

**THE PREVALENCE, NATURE, AND EFFECT
OF PUBLIC SUBSIDIARIES**

by

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Abstract

Diversity in ownership structures of public companies worldwide poses a challenge for standards setters when developing a concept of the “reporting entity.” It is an empirical question when, if ever, financial statements of a *portion* of a reporting entity should be considered general purpose. This dissertation investigates whether public subsidiaries provide useful financial information to equity investors in consolidated entities.

Subsidiaries with public common equity arise in one of two ways: (1) from takeovers, whereby a consolidated entity acquires a majority, but not 100 percent, stake in an existing public company; or (2) from equity carveouts, whereby a consolidated entity takes a subsidiary public while retaining a majority stake. Using a sample of German, Japanese, UK, and U.S. companies traded on major stock exchanges for each country in fiscal year 2012, I link corporate ownership and control structures to variation in the volume and horizon of these two types of transactions. I then provide descriptive evidence regarding the prevalence and nature of public subsidiaries in these four countries.

I next investigate how holding public subsidiaries affects the information environment of consolidated entities. Using a sample of German companies traded on major German stock exchanges over the fiscal years 2005-2012, I find that public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings. I also find that this incremental informativeness varies systematically with: the relative size of the public subsidiary; the number of public subsidiaries held by the consolidated entity; and the country, industry, accounting standards, and fiscal year-end of the public subsidiaries. Finally, I

find that the informativeness of consolidated entity earnings is higher for consolidated entities with domestic public subsidiaries than for those with only private subsidiaries. Combined, my results suggest that public subsidiary earnings are not only incrementally informative, but also complementary in that they enhance the informativeness of consolidated entity earnings.

CHAPTER ONE

Introduction

Public companies worldwide adopt many different ownership structures, ranging from being standalone legal entities to members of a large diversified corporate group comprised of many legal entities.¹ This diversity in ownership structures poses a challenge for standards setters when developing a concept of the “reporting entity.”

In 2010, the FASB and IASB (hereafter referred to as “the boards”) set their objective of general purpose financial reporting when they revised their conceptual frameworks via the joint conceptual framework project:²

OB2. The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity. Those decisions involve buying, selling, or holding equity and debt instruments and providing or settling loans and other forms of credit.

OB3. Decisions by existing and potential investors about buying, selling, or holding equity and debt instruments depend on the returns that they expect from an investment in those instruments; for example, dividends, principal and interest payments, or market price increases. Similarly, decisions by existing and potential lenders and other creditors about providing or settling loans and other forms of credit depend on the principal and interest payments or other returns that they expect. Investors’, lenders’, and other creditors’ expectations about returns depend on their assessment of the amount, timing, and uncertainty of (the prospects for) future net cash inflows to the entity. Consequently, existing and potential investors, lenders, and other creditors need information to help them assess the prospects for future net cash inflows to an entity.

¹ Legal entities are formed via formal registration governed by an established body of law. A legal entity has legal standing in the eyes of the law and the capacity to enter into agreements or contracts, assume obligations, incur and pay debts, sue and be sued, and be held responsible for its actions. This concept of a legal entity originated in Roman Law (Duff [1971]) and has been accepted in the U.S. since the mid-nineteenth century (Blumberg [1986]) and in many countries around the world.

² The conceptual framework projects are no longer being conducted jointly. In 2013, the IASB issued a Discussion Paper (DP) on “A Review of the Conceptual Framework for Financial Reporting.” This DP does not reconsider the two chapters of a revised conceptual framework as issued in 2010 (Chapter 1 on “The Objective of General Purpose Financial Reporting” and Chapter 3 on “Qualitative Characteristics of Useful Financial Information”) or the Reporting Entity ED issued in 2010 (the IASB instead intends to review the reporting entity proposals, including comments received on the Reporting Entity ED, as it develops an ED on a revised Conceptual Framework).

The boards also jointly issued an Exposure Draft (ED) developing a concept of the reporting entity that would meet the objective of general purpose financial reporting:

RE2. A reporting entity is a circumscribed area of economic activities whose financial information has the potential to be useful to existing and potential equity investors, lenders, and other creditors who cannot directly obtain the information they need in making decisions about providing resources to the entity and in assessing whether management and the governing board of that entity have made efficient and effective use of the resources provided.

The ED addresses the distinction between a legal entity and a reporting entity, whereby a reporting entity may include more than one legal entity (aggregation) or it may be a portion of a legal entity (disaggregation):

RE5. A single legal entity that conducts economic activities and does not control any other entity is likely to qualify as a reporting entity. Most, if not all, legal entities have the potential to be reporting entities. However, a single legal entity may not qualify as a reporting entity if, for example, its economic activities are commingled with the economic activities of another entity and there is no basis for objectively distinguishing their activities. In some jurisdictions, there may be questions about whether those entities are separate entities under the law.

RE6. A portion of an entity could qualify as a reporting entity if the economic activities of that portion can be distinguished objectively from the rest of the entity and financial information about that portion of the entity has the potential to be useful in making decisions about providing resources to that portion of the entity.

The ED then specifically addresses the need for aggregation of legal entities for consolidated financial reporting:³

RE7. An entity controls another entity when it has the power to direct the activities of that other entity to generate benefits for (or limit losses to) itself.

RE8. If one entity controls another entity, the cash flows and other benefits flowing from the controlling entity to its equity investors, lenders, and other

³ The ED also permits presentation of “parent-only” financial statements with consolidated financial statements. “Parent-only” financial statements “provide information about its investments in the entities it controls, and the returns on those investments, rather than the economic resources and claims, and changes in those economic resources and claims, of those entities it controls (RE11).” This practice is common in some jurisdictions and useful, for example, when parent-only financial statements help assess the level of dividends the controlling entity is legally able to pay without depending on transferring funds from the controlled entities (BC24). See further discussion of this in Chapter 5 on “Opportunities for Future Research.”

creditors often depend significantly on the cash flows and other benefits obtained from the entities it controls, which in turn depend on those entities' activities and the controlling entity's direction of those activities. Accordingly, if an entity that controls one or more entities prepares financial reports, it should present consolidated financial statements. Consolidated financial statements are most likely to provide useful information to the greatest number of users.

International Financial Reporting Standard (IFRS) 10 *Consolidated Financial Statements* requires an entity (the parent) that controls one or more entities (subsidiaries) to present consolidated financial statements.⁴ Further, U.S. GAAP (810.10.10) states that consolidated financial statements present “the results of operations and the financial position of a parent and all its subsidiaries as if the consolidated group were a single economic entity” and that “there is a presumption that consolidated financial statements are more meaningful than separate financial statements.”

Comment letters from national standards setters highlight differing international views on aggregation and disaggregation of legal entities for financial reporting. While both the UK Accounting Standards Board (UK ASB) and the German Accounting Standards Board (GASB) agree with the need for aggregation and disaggregation of legal entities, the GASB further argues that all legal entities should qualify as reporting entities because consolidated financial statements do not depict differences in corporate ownership structures where legal entities have dissimilar legal claims. The GASB states, “We consider this information to be relevant as well and, thus, believe that separate financial statements are decision-useful in this regard.” Further, some have suggested that to qualify as a reporting entity, the portion of an entity should represent a business that is defined in the standards-level guidance. Specifically, the Singapore Accounting Standards Council (ASC) expresses concern that subsidiaries that are separate legal

⁴ Laws and regulations that define consolidated entities for tax reporting are not necessarily the same as those for financial reporting. This leads to book-tax differences, the extent of which varies across countries (Atwood et al. [2010]). This dissertation focuses on consolidated entities as defined by financial reporting standards.

entities may have been set up solely to provide services to its parent and related companies, but may not qualify as a reporting entity based on RE5. The ASC argues, “We strongly urge the Boards to include a clarification that the Framework permits a legal entity to qualify as a reporting entity if the legislation in the relevant jurisdiction specifies the reporting entity which is required to prepare financial statements in accordance with IFRS.”

There are also differing international views on the accounting standards that should be used by aggregated and disaggregated reporting entities. Existing laws in the EU require that public companies preparing consolidated financial statements report in accordance with IFRS.⁵ However, public companies that do not prepare consolidated financial statements are not required to report in accordance with IFRS. This includes public subsidiaries that do not themselves, prepare consolidated financial statements. While these public subsidiaries may opt to report in accordance with IFRS, they may instead follow the country’s domestic accounting standards. The GASB expresses concern over this matter stating, “we are worried that financial statements of particular entities will not be allowed to be labeled as ‘having been prepared under IFRSs’ because they do not comply with the description of a reporting entity.”

These differing international views on aggregation and disaggregation of legal entities for financial reporting and the accounting standards that should be used by reporting entities highlight the importance of understanding the usefulness of aggregated and disaggregated financial information. This raises several issues about the appropriate boundaries, or distinguishable characteristics that should be used to determine “a circumscribed area of economic activities.” The motivating question for this dissertation addresses one issue not satisfactorily resolved in concept by the ED: “When, if ever, should financial statements of a *portion* of a reporting entity be considered general purpose?” When addressing this question, it is

⁵ EU Regulation 1606/2002/EC (the 'IAS regulation')

important to consider the objectives of financial reporting (i.e., whether financial statements of the reporting entity provide useful financial information about the amounts, timing, and uncertainty of net cash inflows to the entity).

A circumscribed area of economic activity can be conducted in a single entity within a consolidated group of entities. There is a tradition of accepting subsidiary financial statements (often a legal entity) as general purpose financial statements. Thus, I investigate whether subsidiaries provide useful financial information to equity investors in consolidated entities.⁶ Specifically, I use a setting where consolidated entities and one or more of their subsidiaries are publicly traded.

By focusing on public subsidiaries, my dissertation provides initial evidence for this motivating question using a setting where it is generally presumed that their financial statements should be considered general purpose. However, many questions around this motivating question concern other portions of a reporting entity (e.g., segments within a single legal entity). Thus, this dissertation provides a foundation for future research to consider whether other portions of a reporting entity provide useful financial information to existing and potential investors, lenders, and other creditors. Specifically, future research can consider the usefulness of private subsidiary financial information (presumably, still within specified legal boundaries) and circumscriptions based on the boundaries of activities within a single legal entity.⁷

In Chapter 2, I provide background by considering how differences in countries' legal environments impact corporate ownership and control structures. Corporate ownership is either dispersed or concentrated and corporate control is attributed to either powerful management or

⁶ Future research can consider whether subsidiaries provide useful financial information to lenders, and other creditors.

⁷ See further discussion of "Opportunities for Future Research" in Chapter 5.

strong shareholder rights. There are two features of legal environments that lead to cross-country differences in corporate ownership structures: legal traditions and legal protection. *Legal traditions* can be identified as either code law or common law. *Legal protection* refers to legal enforcement of investors' control rights arising from the contract between a firm and investors.

Common (code) law countries often have more dispersed (concentrated) ownership structures and the quality of legal protection is negatively related to the concentration of ownership. Legal protection also varies within each category of ownership structure (dispersed and concentrated), leading to cross-country differences in corporate control structures. Specifically, takeover laws vary internationally in how well they protect the interests of shareholders and other stakeholders when a company is subject to a takeover bid for control. Corporate control structures vary in whether firms are characterized by powerful management with strong takeover defenses or strong shareholder rights so that there are fewer takeover defenses. Major elements of takeover law concern takeover defenses and rules for mandatory bids, squeeze-outs, and sell-outs.

In Chapter 3, I describe the prevalence and nature of public subsidiaries worldwide. Subsidiaries with public common equity arise in one of two ways: (1) from takeovers, whereby a consolidated entity acquires a majority, but not 100 percent, stake in an existing public company; or (2) from equity carveouts, whereby a consolidated entity takes a subsidiary public while retaining a majority stake.⁸ Using a sample of German, Japanese, UK, and U.S. companies traded on major stock exchanges for each country in fiscal year 2012, I link corporate ownership and control structures to variation in the volume and horizon of these two types of transactions. I then

⁸ Public subsidiaries also arise when the subsidiary has public preferred stock or public debt. Consistent with Liao et al. [2012], I do not consider these observations because my accounting-based valuation models are only appropriate for pricing common shares that represent the residual owners' claims to firm assets. See further discussion of public subsidiaries traded via preferred stock and public debt in "Opportunities for Future Research" in Chapter 5.

provide descriptive evidence regarding the prevalence and nature of public subsidiaries in these four countries.

With respect to the prevalence of public subsidiaries, I find that: Japan has the highest relative percentage (7.6 percent) of public subsidiaries with domestic public parents; Germany has the highest relative percentage (4.3 percent) of public subsidiaries with foreign public parents; and both Germany and the UK have the highest relative percentage (11.3 percent) of public subsidiaries with private parents. With respect to the nature of public subsidiaries, I find that: (1) German public subsidiaries are involved in financial and nonfinancial operations; (2) Japanese public subsidiaries are often held by holding companies and report financial information that reflects underlying operations; (3) UK public subsidiaries are often investment trusts; and (4) U.S. public subsidiaries often operate as independent entities.

In Chapter 4, I investigate how holding public subsidiaries affects the information environment of consolidated entities, where the information environment is defined broadly to reflect all sources of information relevant to assessing firm value. Specifically, I investigate: (1) whether public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings; (2) what factors affect this incremental informativeness; and (3) how this incremental informativeness affects the informativeness of consolidated entity earnings.

I investigate these research questions using a sample of German companies traded on major German stock exchanges over the fiscal years 2005-2012. Focusing on a single country allows me to control for potential confounding effects that would arise in an international sample, such as market structures and pricing mechanisms, legal and political environments, culture and religion, macroeconomic conditions, institutional arrangements, and financial reporting standards

of consolidated entities. I chose Germany for several reasons. Public subsidiaries are not only sufficiently prevalent in Germany, but the effect of pooling public subsidiaries and their related public consolidated entities in the same sample is also likely to be more pronounced in Germany relative to the other three countries. Further, there are differences in the information environment between consolidated entities with public subsidiaries and those with only private subsidiaries, which is necessary for my analyses.

I use the informativeness of earnings, defined as the association between earnings and returns, to investigate how holding public subsidiaries affects the information environment of consolidated entities. The literature on segment reporting suggests that disaggregated data provides incremental information about the aggregated entity. Thus, my first hypothesis predicts and finds that public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings.

However, variation in the incremental informativeness of public subsidiary earnings can be expected for several reasons. I predict and find that this incremental informativeness varies systematically with: the relative size of the public subsidiary; the number of public subsidiaries held by the consolidated entity; and the country, industry, accounting standards, and fiscal year-end of the public subsidiaries. Specifically, public subsidiary earnings are more incrementally informative when they: (1) are relatively large compared to the consolidated entity; (2) are the only public subsidiary held by the consolidated entity; (3) are from the same country as the consolidated entity (i.e., Germany); (4) operate in an industry with higher growth and lower leverage or in the same industry as the consolidated entity; (5) use different accounting standards than the consolidated entity; or (6) have fiscal year-ends that precede that of the consolidated entity.

Having found evidence that supports the incremental informativeness of public subsidiary earnings as well as sources of variation in this relation, I next investigate how this informativeness affects the informativeness of consolidated entity earnings. Lambert et al. [2011] state that increasing the amount of public information increases financial information precision. For my setting, this suggests that the information provided by public subsidiaries increases consolidated entity financial information precision by enhancing its credibility, increasing its predictive value. This suggests that consolidated entity earnings are more informative for consolidated entities with public subsidiaries than for those with only private subsidiaries.

Alternatively, several studies provide evidence of a negative relation between the predictive value of alternative information about an entity and the informativeness of its earnings. Finding support for my first hypothesis suggests that public subsidiary earnings can be used to predict the value of the consolidated entity via the aggregation of its components, so that it represents alternative information that may instead substitute for consolidated entity earnings. This suggests that consolidated entity earnings are less informative for consolidated entities with public subsidiaries than for those with only private subsidiaries.

Because of these competing predictions, my second hypothesis predicts that the informativeness of consolidated entity earnings will be systematically different for consolidated entities with public subsidiaries than for those with only private subsidiaries, but it does not provide an *ex ante* prediction as to whether the difference will be higher or lower. I find that the informativeness of consolidated entity earnings is higher for consolidated entities with domestic public subsidiaries than for those with only private subsidiaries. This suggests that information provided by domestic public subsidiaries increases consolidated entity financial information

precision. Additional analyses considering the growth and profitability of the public subsidiaries relative to those of the consolidated entity provide additional support for this result.

I also perform several sensitivity tests which consider alternative economic determinants of the informativeness of earnings. For my first hypothesis, I continue to find that public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings when controlling for the growth, leverage, extent of losses, and systematic risk of the consolidated entity, when using alternative returns holding periods, and when controlling for cross-sectional and time-series dependence via two-way (year and firm) cluster-robust standard errors. However, when controlling for consolidated entity size, I do not find a statistically significant effect of either public subsidiary earnings or consolidated entity size interacted with public subsidiary earnings on consolidated entity returns. High multicollinearity suggests that the variables are substitute proxies for the information environment of consolidated entities with public subsidiaries.

For my second hypothesis, my main tests control for consolidated entity growth, size, leverage, and extent of losses by using a propensity matched sample based on these determinants. When using alternative returns holding periods and two-way (year and firm) cluster-robust standard errors, I continue to find that the informativeness of consolidated entity earnings is higher for consolidated entities with domestic public subsidiaries than for those with only private subsidiaries.

Combined, my results suggest that public subsidiary earnings are not only incrementally informative, but also complementary in that they enhance the informativeness of consolidated entity earnings. Further, sensitivity tests suggest that consolidated entity size is a substitute proxy for the public subsidiary effect.

This dissertation makes two key contributions to the accounting literature. First, this study contributes to the literature that identifies the prevalence and nature of public subsidiaries (e.g., Allen and McConnell [1998]; Aman and Okamura [2013]; Atanasov et al. [2010]; Chernenko et al. [2012]; Eckbo and Thorburn [2008]; Otsubo [2013]; Tam [2014]; Wagner [2005]). While these studies document the existence of public subsidiaries arising from specific transactions, there are no studies that consider the extent of their presence globally. Using the framework provided by Kanda [2011], I provide descriptive evidence of the prevalence and nature of public subsidiaries worldwide.

Second, this study contributes to the literature that identifies the information environment as an economic determinant of the informativeness of earnings (e.g., Atiase [1985, 1987]; Collins et al. [1987]; Collins and Kothari [1989]; Freeman [1987]; McNichols and Manegold [1983]). I find that public subsidiary earnings contribute to the information environment of consolidated entities, but that consolidated entity size is a substitute proxy for the public subsidiary effect.

This dissertation also provides information to the boards as they develop a concept of the reporting entity. By providing empirical evidence on when public subsidiaries provide useful financial information to equity investors in consolidated entities and descriptive evidence on the prevalence and nature of public subsidiaries worldwide, this study provides information for the boards' deliberations on the appropriate boundaries that should be used to determine "a circumscribed area of economic activities."

This dissertation proceeds as follows. Chapter 2 discusses how differences in countries' legal environments impact corporate ownership and control structures. Chapter 3 describes the prevalence and nature of public subsidiaries worldwide. Chapter 4 investigates how holding

public subsidiaries affects the information environment of consolidated entities. Chapter 5 concludes and provides directions for future research.

CHAPTER TWO

Corporate Ownership and Control Structures

In this chapter, I discuss how differences in countries' legal environments (legal traditions and legal protection) impact corporate ownership and control structures. Corporate ownership is either dispersed or concentrated and corporate control is attributed to either powerful management or strong shareholder rights. Kanda [2011] identifies the U.S. and UK as countries where dispersed ownership is more common, while concentrated ownership is more common in Japan and Continental Europe. However, U.S. and Japanese firms are characterized by powerful management with strong takeover defenses while UK and Continental European firms have stronger shareholder rights so that there are fewer takeover defenses. Throughout, I focus on the legal environments of four countries (Germany, Japan, the UK, and the U.S.) as representative of other countries with similar legal environments.

2.1 Corporate Ownership Structures

Eighty years ago, Berle and Means [1932] proposed that firms increasing in size would necessitate a transition from concentrated ownership and control to dispersed ownership. However, a large number of studies have shown that dispersed ownership is actually an exception around the world, with most corporations being controlled by a family, institution, or other controlling shareholder (e.g., Claessens et al. [2000]; Faccio and Lang [2002]; La Porta et al. [1999]).

Under dispersed ownership structures, many unrelated shareholders elect members of a governing board (a market-oriented economy). This delegation of authority increases information asymmetry, which creates the need for increased public disclosure. Under

concentrated ownership structures, agents for major political groups (labor unions, banks, families, and business associations) contract with the firm and often sit on the board of directors. Because related party transactions occur more frequently, information asymmetry is lower, and therefore less public disclosure is required. This suggests that overall, the *public* information environment of public companies is more robust in countries with dispersed ownership structures than in countries with concentrated ownership structures. In countries with concentrated ownership structures, the *private* information environment of public companies is rich from the perspective of the controlling shareholder, but not from the perspective of non-controlling shareholders.

There are two features of legal environments that lead to cross-country differences in corporate ownership structures: legal traditions and legal protection. *Legal traditions* can be identified as either code law or common law. The defining feature of code law is that the law is codified and the code is the primary source of law. This contrasts with common law, which is defined by court decisions operating under a doctrine of judicial precedent. *Legal protection* refers to legal enforcement of investors' control rights arising from the contract between a firm and investors.⁹

Common (code) law countries often have more dispersed (concentrated) ownership structures (Ball et al. [2000]). Accordingly, dispersed ownership is more common in the U.S. and UK, while concentrated ownership is more common in Japan and Germany. In both Japan and Germany, financial institutions have significant influence over companies. In Germany, banks hold a large proportion of both debt and equity holdings and provide custodial services that includes holding and voting shares and collecting dividends on behalf of their clients (Ashbaugh

⁹ This definition of legal protection expands on the term *investor protection*, which only considers the nature of legal obligations that managers have to investors, by also considering how courts interpret and enforce these obligations.

and Warfield [2003]; Jungmann [2006]). In Japan, firms typically have a “main bank” that is the largest provider of debt capital and plays a key corporate governance role (Morck et al. [2000]).

