence suggesting that controlling shareholders of a business group "prop up" affiliated firms during the crisis, using their private funds or the group-wide savings. Chang and Hong (2000) provide evidence that profitable affiliates prop up or cross-subsidize poorly performing affiliates by using various forms of intra-group transactions, including cash injections, debt guarantees, and/or equity investments.[7] Their evidence also suggests that chaebol-affiliated firms extensively share not only financial resources but also intangibles such as technological skills and advertising.

On the other hand, business group affiliation can create severe agency problems, and may thus destroy firm value. The complex structure of business groups is conducive to self-dealing transactions and makes it difficult for outside investors to monitor these transactions. As a result, group-affiliated firms have more opportunities and means than do unaffiliated firms to divert firm resources through related-party transactions at the expense of minority shareholders. These agency problems could be exacerbated in an environment of weak disclosure requirements, poor corporate governance, and lax law enforcement, and in an inefficient market for corporate control. Bertrand et al. (2002) find that controlling shareholders in Indian business groups transfer resources or tunnel profits from affiliated firms for which they have low cash flow rights to those for which they have high cash flow rights, and that much of tunneling occurs through nonoperating components of earnings.

The diversion of firm resources, whether it is through tunneling or propping, is likely to distort the true underlying earnings performance of an affiliated firm. This earnings distortion, if detected, is likely to invite regulatory intervention and additional scrutiny by outside stakeholders. Therefore, group-affiliated firms are likely to have stronger incentives and greater means to engage in opportunistic earnings management than do unaffiliated, stand-alone firms. To provide empirical evidence on the effect of business group affiliation on earnings management, we test the following hypothesis in alternative form:

HYPOTHESIS 2. *The magnitude of earnings management is greater for business group-affiliated firms than for nonaffiliated firms, other things being equal.*

Listing status and earnings management

Although prior research has examined various incentives for earnings management in publicly traded firms, little is known about incentives in privately held firms, despite their economic importance for most emerging economies. Quite recently, academic research has started investigating the motives for managing earnings in private firms and differences in the pervasiveness of earnings management between private and public firms (Ball and Shivakumar 2005; Beatty et al. 2002; Burgstahler et al. 2006; Coppens and Peek 2005).

The demand for accounting information differs significantly between public and private firms. Public firms are distinguished from private firms in that public firms can raise capital from outside investors in stock markets. Equity financing through stock markets puts public firms under close scrutiny by outside investors. Because outside investors usually cannot get access to inside information, published financial statements play an important role in reducing information asymmetry between corporate insiders and outside investors of public firms. Outside investors demand credible financial reporting and high disclosure transparency to evaluate firm performance and to exercise their contractual rights. Evidence shows that public firms with high-quality financial reporting obtain external financing on better terms (e.g., Botosan 1997; Sengupta 1998; Bhattacharya, Daouk, and Welker 2003).

In contrast, the ownership of private firms is concentrated in the hands of a small number of shareholders, and conflicts among shareholders are often resolved through private channels. Shareholders of private firms typically are involved in the operations of firms, and thus have access to private information. The role of financial statements as a tool for reducing information asymmetry is less important and the demand for high-quality financial reporting is lower for private firms than for public firms. Thus, one may argue that public firms have a stronger incentive to produce high-quality accounting information and a weaker incentive to engage in opportunistic earnings management than private firms. Consistent with this argument, Ball and Shivakumar (2005) and Burgstahler et al. (2006) provide evidence suggesting that public firms exhibit higher earnings quality than private firms.

However, stock markets may create incentives for public firms to engage in earnings management. Previous research shows that public firms manage reported earnings to obtain better terms on additional funding through equity offerings in stock markets (e.g., Teoh, Welch, and Wong 1998a, b), to meet the earnings expectations of financial analysts (e.g., Degeorge, Patel, and Zeckhauser 1999), or to influence the earnings expectations of specific investors such as institutional investors (e.g., Bushee 1998). Private firms, on the other hand, are free from the various stock-market pressures facing public firms because they rely primarily on bank loans or other borrowings from private lenders to meet their financing needs. As such, private firms may have weaker incentives to engage in earnings management than public firms. Consistent with this argument, Beatty and Harris (1998) and

Beatty et al. (2002) provide evidence suggesting that public firms engage in opportunistic earnings management more intensely than private firms. In short, previous research provides mixed evidence on which type of firm (private or public) is more likely to engage in earnings management. To provide further evidence on the effect of listing status on earnings management, we test the following hypothesis in alternative form:

HYPOTHESIS 3. *The magnitude of earnings management is greater for publicly traded firms than for privately held firms, other things being equal.*

In Korea, public and private firms face the same accounting and auditing standards and are subject to the same tax regulations. This feature provides an ideal setting for a comparison of the pervasiveness and intensity of earnings management between public and private firms. The Act on External Auditing in Korea requires that all privately held, limited liability, incorporated firms with total assets exceeding a certain regulatory limit have their financial statements audited by independent auditors — that is, external certified public accountants.[8] In this study, we consider only privately held firms whose financial statements were audited during the sample period to ensure the quality of accounting information. Given the lack of international evidence on the issue, Korean evidence can provide further insight into how listing status affects managers' financial reporting behavior.

3. Empirical model

To test our hypotheses, we specify the following regression model linking the magnitude of earnings management with three test variables — the control–ownership wedge, business group affiliation, and listing status — and with other control variables:

$$\begin{aligned} ABSDAC_{jt} = {} & \alpha + \beta_1 WEDGE_{jt} + \beta_2 CHAEBOL_{jt} + \beta_3 PUBLIC_{jt} + \beta_4 BIG6_{jt} \\ & + \beta_5 SIZE_{jt} + \beta_6 LEV_{jt} + \beta_7 ROA_{jt} + \beta_8 ABSROA_{jt} + \beta_9 ABSCROA_{jt} \\ & + (\text{Industry dummies}) + \varepsilon_{jt} \end{aligned} \quad (1),$$

where, for firm j and in year t, the variables are as defined below. As in other studies, we measure the magnitude of earnings management by absolute discretionary accruals (*ABSDAC*) estimated from the modified Jones 1991 model. Detailed procedures for obtaining *ABSDAC* are explained in section 4.

To test Hypothesis 1, we include in (1) the variable *WEDGE*, which represents the wedge between control (voting rights) and ownership (cash flow rights). Consistent with Joh 2003, we define *WEDGE* as the simple difference between the voting rights and cash flow rights of the controlling shareholders. The cash flow rights are the percentage of equity shares owned by the controlling shareholders. The voting rights are the sum of the percentage of equity shares owned by the controlling shareholders and by affiliated firms. We obtain the ownership data from Korea Investors Services (KIS), which provides the names and percentage of shares held by the largest shareholder, his or her family members, and institutional shareholders.

We compute the percentage of equity ownership of the controlling shareholders (the largest shareholder and his or her family members) for each firm.

To test Hypothesis 2, we include in (1) the dummy variable *CHAEBOL*, which takes the value of one if a firm is affiliated with one of the chaebols identified by the KFTC and zero otherwise. The KFTC regularly releases information about the memberships of business groups and changes in a firm's group membership due, for example, to mergers and acquisitions. The coefficient on *CHAEBOL* captures the difference in the magnitude of earnings management between chaebol-affiliated firms and nonaffiliated firms.

To test Hypothesis 3, we include in (1) the dummy variable *PUBLIC*, which takes the value of one if a firm's shares are publicly traded and zero otherwise. We define public firms as those listed on the Korea Stock Exchange (KSE) or registered with the Korea Securities Dealers Automated Quotations (KOSDAQ), Korea's equivalent to the National Association of Securities Dealers Automated Quotations (NASDAQ). The coefficient on *PUBLIC* captures the difference in the extent of earnings management between public and private firms.