While common (code) law countries often have dispersed (concentrated) ownership structures, this is not always the case (e.g., Ball et al. [2003]). This highlights the importance of legal protection. According to Shleifer and Vishny [1997], external financing is governed through a contract between a firm and investors that gives the investors control rights. If managers violate terms of the contract, investors can appeal to courts to enforce their control rights. However, countries differ in terms of the nature of legal obligations that managers have to investors and in how courts interpret and enforce these obligations. La Porta et al. [1998] examine how laws protecting investors and the quality of enforcement of these laws differ across 49 countries of common law (English) and code law (French, German, and Scandinavian) origin and whether these differences matter for corporate ownership structures. They find that the quality of legal protection is negatively related to the concentration of ownership.

La Porta et al. [1997, 1999] and Shleifer and Vishny [1997] provide two key reasons for this finding. First, when legal protection is weak, investors can achieve more effective control rights by owning more shares because action by a controlling shareholder is much easier than when control rights are dispersed. Further, the controlling shareholder has motivation to take action because it receives a larger share of the benefits from doing so. However, when legal protection of minority shareholders is weak, controlling shareholders also have incentives and opportunity to expropriate assets at the expense of minority shareholders. Thus, several studies attempt to determine whether concentrated ownership leads to alignment or entrenchment of the controlling shareholder. The alignment effect states that the controlling owners’ incentives become more aligned with the firm due to increased stake in the firm. The entrenchment effect

states that the controlling owners utilize their concentrated ownership to expropriate assets at the expense of minority shareholders through self-dealing transactions or the pursuit of non-profit-maximizing personal objectives. This leads to the second reason that concentrated ownership is more common in countries with weak legal protection of minority shareholders – that the controlling shareholder will do whatever it takes to avoid costs associated with losing control. These costs include losses from expropriation by the new controlling shareholder or the loss of their own ability to expropriate.

A number of studies on U.S. family firms support the alignment effect (Ali et al. [2007]; Anderson and Reeb [2003]; Anderson et al. [2004]; Bates et al. [2006]; Holderness and Sheehan [1988, 2000]; Villalonga and Amit [2006]; Wang [2006]). However, when using a sample of public subsidiaries that arose from equity carveouts, Atanasov et al. [2010] suggest that the risk of expropriation is a nonlinear function of the parent's ownership stake. Further, several studies outside of the U.S. support the entrenchment effect, especially in emerging markets and when legal protection is weaker (Atanasov [2005]; Bae et al. [2002]; Baek et al. [2006]; Bertrand et al. [2002]; Cheung et al. [2006]; Claessens et al. [2002]; Dyck and Zingales [2004]; Fan and Wong [2002]; Jeong-Bon and Yi [2006]; Johnson et al. [2000]; La Porta et al. [2002]; Lemmon and Lins [2003]; Nenova [2003]).

The mixed evidence on the effect of concentrated ownership can be traced to differences in the nature of concentrated ownership structures across countries. La Porta et al. [1999] identify a variety of ownership structures that result in concentration of control rights without concentration of ownership, including: superior voting rights, cross-ownership patterns, and pyramids. This control in excess of ownership exacerbates controlling shareholders' incentives

and opportunities to expropriate assets at the expense of other investors because the concentrated owner's benefits from expropriation become relatively larger than the associated cost.

These structures often result in large diversified corporate groups that dominate the economies of many countries, especially in emerging markets (e.g., Korean *chaebols*, Indian *business houses*, Latin American *grupos*, and Japanese *keiretsu*). The *corporate group* is an elusive concept because membership is typically informal (Khanna [2000]).¹⁰ This has led to several definitions in the literature. Davies [1990] defines a corporate group as “the operation of two or more companies as a single economic unit, despite each having its own legal personality and limited liability”; Strachan and Vernon [1976] provides an even more encompassing definition, whereby a corporate group is “a long-term association of firms and the people who own and manage them.” Because these definitions encompass a variety of structures, the criteria used to define the boundaries of a corporate group and to identify members vary considerably across countries and studies. For example, membership in Japanese *keiretsu* is generally based on measures of long-term relationships among member firms (Yafeh [2003]).

Khanna and Palepu [1997] provide one explanation for the prevalence of corporate groups. They argue that because companies must adapt their strategies to fit their institutional context, corporate groups imitate the functions of several institutions that are present only in advanced economies. Accordingly, corporate law reforms in the 1990s broke down stable cross-shareholdings, leading to a decline in Japanese *keiretsu*. Despite their decline in Japan, corporate groups are prevalent in several emerging markets, ranging from 22 to 65 percent of the countries' firms being affiliated with a corporate group (Yafeh [2003]).

¹⁰ Exceptions include Italy, where the law identifies “common control” and Chile, where groups are legal entities (Yafeh [2003]).

2.2 Corporate Control Structures

The previous discussion highlights that legal protection also varies within each category of ownership structure (dispersed and concentrated), leading to cross-country differences in corporate control structures. Specifically, takeover laws vary internationally in how well they protect the interests of shareholders and other stakeholders when a company is subject to a takeover bid for control. Corporate control structures vary in whether firms are characterized by powerful management with strong takeover defenses or strong shareholder rights so that there are fewer takeover defenses. U.S. and Japanese firms are characterized by powerful management while UK and Continental European firms have strong shareholder rights.

Major elements of takeover law concern takeover defenses and rules for mandatory bids, squeeze-outs, and sell-outs. The remainder of this section discusses differences in these laws across the four countries.

Takeover Defenses

Takeover defenses can be categorized as either pre-bid or post-bid. Pre-bid defenses restrict share acquisitions (e.g., share transfer restrictions) or exercise of control (e.g., voting restrictions, shares with multiple voting rights). Post-bid defenses are put in place once the company has become the target of a takeover bid (e.g., seeking a white knight, issuing capital or debt, using poison pills).

In 2004, the EU adopted Directive 2004/25/EC on takeover bids (“the Directive”).¹¹ Breakthrough and board neutrality rules limit the use of pre-bid and post-bid takeover defenses, respectively (Articles 11 and 9 of the Directive). An External Study on the application of the Directive conducted on behalf of the Commission (“the External Study”) reports little application

¹¹ Directive 2004/25/EC of the European Parliament and of the Council of 21 April 2004 on takeover bids, OJ L 142/12 of 30.03.2004, p.38. Available at: http://ec.europa.eu/internal_market/company/official/index_en.htm

of the breakthrough rules across the Member States.¹² However, both the UK and Germany have rules that limit the use of pre-bid takeover defenses. Both countries generally adhere to a one share / one vote principle.¹³ Further, in the UK, proposals that would allow certain pre-bid defenses, such as amending the articles or changing shareholders' voting rights, generally require a supermajority vote of 75 percent (Gregory and Simmelkjaer [2002]). Alternatively, in Germany, holders of 25 percent plus one share may block all decisions where a 75 percent supermajority is required for liquidations, transformations, mergers, and other restructuring transactions (Gregory and Simmelkjaer [2002]).

In contrast to the little application of the breakthrough rules, only seven out of 22 Member States have opted out from the board neutrality rules (Belgium, Denmark, Germany, Hungary, Luxembourg, the Netherlands, and Poland). Thus, in the UK, the board and management of a target company may not thwart a takeover attempt unless they do so in the best interests of shareholders (Meridian [2011]). Despite opting out, Germany has a board passivity rule that existed before the transposition of the Directive. Compared to the Directive's board neutrality rules, the German passivity rules allow more exceptions from board neutrality (e.g., seeking a white knight, issuing debt, selling off important assets).¹⁴ Certain post-bid defenses

¹² Marccus Partners, in cooperation with the Centre for European Policy Studies (June 2012), *Study on the application of Directive 2004/25/EC on takeover bids*. Available at: http://ec.europa.eu/internal_market/company/takeoverbids/index_en.htm

¹³ There are exceptions. Although very rare and only with shareholder approval, shares in the UK can have multiple voting rights or the ability to block mergers or takeovers. Further, the UK has historically allowed votes to be cast at the general meeting by a show of hands, giving disproportionate rights to small, individual shareholders and those in actual attendance over those who have relied on proxies. To counteract this, shareholders can demand a formal count (Gregory and Simmelkjaer [2002]). Germany has recognized a one share / one vote principle since 2001, when a law abolished multiple voting rights (*Gesetz zur Namensaktie und zur Erleichterung der Stimmrechtsausübung, NaStraG*). However, non-voting stock can be issued as preferred stock (Meridian [2011]).

¹⁴ The Act is formally cited as "Wertpapiererwerbs- und Übernahmegesetz" v. 20 Dezember 2001 (BGBl. I. S. 3822). A useful summary of its provisions are found in the Int'l Fin. L. Rev. (March 2002).

(e.g., poison pills) are infeasible in both countries because they require shareholder approval (Gordan [2002]).

Consistent with the U.S. having powerful managers (as opposed to strong shareholder rights), the U.S. does not have equivalent breakthrough or board neutrality rules.¹⁵ Japan also does not have equivalent breakthrough rules; however, it does have a board neutrality equivalent. Until the early 2000s, hostile takeovers were virtually non-existent in Japan, due mainly to the prevalence of cross-shareholding structures. The corporate law reforms that broke down stable cross-shareholdings increased foreign ownership and hostile takeover bids. Due to the rise in hostile takeovers, since 2004 there has been a large increase in the use of takeover defenses in Japan, particularly poison pills (Hill [2010]; ISS [2007]). In 2005, the Japanese Ministry of Economy, Trade and Industry and the Ministry of Justice issued the “Guidelines regarding Takeover Defenses for the purposes of Protection and Enhancement of Corporate Value and Shareholders’ Common Interests”.¹⁶ These guidelines favor shareholder approval of the use of post-bid takeover defenses, and according to Kanda [2010], most companies comply voluntarily.

Mandatory Bids, Squeeze-Outs and Sell-Outs

Under a mandatory bid rule, if an entity acquires control over a company (as determined by a triggering threshold of shares), it is obligated to make a takeover bid for all remaining shares at an equitable price. This rule protects minority shareholders by granting them both a right to sell their shares in the event of a change of control, and the benefit of the premium paid for the controlling stake. Article 5 of the Directive provides a mandatory bid rule that grants

¹⁵ When making everyday business decisions in the U.S., directors are protected from legal liability under the “business judgment rule”, whereby they are not held liable for decisions where they acted on an informed basis, in good faith, and in the honest belief that the action was in the best interest of the company. However, in the takeover context, directors are held to a higher standard under Unocal and Revlon duties. These duties require directors to: (1) show that there were reasonable grounds for launching takeover defenses and that the defenses were proportionate to the threat posed, and (2) maximize shareholder value if the dissolution of the company is inevitable.

¹⁶ http://www.meti.go.jp/policy/economy/keiei_innovation/keizaihousei/pdf/shishin_hontai.pdf

flexibility for setting the triggering threshold; a large majority of the Member States introduced a threshold around 30 percent of the voting rights.¹⁷

A squeeze-out rule allows an acquirer of a large portion of shares to acquire the remaining outstanding shares at a fair price, while a sell-out rule allows the minority shareholders to force the acquirer to purchase their shares at a fair price. Squeeze-out rules are intended to increase takeover volume by reducing costs and risks for the acquirer. Sell-out rules protect minority shareholders similar to the mandatory bid rule; however, the threshold is higher and the timing differs (a mandatory bid occurs once the acquirer crosses the triggering threshold, while the sell-out right applies after the completion of a takeover). This mitigates minority shareholders' pressure to sell during the bid process since it essentially extends the offer period (Burkart and Panunzi [2003]). Articles 15 and 16 of the Directive provide squeeze-out and sell-out rules, respectively, that grant flexibility for setting the triggering thresholds; a large majority of the Member States introduced a threshold around 90 to 95 percent of the voting rights.¹⁸

There is no direct counterpart to the Directive's mandatory bid rule under U.S. federal law.¹⁹ However, Japanese tender offer regulations have complicated rules regarding mandatory bids.²⁰ There are four key thresholds: five, one-third (33.3), 50, and two-thirds (66.7) percent. A

¹⁷ Both Germany and the UK have thresholds of 30 percent of the voting rights.

¹⁸ Germany and the UK have thresholds of 95 and 90 percent of the voting rights, respectively.

¹⁹ However, three States (Maine, Pennsylvania and South Dakota, none of which have a significant number of public companies incorporated under their laws) have comparable "control share cash-out" laws. Further, the "all-holders/best-price" rule set out by the SEC in Rule 14d-10 of the *Securities Exchange Act of 1934* provides for the first part of Article 3.1(a) of the Directive ("all holders of the securities of an offeree company of the same class must be afforded equivalent treatment"), by requiring that no offeror is permitted to make a takeover bid unless the bid "is open to all security holders of the class of securities subject to the tender offer" and "the consideration paid to any security holder for securities tendered in the tender offer is the highest consideration paid to any other security holder for securities tendered in the tender offer". Thus, the key distinction is that this rule requires that the initial takeover offer be to all shareholders, while mandatory bids occur after the offerer acquires control.

²⁰ The Financial Instruments and Exchange Act (the "FIEA") governs rules for tender offers in Japan. Available at: <http://www.fsa.go.jp/common/law/fie01.pdf>

mandatory bid is required if an acquisition results in the entity holding greater than five percent, unless it involved private purchases from ten or fewer shareholders within a 61 day period (“Limited Seller Acquisitions”). A mandatory bid is not required for Limited Seller Acquisitions that result in the entity holding less than one-third (33.3) percent. A mandatory bid is required for either type of acquisition that results in the entity holding greater than one-third (33.3) percent, unless it involved Limited Seller Acquisitions made by an entity that previously held greater than 50 percent. In this latter case, a mandatory bid is only required if the acquisition results in the entity holding greater than two-thirds (66.7) percent. Neither the U.S. nor Japan have equivalent squeeze and sell-out rights. However, certain mechanisms can still be used by the acquirer to accomplish a squeeze-out (e.g., transforming shares into callable shares; performing a two-step acquisition).

2.3 Summary

Differences in countries’ legal environments (legal traditions and legal protection) impact corporate ownership and control structures. Corporate ownership is either dispersed or concentrated and corporate control is attributed to either powerful management or strong shareholder rights. Common (code) law countries often have more dispersed (concentrated) ownership structures and the quality of legal protection is negatively related to the concentration of ownership. Legal protection also varies within each category of ownership structure (dispersed and concentrated), leading to cross-country differences in corporate control structures. Specifically, takeover laws vary internationally in how well they protect the interests of shareholders and other stakeholders when a company is subject to a takeover bid for control. Major elements of takeover law concern takeover defenses and rules for mandatory bids,

squeeze-outs, and sell-outs. The next chapter links corporate ownership and control structures to ways that subsidiaries with public common equity arise, with the purpose of understanding the prevalence and nature of public subsidiaries worldwide.

CHAPTER THREE

The Prevalence and Nature of Public Subsidiaries

3.1 Literature Review

Subsidiaries with public common equity arise in one of two ways: (1) from takeovers, whereby a consolidated entity acquires a majority, but not 100 percent, stake in an existing public company, or (2) from equity carveouts, whereby a consolidated entity takes a subsidiary public while retaining a majority stake. The prevalence and nature of public subsidiaries depends on the *volume* and *horizon* of these transactions. Volume refers to the frequency with which the transaction takes place. Horizon refers to the time period entity after the initial transaction that the subsidiary continues to be a publicly traded subsidiary of the consolidated. This section reviews the literature linking corporate ownership and control structures to variation in the volume and horizon of these two types of transactions. Figure 1 summarizes this section using the framework provided by Kanda [2011]. In the sections that follow, I then provide descriptive evidence of the prevalence and nature of public subsidiaries in four countries based on this framework.

Takeovers

The first way subsidiaries with public common equity arise is through a consolidated entity acquiring a majority, but not 100 percent, stake in an existing public company. This section reviews the literature linking corporate ownership and control structures to variation in the volume and horizon of takeovers.

Corporate Ownership Structures

Schneper and Guillén [2004] state that in countries with dispersed ownership, firms more often rely on external market mechanisms for disciplining management, such as the market for

corporate control. Alternatively, in countries with concentrated ownership, corporations place greater emphasis on internal mechanisms, such as boards of directors that exhibit broad stakeholder participation, which could include representation from labor, creditors, regulatory agencies, or banks (Aoki [1993]; Charkham [1994]; Dore [2000]; Lazonick and O'Sullivan [1996]; Prowse [1995]). Because the U.S. and UK have the largest equity markets among countries where dispersed ownership is more common, the majority of research on M&A activity is set in these two countries.²¹

Consistent with the notion of takeover volume being higher in countries where ownership is dispersed rather than concentrated, Martynova and Renneboog [2006] find that the majority of takeover activity in the EU over the period 1993-2001 is situated in the UK. They find that this is especially the case for hostile takeovers, although hostile takeovers are overall less frequent than friendly M&A. Several studies specifically demonstrate that hostile takeovers are rare in countries with concentrated ownership (Guillén [2000]; Jungmann [2006]; O'Sullivan [2003]).

As stated in Chapter 2, La Porta et al. [1997, 1998, 1999] find that the quality of legal protection is negatively related to the concentration of ownership and argue that controlling shareholders will do whatever it takes to avoid costs associated with losing control when legal protection of minority shareholders is weak. Thus, many studies are based on the premise that takeover horizon is higher when corporate ownership is concentrated rather than dispersed.²²

Corporate Control Structures

Holding ownership dispersion constant, countries where firms are characterized by powerful management with strong takeover defenses are expected to have a lower volume of

²¹ Betton et al. [2008] review the literature on U.S. takeover activity over the period 1980-2005. Martynova and Renneboog [2006] characterize the main features of takeovers involving European companies in the period 1993-2001.

²² See further discussion of these studies in Chapter 2 in the section "Corporate Ownership Structures."

takeovers than countries where firms are characterized by strong shareholder rights with fewer takeover defenses. Accordingly, the External Study finds that squeeze and sell-out rights both have a positive but very limited impact on the volume of takeovers given their very high thresholds. Further, this positive effect is more pronounced for countries with concentrated ownership (e.g., Germany) than for countries with dispersed ownership (e.g., the UK). The External Study also suggests that the breakthrough and board neutrality rules could have a positive impact on the volume of takeovers, and this positive effect would be more pronounced for countries with concentrated ownership than for countries with dispersed ownership.

However, the External Study finds that the application of the mandatory bid rule is negatively associated with takeover volume, which the study attributes to the rule raising the *ex ante* cost of deals and providing incentives to incumbent shareholders to increase their holdings close to the triggering threshold. Dyck and Zingalas [2004] provide evidence of the latter incentive in the UK, finding that more than one quarter of takeovers are for ownership holdings of between 29 and 30 percent, with a median block size of 25 percent.²³ Further, this negative effect is more pronounced for countries with dispersed ownership (e.g., the UK) than for countries with concentrated ownership (e.g., Germany). Thus, it may instead be the case that countries where firms are characterized by powerful management with strong takeover defenses have a higher volume of takeovers than countries where firms are characterized by strong shareholder rights with fewer takeover defenses.

Laws that require mandatory bids and provide squeeze and sell-out rights provide a legal means for fair exit by minority shareholders. Thus, it is expected that the acquirer is more likely to fully acquire the remaining shares in the subsidiary in the presence of these laws, reducing the

²³ As stated in Chapter 2, the mandatory bid threshold in the UK is 30 percent of the voting rights (as it was during the period studied by Dyck and Zingalas [2004]).

time frame during which the subsidiary is publicly traded. Thus, holding ownership dispersion constant, countries where firms are characterized by strong shareholder rights with fewer takeover defenses are expected to have a shorter takeover horizon than countries where firms are characterized by powerful management with strong takeover defenses. This notion is supported by several studies demonstrating that establishing prior ownership increases the likelihood of a full takeover (e.g., Akhigbe et al. [2007]; Betton and Eckbo [2000]; Bulow et al. [1999]; Choi [1991]; Hirshleifer and Titman [1990]; Shleifer and Vishny [1986]; Singh [1998]; Walkling [1985]). Akhigbe et al. [2007] find that partial bids initiated by corporate bidders are more likely to result in a full acquisition, and the size of the acquired stake and the level of institutional ownership are positively linked to the probability of a full acquisition.

Equity carveouts

The second way subsidiaries with public common equity arise is through a consolidated entity taking a subsidiary public while retaining a majority stake (i.e., an equity carveout). The subsidiary gets its own management team and board of directors and becomes subject to all reporting requirements of public companies. However, the parent company often retains a controlling interest, so equity carveouts often result in a public subsidiary. Eckbo and Thorburn [2008] provide the annual distribution of equity carveouts worldwide from 1985 to 2007. Most of these transactions occurred outside the U.S., and the transaction volume peaked in the first half of the 1990's. In recent years, only a handful of equity carveout transactions have taken place annually. Thus, the extent to which current public subsidiaries arose from equity carveouts depends primarily on *prior* volume and the time horizon of the consolidated entity with respect to the carved out subsidiary.

Allen and McConnell [1998] find that equity carveouts were infrequent in the U.S., usually occurring only when the financial performance of a subsidiary had deteriorated and the parent had no other financing choices. This study shows that at the time of the equity carveout, parent firms retained a mean (median) of 69 (80) percent of the subsidiary's shares. However, the public listing of a carved-out subsidiary was usually temporary in the U.S. because subsequent events, such as re-acquisitions, spin-offs, secondary offerings, or sell-offs, resulted in the dissolution of the parent-subsidary relationship or the delisting of the subsidiary (Atanasov et al. [2010]; Hulburt [2003]; Klein et al. [1991]; Otsubo, [2009]; Schipper and Smith [1986]).

Equity carveouts accounted for 12 percent of all IPOs in Germany between 1981 and 1995 (Wagner [2005]). Vijh [1999] reported a median (mean) ownership of the subsidiary by the parent after the equity carveout of 63 (59) percent. However, in the long run, most firms either completely divested the subsidiary or continued to hold a stake of 75 percent or more, suggesting that equity carveouts were also temporary arrangements in Germany similar to that in the U.S. To my knowledge, there are no studies that identify the extent of equity carveouts in the UK, suggesting that this was not a prevalent transaction in the UK.²⁴

However, in Japan, companies frequently engaged in equity carveouts within corporate groups (*keiretsu*), where both the consolidated entity and its subsidiaries remained publicly traded (Aman and Okamura [2013]; Chernenko et al. [2012]; Otsubo [2013]). Accordingly, Itoh and Hayashida [1997] found that 70 percent of Japanese subsidiaries were former or newly founded operating units of their parent companies. Because of strong operating relationships that existed prior to the equity carveout, Japanese parent companies often retained majority control

²⁴ Afshar et al. [1992] provide a ceiling for the number of carveouts over the period 1985-1986. Their initial sample consists of 403 corporate divestitures, which includes sell-offs, spin-offs, carveouts, and management buy-outs. This was reduced to 178 sell-offs, suggesting that there were 225 spin-offs, carveouts, and management buy-outs during this time period.

over their public subsidiaries for a long period of time so that equity carveout horizon is longer in Japan. For example, Hitachi, Ltd., the parent company of the Hitachi group, held 23 public subsidiaries in 2008, of which 12 arose from equity carveouts and were public subsidiaries of Hitachi for over 20 years (Miyajima et al. [2011]). This suggests that public subsidiaries arising from takeovers will only be prevalent in Japan, and not in Germany, the UK, or the U.S.

Summary

The literature suggests that the volume of takeovers is higher in countries where ownership is dispersed rather than concentrated. However, it is questionable whether the volume of takeovers in countries where firms are characterized by powerful management with strong takeover defenses is higher or lower than in countries where firms are characterized by strong shareholder rights with fewer takeover defenses. The literature further suggests that takeover horizon is higher when corporate ownership is concentrated rather than dispersed and in the presence of stronger takeover defenses that allow the subsidiary to remain publicly traded for a longer period of time. However, prior literature does not establish whether the impact of ownership or control structures will be stronger. Thus, rather than empirically predicting how corporate ownership and control structures affect the prevalence and nature of public subsidiaries arising from takeovers, I instead provide descriptive evidence.

Further, due to the limited use of equity carveouts in recent years, the extent to which current public subsidiaries arose from equity carveouts depends primarily on *prior* volume and the time horizon of the consolidated entity with respect to the carved out subsidiary. The literature suggests that equity carveout volume was higher when corporate ownership was concentrated rather than dispersed, but that equity carveout horizon was longest when management was powerful (as opposed to when shareholders have strong rights). This is mainly

the case for countries where corporate groups are prevalent (e.g., Korean *chaebols*, Indian *business houses*, Latin American *grupos*, and Japanese *keiretsu*).

3.2 Sample Development

My sample consists of a cross section of German, Japanese, UK, and U.S. companies traded on major stock exchanges for each country in fiscal year 2012. As can be seen in Panel A of Table 1, this results in an initial sample of 9,145 firms. I obtain entity structures from FactSet.²⁵ I then delete firms not having necessary financial data on Datastream and Worldscope, resulting in a final sample of 8,548 firms.

3.3 The Prevalence of Public Subsidiaries

Panel B of Table 1 demonstrates that the existence of public subsidiaries results in seven different categories of publicly traded companies with distinct information environments: (1) consolidated entities with domestic public subsidiaries, (2) consolidated entities with foreign public subsidiaries, (3) consolidated entities with only private subsidiaries, (4) public subsidiaries with domestic public parents, (5) public subsidiaries with foreign public parents, (6) public subsidiaries with private parents, and (7) stand-alone entities without subsidiaries.²⁶

For all four countries the largest number of firm-year observations relates to consolidated entities with only private subsidiaries. However, there is a substantial number of consolidated

²⁵ I lose 14 firms that are unavailable on FactSet.

²⁶ Consolidated entities with public subsidiaries (Categories 1 and 2) may also hold private subsidiaries. Consolidated entities with foreign public subsidiaries (Category 2) may also hold domestic public subsidiaries. FactSet does not track strict legal entity hierarchies, instead compiling hierarchies that are more operational in nature, reflecting underlying regulatory, financing, and economic activities. This results in the overstatement of firms in Category 7 and the understatement of firms in Category 3. To correct for this, I reclassify any firms reporting a value for minority interest on their balance sheet (WC03426) or income statement (WC01501) from Category 7 to Category 3.

entities with public subsidiaries, and an even larger number of public subsidiaries.²⁷ Japan has the highest relative percentage (7.6 percent) of public subsidiaries with domestic public parents (Category 4), Germany has the highest relative percentage (4.3 percent) of public subsidiaries with foreign public parents (Category 5), and both Germany and the UK have the highest relative percentage (11.3 percent) of public subsidiaries with private parents (Category 6).

3.4 The Nature of Public Subsidiaries

Table 2 presents the mean balance sheet and income statement values (in USD) for these four countries by public company category. For all four countries, consolidated entities with public subsidiaries (Categories 1 and 2) hold the highest value of average total assets, while standalone entities without subsidiaries (Category 7) hold the lowest. Further, with the exception of Japan, average total assets are greatest for those consolidated entities holding public subsidiaries globally (Category 2). In Japan, average total assets are greatest for those holding domestic (Japanese) public subsidiaries (Category 1), demonstrating the importance of *kieretsu* in Japan.

In Germany, the public subsidiaries (Categories 4, 5, and 6) have greater average total assets than consolidated entities with only private subsidiaries (Category 3), and those with domestic (German) public parents (Category 4) are the largest. In both Japan and the UK, public subsidiaries with private parents (Category 6) hold greater average total assets than consolidated entities with only private subsidiaries (Category 3), while public subsidiaries with public parents (Categories 4 and 5) are relatively small. In the U.S., public subsidiaries with foreign public parents (Category 5) hold greater average total assets than consolidated entities with only private

²⁷ The number of consolidated entities with public subsidiaries considers both those with domestic public subsidiaries (Category 1) and those with foreign public subsidiaries (Category 2). The number of public subsidiaries considers those with domestic public (Category 4), foreign public (Category 5), and private (Category 6) parents.

subsidiaries (Category 3), while public subsidiaries with domestic (U.S.) public parents (Category 5) and private parents (Category 6) are relatively small.

Public subsidiaries with public parents (Categories 4 and 5) are consolidated into consolidated entities with public subsidiaries (Categories 1 and 2). Thus, studies that pool these categories in an international sample erroneously assume that public companies are independent entities. Even when using a sample within a single country, this issue remains with Category 4 being consolidated into either Category 1 or 2. Because the value of average total assets for Category 4 in Table 2 is highest in Germany as compared to the other three countries, the effect of this erroneous assumption is likely to be more pronounced in Germany. This is further supported by Table 3, which presents mean balance sheet and income statement values (in USD) for the consolidated entities with public subsidiaries (Categories 1 and 2) decomposed into that from the public subsidiaries and that from the remainder of the consolidated entity. The mean value of public subsidiary total assets as a percentage of consolidated entity total assets is highest in Germany (8.8 percent).²⁸

Panel C of Table 1 provides the sample breakdown by industry for the public company categories. Both the industries that public subsidiaries operate in and the nature of their balance sheets depict a stark difference in the ways that public subsidiaries are used by consolidated entities across countries. The sections that follow present descriptive evidence for the nature of public subsidiaries in each country.

²⁸ When considering the two categories of consolidated entities with public subsidiaries separately, the mean value of public subsidiary total assets as a percentage of consolidated entity total assets is still highest in Germany (10.8 percent) for consolidated entities with domestic public subsidiaries (Category 1). However, for consolidated entities with foreign public subsidiaries (Category 2), this value is highest in Japan (27.4 percent). This suggests that the effect of this erroneous assumption is likely to be more pronounced in Germany for a single country sample and in Japan for an international sample.

Germany

Table 2 demonstrates that the public subsidiaries (Categories 4, 5, and 6) in Germany hold approximately the same percentage of liabilities as the consolidated entities with public subsidiaries (Categories 1 and 2). Further, liabilities are comprised primarily of debt and deposits, reserves and other long-term liabilities. This is consistent with a large number of German companies operating in the finance, insurance, and real estate industries as demonstrated in Table 1. For example, Deutsche Bank AG (Category 2) is the largest bank in Germany, with total assets of \$2,660 billion. The group currently has 1,326 members, of which two are public subsidiaries: Deutsche Postbank AG, a German financial services company (Category 4), and Rostovnefteproduct OJSC, a Russian petroleum products distributor. Deutsche Postbank AG was acquired by Deutsche Bank AG in 2010 and is one of the major providers of banking and other financial services in Germany, with total assets of \$256 billion and total liabilities of \$248 billion, comprised primarily of deposits equaling \$197 billion.

However, Panel C of Table 1 demonstrates that there are also a large number of companies involved in nonfinancial operations, especially the manufacturing and service industries. For example, Volkswagen AG is a German automobile manufacturer with total assets of \$409 billion (Category 1). The group currently has 812 members, of which three are German public subsidiaries (Category 4): Audi AG, a developer and producer of automobiles with total assets of \$53 billion, Man SE, a manufacturer of commercial vehicles, engines and mechanical engineering equipment with total assets of \$26 billion, and Renk AG, a manufacturer of specialty gears, components of propulsion technology and test systems with total assets of \$732 million.

Japan

In Japan, public subsidiaries are often held by holding companies. Because holding companies do not produce goods or services themselves, their public subsidiaries report financial information that reflects underlying operations. Thus, Panel C of Table 1 demonstrates that a large number of subsidiaries operate in the manufacturing and service industries, suggesting that they are more involved in operations. Accordingly, Tables 2 and 3 demonstrate that cash, accounts receivable, and property, plant, and equipment comprise a large proportion of total assets for the public subsidiaries.

Despite their involvement in operations, Table 2 demonstrates that the three categories of Japanese public subsidiaries differ significantly in how the operations are financed. First, Japanese public subsidiaries with domestic (Japanese) public parents (Category 4) hold relatively high values of liabilities (62.6 percent), the majority of which are deposits, reserves, and other long term liabilities (30.9 percent), but they also hold accounts payable (10.2 percent) and debt (7.5 percent), suggesting that these subsidiaries are more likely to be members of *kieretsu* financed primarily by their own operations.

For example, Mitsubishi UFJ Financial Group, Inc. (Category 1) is a Japanese holding company for many companies engaged in a range of financial businesses, with total assets of \$2,492 billion. The holding company formed in 2005 from the merger of two bank holding companies: UFJ Holdings and Mitsubishi Tokyo Financial Group (which was a holding company for three once publicly traded banks: The Bank of Tokyo-Mitsubishi, Ltd., Mitsubishi Trust and Banking Corporation, and Nippon Trust Bank). The group currently has 631 members, of which one, kabu.com Securities Co., Ltd. (Category 4), is a Japanese public subsidiary that specializes

in online financial services and has total assets of \$6.1 billion and total liabilities of \$5.7 billion, comprised largely of deposits equaling \$3.3 billion.

This is also the case for Japanese consolidated entities that hold foreign public subsidiaries. For example, Hitachi, Ltd. (Category 2) is a Japanese electronic component manufacturer that provides various systems, products and services for use in information systems, electronic devices, power and industrial systems, consumer products, materials, logistics and financial services markets globally. The company operates through ten reportable business segments. The Hitachi Group has total assets of \$104 billion and 1,055 members, including twelve public subsidiaries: nine in Japan (Category 4) and one each in India, Indonesia, and South Korea.²⁹

Second, public subsidiaries with foreign public parents (Category 5) hold relatively low values of liabilities (20.9 percent), with operations financed by the equity provided by the foreign consolidated entity. Thus, the holding company does not have to be a Japanese company. For example, Roche Holding AG is a Swiss holding company with operating businesses organized into two divisions: pharmaceuticals and diagnostics. The group currently has 249 members, with the pharmaceuticals division being divided into three sub-divisions, one of which is headed by the Chugai Group. Chugai Group is comprised of Chugai Pharmaceutical Co., Ltd. (Category 5), a public Japanese pharmaceutical company with total assets of \$7.5 billion and total equity of \$6 billion, and 18 other Chugai subsidiaries.

Third, public subsidiaries with private parents (Category 6) hold relatively high values of liabilities (91.4 percent), comprised mainly of debt financing (41.3 percent). This suggests that while the holding company does not have to be a public company, due to the relatively smaller

²⁹ As indicated in the previous section, Hitachi Ltd. held 23 public subsidiaries in 2008. This decrease in the number of public subsidiaries is consistent with the recent decline in cross-shareholdings in Japan, as discussed in Chapter 2.

size of private holding companies, public subsidiaries with private parents (Category 6) are more frequently debt financed. For example, Mori Trust Holdings, Inc. is a private Japanese holding company that operates and manages urban development, hotel management, real estate, and investment businesses. Urban Life Co., Ltd. (Category 6) is a Japanese public subsidiary engaged in the real estate business and has total assets of \$138 million and total liabilities of \$129 million, comprised primarily of notes payable equaling \$116 million.

United Kingdom

In the UK, public subsidiaries are often investment trusts, in which investor's money is pooled together by a professional asset manager who sets up trusts as public limited companies (PLCs). Thus, Panel C of Table 1 demonstrates that a large number of public subsidiaries operate in the finance, insurance, and real estate industries. Accordingly, Table 2 demonstrates that investments and other long-term assets comprise the majority of total assets for all three categories of public subsidiaries (Categories 4, 5, and 6).

As investment trusts, public subsidiaries with public parents (Categories 4 and 5) hold relatively low liabilities (14.0 and 14.5 percent, respectively), so that equity represents a larger percentage of total assets. Accordingly, Table 1 demonstrates that public subsidiaries in the UK operate primarily in the finance, insurance, and real estate industries, but hold relatively low percentages of average deposits, reserves and other long-term liabilities (2.7 and 3.3 percent, respectively), as compared to Germany where these percentages are higher (61.0 and 83.0 percent). This is consistent with public subsidiaries in the UK being used as an investment vehicle for the public parent, while in Germany, the public subsidiaries are involved in financial

operations. Further, this is consistent with IFRS, in that public investment companies measure investments in controlled entities at fair value and no consolidation is required.³⁰

For example, Aberdeen Asset Management PLC is a public UK asset management company (Category 1). The company has total assets of \$7 billion and manages fifteen public UK investment trusts (Category 4). UK asset managers may also hold foreign public subsidiaries. For example, F&C Asset Management PLC (Category 2) is a public UK asset management company. The company has total assets of \$1.8 billion and manages twelve public investment trusts, eleven of which are in the UK (Category 4) and one of which is in the Netherlands. The consolidated entity does not have to be a public company. For example, Baillee Gifford & Co. is a global private UK investment management firm. Scottish Mortgage Investment Trust PLC (Category 6) is its flagship investment trust, with total assets of \$4 billion, making it one of the UK's largest investment trusts.

United States

Table 2 demonstrates that the public subsidiaries in the U.S. are fairly similar to the consolidated entities in the composition and nature of liabilities and equity. This is consistent with public subsidiaries in the U.S. being a temporary organizational form, where they are transitioning either from being (takeover) or to becoming (equity carveout) an independent entity.

For example, Loews Corp. (Category 1) is a holding company with subsidiaries engaged in commercial property and casualty insurance, operation of offshore oil and gas drilling rigs, exploration, production and marketing of natural gas and oil, interstate transportation and storage of natural gas, and operation of hotels. The company has total assets of \$80 billion and 278

³⁰ This presentation is essentially that of parent-only financial statements (refer to footnote 3). This raises questions as to whether this treatment is justifiable on general conceptual principles or whether an entity's "business model" should influence when parent-only financial statements are more appropriate than consolidated financial statements. See further discussion of this in Chapter 5 on "Opportunities for Future Research."

members, of which three are U.S. public subsidiaries (Category 4). CNA Financial Corp. is an insurance holding company with total assets of \$58 billion and total liabilities of \$46 billion, comprised largely of policy liabilities equaling \$40 billion. Diamond Offshore Drilling, Inc. is a global offshore oil and gas drilling contractor with total assets of \$7.2 billion and total equity of \$4.6 billion. Boardwalk Pipeline Partners, LP owns and operates three interstate natural gas pipeline systems. It has total assets of \$7.9 billion and total liabilities of \$4.0 billion, comprised largely of debt equaling \$3.5 billion.

The consolidated entity does not have to be a holding company for the public subsidiaries to operate as independent entities. For example, EMC Corp. (Category 1) develops, delivers, and supports the Information Technology industry's range of information infrastructure and virtual infrastructure technologies, solutions, and services. The company has total assets of \$38 billion and manages its business in two broad categories: EMC Information Infrastructure and VMware Virtual Infrastructure. The latter is represented by EMC's only public subsidiary, VMware, Inc. (Category 4), a U.S. company with total assets of \$11 billion and total liabilities of \$5 billion, comprised largely of customer advances equaling \$2 billion.

3.5 Summary

Subsidiaries with public common equity arise in one of two ways: (1) from takeovers, whereby a consolidated entity acquires a majority, but not 100 percent, stake in an existing public company, or (2) from equity carveouts, whereby a consolidated entity takes a subsidiary public while retaining a majority stake. Using a cross section of German, Japanese, UK, and U.S. companies traded on major stock exchanges for each country in fiscal year 2012, I link corporate ownership and control structures to variation in the volume and horizon of these two types of

transactions. I then provide descriptive evidence of the prevalence and nature of public subsidiaries in these four countries.

With respect to the prevalence of public subsidiaries, I find that: Japan has the highest relative percentage (7.6 percent) of public subsidiaries with domestic public parents; Germany has the highest relative percentage (4.3 percent) of public subsidiaries with foreign public parents; and both Germany and the UK have the highest relative percentage (11.3 percent) of public subsidiaries with private parents. With respect to the nature of public subsidiaries, I find that: (1) German public subsidiaries are involved in financial and nonfinancial operations; (2) Japanese public subsidiaries are often held by holding companies and report financial information that reflects underlying operations; (3) UK public subsidiaries are often investment trusts; and (4) U.S. public subsidiaries often operate as independent entities. The next chapter investigates whether public subsidiaries provide useful financial information to equity investors in consolidated entities.

CHAPTER FOUR

The Effect of Holding Public Subsidiaries on the Information Environment of Consolidated Entities

4.1 Literature Review and Hypothesis Development

Views differ internationally on aggregation and disaggregation of legal entities for financial reporting and the accounting standards that should be used by aggregated and disaggregated reporting entities. Public subsidiaries provide additional information that equity investors in consolidated entities can use in their investment decisions. This section reviews the literature necessary to develop hypotheses concerning whether public subsidiaries provide useful financial information to equity investors in consolidated entities.

Qualitative Characteristics of Useful Financial Information

The conceptual framework of the boards identifies the qualitative characteristics of useful financial information: relevance, faithful representation, comparability, verifiability, timeliness, and understandability.

The fundamental qualitative characteristics are relevance and faithful representation. *Relevant* financial information is capable of making a difference in the decisions made by users by being material and having predictive value, confirmatory value, or both. Financial information has predictive value if it can be used as an input to processes employed by users to predict future outcomes. Financial information has confirmatory value if it provides feedback (confirms or changes) about previous evaluations. Financial information that is complete, neutral, and free from error *faithfully represents* the phenomena that it purports to represent. A complete depiction includes all information necessary for a user to understand the phenomenon being depicted. A neutral depiction is without bias in the selection or presentation of financial information. Free from error means there are no errors or omissions in the description of the

phenomenon, and the process used to produce the reported information has been selected and applied with no errors in the process.

Comparability, verifiability, timeliness, and understandability are qualitative characteristics that enhance the usefulness of information that is relevant and faithfully represented. *Comparability* enables users to identify and understand similarities in, and differences among, items. *Verifiability* means that different knowledgeable and independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation. *Timeliness* means having information available to decision makers in time to be capable of influencing their decisions. Classifying, characterizing, and presenting information clearly and concisely makes it *understandable*.

Informativeness of Earnings

The seminal works of Ball and Brown [1968] and Beaver [1968] provide early evidence of the usefulness of financial information via the informativeness of earnings. Studies on the informativeness of earnings are based on the objective of general purpose financial reporting in that they seek to understand the extent to which financial information helps users assess the prospects for future net cash inflows to the entity. Thus, as derived, the informativeness of earnings is (1) positively related the extent to which current earnings relate to future dividends, and (2) negatively related to the expected rate of return on a security.

As it relates to the qualitative characteristics of useful financial information, an increase in *predictive value* increases the extent to which current earnings relate to future dividends. Further, an increase in timeliness increases the predictive value of current earnings relative to other sources of information. Thus, the informativeness of earnings increases with the predictive value and timeliness of earnings.