In (1), we include several control variables that may affect the magnitude of earnings management. Previous research provides evidence that Big 6 auditors are effective in constraining controlling shareholders' ability to manage reported earnings through accruals choices (Becker, DeFond, Jiambalvo, and Subramanyam 1998; Francis, Maydew, and Sparks 1999; Kim, Chung, and Firth 2003). Fan and Wong (2005) also document that in East Asian economies, Big 6 auditors are more effective in mitigating agency problems than non–Big 6 auditors. To control for the effect of this audit quality differentiation on our results, we include the dummy variable *BIG6*, which takes the value of one for Big 6 clients and zero otherwise.[9]

Dechow and Dichev (2002) show that larger firms tend to have more stable and predictable operations and hence report smaller amounts of discretionary accruals. To control for this size effect, we include in (1) firm size (*SIZE*) measured by the natural logarithm of the book value of total assets. Firms with high leverage may have incentives to manage reported earnings because of their concerns over debt covenant or private lending agreement violations. To control for the potential effect of financial leverage on our results, we also include the variable *LEV*, measured by the ratio of total debts to lagged total assets. Finally, we include industry dummies to control for potential confounding effects on our results of industry-level variations in accounting standards and regulations.

Previous research indicates that it is important to control for the effect of firm performance on accruals when measuring discretionary accruals using the Jones 1991 model or its variants. Dechow, Sloan, and Sweeney (1995) and Kasznik (1999) show that the Jones 1991 model estimate of discretionary accruals is positively correlated with earnings performance. Firms with low (high) earnings tend to have negative (positive) discretionary accruals. Similar to the approach used in Haw et al. 2004, we address this potential problem by including three performance-related variables in (1): return on assets, defined as earnings before extraordinary items divided by lagged total assets (*ROA*); the absolute value of *ROA*, denoted by *ABSROA*; and the absolute value of change in *ROA*, denoted by

ABSCROA. We include these variables to control for a firm's inherent accruals, reversals of prior-year accruals, and growth in earnings (Kasznik 1999; McNichols 2000; Klein 2002; Haw et al. 2004). As will be further explained in section 5, the inclusion of these three variables allows us to control for potential biases that may arise from a positive correlation between our measure of earnings management (that is, discretionary accruals) and firm performance.

4. Measurement of discretionary accruals

Consistent with previous studies (e.g., Warfield, Wild, and Wild 1995; Frankel, Johnson, and Nelson 2002; Haw et al. 2004), this study uses the absolute value of a firm's discretionary accruals from the modified cross-sectional Jones 1991 model to proxy for the extent of opportunistic earnings management. This measure captures the combined effect of income-increasing and income-decreasing earnings management. To estimate discretionary accruals (*DAC*), we first compute total accruals as follows:

$$TAC_{jt} = (\Delta CA_{jt} - \Delta Cash_{jt}) - (\Delta CL_{jt} - \Delta STD_{jt}) - Dep_{jt} \quad (2),$$

where, for firm *j* and in year *t*:

TAC_{jt} = total accruals;

ΔCA_{jt} = change in current assets;

$\Delta Cash_{jt}$ = change in cash and cash equivalents;

ΔCL_{jt} = change in current liabilities;

ΔSTD_{jt} = change in long-term debt included in current liabilities; and

Dep_{jt} = depreciation and amortization expenses.

To decompose total accruals (*TAC*) into discretionary and nondiscretionary accruals, we estimate the Jones 1991 model given below:

$$TAC_{jt}/A_{jt-1} = \alpha_1(1/A_{jt-1}) + \alpha_2(\Delta REV_{jt}/A_{jt-1}) + \alpha_3(PPE_{jt}/A_{jt-1}) + e_{jt} \quad (3),$$

where, for firm *j* and in year *t*:

TAC_{jt} = total accruals for firm *j* in year *t*;

A_{jt-1} = total assets for firm *j* in year $t-1$;

ΔREV_{jt} = change in net revenues for firm *j* in year *t*;

PPE_{jt} = gross property, plant, and equipment for firm *j* in year *t*; and

e_{jt} = error term.

For each year and industry, we estimate regression parameters in (3) using cross-sectional observations. Following the industry classification of the Korea

Stock Exchange, we classify firms into 18 industries. To obtain meaningful cross-sectional estimates of regression parameters in (3), we require that at least 10 firms exist for each industry in each sample year. The estimated parameters of (3) are used to calculate nondiscretionary accruals (*NDAC*) as follows:

$$NDAC_{jt} = \hat{\alpha}_1(1/A_{jt-1}) + \hat{\alpha}_2(\Delta REV_{jt}/A_{jt-1} - \Delta REC_{jt}/A_{jt-1}) + \hat{\alpha}_3(PPE_{jt}/A_{jt-1}) \quad (4),$$

where, for firm j and in year t, ΔREC_{jt} is the change in net receivables, and other variables are as defined earlier. *DAC* is equal to *TAC* minus *NDAC*. As in other studies, the absolute value of *DAC* is considered to capture the outcome of firms' opportunistic accruals choices.

5. Sample and descriptive statistics

Sample selection

The initial sample for this study consists of all public and private firms that are included in the 2001 KIS-DATA data base developed by KIS.[10] KIS is the largest credit-rating agency in Korea and recently became an affiliate of Moody's Investors Services. This data base provides financial statement information as well as detailed data on corporate ownership for all publicly traded companies and many privately held companies. A total of 63,386 firm-year observations are available over the sample period 1992–2000. Our sample period starts in 1992, when the number of firms covered by the KIS-DATA data base increases significantly, and ends in 2000. We exclude firms in the financial services industry (commercial banking, investment brokerage, insurance, etc.) from the sample because the nature of accruals for firms in this industry differs from that in other industries. As mentioned earlier, we include in our sample those firms that are subject to the Act on External Auditing to ensure the quality of accounting information. We deleted firms with negative equity due to accumulated losses from the sample. Firms are also excluded from the sample if they have insufficient data required for measuring discretionary accruals, controlling shareholders' voting rights, cash flow rights, or other variables included in our regression model. As outlined in Table 1, we obtain a total of 15,159 firm-year observations over the nine-year period 1992–2000 after applying the above selection criteria.

Our analysis relies on information contained in unconsolidated financial statements, for the following reasons. First, according to the Securities and Exchange Act in Korea, all firms that are subject to the Act on External Auditing are required to submit annual business reports to the Financial Supervisory Commission (FSC). Annual business reports, which are equivalent to Form 10-K in the United States, contain firm-specific information such as descriptions of the firm's business, the remuneration of officers, the major shareholders, and audited financial statements. The Securities and Exchange Act requires that firm-specific disclosures in annual business reports be made from a viewpoint of a company as a single legal entity. Thus, under the Act, unconsolidated financial statements are required to be prepared

as the primary financial statements, whereas consolidated financial statements are to be provided as supplementary information. Second, the focus of our analysis is on the effect of firm-specific governance characteristics on individual entities, rather than on consolidated entities such as business groups. The financial statement effect of intra-group transactions within a business group and the associated effect of a firm's affiliation with a business group on earnings management are, in most cases, not reflected in information contained in consolidated financial statements.[11] In other words, the consolidation process removes the effect of most intra-group transactions on an individual firm's accounting accruals. Therefore, the use of unconsolidated financial statements is more appropriate for the purpose of assessing the effect of a firm's affiliation with a business group on earnings management than is the use of consolidated financial statements.

Descriptive statistics

Table 2 presents descriptive statistics on all the variables included in our regression for the pooled sample of 15,159 firm-year observations. The mean of absolute discretionary accruals, denoted by *ABSDAC*, is 8.4 percent of lagged total assets.[12] The mean control–ownership wedge, denoted by *WEDGE*, is 11.1 percent of total shares outstanding. The dummy variables, *CHAEBOL* and *PUBLIC*, have the mean values of 0.446 and 0.347, respectively. This suggests that out of 15,159 firm-year observations, on average, 44.7 percent (6,772 firm-years) are affiliated with business groups and 34.7 percent (5,274 firm-years) are for publicly traded firms. The average ratio of total debts to lagged total assets (*LEV*) is 79.4 percent, while the average return on assets (*ROA*) is 3.6 percent.[13]

Table 3 reports Pearson correlations between *ABSDAC* and other firm characteristics. The correlation between *ABSDAC* and *WEDGE* is positive and significant, which suggests that as the control–ownership disparity becomes larger, the extent of earnings management increases and vice versa. The significantly positive correlation between *ABSDAC* and *CHAEBOL* suggests that firms affiliated with a business

TABLE 1
Sample selection

Sample selection procedure	No. of firm-year observations
Initial sample available from the KIS data base over the period 1992–2000	63,386
Less: firms in financial industries	(2,483)
Less: firms whose total assets are less than a certain regulatory limit	(10,387)
Less: observations with negative equity	(9,072)
Less: firms with insufficient data to compute discretionary accruals	(17,862)
Less: firms with insufficient data to compute controlling shareholders' voting rights, cash flow rights, or control variables	(8,423)
Final sample	15,159

group are more likely to engage in earnings management than nonaffiliated firms. *ABSDAC* is positively correlated with *PUBLIC*, suggesting that public firms engage in earnings management to a greater extent than private firms.

Table 4 presents descriptive statistics for the sample partitioned by each of three firm-specific corporate governance measures: *WEDGE*, *CHAEBOL*, and *PUBLIC*. In panel A, we partition our sample into firms with a positive *WEDGE* (voting rights exceed cash flow rights) and firms with a zero *WEDGE* (voting rights are equal to cash flow rights) and compare the absolute magnitudes of discretionary accruals and other control variables across the two groups. The mean

TABLE 2
Descriptive statistics

	Mean	Standard deviation	Lower quartile	Median	Upper quartile
ABSDAC	0.084	0.090	0.027	0.060	0.110
WEDGE	0.111	0.198	0.000	0.000	0.149
CHAEBOL	0.446	0.497	0.000	0.000	1.000
PUBLIC	0.347	0.476	0.000	0.000	1.000
BIG6	0.525	0.499	0.000	1.000	1.000
SIZE	17.671	1.421	16.599	17.307	18.417
LEV	0.794	0.268	0.627	0.789	0.941
ROA	0.036	0.082	0.007	0.027	0.064
ABSROA	0.060	0.067	0.002	0.038	0.078
ABSCROA	0.042	0.059	0.008	0.022	0.053

Notes:

Variables are defined as follows:

ABSDAC = absolute value of discretionary accruals;

WEDGE = a continuous variable measuring the difference between control rights and cash flow rights held by the controlling shareholder;

CHAEBOL = a dummy variable that takes the value of one if a firm is affiliated with a business group called a chaebol, and zero otherwise;

PUBLIC = a dummy variable that takes the value of one if a firm is publicly traded, and zero otherwise;

BIG6 = a dummy variable that takes the value of one if the auditor is a Big 6 firm, and zero otherwise;

SIZE = the natural logarithm of the book value of total assets;

LEV = the ratio of total debts to total assets;

ROA = earnings before extraordinary items by lagged total assets;

ABSROA = absolute value of *ROA*; and

ABSCROA = absolute value of change in *ROA*.

TABLE 3
Pearson correlation matrix

	WEDGE	*CHAEBOL*	*PUBLIC*	*BIG6*	*SIZE*	*LEV*	*ROA*	*ABSROA*	*ABSCROA*
ABSDAC	0.038*	0.036*	0.030*	0.015‡	0.018†	0.154*	0.037*	0.234*	0.234*
WEDGE		0.147*	0.073*	0.113*	0.148*	−0.060*	0.026*	0.054*	0.028*
CHAEBOL			0.208*	0.104*	0.323*	−0.066*	−0.039*	−0.028*	−0.004
PUBLIC				0.100*	0.487*	−0.185†	−0.027*	0.000	0.004
BIG6					0.240*	0.018†	−0.011	0.003	0.001
SIZE						0.078*	−0.070*	−0.069*	−0.061*
LEV							−0.152*	−0.106*	−0.018†
ROA								0.516*	0.110*
ABSROA									0.571*

Notes:

Variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.05 level.

‡ Significant at the 0.10 level.

absolute discretionary accruals for firms with a positive *WEDGE* is 0.089 (that is, 8.9 percent of lagged total assets), whereas the mean *ABSDAC* for firms with a zero *WEDGE* is 0.081. The difference is significant at less than the 1 percent level. Our test for the median difference in *WEDGE* between the two groups shows a similar result. This significantly positive relation between the extent of earnings management and the control–ownership wedge is consistent with Hypothesis 1, indicating that firms with a high control–ownership wedge engage in opportunistic earnings management more than those with a low wedge. The results also show that with respect to other corporate governance and control variables, firms with a positive *WEDGE* are different from firms with a zero *WEDGE*. Firms with a positive *WEDGE* are more likely to be associated with business groups and their shares are more likely to be publicly traded, compared with firms with a zero *WEDGE*. Firms with a positive *WEDGE* are more likely to have a Big 6 auditor, are larger, are less leveraged, and are less profitable than firms with a zero *WEDGE*.

To investigate the effect of business group affiliation on the extent of earnings management, we partition our sample into chaebol-affiliated firms and nonaffiliated firms. Panel B of Table 4 reports the results of both parametric and nonparametric tests for the mean and median differences in *ABSDAC* and other control variables, respectively, between the two types of firms. Both the mean and median of *ABSDAC* are significantly greater for chaebol-affiliated firms than for nonaffiliated, independent firms.[14] This is consistent with Hypothesis 2, suggesting that chaebol-affiliated firms engage more aggressively in earnings management than nonaffiliated firms. The results also show that chaebol-affiliated firms have firm characteristics different from those of nonaffiliated, independent firms. Chaebol-affiliated firms tend to have a higher *WEDGE* and to have publicly traded shares, compared with nonaffiliated firms. Firms affiliated with a business group are more likely to have a Big 6 auditor, are larger, are less leveraged, and are less profitable than nonaffiliated firms.

In panel C, we divide our sample firms into publicly traded and privately held firms and perform tests for the mean and median differences in *ABSDAC* and other control variables between the two groups. The mean (median) *ABSDAC* is 0.088 (0.060) for public firms, while it is 0.082 (0.060) for private firms. The mean difference between the two groups is significant at less than the 1 percent level, which is consistent with Hypothesis 3. The significant mean difference between the two groups suggests that public firms engage in earnings management more intensely than privately held firms. Note, however, that the median difference is not significant at the conventional level. The control–ownership wedge is significantly higher for public firms (13.1 percent) than for private firms (10.0 percent). The percentage of business group affiliation is significantly higher for public firms than for private firms. On average, over 58 percent of public firms in the sample belong to chaebols, while 37 percent of private firms are affiliated with chaebols. In our sample, public firms are more likely to have their financial statements audited by Big 6 auditors than private firms, which is consistent with our prior expectation. Also, 59 percent of public firms and 49 percent of private firms have their financial statements audited by one of the Big 6 auditors. Public firms are larger in size, are

less leveraged, and are less profitable, compared with private firms. The mean differences in *SIZE*, *LEV*, and *ROA* between the two groups are significant at less than the 1 percent level, though the median difference in *ROA* is insignificant.