Many studies investigate whether financial information affects the expected rate of return on a security (i.e., the cost of capital). Indeed, Beyer et al. [2010] state that this “is one of the most interesting and important questions in the accounting and finance literature.” While there is debate over the specific mechanisms involved, these studies suggest that increasing financial information *precision* decreases investors’ assessment of uncertainty of the security’s value, decreasing the risk premium they demand to hold the security, thereby decreasing the expected rate of return.³¹ Lambert et al. [2011] state that increasing the amount of public information increases financial information precision. However, I posit that an increase in any one of the attributes of useful financial information (relevance, faithful representation, comparability, verifiability, timeliness, and understandability) increases financial information precision. Because the informativeness of earnings is negatively related to the expected rate of return on a security, this suggests that the informativeness of earnings increases with all attributes of useful financial information.

Numerous studies have identified cross-sectional and intertemporal variation in the informativeness of earnings (e.g., Biddle and Seow [1991]; Collins and Kothari [1989]; Dhaliwal et al. [1991]; Easton and Zmijewski [1989]; Hayn [1995]; Kormendi and Lipe [1987]; Warfield and Wild [1992]). These studies identify several economic determinants of the informativeness

³¹ Beyer et al. [2010] identify the two main theoretical arguments supporting these linkages: pricing of estimation risk and pricing of information quality (information risk). The “estimation risk” literature suggests that investors must estimate the parameters necessary for pricing securities and that uncertainty in the parameters is known as estimation risk (e.g. Barry and Brown [1984, 1985]; Brown [1979]; Coles and Loewenstein [1988]; Coles et al., [1995]). This research suggests that a firm can reduce estimation risk by providing more information and, if estimation risk is priced, providing more information will reduce the firm’s cost of capital. The “information quality (information risk)” literature defines information risk as “the likelihood that firm-specific information that is pertinent to investor pricing decisions is of poor quality” and suggests that firms can reduce information risk by increasing the precision and quantity of financial information they provide to investors (e.g., Easley and O’Hara [2004]; Francis et al. [2005]). The debate arises over whether these risks are diversifiable so that estimation risk is measured via systematic risk (beta) while information risk is an additional idiosyncratic risk factor (Core et al. [2008]; Hughes et al. [2007]; Lambert et al. [2007]). Bhattacharya et al. [2012] and Lambert et al. [2011] provide models that reconcile these arguments by suggesting that there is a direct link between financial information precision and the systematic risk component of the expected rate of return on a security, but in the presence of imperfect competition, there is also an indirect link, through idiosyncratic information asymmetry.

of earnings: information environment (measured using firm size and returns holding period), earnings-generating process (measured using the persistence of a firm's earnings under various specifications for time series models, a firm's growth opportunities, and the prevalence of losses), earnings-recognition process (measured using returns holding period and industry groupings), capital structure (measured using the extent of financial leverage), systematic risk (measured using beta estimated from a market model), interest rates (measured using the risk-free interest rate), and other operating and market structure characteristics (measured using the extent of operating leverage, product type, and industry entry barriers).

Most relevant to my study, Collins and Kothari [1989] define the information environment broadly to reflect all sources of information relevant to assessing firm value. Differences in the information environment have been shown to affect the extent to which price changes anticipate earnings changes (Atiase [1985, 1987]; Collins et al. [1987]; Collins and Kothari [1989]; Freeman [1987]; McNichols and Manegold [1983]). My study contributes to this literature by investigating how holding public subsidiaries affects the information environment of consolidated entities.

Incremental Informativeness of Public Subsidiary Earnings

Subsidiary earnings represent one component of consolidated entity earnings. While several studies provide evidence of the incremental informativeness of earnings components (e.g., Barth et al. [1992]; Lipe [1986]; Ohlson and Penman [1992]; Ramakrishnan and Thomas [1998]), most relevant to my study are those studies that provide evidence of the incremental informativeness of segment accounting data.³²

³² Several studies also provide evidence of the incremental informativeness of non-controlling interests (i.e., that part of subsidiaries' equity that is attributable to shareholders other than those from the parent company) – see Lopes and Lourenço [2013]. While related, these studies focus primarily on the extent of control of the subsidiary. My study instead focuses on the information reported by the subsidiary.

The segment reporting literature suggests that segment information provided at a less aggregated level should be at least as useful as that provided at a more aggregated level. This is an application of the Blackwell [1953] theorem from information economics.³³ Thus, much of the early research on industry segment data focused on its usefulness for improving the accuracy of forecasts of firm sales and earnings, finding that industry segment data improves forecast accuracy and reduces information risk, improving the overall informativeness of financial reports (e.g., Ajinka [1980]; Balakrishnan et al. [1990]; Baldwin [1984]; Collins [1976]; Collins and Simonds [1979]; Kinney [1971, 1972]).

Several studies also suggest that SFAS 131 on segment reporting (FASB ASC 280) improved the information environment for consolidated entities in the United States, finding that increased information disaggregation under SFAS 131 is associated with significantly smaller forecast errors, lower forecast dispersion, and reduced stock return volatility (Berger and Hann [2003]; Botosan and Stanford [2005]; Piotroski [1999]; Venkataraman [2001]). Most relevant to my study are Chen and Zhang [2003] and Tse [1989], which provide evidence of an *incremental* role of segment data in a valuation model that already incorporates firm-level data. Thus, the literature on segment reporting suggests that disaggregated data provides incremental information about the aggregated entity.

The experiences of equity carveouts and tracking stock in the United States suggests that the findings of the segment reporting literature also apply to publicly visible subsidiaries. Several studies suggest that equity carveouts are viewed favorably by the market. Schipper and Smith [1986] was the first study to document parent cumulative abnormal stock returns over the event window relative to the announcement of equity carveouts by U.S. parents. These results have

³³ Blackwell's [1953] theorem enables identification of a relationship between the nature of an information system (i.e., the attributes of information provided by the information system) and information value.

since been confirmed by numerous studies in the U.S. (e.g., Allen and McConnell [1998]; Vijh [1999, 2002]) and in Germany (e.g., Elsas and Löffler [2001]; Wagner [2005]). Among other reasons, Schipper and Smith [1986] provide descriptive evidence that the gains associated with equity carveouts might be attributed to separation of the subsidiary from the parent, which increases information about the subsidiary in the market.

Tracking stock is a form of common equity that links a separate equity issuance to the cash flows of a particular subsidiary of a firm, without legally separating the subsidiary from the company. Elder and Westra [2000] find a mean abnormal return of over 3 percent in the two-day period surrounding the announced proposal to issue a tracking stock, which they interpret as suggesting that investors expect gains from more focused and transparent information.

For my setting, these studies support the following hypothesis (stated in the alternate form):

H1: Public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings.

However, there are several reasons that the findings of the segment reporting literature may not apply to public subsidiaries. First, segment financial information is provided with the financial information of the consolidated entity. Because financial information on public subsidiaries is not a required disclosure for consolidated entities, the extent to which the public subsidiary is discussed with the financial information of the consolidated entity varies widely. Thus, investors must seek this additional source of information. The consolidated entity may not even disclose that the subsidiary is publicly traded, so that investors would not even be aware that this additional public information exists.

Further, unlike segment information, it is the public subsidiary, and not the consolidated entity, that presents its financial information. Givoly et al. [2000] demonstrate that when segment data is measured or reported with error (i.e., reducing faithful representation of the information), disaggregated data may not be as useful as aggregated data alone. For my setting, if public subsidiary earnings do not faithfully represent the subsidiary, then they may not be incrementally informative about consolidated entity returns beyond consolidated entity earnings. Thus, it is an empirical question whether the findings of the segment reporting literature apply to public subsidiaries.

Variation in the Incremental Informativeness of Public Subsidiary Earnings

H1 suggests that overall, public subsidiary earnings will be incrementally informative about consolidated entity returns beyond consolidated entity earnings. However, variation in the incremental informativeness of public subsidiary earnings can be expected for several reasons. I identify sources of variation based on factors predicted to affect the qualitative characteristics of useful financial information as identified by the conceptual framework. Specifically, I consider: (1) the relative size of the public subsidiary, (2) the number of public subsidiaries held by the consolidated entity, and the (3) country, (4) industry, (5) accounting standards, and (6) fiscal year-end of the public subsidiaries.

Relative Size of the Public Subsidiary

When the public subsidiary is relatively small compared to the consolidated entity, equity investors in the consolidated entity are more likely to deem the information provided by the public subsidiary to be immaterial, and thus, irrelevant. Further, public subsidiaries are relatively large for holding companies so that relative size also serves as a proxy for the likelihood of being a subsidiary of a holding company. Because holding companies do not produce goods or services

themselves, their public subsidiaries provide relevant information on underlying operations. Both arguments suggest that the incremental informativeness of public subsidiary earnings will be higher when the public subsidiary is large relative to the consolidated entity.

Number of Public Subsidiaries Held by the Consolidated Entity

A consolidated entity may hold more than one public subsidiary. When this is the case, the amount of public financial information increases. This increases the predictive value (relevance) and completeness (faithful representation) of the information. This suggests that the incremental informativeness of public subsidiary earnings will be higher when there are multiple public subsidiaries than when there is only one public subsidiary.

However, the literature on depth of information search suggests that people generally prefer to limit search (Simon [1990]), and as tasks increase in complexity, depth of search tends to decrease (Payne et al. [1993]). For my setting, it is not obvious whether having multiple public subsidiaries increases or decreases task complexity for users of financial statements compared to having only one public subsidiary. Although an increase in the number of information signals (referred to as information load) can increase task complexity, correlation among signals decreases task complexity because people ignore redundant signals. In either case, these studies suggest limited use of the financial information of multiple public subsidiaries.

Further, Bricker and DeBruine [1993] find that students proxying for investors seek information in order to reduce risk, but decrease information search as the costs of information increase. Anderson [1988] finds that investors exhibit confirmation bias, searching for information that is likely to support their favored investment decision. These studies suggest that while having multiple public subsidiaries increases information available to investors, cognitive processes may limit the use (and thus, the usefulness) of this information. Thus, it is an empirical

question whether the incremental informativeness of public subsidiary earnings will be higher or lower when there are multiple public subsidiaries.

Country of the Public Subsidiary

The literature on investor home bias has shown that investors exhibit a home bias in their investment portfolios, overweighting the number of domestic firms and underweighting the number of foreign firms (e.g., Cooper and Kaplanis [1994]; French and Poterba [1991]; Lewis [1999]; Tesar and Werner [1995]). Several studies suggest that informational factors, such as low visibility of the firm to foreign investors and lower credibility of its financial information, are a potential source of this home bias (e.g., Ahearne et al. [2004]; Suh [2001]). Further, laws and regulations, including accounting and auditing standards, differ across countries (e.g., Alford et al. [1993]; Ashbaugh and Pincus [2001]; Bae et al. [2008]; Barth et al. [2008]; Guedhami and Pittman [2006]; Hoyer-Ellefsen [2006]; La Porta et al. [1998]; Skaife and Friday [2006]). Even when similar laws and regulations are in place, other differences in institutional environments, such as legal traditions, enforcement of laws and regulations, political economy, culture and religion, market development, and tax reporting, affect the usefulness of information (e.g., Ball et al. [2000]; Ball et al. [2003]; Bushman et al. [2004]; Daske et al. [2008]; Frost et al. [2006]; Hail and Leuz [2006]; Liao et al. [2012]; Swenson [2012]). This suggests that the incremental informativeness of public subsidiary earnings will be higher when the public subsidiary is from the same country as the consolidated entity.

However, several studies examine the informativeness of foreign earnings relative to domestic earnings, documenting contradictory results. Bodnar and Weintrop [1997] and Hope et al. [2009] find that investors value foreign earnings significantly more than domestic earnings, which they attribute to differences in growth opportunities. Alternatively, Callen et al. [2005],

Christophe and Pfeiffer [2002], and Denis et al. [2002] find the opposite, which they attribute to inefficient global investment policies and investors' underestimation of the persistence of foreign earnings, as documented in Thomas [2000]. Thus, it is an empirical question whether the incremental informativeness of public subsidiary earnings will be higher or lower when the public subsidiary is from the same country as the consolidated entity.

Industry of the Public Subsidiary

The industry of the subsidiary presents two possible sources of variation in the incremental informativeness of public subsidiary earnings. First, the extant literature has shown that operating and structural characteristics vary across industries, resulting in differences in the informativeness of earnings across industries. Second, the public subsidiary may operate in the same or in a different industry than the consolidated entity.

First, because operating and structural characteristics vary across industries, earnings recognition practices vary across industries. Lags in recognition of earnings reduce the predictive value (relevance) of the information. Warfield and Wild [1992] identify accounting determinants of this recognition lag by grouping companies into three broad industry classes based on an *ex ante* assessment of earnings measurement sensitivity to accounting recognition criteria.³⁴ They hypothesize and find that sensitivity to accounting recognition criteria increases the recognition lag, decreasing the informativeness of earnings. This suggests that the incremental informativeness of public subsidiary earnings will be higher when the public subsidiary is from an industry with lower earnings measurement sensitivity.

However, Biddle and Seow [1991] also find a direct effect of the operating and structural differences of industries on the informativeness of earnings. Specifically, they find that the

³⁴ Low sensitivity industries are wholesale-retail trade and services (one-digit SIC codes 5, 7, and 8); medium sensitivity industries are finance, insurance, real estate, public utilities, and transportation (one-digit SIC codes 4 and 6); and high sensitivity industries are mining, construction, and manufacturing (one-digit SIC codes 1, 2, and 3).

informativeness of earnings is negatively related to financial and operating leverage, positively related to growth, and is higher in industries producing nondurables or services and in industries with entry barriers. Their results demonstrate that these underlying operating and structural characteristics vary within the three broad industry classes identified by Warfield and Wild [1992]. Thus, it is an empirical question how the industry of the public subsidiary will impact the incremental informativeness of its earnings.

Second, when the public subsidiary operates in a different industry than the consolidated entity, this increases the completeness, and thus, faithful representation, of the information. This suggests that the incremental informativeness of public subsidiary earnings will be higher when the public subsidiary operates in a different industry than the consolidated entity. However, reduced comparability and understandability of its financial information may instead result in lower incremental informativeness of its earnings. Thus, it is also an empirical question whether the incremental informativeness of public subsidiary earnings will be higher or lower when the public subsidiary operates in a different industry than the consolidated entity.

Accounting Standards of the Public Subsidiary

Consolidated financial statements must be prepared using uniform accounting policies for like transactions and other events in similar circumstances.³⁵ However, the financial statements issued by the public subsidiary may be prepared under different accounting standards. This decreases the comparability of its financial information for investors in the consolidated entity. This suggests that the incremental informativeness of public subsidiary earnings will be lower

³⁵ My setting relies on IFRS, where this is specified by IAS 27.28 [IASB, 2003] and IFRS 10.19 [IASB, 2010b]. IAS 27 was superseded by IFRS 10 in May 2011.

when the public subsidiary does not use the same accounting standards as the consolidated entity.³⁶

However, Hanlon et al. [2008] find that an increase in book-tax conformity decreases the informativeness of earnings. This suggests that by preparing financial statements under different accounting standards, the public subsidiary increases the amount of public financial information. For example, IFRS may require that an amount be stated at fair value (historical cost), while the domestic GAAP of the country requires that the amount be stated at historical cost (fair value), increasing the relevance and/or faithful representation of the information. This suggests that the incremental informativeness of public subsidiary earnings will be higher when the public subsidiary does not use the same accounting standards as the consolidated entity. Thus, it is an empirical question whether the incremental informativeness of public subsidiary earnings will be higher or lower when the public subsidiary does not use the same accounting standards as the consolidated entity.

Fiscal Year End of the Public Subsidiary

Public subsidiaries may have a different fiscal year end than the consolidated entity. When a public subsidiary has a fiscal year end that precedes (follows) that of the consolidated entity, this increases (decreases) the timeliness of its financial information, suggesting higher (lower) incremental informativeness of its earnings than when it has the same fiscal year-end as the consolidated entity.

³⁶ This is further supported by my setting where firms preparing consolidated financial statements are required to report under IFRS. Several studies suggest that the informativeness of financial information prepared under IFRS (and U.S. GAAP) is higher than under the domestic GAAP of many other countries (e.g., Barth et al. [2008] using an international sample; Bartov et al. [2005] using a German sample).

Effect of Holding Public Subsidiaries on the Informativeness of Consolidated Entity Earnings

The ED states that “Consolidated financial statements are most likely to provide useful information to the greatest number of users (RE8).” Further, U.S. GAAP (810.10.10) states that “there is a presumption that consolidated financial statements are more meaningful than separate financial statements.” However, the GASB argues that all legal entities should qualify as reporting entities because consolidated financial statements do not depict differences in corporate ownership structures where legal entities have dissimilar legal claims. The GASB states, “We consider this information to be relevant as well and, thus, believe that separate financial statements are decision-useful in this regard.” This suggests that public subsidiary financial information affects the informativeness of consolidated entity earnings.

Lambert et al. [2011] state that increasing the amount of public information increases financial information precision. For my setting, this suggests that the information provided by public subsidiaries increases consolidated entity financial information precision by enhancing its credibility, increasing its predictive value.³⁷ This suggests that consolidated entity earnings are more informative for consolidated entities with public subsidiaries than for those with only private subsidiaries.

Alternatively, Lipe [1990] develops a model that establishes a negative relation between the predictive value of alternative information and the informativeness of earnings. As mentioned previously, several studies provide evidence consistent with this result, differentiating the information environment based on firm size and exchange listing (e.g., Atiase [1985, 1987]; Collins et al. [1987]; Collins and Kothari [1989]; Freeman [1987]; McNichols and Manegold

³⁷ As discussed in footnote 31, reducing either systematic “estimation risk” or idiosyncratic “information risk” increases consolidated entity financial information precision.

[1983]). For my setting, the information provided by public subsidiaries can be used to predict the value of the consolidated entity via the aggregation of its components, so that it represents alternative information that may instead substitute for consolidated entity earnings. This suggests that consolidated entity earnings are less informative for consolidated entities with public subsidiaries than for those with only private subsidiaries.

Because of these competing predictions for the effect of holding public subsidiaries on the informativeness of consolidated entity earnings, I test the following general hypothesis (stated in the alternate form):

H2: The informativeness of consolidated entity earnings will be systematically different for consolidated entities with public subsidiaries than for those with only private subsidiaries.

H2 assumes that the information environment differs for consolidated entities with public subsidiaries than for those with only private subsidiaries. In the United States, private company financial information is not publicly available. However, in many other world regions, private company data must not only be filed with the appropriate regulatory body, but is also made available to the public. If private subsidiary earnings are publicly available, then the informativeness of earnings will not be systematically different for consolidated entities with public subsidiaries than for those with only private subsidiaries.

4.2 Research Design

Sample Development

My sample consists of German companies traded on major German stock exchanges over the fiscal years 2005-2012. I chose this sample for four reasons. First, several studies report

systematic differences in the informativeness of earnings across countries (e.g., Alford et al. [1993]; Ball et al. [2000]; Harris et al. [1994]; Joos and Lang [1994]; Swenson [2012]). Further, Devalle et al. [2010] and Liao et al. [2012] demonstrate that even after mandatory IFRS adoption, financial information is not comparable across countries. Focusing on German companies traded on major German stock exchanges provides sufficient variability in the categories of publicly traded companies necessary for my analysis (see Table 1), while also allowing me to control for potential confounding effects that would arise in an international sample, such as market structures and pricing mechanisms, legal and political environments, culture and religion, macroeconomic conditions, and institutional arrangements.

Second, since 2005, all EU publicly traded firms preparing consolidated financial statements have been required to report in accordance with IFRS.³⁸ Using a sample of German companies traded on German stock exchanges, Bartov et al. [2005] find that the informativeness of IAS- and U.S. GAAP- based earnings is higher than that of German GAAP-based earnings. Alternatively, Japanese publicly traded firms have only been allowed to voluntarily use IFRS since 2010.³⁹ Thus, I control for the financial reporting standards of consolidated entities by using a sample from an EU country over the fiscal years 2005-2012.

Third, in Chapter 3, I identify Germany as being the country where the effect of pooling public subsidiaries and their related public consolidated entities in the same sample is likely to be most pronounced. Specifically, Table 2 demonstrates that the value of average total assets for public subsidiaries with domestic public parents (Category 4) is highest in Germany as compared to the other three countries, and Table 3 demonstrates that the mean value of public subsidiary

³⁸ EU Regulation 1606/2002/EC (the 'IAS regulation')

³⁹ <http://www.iasplus.com/en/jurisdictions/asia/japan>

total assets as a percentage of consolidated entity total assets is highest in Germany. Further, German public subsidiaries are involved in financial and nonfinancial operations.

Finally, German private companies are required to file their accounts and there is a centralized portal to access private company information for a fee. However, the environment is such that few private companies file, and failure to file is rarely punished.⁴⁰ Thus, the cost and limited availability of private company financial information in Germany suggests that the information environment for consolidated entities with public subsidiaries differs from those with only private subsidiaries, which is a necessary condition for testing my second hypothesis.

As can be seen in Panel A of Table 4, this results in an initial sample of 883 firms (5,367 firm-years). I identify the type of public company category using entity structures provided by FactSet.⁴¹ I then delete firms not having necessary market and financial data on Datastream and Worldscope, resulting in a final sample of 793 firms (4,330 firm-years).

Panel B of Table 4 provides the sample breakdown by public company category. While the largest number of firm-year observations relate to consolidated entities with only private subsidiaries (59.7 percent) and stand-alone entities without subsidiaries (17.6 percent), there is a substantial number of consolidated entities with public subsidiaries (3.9 percent), and an even

⁴⁰ <http://web.freepint.com/go/features/68980>

⁴¹ I lose 83 firm-years for firms that are unavailable on Factset. Because Factset provides live entity structures, I hand-collect historical entity structures from the relevant consolidated entity's financial statements for those identified as having (Categories 1 and 2) or being (Categories 4 and 5) a public subsidiary with a public parent. This process resulted in losing 118 firm-years for which the category was indeterminable, either due to missing financial statements or failure to disclose subsidiaries in their financial statements. Further, as mentioned in footnote 26, FactSet does not track strict legal entity hierarchies, instead compiling hierarchies that are more operational in nature, reflecting underlying regulatory, financing, and economic activities. This results in the overstatement of firms in Category 7 and the understatement of firms in Category 3. To correct for this, I reclassify any firms reporting a value for minority interest on their balance sheet (WC03426) or income statement (WC01501) from Category 7 to Category 3.

larger number of public subsidiaries (18.8 percent).⁴² The frequency of firm-year observations by year reported in Panel C of Table 4 suggests there is no clustering of the sample by year.⁴³

Panel D of Table 4 provides the sample breakdown by accounting standards used.⁴⁴ While EU publicly traded firms preparing consolidated financial statements (Categories 1-3) are required to report in accordance with IFRS, publicly traded firms that do not prepare consolidated financial statements are not required to report in accordance with IFRS.⁴⁵

The remainder of the panels provide information about the public subsidiaries held by the consolidated entities with public subsidiaries (Categories 1 and 2). Panel E of Table 4 provides the number of public subsidiaries held. While the majority hold only one public subsidiary, there are quite a few that hold multiple public subsidiaries, resulting in 238 subsidiary-firm-years (hereafter referred to as “sub-years”) for the 166 firm-years of these consolidated entities. This is especially the case for those that hold public subsidiaries globally (Category 2).

These sub-years relate to 56 public subsidiaries. The majority of the subsidiaries arose from takeovers, whereby the consolidated entity acquired a majority stake in an existing publicly traded company. Of these 48 acquired public subsidiaries, 21 were no longer publicly traded by

⁴² The number of consolidated entities with public subsidiaries considers both those with domestic public subsidiaries (Category 1) and those with foreign public subsidiaries (Category 2). The number of public subsidiaries considers those with domestic public (Category 4), foreign public (Category 5), and private (Category 6) parents.

⁴³ There are fewer observations for 2012 due to the delay in coverage by Datastream and Worldscope. Further, there are three reasons that the distribution for the public company categories differs for Germany between Table 1 and Table 4. First, as discussed in footnote 41, FactSet provides live entity structures so that the hand-collection process for Table 4 results in correct historical classification for those identified as having (Categories 1 and 2) or being (Categories 4 and 5) a public subsidiary with a public parent. Second, there are different data requirements for each sample (it is only by coincidence that there are 577 firms in 2011 in Table 4 and for Germany in Table 1; there are 76 firms that are included in each sample that are not included in the other sample). Third, firms change categories over time.

⁴⁴ I group firm-years that report under IFRS and U.S. GAAP because Bartov et al. [2005] find that the informativeness of financial information prepared under IAS and U.S. GAAP is higher than under German domestic GAAP, but they do not find a significant difference in informativeness between IAS and U.S. GAAP.

⁴⁵ There are 49 firms (99 firm-years) that are consolidated entities with only private subsidiaries (Category 3) that use domestic GAAP instead of IFRS.

the end of my sample period, so that these subsidiaries remained publicly traded for a mean (median) of 2.8 (2.0) years after the acquisition. The remaining 27 acquired public subsidiaries were still publicly traded at the end of my sample period, so that these subsidiaries have been publicly traded for a mean (median) of 14.2 (11.0) years since the acquisition.

The remaining subsidiaries arose from equity carveouts, whereby the consolidated entity took a subsidiary public while retaining a majority stake. Of these eight equity carveouts, one was repurchased so that it was publicly traded for nine years after the equity carveout. The remaining seven equity carveouts were still publicly traded at the end of my sample period, so that these subsidiaries have been publicly traded for a mean (median) of 17.6 (11.0) years since the equity carveout.

Panel F of Table 4 provides the sample breakdown by the country of the public subsidiaries. While the majority of public subsidiaries are also in Germany, the location of the remaining subsidiaries is fairly dispersed.⁴⁶ It is interesting that of the consolidated entities that hold multiple public subsidiaries, the majority hold at least one in Germany. Panel G of Table 4 provides the sample breakdown by industry of the consolidated entity and indicates when the public subsidiary is in the same or a different industry. While the majority of public subsidiaries are in the same industry as the consolidated entity, there are a small number of subsidiaries in a different industry, more often when the consolidated entity is in mining, construction, and manufacturing.⁴⁷ Panel H of Table 4 provides the accounting standards used by the public

⁴⁶ There are two reasons that the number of public subsidiaries with German public parents (98 firm-years for Category 4 in Panel B) does not equal the number of public subsidiaries from Germany for German consolidated entities (111 sub-years in Panel F). First, Panel B requires that the German public company be traded on a German stock exchange; however, I do not impose this restriction on the public subsidiaries in Panel F, resulting in 30 sub-years in Panel F that are not included in Panel B. Second, data restrictions for Panel B led to the deletion of a consolidated entity with German public subsidiaries (Categories 1 and 2), but not the deletion of the German public subsidiary (Category 4), resulting in 17 firm-years in Panel B that are not included in Panel F.

⁴⁷ The sub-years in different industries than the consolidated entity are in the following industries:

subsidiaries. While 164 sub-years use IFRS or U.S. GAAP, 74 sub-years report under the domestic GAAP of their country.

Empirical Models

Informativeness of Earnings

A well-accepted measure of the informativeness of earnings is based on the significance of the slope coefficient (α_1) and explanatory power (R^2) of the following general linear model (Collins and Kothari [1989]):

$$UR_{it} = \alpha_0 + \alpha_1 UX_{it} / P_{i,t-1} + \varepsilon_{it} \quad (1)$$

where UR_{it} is a measure of unexpected return for firm i over period t , UX_{it} is a measure of unexpected earnings (deflated by $P_{i,t-1}$, beginning-of-period stock price), the slope coefficient (α_1) is called the earnings response coefficient (ERC), and ε_{it} is a random disturbance term assumed to be distributed $N(0, \sigma^2)$.

Because my study seeks to understand how holding public subsidiaries affects the information environment of consolidated entities, I use an association study method with the following general model based on Equation (1):⁴⁸

$$R_{i,t} = \alpha_0 + \alpha_1 E_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_{i,t} / P_{i,t-1} + \varepsilon_{it} \quad (2)$$

where:

$R_{i,t}$ = 12-month buy-and-hold return (%) ending 4 months after fiscal year-end t for entity i (Datastream RI);⁴⁹

For Category 1, Consolidated Entity is: Manufacturing – 1 sub-year in Transportation, Communications, Electric, Gas, and Sanitary Services, 2 sub-years in Finance, Insurance, and Real Estate; Transportation, Communications, Electric, Gas, And Sanitary Services – 2 sub-years in Services

For Category 2, Consolidated Entity is: Mining & Construction – 5 sub-years in Services; Manufacturing – 9 sub-years in Services, 3 sub-years in Wholesale & Retail Trade; Transportation, Communications, Electric, Gas, And Sanitary Services – 1 sub-year in Services; Finance, Insurance, And Real Estate – 1 sub-year in Agriculture

⁴⁸ An event study uses a short time period (typically 2-3 days) to infer whether investors responded to a particular information event. An association study uses a relatively long time period to investigate whether accounting earnings measurements are consistent with the underlying events and information reflected in stock prices.

$E_{i,t}$	=	earnings before extraordinary items for entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t);
$P_{i,t-1}$	=	price for entity i at the beginning of fiscal year t (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year t);
$\Delta E_{i,t}$	=	change in earnings before extraordinary items for entity i from fiscal year $t-1$ to t in EUR (using average annual exchange rates for fiscal years $t-1$ and t).

Following Collins and Kothari [1989], I proxy for UR_{it} using returns inclusive of dividends.⁵⁰ Equation (2) is consistent with several studies that indicate that both earnings levels and changes (deflated by beginning-of-period stock price) as proxies for unexpected earnings have explanatory power when they are included simultaneously in a regression of annual returns on earnings. Further, the two variables are not just substitutes because significantly more of the cross-sectional variation in returns is explained by including both variables than is explained by either variable considered alone (e.g., Ali and Zarowin [1992]; Brown et al. [1987]; Easton and Harris [1991]). These studies also show that the estimated ERC (i.e., the marginal effect of earnings on returns) is determined as the sum of the coefficients on all proxies for unexpected earnings. Consistent with these studies, I evaluate the informativeness of earnings based on the explanatory power (adjusted R^2) and marginal effect of earnings on returns ($\alpha_1 + \alpha_2$) from Equation (2).

Incremental Informativeness of Public Subsidiary Earnings

I test my first hypothesis using the sample of consolidated entities with public subsidiaries (Categories 1 and 2). I decompose the earnings of the consolidated entity i from

⁴⁹ The financial reporting requirements of German stock exchanges are governed by the German Securities Trading Act (Wertpapierhandelsgesetz – WpHG), which states that listed companies must publish their annual report within four months of fiscal year-end (Part 11, Sub-Part2, Section 37V).

⁵⁰ Collins and Kothari [1989] provide three reasons that returns is an appropriate proxy for unexpected returns (i.e., returns less expected returns): (1) *ex ante* measures of expected returns are not readily available so that using *ex post* measures introduces error, (2) relative to the variability in returns, the variability in expected returns is small, and (3) Beaver et al. [1980] and Beaver et al. [1987] report that the earnings/returns relation is essentially the same whether one uses returns or market model prediction errors.

Equation (2) into that from the public subsidiaries and that from the remainder of the consolidated entity:

$$R_{i,t} = \alpha_0 + \alpha_1 E_SUBS_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_SUBS_{i,t} / P_{i,t-1} + \alpha_3 (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_4 \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \varepsilon_{it} \quad (3)$$

where:

- $E_SUBS_{i,t}$ = the summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t);
- $\Delta E_SUBS_{i,t}$ = the summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t);

and all other variables are as previously defined.

Equation (3) is designed to capture the joint impact of the earnings of the consolidated entity and the public subsidiaries on consolidated entity returns. This is accomplished by specifying that the information contained in the earnings of the public subsidiary is incremental to that in consolidated earnings. Specifically, the marginal effect of consolidated entity earnings on consolidated entity returns ($\alpha_1 + \alpha_2 + \alpha_3 + \alpha_4$) can be decomposed into that from the public subsidiaries ($\alpha_1 + \alpha_2$) and that from the remainder of the consolidated entity ($\alpha_3 + \alpha_4$). H1 predicts that the marginal effect of earnings on consolidated entity returns and explanatory power will be higher for Equation (3) than Equation (2), and that the increase will be due to the marginal effect of public subsidiary earnings on consolidated entity returns.

Variation in the Incremental Informativeness of Public Subsidiary Earnings

To test for variation in the incremental informativeness of public subsidiary earnings, I decompose the earnings of the public subsidiaries in Equation (3) into those from X=(1,n) groups

based on cross-sectional variation in factors predicted to affect the incremental informativeness of public subsidiary earnings:⁵¹

$$R_{i,t} = \alpha_0 + \alpha_X E_SUBS_X_{i,t} / P_{i,t-1} + \alpha_{X+n} \Delta E_SUBS_X_{i,t} / P_{i,t-1} + \alpha_{2n+1} (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_{2n+2} \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \varepsilon_{it} \quad (4)$$

where:

- $E_SUBS_X_{i,t}$ = the summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i in Group X for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t);
- $\Delta E_SUBS_X_{i,t}$ = the summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i in group X from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t);

and all variables are as previously defined.

Using Equation (4), the marginal effect of consolidated entity earnings on consolidated entity returns ($\sum_{j=1}^{2n+2} \alpha_j$) can be decomposed into that from the public subsidiaries ($\sum_{j=1}^{2n} \alpha_j$) and that from the remainder of the consolidated entity ($\alpha_{2n+1} + \alpha_{2n+2}$). Further, the marginal effect of public subsidiary earnings on consolidated entity returns can be decomposed into that from the X groups, where the marginal effect of public subsidiary earnings on consolidated entity returns for each group is represented by ($\alpha_X + \alpha_{X+n}$).

Effect of Holding Public Subsidiaries on the Informativeness of Consolidated Entity Earnings

I test my second hypothesis using propensity-score matching models (Rosenbaum and Rubin [1983]) to match a control sample of consolidated entities with only private subsidiaries (Category 3) to consolidated entities with public subsidiaries (Categories 1 and 2). Propensity-score matching models match observations based on the probability of undergoing a treatment, which in my case, is the probability of a consolidated entity holding a public subsidiary. I use the following logit regression model to estimate the probability of consolidated entity i holding a

⁵¹ The derivation of the groups for each factor is discussed in Section 4.3.

public subsidiary (Deitrick [2010]; Kuznetsov et al. [2008]; Lopes and Lourenço [2013]; Mulford and Quinn [2008]; Rezaee and Spiceland [2003]; So and Smith [2009]; Swanson [2010]; Urbancic [2008]):

$$\text{Prob}(\text{PUB_SUB}_{i,t} = 1) = f(\beta_0 + \beta_1 \text{GROWTH}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{LEV}_{i,t} + \beta_4 \text{LOSS}_{i,t} + \varepsilon_{i,t}) \quad (5)$$

where:

- $\text{PUB_SUB}_{i,t}$ = an indicator variable equal to one for consolidated entities with public subsidiaries (Categories 1 and 2);
- $\text{GROWTH}_{i,t}$ = growth of entity i over fiscal year t = percentage change in sales revenue (Worldscope, WC01001);
- $\text{SIZE}_{i,t}$ = size of entity i at the end of fiscal year t = natural log of total assets (Worldscope, WC02999) in EUR (using average daily exchange rate at the end of fiscal year t);
- $\text{LEV}_{i,t}$ = leverage of entity i at the end of fiscal year t = total debt (Worldscope, WC03255) / total assets (Worldscope, WC02999);
- $\text{LOSS}_{i,t}$ = an indicator variable equal to one when $E_{i,t}$ is less than zero;

and all other variables are as previously defined.

I then match, without replacement, a consolidated entity with only private subsidiaries (Category 3) to a consolidated entity with public subsidiaries (Categories 1 and 2) that has the closest predicted value from Equation (5) within a maximum caliper distance of 3 percent.⁵²

Using this matched sample, I then include and interact PUB_SUB in Equation (2):

$$\begin{aligned} R_{i,t} = & \alpha_0 + \alpha_1 E_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_{i,t} / P_{i,t-1} + \alpha_3 E_{i,t} / P_{i,t-1} * \text{PUB_SUB}_{i,t} \\ & + \alpha_4 \Delta E_{i,t} / P_{i,t-1} * \text{PUB_SUB}_{i,t} + \alpha_5 \text{PUB_SUB}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (6)$$

where all other variables are as previously defined.

H2 predicts that the marginal effect of consolidated entity earnings on consolidated entity returns will be systematically different for consolidated entities with public subsidiaries than for consolidated entities with only private subsidiaries. Using Equation (6), this suggests that the incremental effect of holding public subsidiaries on the informativeness of consolidated entity earnings ($\alpha_3 + \alpha_4$) will be significantly different from zero. Finding a significant positive effect

⁵² This caliper distance is consistent with other studies in the accounting literature (e.g., Lawrence et al. [2011]).

suggests that information provided by public subsidiaries increases consolidated entity financial information precision. Finding a significant negative effect suggests that information provided by public subsidiaries substitutes for consolidated entity earnings.

4.3 Results

Incremental Informativeness of Public Subsidiary Earnings

Descriptive Statistics

Table 5 presents the descriptive statistics for the consolidated entities with public subsidiaries (Categories 1 and 2), decomposed into that from the public subsidiaries and that from the remainder of the consolidated entity.⁵³ Consistent with prior literature, the signs and variability of consolidated entity returns and the proxies for unexpected earnings are comparable. T-tests (Wilcoxon rank sum tests) indicate that public subsidiaries have lower levels of earnings, are smaller, and are less leveraged than the consolidated entity. However, their changes in earnings, growth, and extent of losses are not significantly different.

Main Tests

Panel A of Table 6 reports the results of estimating Equation (2) and Equation (3) for the consolidated entities with public subsidiaries (Categories 1 and 2). Consistent with H1, there is an increase in explanatory power when decomposing the earnings of the consolidated entity into that from the public subsidiaries and that from the remainder of the consolidated entity (from an adjusted r-square of 26.2 to 31.8 percent). Further, the marginal effect of earnings on returns for the consolidated entity increases from 0.791 (0.000) to 5.618 (0.000), the majority of which

⁵³ My first hypothesis supports considering the incremental informativeness of public subsidiary earnings for the two categories of consolidated entities with public subsidiaries combined. Untabulated analyses when separately considering the two categories are qualitatively similar to the descriptive statistics and main tests reported here. Further, additional analyses specifically consider sources of cross-sectional variation in the incremental informativeness of public subsidiary earnings, including the country of the public subsidiaries.

(4.910, 0.000) is attributable to the earnings of public subsidiaries.⁵⁴ This suggests that public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings. Further, Panel B of Table 6 reports Vuong [1989] and Clarke [2001] test statistics for non-nested models using maximum likelihood estimation. These test statistics suggest that the results from estimating Equation (3) are significantly closer to the true model than the results from estimating Equation (2).

Sensitivity Tests

Section 4.1 discussed several economic determinants of ERCs identified by prior research. Based on Ettredge et al. [2005], I perform sensitivity tests controlling for alternative economic determinants by individually including and interacting each determinant with all proxies for unexpected earnings in Equation (3):

$$\begin{aligned}
 R_{i,t} = & \alpha_0 + \alpha_1 E_SUBS_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_SUBS_{i,t} / P_{i,t-1} + \alpha_3 (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} \\
 & + \alpha_4 \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_5 E_SUBS_{i,t} / P_{i,t-1} * CONTROL_{i,t} \\
 & + \alpha_6 \Delta E_SUBS_{i,t} / P_{i,t-1} * CONTROL_{i,t} + \alpha_7 (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} * CONTROL_{i,t} \\
 & + \alpha_8 \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} * CONTROL_{i,t} + \alpha_9 CONTROL_{i,t} + \varepsilon_{it} \quad (7)
 \end{aligned}$$

where:

$$CONTROL_{i,t} = (GROWTH_{i,t}, SIZE_{i,t}, LEV_{i,t}, LOSS_{i,t});$$

and all other variables are as previously defined.

Table 7 reports the results of this analysis. When considering all control variables except for *SIZE*, the marginal effects indicate that the public subsidiary earnings have a statistically significant incremental effect on consolidated entity returns beyond those economic determinants identified in prior literature.⁵⁵ Specifically, the marginal effect of public subsidiary earnings on

⁵⁴ Here and throughout, amounts reported include marginal effects and two-tailed p-values for the marginal effects.

⁵⁵ Marginal effects are evaluated at the means of the data for the control variables.

consolidated entity returns not attributable to *GROWTH*, *LEV*, and *LOSS* are 3.349 (0.069), 6.238 (0.044), and 5.465 (0.000), respectively. However, public subsidiary earnings do not appear to have a statistically significant incremental marginal effect on consolidated entity returns when controlling for *SIZE* (-2.048, 0.819).⁵⁶ Further, the marginal effect of *SIZE* on the earnings-returns relation for the public subsidiaries is also not statistically significant (8.300, 0.342).⁵⁷ This is due to high multicollinearity, as suggested by the large Variance Inflation Factors (VIFs) on all proxies for unexpected public subsidiary earnings when interacting *SIZE*.⁵⁸

The high multicollinearity when interacting *SIZE* suggests that both subsidiary earnings and consolidated entity size capture the information environment of the consolidated entity. This is consistent with Collins and Kothari [1989], which demonstrates that when varying the returns holding period (to capture the information environment), firm size does not have a statistically significant effect on ERCs. Thus, I also control for the returns holding period. Untabulated results using the nine 12-month buy-and-hold returns holding periods ending 0-8 months after fiscal year-end are qualitatively similar to the main results reported in Table 6 and the results controlling for size in Table 7.

Further, Collins and Kothari [1989] and Easton and Zmijewski [1989] find that ERCs are negatively related to systematic risk (which they measure using beta estimated from a market

⁵⁶ Untabulated analyses verify that these results are consistent for marginal effects evaluated at decile values of *SIZE*.

⁵⁷ This section controls for economic determinants of ERCs for the consolidated entity as identified by prior research. Thus, this section does not control for relative values of these variables for the public subsidiaries. Later tests consider the relative size, growth, and profitability of the public subsidiaries.

⁵⁸ Untabulated analyses for Table 6 report VIFs of 1.145, 1.147, 3.177, and 3.191 on the four predictor variables for Eq. (3). Thus, the results in Table 7 also suggest that multicollinearity is present when including and interacting *LEV* and *LOSS*; however, the effect is mainly on the proxies for unexpected earnings from the remainder of the consolidated entity and not on the proxies for unexpected public subsidiary earnings, as is the case when controlling for *SIZE*.

model). To control for systematic risk, I re-estimate Equation (3) using a market-value weighted measure of returns. Untabulated results are qualitatively similar to those reported in Table 6.

Finally, my sample consists of an unbalanced panel over the fiscal years 2005-2012. To control for cross-sectional and time-series dependence, I re-estimate Equations (2) and (3) using an OLS regression with two-way (year and firm) cluster-robust standard errors (Gow et al. [2010]). Untabulated results are qualitatively similar to those reported in Table 6.