6. Empirical results

Results of main regressions

Panel A of Table 5 reports the results of our main regressions using the pooled sample of 15,159 firm-year observations over the 1992–2000 period. The statistical significance of the reported coefficients is based on the heteroscedasticity-consistent

TABLE 4
Descriptive statistics partitioned by corporate governance measures

Panel A: Firms with a positive *WEDGE* versus firms with a zero *WEDGE*

	Firms with a positive *WEDGE*		Firms with a zero *WEDGE*		Test of difference	
	Mean	Median	Mean	Median	*t*-stat.	*z*-stat.
ABSDAC	0.089	0.061	0.081	0.059	5.27*	2.93*
CHAEBOL	0.590	1	0.344	0	30.83*	30.07*
PUBLIC	0.581	1	0.182	0	53.64*	50.88*
BIG6	0.609	1	0.466	0	17.60*	17.35*
SIZE	18.348	18.126	17.191	16.880	51.50*	52.63*
LEV	0.761	0.745	0.818	0.815	−12.75*	−15.57*
ROA	0.036	0.027	0.037	0.027	−0.92	−1.20
ABSROA	0.062	0.039	0.058	0.037	3.50*	2.43†
ABSCROA	0.043	0.022	0.041	0.021	2.18†	2.00†
n	6,288		8,871			

Panel B: Chaebol-affiliated firms versus nonaffiliated firms

	Chaebol-affiliated firms		Nonaffiliated firms		Test of difference	
	Mean	Median	Mean	Median	*t*-stat.	*z*-stat.
ABSDAC	0.088	0.062	0.081	0.058	4.39*	3.65*
WEDGE	0.144	0.003	0.084	0	18.06*	27.80*
PUBLIC	0.458	1	0.258	0	25.91*	25.68*
BIG6	0.583	1	0.478	0	12.91*	12.83*
SIZE	18.182	17.949	17.258	16.948	41.03*	41.99*
LEV	0.774	0.763	0.810	0.807	−8.07*	−10.17*
ROA	0.033	0.025	0.039	0.028	−4.91*	−5.37*
ABSROA	0.058	0.037	0.061	0.039	−3.50*	−3.65*
ABSCROA	0.042	0.022	0.042	0.022	−0.57	0.69
n	6,772		8,387			

(The table is continued on the next page.)

TABLE 4 (Continued)

Panel C: Public firms versus private firms

	Public firms		Private firms		Test of difference	
	Mean	Median	Mean	Median	*t*-stat.	*z*-stat.
ABSDAC	0.088	0.060	0.082	0.060	3.58*	1.05
WEDGE	0.131	0.054	0.100	0	9.45*	38.47*
CHAEBOL	0.588	1	0.370	0	26.26*	25.68*
BIG6	0.594	1	0.489	0	12.42*	12.35*
SIZE	18.620	18.379	17.165	16.880	63.09*	63.07*
LEV	0.726	0.714	0.831	0.826	−23.61*	−25.82*
ROA	0.033	0.027	0.038	0.027	−3.30*	−0.52
ABSROA	0.060	0.038	0.060	0.039	0.01	−0.19
ABSCROA	0.042	0.021	0.041	0.023	0.58	−2.38†
n	5,274		9,885			

Notes:

Variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.05 level.

covariance matrix. All regressions in Table 5 include industry dummies, though their coefficients are not reported for the sake of brevity.

Column 1 of Table 5 presents the result of an ordinary least squares (OLS) regression of absolute discretionary accruals on the control−ownership wedge and all control variables. The coefficient on *WEDGE* is positive and significant at less than the 1 percent level after all other variables are controlled for, which is consistent with Hypothesis 1. The above finding suggests that as the control−ownership wedge becomes larger, corporate insiders have stronger incentives to manipulate reported earnings to mask their wealth appropriation at the expense of minority shareholders. Column 2 reports the result of an OLS regression of absolute discretionary accruals on business group affiliation and all control variables. With all controls included, the coefficient on *CHAEBOL* is positive and significant at less than the 1 percent level. This is consistent with Hypothesis 2 that chaebol-affiliated firms manage earnings more intensely than nonaffiliated, independent firms. Column 3 presents the result of an OLS regression of absolute discretionary accruals on a firm's listing status and all control variables. The result in column 3 shows that the coefficient on *PUBLIC* is positive and significant at the 1 percent level, which is consistent with Hypothesis 3 that public firms engage in earnings management more intensely than private firms. This finding suggests that corporate insiders of public firms have stronger incentives for earnings management than corporate insiders of private firms to satisfy the expectations of various market participants expressed in earnings numbers.

Column 4 presents the result of our full-model regression, which includes all three test variables: *WEDGE*, *CHAEBOL*, and *PUBLIC*, along with all control variables. The result shows that the coefficients on *WEDGE*, *CHAEBOL*, and *PUBLIC* are all positive and significant. Taken together, our result suggests that the control–ownership wedge, business group affiliation, and listing status all have a significant positive impact on managerial opportunism in financial reporting.

With respect to the control variables, the coefficient on *BIG6* is positive, but insignificant across all columns. The coefficient on *SIZE* is negative and significant at the 1 percent level only in the full model as reported in column 4. In other columns, the coefficient on *SIZE* is either weakly significant or insignificant. The coefficient on *LEV* is positive and significant across all columns, suggesting that firms with high leverage tend to engage in earnings management more aggressively than those with low leverage. The coefficients on three earnings performance measures, *ROA*, *ABSROA*, and *ABSCROA*, are all significant at the 1 percent level.

Issues of data overfitting

We include in (1) three firm-performance measures, *ROA*, *ABSROA*, and *ABSCROA*, to alleviate a concern over potential problems arising from the possibility that our measure of earnings management, *ABSDAC*, is correlated with firm performance (e.g., Haw et al. 2004; Kothari, Leone, and Wasley 2005). As shown in Table 3, *ABSDAC* is, in fact, significantly correlated with *ROA*, *ABSROA*, and *ABSCROA* at the less than 1 percent level with Pearson correlation coefficients of 0.037, 0.234, and 0.234, respectively. On the one hand, the inclusion of these three performance measures in (1) allows us to control for the aforementioned problems. On the other hand, their inclusion in (1) may create another problem of data overfitting, which may lead to an erroneous statistical inference on the coefficients on our main variables: *WEDGE*, *CHAEBOL*, and *PUBLIC*.[15] To check for this possibility, we first reestimate (1) after dropping all three performance measures together, *ROA*, *ABSROA*, and *ABSCROA*, and then reestimate it after including these performance measures one by one.

The regression results are presented in columns 5 to 8 in panel B of Table 5. A comparison of the benchmark result in column 4 with the results in columns 5 to 8 reveals that the estimated coefficients on all variables except *SIZE* remain qualitatively similar (in terms of magnitude and significance) even when we drop all three performance measures (column 5) or when we include only one of the three measures (columns 6 to 8). Note that the coefficient on *SIZE* becomes more significant in columns 5 to 8 than in column 4. As expected, the model's explanatory power, measured by adjusted R^2, decreases significantly when we drop the performance measures. In short, the regression results in Table 5, taken together, indicate that the result of our main regression in column 4 is unlikely to be driven by potential data-overfitting problems.