Variation in the Incremental Informativeness of Public Subsidiary Earnings

I test for cross-sectional variation in the incremental informativeness of public subsidiary earnings by deriving groups for Equation (4) based on factors predicted to be related to informativeness. Specifically, I derive groups based on the relative size of the public subsidiary, the number of public subsidiaries held by the consolidated entity, and the country, industry, accounting standards, and fiscal year-end of the public subsidiaries. Panel A of Table 8 shows that many of these features are correlated. So while Table 8 reports the results of estimating Equation (4) considering each feature separately, in the sections that follow I also discuss additional analyses that consider these correlations.

Relative Size of the Public Subsidiary

Figure 2 depicts the relative size of the public subsidiaries compared to the consolidated entity.⁵⁹ As demonstrated by this figure, there are a large number of public subsidiaries that are relatively small compared to the consolidated entity. However, this figure also highlights the importance of public subsidiaries to holding companies, where the subsidiaries are relatively large compared to the consolidated entity.

⁵⁹ Relative size is defined as the total assets (Worldscope, WC02999) of the subsidiary in EUR (using the average daily exchange rate at the end of fiscal year t) divided by the total assets of the consolidated entity in EUR.

Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings when the public subsidiary is relatively small (group 1) or large (group 2) based on a split on the median value of relative size of 2.08 percent. The marginal effect of public subsidiary earnings on consolidated entity returns is only statistically significant when the subsidiaries are relatively large compared to the consolidated entity (4.870, 0.000), and not when the subsidiaries are relatively small (3.297, 0.814).⁶⁰ This result is consistent with equity investors deeming the information of only relatively large subsidiaries to be relevant, due to both the immateriality of relatively small subsidiaries and public subsidiaries providing relevant information on underlying operations for holding companies.

Number of Public Subsidiaries Held by the Consolidated Entity

As seen in Panel E of Table 4, while the majority of consolidated entities hold only one public subsidiary, there are quite a few that hold multiple public subsidiaries. Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings when the consolidated entity holds only one public subsidiary (group 1) versus when it

⁶⁰ I perform two additional tests. First, results are qualitatively similar when considering four groups split on the quartile values of relative size of 0.41, 2.08, and 15.41 percent; the marginal effect of public subsidiary earnings on consolidated entity returns is only statistically significant when the subsidiaries are in the third (9.280, 0.008) and fourth (4.287, 0.007) relative size quartiles. This result also suggests a nonlinear relationship for the effect of relative size, most likely due to the incremental informativeness of public subsidiary earnings diminishing when the consolidated entity and public subsidiary are essentially reporting the same information. Second, when controlling for consolidated entity size (SIZE), results are qualitatively similar in that the marginal effect of public subsidiary earnings on consolidated entity returns is only statistically significant when the subsidiaries are relatively large compared to the consolidated entity (6.434, 0.005), and not when the subsidiaries are relatively small (12.066, 0.787). However, similar to the results reported in Table 8, the earnings of relatively large public subsidiaries do not appear to have a statistically significant incremental marginal effect on consolidated entity returns (-2.491, 0.790) and the marginal effect of SIZE on the earnings-returns relation for the relatively large public subsidiaries is also not statistically significant (8.925, 0.325).

holds multiple public subsidiaries (group 2).⁶¹ The marginal effect of public subsidiary earnings on consolidated entity returns is only statistically significant when the consolidated entity holds one public subsidiary (4.951, 0.000), and not when the consolidated entity holds multiple public subsidiaries (-3.321, 0.668). This result is consistent with the literature on information search, suggesting that despite the increase in information available, investors' cognitive processes limit the use (and thus, usefulness) of this information so that it is not incrementally informative.

However, Panel A of Table 8 reports a Pearson correlation of -0.546 (0.000) between holding multiple public subsidiaries and the relative size of the subsidiaries. This suggests that when the consolidated entity holds multiple public subsidiaries, they are often relatively small. To investigate whether this result is driven by the relative size of the subsidiaries, I re-estimate the model for only those subsidiaries that are relatively large. Untabulated results are qualitatively similar to those reported in Table 8.

Further, Panels E and F of Table 4 highlight that it is also frequently the case that when consolidated entities hold multiple public subsidiaries, at least one of the subsidiaries is foreign. This is further supported by Panel A of Table 8, which reports a Pearson correlation of 0.361 (0.000) between holding multiple public subsidiaries and being in a different country. Thus, the next section investigates whether this result is driven by the country of the public subsidiary.

Country of the Public Subsidiary

As seen in Panel F of Table 4, while the majority of public subsidiaries are also in Germany, the location of the remaining subsidiaries is fairly dispersed. Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings when they are from Germany (group 1) and when they are from a foreign country

⁶¹ The majority of consolidated entities that hold multiple public subsidiaries hold two (35 firm-years, 70 sub-years). Because the number of consolidated entities holding three (5 firm-years, 15 sub-years) and four (9 firm-years, 36 sub-years) public subsidiaries is relatively small, it is infeasible to consider each as a separate group.

(group 2). The marginal effect of public subsidiary earnings on consolidated entity returns is higher when the subsidiary is from Germany (5.655, 0.003) than when the subsidiary is from a foreign country (4.635, 0.008). This result is consistent with the literature on investor home bias, suggesting that reduced visibility and credibility of financial information for foreign public subsidiaries results in lower incremental informativeness of earnings for these subsidiaries than for domestic (i.e., German) public subsidiaries.

However, the marginal effect of public subsidiary earnings on consolidated entity returns is statistically significant and positive even when the subsidiary is foreign. This suggests that the lack of a statistically significant marginal effect of public subsidiary earnings on consolidated entity returns when the consolidated entity holds multiple public subsidiaries is not solely due to the country of the public subsidiaries. This further supports the conclusion that investors' cognitive processes drive the lack of incremental informativeness of earnings for these public subsidiaries.

Panel A of Table 8 reports a Pearson correlation of -0.430 (0.000) between the country and relative size of the subsidiaries. This suggests that when the subsidiary is foreign, it is often relatively small. To investigate whether this result is driven by the relative size of the subsidiaries, I re-estimate this analysis for only those subsidiaries that are relatively large. Untabulated results are qualitatively similar to those reported in Table 8.

Industry of the Public Subsidiary

This section presents the results of investigating two sources of variation in the incremental informativeness of public subsidiary earnings due to the industry of the subsidiary: that due to operating and structural differences across industries and that due to the industry of the subsidiary relative to that of the consolidated entity.

First, I identify sources of variation due to operating and structural differences across public subsidiaries. Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings grouped into three broad industry classes conditional on an *ex ante* assessment of earnings measurement sensitivity to accounting recognition criteria based on Warfield and Wild [1992]. Specifically, group 1 contains low sensitivity industries (one-digit SIC codes 5, 7, and 8); group 2 contains medium sensitivity industries (one-digit SIC codes 4 and 6); and group 3 contains high sensitivity industries (one-digit SIC codes 0, 1, 2, and 3). Contrary to the results of Warfield and Wild [1992], the marginal effect of public subsidiary earnings on consolidated entity returns is only statistically significant when the subsidiary is in a high sensitivity industry (8.042, 0.004), and not when the subsidiary is in a low (4.404, 0.379) or medium (2.796, 0.595) sensitivity industry. This suggests that the three broad industry classes may instead be picking up other operating and structural differences across the industries.

I investigate this alternative explanation by comparing growth and leverage across the three broad industry classes. Untabulated results find that the subsidiaries labeled as high sensitivity have higher average growth (0.157) and lower average leverage (0.107) than those labeled as low (0.132 and 0.119, respectively) or medium (0.139 and 0.127, respectively) sensitivity. Thus, finding higher incremental informativeness for the subsidiaries labeled as high sensitivity and not for those labeled as low or medium sensitivity is consistent with the results of Biddle and Seow [1991] that ERCs are positively related to growth and negatively related to leverage.

Second, I identify sources of variation due to the industry of the subsidiary relative to that of the consolidated entity. As seen in Panel G of Table 4, while the majority of public

subsidiaries are in the same industry as the consolidated entity, there are a small number of subsidiaries in a different industry, more often when the consolidated entity is in mining, construction, and manufacturing. Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings when they operate in the same industry as (group 1) or a different industry than (group 2) than the consolidated entity. The marginal effect of public subsidiary earnings on consolidated entity returns is only statistically significant when the subsidiary operates in the same industry (5.396, 0.000), and not when the subsidiary operates in a different industry (5.908, 0.256). This result suggests that reduced comparability and understandability of the financial information for public subsidiaries that operate in different industries than the consolidated entity limits the usefulness of their financial information so that their earnings are not incrementally informative.⁶²

Accounting Standards of the Public Subsidiary

As seen in Panel H of Table 4, there is also variation in the accounting standards used by the public subsidiaries. Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings when they report under IFRS or U.S. GAAP (group 1) and when they report under domestic GAAP (group 2). The marginal effect of public subsidiary earnings on consolidated entity returns is higher when the subsidiary reports under different accounting standards (15.537, 0.002) than when the subsidiary reports under IFRS or U.S. GAAP (4.365, 0.000). This result is consistent with the use of different accounting standards increasing the amount of information available, resulting in higher incremental informativeness of public subsidiary earnings reported under domestic GAAP.

⁶² The sample sizes for groups 1 and 2 are 214 and 24 sub-years, respectively, so that the lack of statistical significance on group 2 may instead derive from the small number of sub-years; future research can explore this source of cross-sectional variation more extensively.

Fiscal Year End of the Public Subsidiary

Untabulated analyses reveal that of the 238 sub-years, only 20 have a different fiscal year-end than the consolidated entity, and with the exception of one sub-year, the fiscal year end of the subsidiary precedes that of the consolidated entity.⁶³ Panel B of Table 8 reports the results of separately considering the incremental informativeness of public subsidiary earnings when they have the same fiscal year end as the consolidated entity (group 1) or a fiscal year end that precedes that of the consolidated entity (group 2). The marginal effect of public subsidiary earnings on consolidated entity returns is higher when the subsidiary has a fiscal year end that precedes that of the consolidated entity (27.504, 0.095) than when the subsidiary has the same fiscal year end as the consolidated entity (5.317, 0.000). Consistent with expectation, this result suggests that more timely public subsidiary earnings are more incrementally informative.⁶⁴

Effect of Holding Public Subsidiaries on the Informativeness of Consolidated Entity Earnings

Descriptive Statistics

Table 9 presents the descriptive statistics for the full and propensity-score matched samples of the consolidated entities (Categories 1-3). T-tests for the full sample indicate that consolidated entities with only private subsidiaries have lower levels of earnings and greater extent of losses than consolidated entities with public subsidiaries. Consolidated entities with global public subsidiaries are larger than those with only German subsidiaries, which are larger than those with only private subsidiaries. Consolidated entities with only German public subsidiaries have higher growth than consolidated entities with global public subsidiaries and are

⁶³ Results for this section are robust to the inclusion of this one sub-year observation.

⁶⁴ The small number of sub-year observations with different fiscal year-ends would bias against finding significance on the marginal effect for group 2.

more leveraged than both of the other two categories. However, t-tests do not indicate statistically significant consistent differences in the returns or changes in earnings across the three categories.

Using Equation (5) to calculate the propensity scores and imposing a caliper distance of 3 percent, I obtain a propensity-score matched sample of 278 firm-years, of which 139 are consolidated entities with public subsidiaries (Categories 1 and 2) and 139 are consolidated entities with only private subsidiaries (Category 3). Because of the differences noted between the two types of consolidated entities with public subsidiaries for the full sample, Table 9 presents the descriptive statistics for the propensity-score matched samples separately for consolidated entities with domestic public subsidiaries (Category 1) and those with foreign public subsidiaries (Category 2). The propensity-score model appears effective in forming a balanced sample of consolidated entities with and without public subsidiaries, as all control variables in the propensity-score matched sample are insignificantly different between the two groups for both categories of consolidated entities with public subsidiaries.

Main Tests

Table 10 first reports the results of estimating Equation (6) for the propensity-score matched sample combining the two categories of consolidated entities with public subsidiaries. While the incremental effect of holding public subsidiaries on the informativeness of consolidated entity earnings is positive (0.606, 0.133), it is not statistically significant at conventional levels. This suggests that the informativeness of consolidated entity earnings is not systematically different for consolidated entities with public subsidiaries than for those with only private subsidiaries.

While there is an overall lack of statistical significance for my main tests, I conduct additional analyses to identify sources of variation for how holding public subsidiaries affects the informativeness of consolidated entity earnings for consolidated entity returns.

Additional Tests

Country of the Subsidiary

The results in Table 8 suggest that lower information value from reduced visibility and credibility of foreign public subsidiaries results in lower incremental informativeness of their earnings. Thus, the lack of statistical significance on the incremental effect of holding public subsidiaries on the informativeness of consolidated entity earnings reported in Table 10 may be due to a netting effect between the two categories of consolidated entities with public subsidiaries. Thus, I also analyze these two categories separately. Table 10 reports that the incremental effect of holding public subsidiaries on the informativeness of consolidated entity earnings is only positive and significant for consolidated entities with domestic public subsidiaries (2.488, 0.033), and not for those with foreign public subsidiaries (-0.394, 0.424). This suggests that information provided by domestic public subsidiaries increases consolidated entity financial information precision.

Relative Growth and Profitability of the Subsidiary

Finding that the presence of domestic public subsidiaries increases consolidated entity financial information precision suggests that public subsidiary earnings should be more incrementally informative when they are more likely to increase consolidated entity financial information precision. This section investigates whether this is the case by considering the relative growth and profitability of the subsidiary.

Ceteris paribus, equity investors in the consolidated entity are more concerned with the risk that sales and earnings are overstated than understated. Thus, the credibility of consolidated entity earnings is increased by information that suggests that these amounts are not overstated. Public subsidiaries provide such information when they report relatively higher sales growth and profit margins and lower extent of losses than those reported by the consolidated entity. Thus, I predict that when this is the case, information provided by public subsidiaries increases consolidated entity financial information precision.

These predictions are consistent with findings of the segment reporting literature. Chen and Zhang [2003] find that when segments differ in profitability and growth opportunities, segment-level data are necessary to supplement firm-level data to convey additional relevant information. However, when segments have identical real options, firm value can be determined solely by firm-level data. Further, Tse [1989] finds that the percentage of total earnings derived from a high-growth industry is more value-relevant than from a low-growth industry. As indicated earlier, there are several reasons that the findings of the segment reporting may not apply to public subsidiaries, so that this is an empirical question.

Table 11 reports the results of estimating Equation (4), separately considering the incremental informativeness of public subsidiary earnings when the subsidiary does (group 1) and does not (group 2) report higher growth, profit margins, and extent of losses than the consolidated entity. The marginal effect of public subsidiary earnings on consolidated entity returns is higher when the subsidiary has higher growth (6.310, 0.000) than when the subsidiary has lower growth (4.019, 0.086). Further, the marginal effect of public subsidiary earnings on returns is only statistically significant when the subsidiary has a higher profit margin (4.904, 0.000) or does not have higher *LOSS* (4.764, 0.000) than the consolidated entity, and not when

the subsidiary has a lower profit margin (4.482, 0.172) or higher *LOSS* (0.713, 0.939) than the consolidated entity.⁶⁵ This suggests that public subsidiary earnings are more informative when the amount reported increases consolidated entity financial information precision.⁶⁶

Sensitivity Tests

By using a propensity matched sample based on consolidated entity *GROWTH*, *SIZE*, *LEV*, and *LOSS*, I control for these economic determinants of ERCs.⁶⁷ I also investigate whether the results in Table 10 are sensitive to the returns holding period used. Untabulated results demonstrate an incremental effect of holding public subsidiaries on the informativeness of consolidated entity earnings for the 12-month returns holding periods ending one (0.686, 0.069), two (0.864, 0.036), and three (0.751, 0.066) months after fiscal year-end. This suggests that public subsidiaries provide information earlier than required by law, increasing consolidated entity financial information precision. Further, when considering the country of the public subsidiary, the incremental effect of holding public subsidiaries on the informativeness of consolidated entity earnings is positive and significant for consolidated entities with domestic

⁶⁵ For relative *LOSS*, the sample sizes for groups 1 and 2 are 14 and 224 sub-years, respectively, so that the lack of statistical significance on group 1 may instead derive from the small number of sub-years; future research can explore this source of cross-sectional variation more extensively.

⁶⁶ German companies are taxed at different rates for earnings that are distributed versus earnings that are retained; at least 50 percent of a company's earnings must be offered to shareholders as dividends or an additional 10 percent tax is levied on retained earnings. While Germany has very high book-tax conformity for company's individual accounts (separate company accounts used to assess taxes and to limit the dividends that separate companies can pay), this does not apply to the group accounts in the consolidated financial statements, which may differ significantly from those in the individual accounts (Atwood et al. [2010]). This suggests that German public subsidiaries may prefer to report lower relative earnings than the consolidated entity for tax reasons. Untabulated analyses are consistent when separately considering the two categories of consolidated entities. This suggests that tax incentives do not mitigate the results.

⁶⁷ I posit that the information provided by public subsidiaries increases consolidated entity financial information precision. The "estimation risk" literature suggests that financial information precision decreases with systematic risk (beta). Thus, it is not appropriate to control for systematic risk, as this would be means through which public subsidiary financial information affects the informativeness of consolidated entity earnings. Accordingly, untabulated results re-estimating Equation (6) using a market-value weighted measure of returns are qualitatively similar to those reported in Table 10, except that the incremental effect of holding domestic public subsidiaries on the informativeness of consolidated entity earnings is smaller and no longer statistically significant (0.823, 0.213).

public subsidiaries for the 12-month returns holding periods ending 0-5 months after fiscal year end. Consistent with Table 10, the effect is not statistically significant for those with foreign public subsidiaries across the nine 12-month returns holding periods ending 0-8 months after fiscal year-end. This further suggests that information provided by domestic public subsidiaries increases consolidated entity financial information precision.

Finally, to control for cross-sectional and time-series dependence, I re-estimate Equation (6) using an OLS regression with two-way (year and firm) cluster-robust standard errors. Untabulated results are qualitatively similar to those reported in Table 10.

4.4 Summary

This chapter investigates how holding public subsidiaries affects the information environment of consolidated entities. Using a sample of German companies traded on major German stock exchanges over the fiscal years 2005-2012, I find that public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings. I also find that this incremental informativeness varies systematically with: the relative size of the public subsidiary; the number of public subsidiaries held by the consolidated entity; and the country, industry, accounting standards, and fiscal year-end of the public subsidiaries. Finally, I find that the informativeness of consolidated entity earnings is higher for consolidated entities with domestic public subsidiaries than for those with only private subsidiaries. Combined, my results suggest that public subsidiary earnings are not only incrementally informative, but also complementary in that they enhance the informativeness of consolidated entity earnings. Further, sensitivity tests suggest that consolidated entity size is a substitute proxy for the public subsidiary effect.

CHAPTER FIVE

Conclusion

Summary

In Chapter 1, I state that diversity in ownership structures of public companies worldwide poses a challenge for standards setters when developing a concept of the “reporting entity.” Comment letters from national standards setters highlight differing international views on aggregation and disaggregation of legal entities for financial reporting and the accounting standards that should be used by aggregated and disaggregated reporting entities. This raises several issues about the appropriate boundaries, or distinguishable characteristics, that should be used to determine “a circumscribed area of economic activities.” The motivating question for this dissertation addresses one issue not satisfactorily resolved in concept by the ED: “When, if ever, should financial statements of a *portion* of a reporting entity be considered general purpose?” Because there is a tradition of accepting subsidiary financial statements as general purpose financial statements, I investigate whether subsidiaries provide useful financial information to equity investors in consolidated entities, using a setting where consolidated entities and one or more of their subsidiaries are publicly traded.

In Chapter 2, I provide background by considering how differences in countries’ legal environments (legal traditions and legal protection) impact corporate ownership and control structures. Corporate ownership is either dispersed or concentrated and corporate control is attributed to either powerful management or strong shareholder rights. Common (code) law countries often have more dispersed (concentrated) ownership structures and the quality of legal protection is negatively related to the concentration of ownership. Legal protection also varies within each category of ownership structure (dispersed and concentrated), leading to cross-

country differences in corporate control structures. Specifically, takeover laws vary internationally in how well they protect the interests of shareholders and other stakeholders when a company is subject to a takeover bid for control. Major elements of takeover law concern takeover defenses and rules for mandatory bids, squeeze-outs, and sell-outs.

In Chapter 3, I describe the prevalence and nature of public subsidiaries worldwide. Subsidiaries with public common equity arise in one of two ways: (1) from takeovers, whereby a consolidated entity acquires a majority, but not 100 percent, stake in an existing public company; or (2) from equity carveouts, whereby a consolidated entity takes a subsidiary public while retaining a majority stake. Using a sample of German, Japanese, UK, and U.S. companies traded on major stock exchanges for each country in fiscal year 2012, I link corporate ownership and control structures to variation in the volume and horizon of these two types of transactions. I then provide descriptive evidence of the prevalence and nature of public subsidiaries in these four countries.

With respect to the prevalence of public subsidiaries, I find that: Japan has the highest relative percentage (7.6 percent) of public subsidiaries with domestic public parents; Germany has the highest relative percentage (4.3 percent) of public subsidiaries with foreign public parents; and both Germany and the UK have the highest relative percentage (11.3 percent) of public subsidiaries with private parents. With respect to the nature of public subsidiaries, I find that: (1) German public subsidiaries are involved in financial and nonfinancial operations; (2) Japanese public subsidiaries are often held by holding companies and report financial information that reflects underlying operations; (3) UK public subsidiaries are often investment trusts; and (4) U.S. public subsidiaries often operate as independent entities.