TABLE 5
Results of regression on absolute values of discretionary accruals on firm-specific corporate governance measures

	Panel A: Main regressions				**Panel B:** Sensitivity checks for possible data-overfitting problems			
Variable	(1) *WEDGE* included	(2) *CHAEBOL* included	(3) *PUBLIC* included	(4) Full model	(5) All three *ROA*-related variables excluded	(6) *ABSROA* and *ABSCROA* excluded	(7) *ROA* and *ABSCROA* excluded	(8) *ROA* and *ABSROA* excluded
Intercept	0.005	0.013	0.032	0.046	0.094	0.086	0.050	0.058
	(0.46)	(1.35)	(3.04)*	(4.30)*	(8.67)*	(7.93)*	(4.74)*	(5.48)*
WEDGE	0.014			0.013	0.019	0.018	0.013	0.015
	(4.01)*			(3.61)*	(5.26)*	(5.05)*	(3.60)*	(4.46)*
CHAEBOL		0.009		0.008	0.007	0.008	0.009	0.007
		(5.85)*		(5.19)*	(4.73)*	(4.96)*	(5.58)*	(4.70)*
PUBLIC			0.013	0.012	0.014	0.014	0.014	0.012
			(6.76)*	(6.59)*	(7.06)*	(7.27)*	(7.21)*	(6.48)*
BIG6	0.000	0.000	0.001	0.000	0.001	0.001	0.001	0.000
	(0.29)	(0.40)	(0.70)	(0.26)	(1.02)	(1.00)	(0.44)	(0.47)
SIZE	0.001	0.000	−0.001	−0.002	−0.003	−0.003	−0.002	−0.002
	(1.80)‡	(0.37)	(−1.75)†	(−3.52)*	(5.71)*	(−5.51)*	(−4.09)*	(−3.78)*
LEV	0.056	0.056	0.069	0.062	0.058	0.061	0.066	0.058
	(11.19)*	(11.34)*	(11.73)*	(12.05)*	(10.90)*	(11.48)*	(13.06)*	(11.34)*
ROA	−0.063	−0.062	−0.060	−0.059		0.072		
	(−3.68)*	(−3.61)*	(−3.52)*	(−3.45)*		(3.89)*		

(The table is continued on the next page.)

TABLE 5 (Continued)

	Panel A: Main regressions				**Panel B:** Sensitivity checks for possible data-overfitting problems			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable	*WEDGE* included	*CHAEBOL* included	*PUBLIC* included	Full model	All three *ROA*-related variables excluded	*ABSROA* and *ABSCROA* excluded	*ROA* and *ABSCROA* excluded	*ROA* and *ABSROA* excluded
ABSROA	0.285	0.288	0.287	0.285			0.340	
	(11.79)*	(11.96)*	(11.91)*	(11.84)*			(17.09)*	
ABSCROA	0.185	0.183	0.182	0.181				0.355
	(7.72)*	(7.67)*	(7.63)*	(7.62)*				(16.09)*
Industry dummies	Included	Included	Included	Included	Included	Included	Included	Included
n	15,159	15,159	15,159	15,159	15,159	15,159	15,159	15,159
Adjusted R^2	0.110	0.111	0.113	0.115	0.044	0.045	0.110	0.093
F-statistic (*p*-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes:

Heteroscedasticity-consistent *t*-statistics are given in parentheses. Industry dummies are dummy variables controlling for fixed effects of industries. All other variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.10 level.

7. Additional analyses

Effect of the Asian financial crisis

The Asian financial crisis, which erupted in December 1997, had a significant impact on the Korean economy. Firm value plummeted and many firms went bankrupt or underwent restructuring as a result of the crisis. To examine the effect of this economic crisis on our analysis, we include in (1) the dummy variable *CRISIS*, which takes the value of one for observations in the post-crisis period (1998–2000) and zero for observations in the pre-crisis period (1992–1997). As shown in column 1 of Table 6, the inclusion of the *CRISIS* dummy in (1) does not alter the relative importance of the three test variables, *WEDGE*, *CHAEBOL*, and *PUBLIC*, in that their coefficients remain significantly positive. And the coefficient on the *CRISIS* dummy is significantly positive at less than the 1 percent level. This suggests that Korean firms had engaged in earnings management more intensely during the post-crisis period than they did during the pre-crisis period. During the post-crisis period, Korean firms had experienced a significant drop in their profits and had undergone major restructuring (Baek et al. 2004), which may have motivated them to manage earnings more aggressively.

To further investigate the impact of the crisis on our analysis, we also include in (1) three interaction variables, *CRISIS*WEDGE*, *CRISIS*CHAEBOL*, and *CRISIS*PUBLIC*, in addition to the *CRISIS* dummy. As reported in column 2 of the table, the coefficient on *CRISIS* remains significantly positive at less than the 1 percent level. Also, the coefficients on *WEDGE*, *CHAEBOL*, and *PUBLIC* all remain significantly positive. We find that while the coefficients on *CRISIS*WEDGE* and *CRISIS*CHAEBOL* are insignificant, the coefficient on *CRISIS*PUBLIC* is positively significant at less than the 1 percent level. This suggests that the positive effects on earnings management driven by agency problems associated with the control–ownership wedge and business group affiliation remain unchanged over the pre-crisis and post-crisis periods. The significantly positive coefficients on *PUBLIC* and *CRISIS*PUBLIC* indicate that public firms engaged in earnings management to a greater extent than private firms and that public firms did so even more intensely during the post-crisis period than they did during the pre-crisis period. A plausible explanation for the above findings is that during the post-crisis period of earnings declines and restructuring, publicly traded firms in Korea were faced with more intense pressure from stock markets to meet investors' earnings expectations than they were during the pre-crisis period. This stock market pressure may have motivated public firms to engage in earnings management more aggressively during the post-crisis period.[16]

Controlling for endogeneity

We specify (1) on the assumption that a firm's decision to go public is exogenous. However, to the extent that the intensity of a firm's involvement in earnings management affects a firm's choice of listing status, the dummy variable *PUBLIC* in (1) is endogenous. In such a case, a simple OLS regression of absolute discretionary accruals on the *PUBLIC* dummy would suffer from potential biases arising from a firm's self-selection of listing status (Heckman 1979; Maddala 1983).

To correct for this self-selectivity problem, we use the Heckman-type, two-stage treatment effects model.[17] In the first stage, we run a probit model that links a firm's choice of listing status to explanatory variables and then obtain the inverse Mills ratios. Following Ball and Shivakumar 2005, we include firm size (*SIZE*),

TABLE 6
Effect of the 1997 Asian financial crisis on earnings management

Variable	(1) With the crisis dummy	(2) With the crisis dummy and its interactions with test variables
Intercept	0.042	0.043
	(3.95)*	(4.07)*
WEDGE	0.009	0.008
	(2.49)†	(2.11)†
CHAEBOL	0.003	0.004
	(1.87)‡	(2.75)*
PUBLIC	0.011	0.005
	(6.08)*	(3.03)*
CRISIS	0.029	0.025
	(14.77)*	(8.14)*
*CRISIS*WEDGE*		−0.001
		(−0.17)
*CRISIS*CHAEBOL*		−0.005
		(−1.33)
*CRISIS*PUBLIC*		0.018
		(4.83)*
BIG6	0.002	0.001
	(1.43)	(1.18)
SIZE	−0.003	−0.003
	(−4.67)*	(−4.62)*
LEV	0.076	0.076
	(14.07)*	(14.04)*
ROA	−0.045	−0.044
	(−2.65)*	(−2.60)*
ABSROA	0.278	0.275
	(11.73)*	(11.63)*
ABSCROA	0.143	0.142
	(6.02)*	(5.96)*
Industry dummies	Included	Included
n	15,159	15,159
Adjusted R^2	0.132	0.134
F-statistic (*p*-value)	0.000	0.000

(The table is continued on the next page.)

TABLE 6 (Continued)

Notes:

Heteroscedasticity-consistent *t*-statistics are given in parentheses. Industry dummies are dummy variables controlling for fixed effects of industries. All other variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.05 level.

‡ Significant at the 0.10 level.

leverage (*LEV*), the quick ratio (*QR*), the ratio of exports to total sales (*EXP*), and sales growth (*GROWTH*) in the probit listing-choice model as explanatory variables. We measure these variables as of year $t - 1$ because a firm's choice of listing status in year t is likely to be affected by the value of these variables in year $t - 1$. We then estimate the probit model using the maximum likelihood procedure and obtain the inverse Mills ratio. In the second stage, we include in (1) the inverse Mills ratio as an additional control variable to correct for potential self-selection biases.

Panel A of Table 7 reports the maximum likelihood estimates of the probit-model parameters, along with *z*-statistics. The sample size is reduced to 4,970 because of additional data requirements for estimating the probit model.[18] The coefficients on *SIZE*, *QR*, and *EXP* are highly significant with expected positive signs. The coefficient on *GROWTH* is negative but insignificant. We find that the coefficient on *LEV* is negatively significant, suggesting that Korean firms with high leverage are less likely to go public, on average, than those with low leverage.

Panel B of Table 7 presents the regression results for (1) with the inverse Mills ratio included as an additional control variable. The coefficient on the inverse Mills ratio (*Mills*) is insignificant, indicating that no significant self-selection bias exists in our regression analysis. The results show that the coefficients on *WEDGE*, *CHAEBOL*, and *PUBLIC* remain significantly positive. This suggests that our main results reported in Table 5 are robust with respect to potential endogeneity problems.

Partitioning the sample by each corporate governance measure

As shown in Table 4, there are significant differences in firm characteristics between two subsamples when the total sample is partitioned by each of three corporate governance measures, namely, our test variables. Thus, one may argue that the underlying relations between the extent of earnings management and our research variables, including both the test and control variables, are inherently different between the two partitioned samples. To provide evidence for this argument, we partition our sample into two subsamples by each corporate governance measure as we do in Table 4, and then estimate (1) separately for each partitioned sample. Table 8 reports the regression results for each partitioned sample. For parsimony, we do not tabulate regression coefficients on the control variables.

In panel A of Table 8, we partition our sample into two subsamples of positive *WEDGE* firms (that is, firms with voting rights exceeding cash flow rights) and zero *WEDGE* firms (that is, firms with voting rights equal to cash flow rights), and estimate (1) separately for each partitioned sample after excluding the partitioning variable, *WEDGE*, from the regression. Columns 1 and 2 of panel A report the regression results for the positive *WEDGE* sample and the zero *WEDGE* sample, respectively, while column 3 presents the results of *t*-tests for differences in the regression coefficients on *CHAEBOL* and *PUBLIC* between the two partitioned samples. A comparison between our benchmark results reported in column 4 of Table 5 with the results reported in panel A of Table 8 indicates that the relative importance of *CHAEBOL* and *PUBLIC*, captured by their regression coefficients, remains stable, and that the results remain qualitatively similar across the full sample, the positive *WEDGE* sample, and the zero *WEDGE* sample. Furthermore, as shown in column 3 of panel A, there is no significant difference in the coefficients between the positive *WEDGE* and zero *WEDGE* samples.

In panel B of Table 8, we partition our sample into two distinct samples of chaebol-affiliated firms and nonaffiliated firms, and then estimate (1) separately for each partitioned sample after excluding the partitioning variable, *CHAEBOL*. The regression results show that the coefficients on *WEDGE* and *PUBLIC* are significantly positive for both chaebol-affiliated and nonaffiliated subsamples. As shown in column 3 of panel B, there is no significant difference in the coefficients

TABLE 7
Results of a two-stage treatment effects model to control for potential self-selection biases

Panel A: Estimated results of probit listing-choice model

Variable	Expected sign	Coefficient (*z*-statistic)
Intercept	?	−10.608
		(−33.23)*
SIZE	+	0.620
		(35.03)*
LEV	+	−1.212
		(−13.55)*
QR	+	0.341
		(8.96)*
EXP	+	0.449
		(5.18)*
GROWTH	+	−0.036
		(−0.74)
Number of observations		4,970
Pseudo-R^2		0.284
F-test (*p*-value)		0.000

(The table is continued on the next page.)

TABLE 7 (Continued)

Panel B: Results of OLS regression of absolute discretionary accruals (*ABSDAC*) on firm-specific corporate governance measures and the inverse Mills ratio

Variable	Full model with the inverse Mills ratio included
Intercept	0.026
	(0.85)
WEDGE	0.013
	(2.12)†
CHAEBOL	0.009
	(3.70)*
PUBLIC	0.019
	(2.00)†
BIG6	−0.005
	(−2.21)†
SIZE	−0.001
	(−0.85)
LEV	0.074
	(13.43)*
ROA	−0.046
	(−2.73)*
ABSROA	0.283
	(11.05)*
ABSCROA	0.172
	(6.80)*
Mills	−0.005
	(−0.87)
Industry dummies	Included
Adjusted R^2	0.131
Number of observations	4,970

Notes:

Heteroscedasticity-consistent *t*-statistics are given in parentheses.

QR = the ratio of quick assets to current liabilities;

EXP = the ratio of exports to total sales;

GROWTH = the rate of sales growth;

Industry dummies = dummy variables controlling for fixed effects of industries; and

Mills = the inverse Mills ratio obtained from the probit listing-choice model.

All other variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.05 level.

between the two partitioned samples. A comparison of regression results in column 4 of Table 5 and panel B of Table 8 reveals that the relative importance of *WEDGE* and *PUBLIC* remains stable, and that the results remain qualitatively similar across the full sample, the chaebol-affiliated sample, and the nonaffiliated sample.

In panel C of Table 8, we partition our sample firms into two distinct samples of publicly traded and privately held firms, and estimate (1) separately for each partitioned sample after excluding *PUBLIC* from the regression. The results in panel C show that the coefficients on *WEDGE* and *CHAEBOL* remain stable and

TABLE 8

Results of regressions for subsamples partitioned by each corporate governance measure and tests for differences in coefficients between the two subsamples

Panel A	(1) Firms with a positive *WEDGE*	(2) Firms with a zero *WEDGE*	(3) Differences ((1) − (2))
CHAEBOL	0.009	0.006	0.003
	(3.61)*	(3.18)*	(0.00)
PUBLIC	0.010	0.010	−0.000
	(3.54)*	(3.92)*	(−0.21)
Panel B	(1) Chaebol-affiliated firms	(2) Nonaffiliated firms	(3) Differences ((1) − (2))
WEDGE	0.009	0.015	−0.006
	(1.86)‡	(2.98)*	(−0.83)
PUBLIC	0.011	0.013	−0.002
	(4.22)*	(5.15)*	(−0.54)
Panel C	(1) Public firms	(2) Private firms	(3) Differences ((1) − (2))
WEDGE	0.013	0.011	0.002
	(1.78)‡	(2.82)*	(0.16)
CHAEBOL	0.007	0.008	−0.001
	(2.41)†	(4.49)*	(−0.40)

Notes:

For parsimony, summary statistics for the control variables are not tabulated.

Heteroscedasticity-consistent *t*-statistics are given in parentheses. Variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.05 level.

‡ Significant at the 0.10 level.

are qualitatively similar to those reported in column 4 of Table 5. As shown in column 3 of panel C, there is no significant difference in the regression coefficients between the public and private samples.