In Chapter 4, I investigate how holding public subsidiaries affects the information environment of consolidated entities. Using a sample of German companies traded on major German stock exchanges over the fiscal years 2005-2012, I find that public subsidiary earnings are incrementally informative about consolidated entity returns beyond consolidated entity earnings. I also find that this incremental informativeness varies systematically with: the relative size of the public subsidiary; the number of public subsidiaries held by the consolidated entity; and the country, industry, accounting standards, and fiscal year-end of the public subsidiaries. Finally, I find that the informativeness of consolidated entity earnings is higher for consolidated entities with domestic public subsidiaries than for those with only private subsidiaries. Combined, my results suggest that public subsidiary earnings are not only incrementally informative, but also complementary in that they enhance the informativeness of consolidated entity earnings. Further, sensitivity tests suggest that consolidated entity size is a substitute proxy for the public subsidiary effect.

Contributions

This dissertation makes two key contributions to the accounting literature. First, this study contributes to the literature that identifies the prevalence and nature of public subsidiaries (e.g., Allen and McConnell [1998]; Aman and Okamura [2013]; Atanasov et al. [2010]; Chernenko et al. [2012]; Eckbo and Thorburn [2008]; Otsubo [2013]; Tam [2014]; Wagner [2005]). While these studies document the existence of public subsidiaries arising from specific transactions, there are no studies that consider the extent of their presence globally. Using the framework provided by Kanda [2011], I provide descriptive evidence of the prevalence and nature of public subsidiaries worldwide.

Second, this study contributes to the literature that identifies the information environment as an economic determinant of the informativeness of earnings (e.g., Atiase [1985, 1987]; Collins et al. [1987]; Collins and Kothari [1989]; Freeman [1987]; McNichols and Manegold [1983]). I find that public subsidiary earnings contribute to the information environment of consolidated entities, but that consolidated entity size is a substitute proxy for the public subsidiary effect.

This dissertation also provides information to the boards as they develop a concept of the reporting entity. By providing empirical evidence on when public subsidiaries provide useful financial information to equity investors in consolidated entities and descriptive evidence on the prevalence and nature of public subsidiaries worldwide, this study provides information for the boards' deliberations on the appropriate boundaries that should be used to determine "a circumscribed area of economic activities."

Opportunities for Future Research

This dissertation addresses the motivating question: "When, if ever, should financial statements of a *portion* of a reporting entity be considered general purpose?" Specifically, I investigate whether public subsidiaries provide useful financial information to *equity investors* in consolidated entities. Future research can use alternative research designs to further investigate this setting. Future research can also address this motivating question by considering whether public subsidiaries provide useful financial information to lenders and other creditors. Further, my dissertation only considers subsidiaries with public *common equity*. However, public subsidiaries also arise when the subsidiary has public preferred stock or public debt. Future research can also address this motivating question by considering whether public subsidiaries arising from preferred stock or public debt provide useful financial information to existing and

potential investors, lenders, and other creditors. Such research would further address another issue facing the boards, namely, the distinction between liabilities and equity.

By focusing on public subsidiaries, my dissertation provides initial evidence for this motivating question using a setting where it is generally presumed that their financial statements should be considered general purpose. However, many questions around this motivating question concern other portions of a reporting entity (e.g., segments within a single legal entity). Thus, this dissertation provides a foundation for future research to consider whether other portions of a reporting entity provide useful financial information to existing and potential investors, lenders, and other creditors. Specifically, future research can consider the usefulness of private subsidiary financial information (presumably, still within specified legal boundaries) and circumscriptions based on the boundaries of activities within a single legal entity. Such studies would provide additional information to the boards as they deliberate on the appropriate boundaries that should be used to determine “a circumscribed area of economic activities.”

The ED also permits presentation of “parent-only” financial statements with consolidated financial statements. “Parent-only” financial statements “provide information about its investments in the entities it controls, and the returns on those investments, rather than the economic resources and claims, and changes in those economic resources and claims, of those entities it controls (RE11).” This practice is common in some jurisdictions and useful, for example, when parent-only financial statements help assess the level of dividends the controlling entity is legally able to pay without depending on transferring funds from the controlled entities (BC24). Further, public investment companies measure investments in controlled entities at fair value and no consolidation is required. This presentation is essentially that of parent-only financial statements. This raises questions as to whether this treatment is justifiable on general

conceptual principles or whether an entity's business model should influence when parent-only financial statements are more appropriate than consolidated financial statements.

This raises another issue about the appropriate boundaries that should be used to determine "a circumscribed area of economic activities" that was not satisfactorily resolved in concept by the ED. This issue can be addressed via the following motivating question: "When, if ever, should parent-only (i.e., controlling-entity only) financial statements be considered an appropriate presentation in general purpose financial reporting?" Future research can address this question by investigating whether parent-only financial statements provide useful financial information to existing and potential investors, lenders, and other creditors.

This study also identifies several other opportunities for future research. First, it would be interesting to investigate whether holding public subsidiaries affects accounting quality of consolidated entities. Second, this study only considers the informativeness of subsidiary and consolidated entity earnings for consolidated entities returns (Categories 1-3), but does not consider the informativeness of earnings for returns of the different categories of public subsidiaries (Categories 4-6) or stand-alone entities (Category 7). Future research can explore differences in the informativeness of earnings for public subsidiaries as the nature of the parent varies (domestic or global, public or private). Third, my results suggest that information provided by domestic public subsidiaries increases consolidated entity financial information precision. Future research can identify additional sources of cross-sectional variation to support this result and also identify if there exists cross-sectional variation where the information provided by public subsidiaries instead substitutes for information provided by the consolidated entity. Specifically, it would be interesting to consider when the persistence and accruals and cash flow components of public subsidiaries' earnings differs from that of the consolidated entity.

Finally, I find that the informativeness of consolidated entity earnings is higher for consolidated entities with domestic public subsidiaries than for those with only private subsidiaries. Several studies report systematic differences in the informativeness of earnings across countries, but implicitly assume that public companies are independent entities that can be pooled in an international sample (e.g., Alford et al. [1993]; Ball et al. [2000]; Harris et al. [1994]; Joos and Lang [1994]). The existence of public subsidiaries indicates that this is an erroneous assumption. Because the prevalence of public subsidiaries varies across countries, future research can identify the extent to which public subsidiaries are the source of systematic differences in the informativeness of earnings across countries.

There are also two limitations of this study that provide opportunities for future research. First, my empirical analyses only use German companies traded on German stock exchanges. There may be unique aspects of this setting that limit the ability to generalize the results. Future research can investigate whether these results translate to other settings. Specifically, it would be interesting to analyze the UK, where private company financial information is generally publicly available. Second, for cross-sectional analyses considering the relative industry and extent of losses of the public subsidiaries, I was not able to rule out that the lack of statistical significance for the marginal effect of public subsidiary earnings for a group instead derives from the small number of sub-years for that group. Future research can explore these sources of cross-sectional variation more extensively.

FIGURE 1
Effect of Corporate Ownership and Control Structures on
Takeover and Equity Carveout Volume and Horizon

This chart illustrates the dual impact of corporate ownership and control structures that exists globally and links this to the volume and horizon of takeovers and equity carveouts. Volume refers to the frequency with which the transaction takes place. Horizon refers to the time period after the initial transaction that the subsidiary continues to be a publicly traded subsidiary of the consolidated entity. This chart has been adapted from the presentation of Professor Hideki Kanda of the University of Tokyo, “*Patterns in Takeover Regulations in the World: Puzzles and Explanations*” at the Conference of International Takeover Regulators (September 9th, 2011).

Ownership Control	Dispersed	Concentrated
Powerful management	United States <u>Takeover</u> Higher Volume Mid Horizon <u>Equity Carveout</u> Lower Prior Volume Shorter Horizon	Japan <u>Takeover</u> Lower Volume Longest Horizon <u>Equity Carveout</u> Higher Prior Volume Longer Horizon
Strong Shareholder rights	United Kingdom <u>Takeover</u> Higher Volume Shortest Horizon <u>Equity Carveout</u> Lower Prior Volume Shorter Horizon	Continental Europe <u>Takeover</u> Lower Volume Mid Horizon <u>Equity Carveout</u> Lower Prior Volume Shorter Horizon

FIGURE 2
Relative Size of Public Subsidiaries

This figure depicts the relative size of the public subsidiaries held by consolidated entities with public subsidiaries (Categories 1 and 2). Relative size is defined as the total assets (Worldscope, WC02999) of the subsidiary in EUR (using the average daily exchange rate at the end of fiscal year t) divided by the total assets (Worldscope, WC02999) of the consolidated entity in EUR (using the average daily exchange rate at the end of fiscal year t).

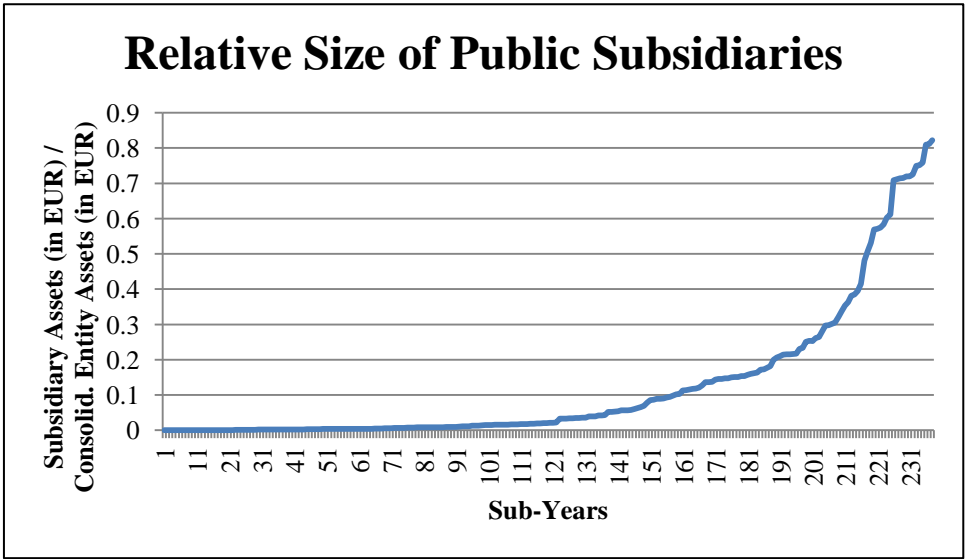


TABLE 1
Sample Composition

Panel A: Sample Development	Germany	Japan	United Kingdom	United States				
Public company traded on the country's stock exchange on Datastream/Worldscope for 2012	751	3,348	1,714	3,332				
Less firms missing entity structure on Factset	4	3	5	2				
Less firms missing financial data on Worldscope	170	44	271	98				
Final Sample	577	3,301	1,438	3,232				
Panel B: Sample by Public Company Category								
(1) Consolidated Entities with domestic public subsidiaries	11	156	21	47				
(2) Consolidated Entities with foreign public subsidiaries	19	36	35	87				
(3) Consolidated Entities with only private subsidiaries	393	2,687	1,002	2,822				
(4) Public Subsidiaries with domestic public parents	13	251	73	42				
(5) Public Subsidiaries with foreign public parents	25	7	56	11				
(6) Public Subsidiaries with private parents	65	30	162	93				
(7) Stand-alone entities without subsidiaries	51	134	89	130				
Full Sample of Public Companies	577	3,301	1,438	3,232				
Panel C: Sample by Industry								
		Public Company Category						
	Full Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Germany								
Agriculture, Forestry, and Fishing	2	1	0	1	0	0	0	0
Mining & Construction	16	0	1	12	0	2	0	1
Manufacturing	227	3	10	163	4	10	21	16
Transportation, Communications, Electric, Gas, And Sanitary Services	42	0	5	25	1	2	7	2
Wholesale & Retail Trade	31	1	0	21	1	1	5	2
Finance, Insurance, And Real Estate	127	4	3	70	5	6	18	21
Services	132	2	0	101	2	4	14	9
	577	11	19	393	13	25	65	51
Japan								
Agriculture, Forestry, and Fishing	6	0	0	6	0	0	0	0
Mining & Construction	208	8	2	175	17	0	3	3
Manufacturing	1,445	72	24	1,200	95	1	8	45
Transportation, Communications, Electric, Gas, And Sanitary Services	166	15	4	123	16	0	1	7
Wholesale & Retail Trade	579	21	3	495	38	4	6	12
Finance, Insurance, And Real Estate	289	17	3	207	23	0	4	35
Services	608	23	0	481	62	2	8	32
	3,301	156	36	2,687	251	7	30	134
United Kingdom								
Agriculture, Forestry, and Fishing	12	0	0	11	0	0	1	0
Mining & Construction	162	2	9	122	1	1	11	16
Manufacturing	303	1	13	266	1	1	5	16
Transportation, Communications, Electric, Gas, And Sanitary Services	81	1	1	74	1	1	2	1
Wholesale & Retail Trade	90	0	1	84	0	0	1	4
Finance, Insurance, And Real Estate	497	16	9	184	70	49	137	32
Services	293	1	2	261	0	4	5	20
	1,438	21	35	1,002	73	56	162	89
United States								
Agriculture, Forestry, and Fishing	9	0	0	8	0	0	1	0
Mining & Construction	221	6	5	188	7	0	6	9
Manufacturing	1,183	12	40	1,028	4	4	24	71
Transportation, Communications, Electric, Gas, And Sanitary Services	290	10	7	251	13	2	6	1
Wholesale & Retail Trade	286	3	5	256	2	1	6	13
Finance, Insurance, And Real Estate	708	15	18	603	10	1	42	19
Services	533	1	12	487	5	3	8	17
Public Administration	2	0	0	1	1	0	0	0
	3,232	47	87	2,822	42	11	93	130

TABLE 2
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Germany								
No. Obs.	577	11	19	393	13	25	65	51
Balance Sheet:								
Assets:								
Cash	936,343	3,780,219	4,608,050	940,900	1,618,287	292,004	184,737	19,901
	6.3%	5.6%	1.6%	27.8%	6.2%	3.3%	2.3%	14.0%
Accounts receivable	432,388	90,436	6,123,542	280,824	743,106	168,462	116,543	6,562
	2.9%	0.1%	2.2%	8.3%	2.9%	1.9%	1.4%	4.6%
Inventory	410,152	3,794,183	4,010,272	248,968	835,727	86,610	116,297	5,741
	2.8%	5.6%	1.4%	7.4%	3.2%	1.0%	1.4%	4.0%
Other current assets	453,837	7,181,029	4,888,258	213,624	104,600	62,076	44,329	4,876
	3.1%	10.6%	1.7%	6.3%	0.4%	0.7%	0.5%	3.4%
Property, plant, & equipment	1,285,777	8,611,140	16,510,392	684,252	1,541,200	316,315	495,135	86,961
	8.6%	12.7%	5.8%	20.2%	5.9%	3.5%	6.1%	61.0%
Long term receivables	318,350	6,503,249	1,190,969	221,768	145,682	863	4,881	2,673
	2.1%	9.6%	0.4%	6.6%	0.6%	0.0%	0.1%	1.9%
Investments and Other long term assets	11,029,166	37,736,792	247,134,783	794,741	20,988,683	8,023,170	7,178,281	15,878
	74.2%	55.7%	86.9%	23.5%	80.8%	89.6%	88.2%	11.1%
Total assets	14,866,013	67,697,048	284,466,268	3,385,077	25,977,285	8,949,499	8,140,203	142,593
Liabilities:								
Accounts payable	368,551	2,248,566	4,248,612	226,813	680,808	86,360	105,412	3,873
	2.5%	3.3%	1.5%	6.7%	2.6%	1.0%	1.3%	2.7%
Short-term debt & current portion of long term debt	1,362,644	6,619,873	28,444,894	338,362	1,386,678	102,645	290,066	10,786
	9.2%	9.8%	10.0%	10.0%	5.3%	1.1%	3.6%	7.6%
Other current liabilities	1,075,788	4,281,248	8,908,870	956,443	1,428,936	143,070	94,340	3,930
	7.2%	6.3%	3.1%	28.3%	5.5%	1.6%	1.2%	2.8%
Long term debt	1,741,611	8,747,043	30,284,973	606,462	2,426,032	115,266	895,866	44,835
	11.7%	12.9%	10.6%	17.9%	9.3%	1.3%	11.0%	31.4%
Provision for risks and charges	614,020	5,956,072	10,395,271	144,190	1,310,308	208,875	188,020	2,332
	4.1%	8.8%	3.7%	4.3%	5.0%	2.3%	2.3%	1.6%
Deposits, Reserves, and Other long term liabilities	7,821,890	26,745,492	176,509,949	263,926	15,833,498	7,425,091	5,690,520	5,319
	52.6%	39.5%	62.0%	7.8%	61.0%	83.0%	69.9%	3.7%
Total liabilities	12,969,691	54,590,294	258,623,064	2,527,586	23,007,438	8,043,813	7,262,139	70,735
	87.2%	80.6%	90.9%	74.7%	88.6%	89.9%	89.2%	49.6%

TABLE 2 (continued)
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Equity:								
Common equity	1,781,327	12,521,688	23,523,889	840,854	2,933,212	902,072	743,529	71,856
	12.0%	18.5%	8.3%	24.8%	11.3%	10.1%	9.1%	50.4%
Minority interest	105,452	578,900	2,056,121	16,240	36,634	3,257	130,329	-
	0.7%	0.9%	0.7%	0.5%	0.1%	0.0%	1.6%	0.0%
Other equity	9,544	6,166	263,194	397	-	357	4,206	2
	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%
Total equity	1,896,323	13,106,755	25,843,204	857,491	2,969,847	905,686	878,064	71,858
	12.8%	19.4%	9.1%	25.3%	11.4%	10.1%	10.8%	50.4%
Income Statement:								
Revenues	4,326,321	32,331,595	55,071,775	2,061,441	7,696,124	1,981,678	2,029,586	51,268
Operating income	298,719	1,848,644	4,095,507	138,341	585,769	83,911	150,579	6,725
	6.9%	5.7%	7.4%	6.7%	7.6%	4.2%	7.4%	13.1%
Net income before taxes, preferred dividends, and extraordinary items	289,945	3,435,809	2,564,909	155,923	683,207	84,983	126,516	5,162
	6.7%	10.6%	4.7%	7.6%	8.9%	4.3%	6.2%	10.1%
Minority interest	12,832	24,597	230,911	3,732	9,155	1,347	17,336	-
	0.3%	0.1%	0.4%	0.2%	0.1%	0.1%	0.9%	0.0%
Net income before extraordinary items	193,628	2,873,337	1,095,987	114,626	485,359	127,027	70,239	3,805
	4.5%	8.9%	2.0%	5.6%	6.3%	6.4%	3.5%	7.4%

TABLE 2, continued
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel B: Japan								
No. Obs.	3,301	156	36	2,687	251	7	30	134
Balance Sheet:								
Assets:								
Cash	335,384 4.7%	1,666,645 3.3%	3,836,768 11.0%	235,875 4.7%	181,963 8.8%	452,054 36.1%	653,955 9.0%	51,138 7.6%
Accounts receivable	413,664 5.8%	2,319,693 4.6%	5,450,102 15.6%	263,399 5.2%	347,867 16.9%	257,116 20.5%	280,477 3.9%	12,789 1.9%
Inventory	244,475 3.4%	1,654,871 3.3%	2,807,857 8.1%	152,889 3.0%	117,246 5.7%	196,608 15.7%	148,927 2.1%	10,484 1.5%
Other current assets	136,279 1.9%	1,359,162 2.7%	1,719,601 4.9%	56,837 1.1%	65,839 3.2%	85,982 6.9%	189,987 2.6%	1,992 0.3%
Property, plant, & equipment	906,516 12.8%	5,088,093 10.1%	11,170,559 32.0%	566,402 11.3%	442,908 21.5%	216,769 17.3%	4,199,680 57.9%	287,594 42.5%
Long term receivables	45,512 0.6%	543,796 1.1%	844,366 2.4%	12,790 0.3%	1,836 0.1%	412 0.0%	426 0.0%	396 0.1%
Investments and Other long term assets	5,013,229 70.7%	37,635,068 74.9%	9,049,706 25.9%	3,730,352 74.3%	904,778 43.9%	42,727 3.4%	1,776,726 24.5%	312,326 46.2%
Total assets	7,095,053	50,267,328	34,878,959	5,018,537	2,062,437	1,251,668	7,250,178	676,719
Liabilities:								
Accounts payable	283,864 4.0%	1,888,635 3.8%	3,337,200 9.6%	171,876 3.4%	209,905 10.2%	96,177 7.7%	193,622 2.7%	7,141 1.1%
Short-term debt & current portion of long term debt	726,017 10.2%	6,217,441 12.4%	3,449,704 9.9%	461,827 9.2%	115,592 5.6%	4,485 0.4%	753,460 10.4%	70,097 10.4%
Other current liabilities	247,425 3.5%	1,668,868 3.3%	3,776,277 10.8%	139,485 2.8%	131,201 6.4%	169,071 13.5%	349,340 4.8%	7,121 1.1%
Long term debt	1,020,778 14.4%	6,367,001 12.7%	7,140,168 20.5%	731,000 14.6%	154,281 7.5%	1,057 0.1%	2,995,798 41.3%	208,084 30.7%
Provision for risks and charges	130,451 1.8%	671,662 1.3%	1,819,859 5.2%	67,779 1.4%	49,465 2.4%	8,430 0.7%	2,250,439 31.0%	1,549 0.2%
Deposits, Reserves, and Other long term liabilities	3,496,579 49.3%	26,483,516 52.7%	1,376,677 3.9%	2,675,283 53.3%	637,929 30.9%	682 0.1%	86,879 1.2%	36,934 5.5%
Total liabilities	5,892,329 83.0%	43,213,893 86.0%	20,793,813 59.6%	4,238,814 84.5%	1,290,369 62.6%	261,641 20.9%	6,628,242 91.4%	326,917 48.3%