In short, the coefficients on *WEDGE*, *CHAEBOL*, and *PUBLIC* remain significantly positive in all cases, as hypothesized in Hypotheses 1, 2, and 3, respectively. Overall, the results presented in Table 8 suggest that our main results reported in Table 5 are not driven by the possibility that the underlying relations between the extent of earnings management and our key research variables differ inherently between the positive wedge and zero wedge samples, between the chaebol-affiliated and nonaffiliated samples, and between the public and private samples.

The 30 largest chaebols versus other chaebols

In this section, we examine whether larger chaebols exhibit a different pattern of earnings-management behavior from that of smaller chaebols. As mentioned earlier, the business group membership of our sample firms is identified by the KFTC, which ranks business groups by total assets and identifies the 30 largest chaebols each year. The reason for this designation is because of the enormous economic power that the 30 largest chaebols wield in the Korean economy. In 1997, the 30 largest chaebols accounted for 40 percent of the shipment amount, 18.1 percent of employment, 46.1 percent of tangible fixed assets, and 38.2 percent of value added in the manufacturing sector. Various regulatory measures specifically target the 30 largest chaebols to prevent an excessive concentration of economic power and to restrain their expansion.[19] On the one hand, the high visibility of the 30 largest chaebols leads to close public scrutiny and monitoring of group activities, which may constrain opportunistic earnings management. On the other hand, the 30 largest chaebols are distinguished from other chaebols in terms of their extent of diversification and cross-shareholdings. More complicated group-related interactions may provide the 30 largest chaebols with more incentives and means to undertake opportunistic behavior, compared with other chaebols. To examine whether the 30 largest chaebols are distinct from other chaebols in their earnings management behavior, we create a dummy variable, *TOP30*, that takes a value of one if a business group is one of the 30 largest chaebols identified by the KFTC. We then interact *TOP30* with *CHAEBOL* and include *TOP30*CHAEBOL* in (1). Our results (not reported) show that the coefficient on *TOP30*CHAEBOL* is negative but insignificant. The coefficients on *WEDGE*, *CHAEBOL*, and *PUBLIC* all remain significantly positive. The finding suggests that the 30 largest chaebols are not different from other chaebols in their earnings-management behavior.

Additional robustness checks

In (1), agency costs associated with corporate ownership structure are captured by the deviation of control (voting rights) from ownership (cash flow rights), namely, *WEDGE*. However, Warfield et al. (1995) provide evidence that the extent of earnings management decreases significantly for U.S. firms as managerial ownership (that is, cash flow rights) increases. As a sensitivity check, we include the level of the controlling shareholders' cash flow rights (*OWN*) in (1) as an additional

explanatory variable. The mean of cash flow rights is 51.9 percent for our sample. Column 1 of Table 9 presents the regression result with *OWN* included. As shown in column 1, the coefficient on *OWN* is negative but insignificant. However, the coefficients on *WEDGE*, *CHAEBOL*, and *PUBLIC* all remain significantly positive, consistent with Hypotheses 1, 2, and 3, respectively. In other words, our main results presented in Table 5 remain unchanged even after we control for the level of cash flow rights owned by the controlling shareholders. The above finding suggests that the control–ownership wedge, not ownership concentration, is an important source of agency problems in Korea.

The statistical significance of the reported coefficients in Table 5 could potentially be overstated because some firms contribute more years of data to our sample than other firms. To address potential problems arising from the use of unbalanced panel data, we first obtain the average value of firm-specific variables for each firm over the sample period 1992–2000. This averaging process gives rise to 3,302 unique firms. We then reestimate (1) using the average values of the variables for each firm. The regression results are reported in column 2 of Table 9. As shown in column 2, the results remain qualitatively similar to those reported in Table 5.

To examine the sensitivity of our results to the composition of the sample over 9 years, we conduct our analysis on the balanced-panel sample of 2,988 firm-years. The regression results are reported in column 3 of Table 9. As shown in column 3, the results remain qualitatively similar to our main regression results reported in Table 5.

Finally, we investigate whether our results presented in Table 5 are robust to alternative approaches to measuring absolute discretionary accruals. For this purpose, we consider three different approaches. First, we undertake a portfolio technique to mitigate the problems of correlated omitted variables (Kothari et al. 2005). More specifically, we partition our sample firms in the same industry into deciles based on their prior year's ROA. We subtract the median *DAC* for each *ROA*-decile portfolio to which a sample firm belongs from the sample firm's *DAC* to get portfolio performance-adjusted discretionary accruals. Using the absolute value of this new measure of *DAC* as the dependent variable in (1), we repeat the analysis in Table 5. The results (not reported for brevity) show that these new regression results are qualitatively similar to those reported in Table 5. Second, following Kothari et al. 2005, we include lagged *ROA* as an additional independent variable in (3) to control for firm performance when we estimate the Jones 1991 model. We then obtain *ROA*-adjusted discretionary accruals. Using the unsigned *ROA*-adjusted discretionary accruals as the dependent variable, we estimate various specifications of regressions in Table 5. Our results (not reported for brevity) using the unsigned *ROA*-adjusted discretionary accruals remain qualitatively similar to those reported in Table 5. Third, similar to Kasznik 1999 and Magnan, Nadeau, and Cormier 1999, we include cash flows from operations (*CFO*) deflated by lagged total assets (instead of lagged *ROA*) as an additional independent variable in (3). We then obtain the *CFO*-adjusted discretionary accruals. Using the unsigned *CFO*-adjusted discretionary accruals as the dependent variable, we repeat the analyses reported in Table 5. Here we use *CFO*, *ABSCFO* (absolute *CFO*), and *ABSCCFO* (absolute changes in *CFO*) instead of *ROA*, *ABSROA*, and *ABSCCFO*,

respectively, where appropriate. Using these alternative measures of discretionary accruals, we reestimate (1). Our results (not reported for brevity) using the unsigned *CFO*-adjusted discretionary accruals as the dependent variable again remain qualitatively similar to those reported in Table 5. In short, the results of various sensitivity checks show that our results in Table 5 are robust to alternative methods for estimating discretionary accruals.

TABLE 9
Robustness checks

Variable	(1) With cash flow right included	(2) Using average values	(3) Using balanced panel data
Intercept	0.052	0.061	0.021
	(4.65)*	(3.28)*	(0.97)
WEDGE	0.011	0.021	0.014
	(2.84)*	(3.04)*	(1.72)†
CHAEBOL	0.008	0.005	0.010
	(5.26)*	(1.69)†	(3.07)*
PUBLIC	0.011	0.019	0.008
	(5.60)*	(5.64)*	(1.75)†
OWN	−0.000		
	(−1.40)		
BIG6	0.000	0.000	−0.002
	(0.26)	(0.13)	(−0.87)
SIZE	−0.002	−0.003	−0.001
	(−3.80)*	(−2.98)*	(−1.21)
LEV	0.062	0.062	0.066
	(12.06)*	(10.82)*	(5.74)*
ROA	−0.059	−0.025	−0.000
	(−3.42)*	(−1.34)	(−0.00)
ABSROA	0.285	0.372	0.184
	(11.85)*	(12.40)*	(3.14)*
ABSCROA	0.181	0.123	0.169
	(7.64)*	(3.72)*	(3.27)*
Industry dummies	Included	Not included	Included
n	15,159	3,302	2,988
Adjusted R^2	0.115	0.158	0.098
F-statistic (*p*-value)	0.000	0.000	0.000

Notes:

Heteroscedasticity-consistent *t*-statistics are given in parentheses. Variables are as defined in Table 2.

* Significant at the 0.01 level.

† Significant at the 0.10 level.

8. Summary and concluding remarks

In this paper, we provide firm-level evidence on the effect of firm-specific corporate governance measures on opportunistic earnings management by Korean firms. Specifically, we investigate whether the magnitude of (unsigned) discretionary accruals is affected by three key characteristics of Korean firms: the deviation of control from ownership, a firm's affiliation with a business group, and a firm's listing status. We perform our analyses using 15,159 firm-year observations of Korean firms over the 1992–2000 period. Our results can be summarized as follows.

First, we find that as the wedge between control (voting rights) and ownership (cash flow rights) of the controlling shareholders becomes larger, firms tend to manage earnings more aggressively. Our results suggest that the control–ownership wedge creates agency problems between corporate insiders and outsiders, and that corporate insiders have incentives to manage earnings to camouflage their self-serving behavior. Our results also suggest that a major source of agency problems in emerging economies like Korea is the deviation of control from ownership rather than the separation of ownership from management.

Second, we find that firms affiliated with business groups tend to engage in earnings management more intensely than independent firms. This suggests that business group affiliation provides the controlling shareholders of a group-affiliated firm with stronger incentives and greater means to engage in earnings management to cover up their self-serving behavior. Although previous studies have examined the costs and benefits of group affiliation, our study is the first to look at the impact of group affiliation on earnings management.

Third, our results show that publicly traded firms tend to engage in earnings management more aggressively than privately held firms, a finding consistent with Beatty and Harris 1998 and Beatty et al. 2002. This is consistent with a view of stock-market manipulation or meeting investors' earnings expectations as a motive for opportunistic earnings management (Jensen 2004).

Overall, the results presented in this study indicate that the extent of earnings management is significantly related to the three firm-specific corporate governance characteristics — the control–ownership wedge, business group affiliation, and listing status — after other firm-specific factors are controlled for. The results are robust to alternative measures of discretionary accruals, different sample periods (pre-crisis versus post-crisis period), and alternative estimation methods.

With respect to the effect of business group affiliation on earnings management, the focus of our analysis is on earnings management or the financial reporting behavior of individual firms within a business group, rather than on the behavior of business groups or chaebols. In other words, our analysis has paid little attention to earnings-management behavior at the group level. Examining group-level financial reporting behavior and differences across different groups would provide further insight into what factors determine the financial reporting behavior of business groups as a whole. Given the lack of evidence on group-level earnings management, future research in this direction is needed.

Endnotes

1. As will be further explained in section 2, resource diversion consists of two activities: tunneling and propping. Tunneling (propping) activities are likely to adversely (positively) affect the earnings performance of an affiliated firm. We conjecture that firms whose resources are tunneled (propped up) are likely to engage in income-increasing (income-decreasing) earnings management. As will be further explained in section 3, our measure of earnings management — that is, absolute discretionary accruals — captures the magnitude of earnings management in both directions. It is beyond the scope of our study, however, to separate the effect of tunneling on earnings management from the effect of propping.
2. The case of the Daewoo Group provides an example of a chaebol that engaged in earnings-management practices through related-party transactions. In 1998, Daewoo Corp., Daewoo Heavy Industries, and Daewoo Electronics posted a combined net profit of $272 million. However, their income statements showed $2.7 billion in gains from asset sales carried out between Daewoo Group–affiliated companies: one Daewoo-affiliated firm sold an asset far above book value to another affiliate and booked the capital gain as profit. Once these profits were deleted, the three companies lost $2.4 billion (Ihlwan 2001).
3. Note that Haw et al. 2004 do not examine the effect of business group affiliation and a firm's listing status on opportunistic earnings management.
4. For example, Burgstahler, Hail, and Leuz (2006) provide European evidence that publicly traded firms tend to engage in earnings management to a lesser extent than privately held firms, whereas Beatty and Harris (1998) and Beatty, Ke, and Petroni (2002) document U.S. evidence supporting the opposite.
5. As of 1997 (the year of the Asian financial crisis), the 30 largest chaebols accounted for 62.54 percent and 72.63 percent of total assets and gross sales, respectively, of all firms listed on the Korea Stock Exchange (Bae, Kang, and Kim 2002).
6. See Bae et al. 2002, Chang and Hong 2000, and Chang 2003 for a discussion of the characteristics of chaebols in Korea.
7. The 2003 accounting scandal at SK Global, whose parent, SK Corp., is Korea's fourth largest chaebol, illustrates how propping activities occur among chaebol-affiliated firms. When hidden losses discovered in the accounts of SK Global threatened the stability of the entire conglomerate, SK Corp., the group's oil refining arm and a large shareholder and creditor of SK Global, agreed to contribute up to $830 million to the rescue of its sister company, while other SK affiliates are expected to support the trading company by doing more business with it (Ward 2003).
8. The Act on External Auditing was introduced in 1981 to enhance the credibility of financial reporting in general and the reliability of financial statements in particular in Korea. The Act requires publicly traded firms as well as privately held firms whose assets are worth more than a certain regulatory limit to report their audited financial statements, along with other required documents, to the Korea Financial Supervisory Commission. During our sample period, the regulatory limit with respect to firms' assets increased from 4 billion to 7 billion Korean won.
9. Big 6 auditors have a member firm relationship with large local audit firms because Big 6 auditors are not allowed to run their own operations in Korea without partnering with

local firms. The local firms associated with Big 6 auditors receive technical expertise and quality control services from Big 6 firms.

10. KIS receives financial and ownership information about Korean firms from the Korea Financial Supervisory Commission and checks the integrity of the data. It provides the most comprehensive financial data base available in Korea.
11. We thank Michel Magnan (associate editor) and an anonymous referee for bringing this point to our attention.
12. The mean value of absolute (unsigned) discretionary accruals in our sample is comparable to that of Korean firms (7.5 percent of lagged total assets) reported in Haw et al. 2004. This figure is also comparable to those of several studies using U.S. data (e.g., Klein 2002). The mean value of signed discretionary accruals in our sample is 0.7 percent of lagged assets.
13. Corporate financing in Korea has depended heavily on bank borrowings, in particular during the pre-crisis period. Joh (2003) reports that in 1997 the average debt-to-equity ratio of Korean firms (396 percent) was much higher than that of U.S. firms (154 percent), Japanese firms (193 percent), and Taiwanese firms (193 percent). Since the Asian crisis, this ratio has gradually decreased due to corporate restructuring and changes in the way that firms raise capital.
14. To provide additional insights into group-affiliated firms' earnings-management practices, we compare *ABSDAC*s obtained using unconsolidated financial statements and using consolidated financial statements for the same parent firms in our sample. We obtain 5,538 firm-year observations (531 parent firms) during our sample period for this comparison. The results are mixed. The mean difference between *ABSDAC* obtained from unconsolidated financial statements and *ABSDAC* from consolidated financial statements is significantly negative, while the median difference is significantly positive. However, comparing *ABSDAC* (obtained from consolidated financial statements) of chaebol affiliated firms with that of independent firms shows that both the mean and median of *ABSDAC* are significantly greater for chaebol-affiliated firms than for independent firms, suggesting that chaebol-affiliated firms engage in earnings management more than independent firms.
15. We thank Michel Magnan (associate editor) for bringing this point to our attention.
16. Note that privately held firms are not subject to stock-market pressure.
17. Previous research in the accounting literature has used the two-stage treatment effects model to address the self-selection bias problem. Examples include Leuz and Verrecchia 2000 and Kim et al. 2003.
18. For example, firms with no data on export sales are not included in this reduced sample.
19. For example, direct cross-shareholding between two affiliated firms of the 30 largest chaebols is prohibited and the total amount of capital investment in other firms by the affiliates of the 30 largest chaebols should not exceed 25 percent of their net asset worth.

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