TABLE 2 (continued)
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Equity:								
Common equity	1,096,152	6,130,217	12,231,454	731,014	737,041	985,828	599,483	346,318
	15.4%	12.2%	35.1%	14.6%	35.7%	78.8%	8.3%	51.2%
Minority interest	88,137	828,137	1,849,007	33,220	20,641	2,043	18,288	-
	1.2%	1.6%	5.3%	0.7%	1.0%	0.2%	0.3%	0.0%
Other equity	20,322	117,430	4,686	16,506	14,387	2,156	4,165	3,484
	0.3%	0.2%	0.0%	0.3%	0.7%	0.2%	0.1%	0.5%
Total equity	1,202,725	7,053,435	14,085,146	779,723	772,068	990,027	621,936	349,802
	17.0%	14.0%	40.4%	15.5%	37.4%	79.1%	8.6%	51.7%
<u>Income Statement:</u>								
Revenues	2,334,731	13,442,207	28,717,072	1,512,079	1,576,569	1,127,065	3,097,594	117,720
Operating income	132,632	745,565	1,877,003	83,677	106,430	219,195	(63,451)	18,351
	5.7%	5.5%	6.5%	5.5%	6.8%	19.4%	-2.0%	15.6%
Net income before taxes, preferred dividends, and extraordinary items	118,257	682,853	1,586,004	76,642	99,172	216,503	(280,000)	17,293
	5.1%	5.1%	5.5%	5.1%	6.3%	19.2%	-9.0%	14.7%
Minority interest	6,533	58,686	133,703	2,570	2,253	1,414	3,513	-
	0.3%	0.4%	0.5%	0.2%	0.1%	0.1%	0.1%	0.0%
Net income before extraordinary items	59,200	370,034	762,949	38,346	52,647	133,559	(313,138)	15,081
	2.5%	2.8%	2.7%	2.5%	3.3%	11.9%	-10.1%	12.8%

TABLE 2, continued
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel C: United Kingdom								
No. Obs.	1,438	21	35	1,002	73	56	162	89
Balance Sheet:								
Assets:								
Cash	206,175	1,022,238	3,809,369	132,769	16,801	20,097	34,761	7,502
	2.5%	2.2%	2.0%	6.1%	3.5%	3.5%	0.3%	7.2%
Accounts receivable	263,080	168,437	3,200,344	256,713	3,027	5,449	29,201	3,111
	3.1%	0.4%	1.7%	11.7%	0.6%	1.0%	0.2%	3.0%
Inventory	126,101	8,851	2,349,002	93,446	-	5,551	28,782	3,671
	1.5%	0.0%	1.2%	4.3%	0.0%	1.0%	0.2%	3.5%
Other current assets	160,999	19,833	806,937	201,581	2,312	2,575	2,711	1,362
	1.9%	0.0%	0.4%	9.2%	0.5%	0.5%	0.0%	1.3%
Property, plant, & equipment	699,357	178,674	13,028,902	510,677	530	60,513	179,370	19,422
	8.3%	0.4%	6.9%	23.3%	0.1%	10.7%	1.3%	18.7%
Long term receivables	13,769	737	378,014	6,156	-	539	2,147	88
	0.2%	0.0%	0.2%	0.3%	0.0%	0.1%	0.0%	0.1%
Investments and Other long term assets	6,919,922	45,127,384	165,789,972	992,863	462,648	471,868	13,205,938	68,709
	82.5%	97.0%	87.6%	45.2%	95.3%	83.3%	97.9%	66.2%
Total assets	8,389,404	46,526,153	189,362,540	2,194,205	485,318	566,592	13,482,908	103,865
Liabilities:								
Accounts payable	142,749	60,347	2,710,855	104,509	167	1,248	25,579	2,035
	1.7%	0.1%	1.4%	4.8%	0.0%	0.2%	0.2%	2.0%
Short-term debt & current portion of long term debt	741,167	535,979	19,063,639	51,807	15,578	20,141	2,053,891	4,595
	8.8%	1.2%	10.1%	2.4%	3.2%	3.6%	15.2%	4.4%
Other current liabilities	341,548	161,025	4,299,697	331,107	5,372	6,313	27,201	3,969
	4.1%	0.3%	2.3%	15.1%	1.1%	1.1%	0.2%	3.8%
Long term debt	801,265	964,947	16,956,512	344,537	33,508	34,784	1,160,357	9,882
	9.6%	2.1%	9.0%	15.7%	6.9%	6.1%	8.6%	9.5%
Provision for risks and charges	126,830	170,726	2,909,153	69,944	271	934	42,012	148
	1.5%	0.4%	1.5%	3.2%	0.1%	0.2%	0.3%	0.1%
Deposits, Reserves, and Other long term liabilities	5,103,569	42,586,326	120,333,835	737,293	13,244	18,767	9,208,675	3,878
	60.8%	91.5%	63.5%	33.6%	2.7%	3.3%	68.3%	3.7%
Total liabilities	7,254,527	44,453,661	166,273,138	1,636,084	68,141	82,187	12,517,374	24,443
	86.5%	95.5%	87.8%	74.6%	14.0%	14.5%	92.8%	23.5%

TABLE 2 (continued)
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Equity:								
Common equity	1,082,006	1,993,913	21,501,094	544,725	413,513	478,457	936,138	79,385
	12.9%	4.3%	11.4%	24.8%	85.2%	84.4%	6.9%	76.4%
Minority interest	49,248	63,320	1,485,907	12,108	3,664	5,738	29,394	-
	0.6%	0.1%	0.8%	0.6%	0.8%	1.0%	0.2%	0.0%
Other equity	3,624	15,260	102,401	1,289	1	209	3	37
	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Total equity	1,134,872	2,072,493	23,089,402	558,112	417,177	484,405	965,535	79,422
	13.5%	4.5%	12.2%	25.4%	86.0%	85.5%	7.2%	76.5%
<u>Income Statement:</u>								
Revenues	1,740,801	3,797,209	35,737,442	1,082,607	36,978	35,660	498,375	28,255
Operating income	180,123	346,594	3,678,849	125,444	32,658	(7,211)	(32,155)	5,764
	10.3%	9.1%	10.3%	11.6%	88.3%	-20.2%	-6.5%	20.4%
Net income before taxes, preferred dividends, and extraordinary items	142,655	237,618	3,040,049	97,770	33,067	(6,740)	(40,891)	4,137
	8.2%	6.3%	8.5%	9.0%	89.4%	-18.9%	-8.2%	14.6%
Minority interest	5,116	4,159	153,053	2,047	362	92	(1,050)	-
	0.3%	0.1%	0.4%	0.2%	1.0%	0.3%	-0.2%	0.0%
Net income before extraordinary items	97,682	166,672	2,067,988	69,979	31,881	(7,086)	(47,792)	3,149
	5.6%	4.4%	5.8%	6.5%	86.2%	-19.9%	-9.6%	11.1%

TABLE 2, continued
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel D: United States								
No. Obs.	3,232	47	87	2,822	42	11	93	130
Balance Sheet:								
Assets:								
Cash	695,019 5.9%	1,283,463 2.5%	7,029,818 4.9%	536,533 6.7%	260,120 5.9%	997,930 4.3%	311,947 10.1%	69,678 10.9%
Accounts receivable	528,290 4.5%	724,563 1.4%	4,017,632 2.8%	458,708 5.7%	238,347 5.4%	246,095 1.1%	156,720 5.1%	14,914 2.3%
Inventory	313,607 2.7%	415,216 0.8%	2,636,321 1.9%	265,095 3.3%	49,751 1.1%	234,828 1.0%	105,281 3.4%	15,720 2.5%
Other current assets	171,421 1.5%	523,022 1.0%	2,007,916 1.4%	123,247 1.5%	42,006 0.9%	183,569 0.8%	25,603 0.8%	5,360 0.8%
Property, plant, & equipment	1,775,848 15.0%	5,985,291 11.9%	12,504,885 8.8%	1,504,979 18.8%	1,240,694 28.0%	876,442 3.8%	498,912 16.1%	112,054 17.6%
Long term receivables	132,429 1.1%	16,375 0.0%	3,268,983 2.3%	50,385 0.6%	1,607 0.0%	8,759 0.0%	3,309 0.1%	138 0.0%
Investments and Other long term assets	8,200,291 69.4%	41,428,513 82.2%	110,715,120 77.9%	5,081,908 63.4%	2,592,987 58.6%	20,677,757 89.0%	1,997,563 64.5%	418,993 65.8%
Total assets	11,816,264	50,376,443	142,180,675	8,020,121	4,425,511	23,225,380	3,099,335	636,858
Liabilities:								
Accounts payable	319,336 2.7%	847,165 1.7%	2,544,553 1.8%	268,341 3.3%	78,013 1.8%	163,490 0.7%	67,275 2.2%	16,988 2.7%
Short-term debt & current portion of long term debt	909,298 7.7%	2,634,921 5.2%	18,553,512 13.0%	412,929 5.1%	137,474 3.1%	124,764 0.5%	54,128 1.7%	172,270 27.0%
Other current liabilities	465,745 3.9%	635,253 1.3%	3,697,941 2.6%	400,716 5.0%	193,489 4.4%	401,012 1.7%	86,217 2.8%	16,947 2.7%
Long term debt	2,453,219 20.8%	11,898,164 23.6%	21,305,240 15.0%	1,903,139 23.7%	1,188,671 26.9%	1,456,624 6.3%	760,699 24.5%	58,335 9.2%
Provision for risks and charges	276,552 2.3%	297,460 0.6%	2,362,307 1.7%	236,375 2.9%	26,354 0.6%	101,017 0.4%	52,821 1.7%	425 0.1%
Deposits, Reserves, and Other long term liabilities	4,807,732 40.7%	25,598,856 50.8%	68,479,996 48.2%	2,836,664 35.4%	1,371,551 31.0%	17,947,294 77.3%	964,998 31.1%	183,876 28.9%
Total liabilities	9,214,322 78.0%	41,883,451 83.1%	116,920,693 82.2%	6,039,518 75.3%	2,994,219 67.7%	20,193,588 86.9%	1,978,840 63.8%	448,295 70.4%

TABLE 2 (continued)
Descriptive Statistics by Public Company Category

	Full Sample	Public Company Category						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Equity:								
Common equity	2,402,728	7,592,906	23,828,753	1,830,503	1,432,582	2,827,102	590,382	174,258
	20.3%	15.1%	16.8%	22.8%	32.4%	12.2%	19.0%	27.4%
Minority interest	125,183	483,137	944,672	89,392	(11,940)	203,668	490,560	-
	1.1%	1.0%	0.7%	1.1%	-0.3%	0.9%	15.8%	0.0%
Other equity	74,254	416,949	486,556	60,963	10,650	1,023	39,553	14,304
	0.6%	0.8%	0.3%	0.8%	0.2%	0.0%	1.3%	2.2%
Total equity	2,601,942	8,492,992	25,259,981	1,980,603	1,431,293	3,031,793	1,120,495	188,563
	22.0%	16.9%	17.8%	24.7%	32.3%	13.1%	36.2%	29.6%
Income Statement:								
Revenues	4,379,391	12,963,219	34,954,957	3,628,383	1,472,019	3,362,713	1,347,757	299,105
Operating income	537,253	1,461,327	4,865,152	427,991	213,455	353,407	234,707	13,557
	12.3%	11.3%	13.9%	11.8%	14.5%	10.5%	17.4%	4.5%
Net income before taxes, preferred dividends, and extraordinary items	414,373	1,327,846	4,007,653	320,325	144,776	236,074	157,026	5,779
	9.5%	10.2%	11.5%	8.8%	9.8%	7.0%	11.7%	1.9%
Minority interest	17,316	52,094	144,978	11,235	16,546	12,659	89,790	-
	0.4%	0.4%	0.4%	0.3%	1.1%	0.4%	6.7%	0.0%
Net income before extraordinary items	286,303	913,602	2,847,721	220,630	116,397	169,420	57,523	(1,625)
	6.5%	7.0%	8.1%	6.1%	7.9%	5.0%	4.3%	-0.5%

This table presents the mean balance sheet and income statement values (in USD) for Germany (Panel A), Japan (Panel B), the United Kingdom (Panel C), and the United States (Panel D) by the following public company categories: (1) consolidated entities with domestic public subsidiaries, (2) consolidated entities with foreign public subsidiaries, (3) consolidated entities with only private subsidiaries, (4) public subsidiaries with domestic public parents, (5) public subsidiaries with foreign public parents, (6) public subsidiaries with private parents, and (7) stand-alone entities without subsidiaries. Percentages represent the mean value as a percentage of total assets for balance sheet values and the mean value as a percentage of sales for income statement values.

TABLE 3
Decomposed Descriptive Statistics for Consolidated Entities with Public Subsidiaries

	n=26 Germany			n=174 Japan			n=44 United Kingdom			n=101 United States		
	Consol. Entity	Public Sub	Remainder	Consol. Entity	Public Sub	Remainder	Consol. Entity	Public Sub	Remainder	Consol. Entity	Public Sub	Remainder
Balance Sheet:												
Assets:												
Cash	4,767,454	1,455,084	3,312,370	2,245,983	364,025	1,881,958	3,288,866	251,227	3,037,639	5,184,013	351,367	4,832,646
	2.0%	7.0%	1.6%	4.3%	9.1%	3.9%	1.9%	2.8%	1.9%	4.0%	6.9%	3.8%
Accounts receivable	4,108,127	215,589	3,892,538	2,931,063	612,557	2,318,506	2,382,219	123,904	2,258,315	2,679,930	214,543	2,465,387
	1.8%	1.0%	1.8%	5.7%	15.2%	4.9%	1.4%	1.4%	1.4%	2.1%	4.2%	2.0%
Inventory	4,401,798	546,556	3,855,242	2,029,367	281,326	1,748,041	1,636,676	166,385	1,470,291	2,319,665	196,769	2,122,896
	1.9%	2.6%	1.8%	3.9%	7.0%	3.7%	1.0%	1.9%	0.9%	1.8%	3.9%	1.7%
Other current assets	6,423,187	107,562	6,315,624	1,532,993	135,841	1,397,152	610,881	27,460	583,421	1,822,442	83,182	1,739,260
	2.7%	0.5%	3.0%	3.0%	3.4%	2.9%	0.4%	0.3%	0.4%	1.4%	1.6%	1.4%
Property, plant, & equipment	15,217,716	3,290,881	11,926,835	6,801,252	874,217	5,927,035	9,885,198	915,860	8,969,338	12,593,545	1,901,936	10,691,608
	6.5%	15.9%	5.6%	13.1%	21.8%	12.4%	5.8%	10.4%	5.5%	9.6%	37.3%	8.5%
Long term receivables	3,616,204	92,028	3,524,176	662,059	1,462	660,598	287,925	19,932	267,993	2,812,651	5,173	2,807,478
	1.5%	0.4%	1.6%	1.3%	0.0%	1.4%	0.2%	0.2%	0.2%	2.2%	0.1%	2.2%
Investments and Other	195,801,773	13,966,790	181,834,983	35,525,788	1,446,663	34,079,125	152,352,820	7,026,158	145,326,662	103,284,206	2,070,008	101,214,198
long term assets	83.6%	67.6%	85.1%	68.7%	36.0%	71.4%	89.4%	79.5%	89.9%	79.0%	40.6%	80.6%
Total assets	234,336,260	20,650,366	213,685,893	51,728,506	4,017,199	47,711,307	170,444,584	8,834,596	161,609,988	130,696,452	5,099,602	125,596,850
		8.8%	91.2%		7.8%	92.2%		5.2%	94.8%		3.9%	96.1%
Liabilities:												
Accounts payable	3,702,858	660,078	3,042,780	2,337,531	424,165	1,913,365	2,076,291	108,929	1,967,361	2,462,601	251,100	2,211,502
	1.6%	3.2%	1.4%	4.5%	10.6%	4.0%	1.2%	1.2%	1.2%	1.9%	4.9%	1.8%
Short-term debt & current	23,533,921	1,181,843	22,352,077	6,222,490	238,668	5,983,823	15,346,804	418,658	14,928,146	14,493,336	112,217	14,381,119
portion of long term debt	10.0%	5.7%	10.5%	12.0%	5.9%	12.5%	9.0%	4.7%	9.2%	11.1%	2.2%	11.5%
Other current liabilities	7,956,475	912,348	7,044,126	2,248,214	371,018	1,877,196	3,009,481	168,275	2,841,207	3,261,357	251,209	3,010,148
	3.4%	4.4%	3.3%	4.3%	9.2%	3.9%	1.8%	1.9%	1.8%	2.5%	4.9%	2.4%
Long term debt	25,548,516	2,079,117	23,469,398	7,123,135	373,752	6,749,383	13,337,674	949,328	12,388,346	18,532,727	829,216	17,703,511
	10.9%	10.1%	11.0%	13.8%	9.3%	14.1%	7.8%	10.7%	7.7%	14.2%	16.3%	14.1%
Provision for risks and charges	9,765,152	749,138	9,016,014	967,030	145,639	821,391	2,125,812	49,812	2,076,000	1,993,478	140,206	1,853,273
	4.2%	3.6%	4.2%	1.9%	3.6%	1.7%	1.2%	0.6%	1.3%	1.5%	2.7%	1.5%
Deposits, Reserves, and Other	140,302,595	10,089,961	130,212,635	23,802,743	765,745	23,036,998	115,923,020	5,405,510	110,517,510	65,917,102	976,939	64,940,164
long term liabilities	59.9%	48.9%	60.9%	46.0%	19.1%	48.3%	68.0%	61.2%	68.4%	50.4%	19.2%	51.7%
Total liabilities	210,723,042	15,376,777	195,346,265	42,605,496	2,550,053	40,055,443	151,814,045	6,799,383	145,014,662	106,631,071	2,828,064	103,803,007
	89.9%	74.5%	91.4%	82.4%	63.5%	84.0%	89.1%	77.0%	89.7%	81.6%	55.5%	82.6%

TABLE 3 (continued)
Decomposed Descriptive Statistics for Consolidated Entities with Public Subsidiaries

	Germany			Japan			United Kingdom			United States		
	Consol. Entity	Public Sub	Remainder	Consol. Entity	Public Sub	Remainder	Consol. Entity	Public Sub	Remainder	Consol. Entity	Public Sub	Remainder
Equity:												
Common equity	21,684,699	4,360,803	17,323,896	7,934,912	1,295,326	6,639,586	17,387,766	1,493,196	15,894,570	22,534,768	1,826,646	20,708,122
	9.3%	21.1%	8.1%	15.3%	32.2%	13.9%	10.2%	16.9%	9.8%	17.2%	35.8%	16.5%
Minority interest	1,736,184	38,569	1,697,615	1,124,027	41,685	1,082,342	1,154,035	93,931	1,060,105	995,337	29,382	965,955
	0.7%	0.2%	0.8%	2.2%	1.0%	2.3%	0.7%	1.1%	0.7%	0.8%	0.6%	0.8%
Other equity	192,334	11,166	181,168	84,109	3,252	80,857	88,738	1	88,737	535,276	3,478	531,798
	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.1%	0.0%	0.1%	0.4%	0.1%	0.4%
Total equity	23,613,217	4,729,129	18,884,089	9,123,010	1,424,313	7,698,697	18,630,539	1,746,649	16,883,890	24,065,381	2,031,754	22,033,626
	10.1%	22.9%	8.8%	17.6%	35.5%	16.1%	10.9%	19.8%	10.4%	18.4%	39.8%	17.5%
Income Statement:												
Revenues	50,629,480	7,285,298	43,344,182	17,651,365	3,488,382	14,162,983	28,769,270	1,725,332	27,043,938	34,174,324	2,809,688	31,364,636
Operating income	3,733,677	540,187	3,193,490	1,047,862	139,818	908,044	2,885,184	248,671	2,636,513	4,484,391	349,037	4,135,355
	7.4%	7.4%	7.4%	5.9%	4.0%	6.4%	10.0%	14.4%	9.7%	13.1%	12.4%	13.2%
Net income before taxes, preferred dividends, and extraordinary items	3,245,678	333,498	2,912,180	931,870	47,956	883,913	2,388,651	96,969	2,291,682	3,770,348	126,881	3,643,466
	6.4%	4.6%	6.7%	5.3%	1.4%	6.2%	8.3%	5.6%	8.5%	11.0%	4.5%	11.6%
Minority interest	173,005	-12,555	185,560	80,159	-8,580	88,739	119,016	12,504	106,512	144,695	1,096	143,599
	0.3%	-0.2%	0.4%	0.5%	-0.2%	0.6%	0.4%	0.7%	0.4%	0.4%	0.0%	0.5%
Net income before extraordinary items	1,962,650	-66,068	2,028,718	485,462	-73,400	558,862	1,610,040	-38,528,105	40,138,145	2,674,565	6,668	2,667,897
	3.9%	-0.9%	4.7%	2.8%	-2.1%	3.9%	5.6%	-2233.1%	148.4%	7.8%	0.2%	8.5%

This table presents the mean balance sheet and income statement values (in USD) for the consolidated entities with public subsidiaries (Categories 1 and 2), decomposed into that from the public subsidiaries and that from the remainder of the consolidated entity. With the exception of the percentage listed below Total Assets, percentages represent the mean value as a percentage of total assets for *the same column* for balance sheet values and the mean value as a percentage of sales for *the same column* for income statement values (e.g., the 7.0% shown for Cash of German public subsidiaries is calculated as the mean cash value for public subsidiaries of \$1,455,084 divided by the mean Total Asset value for public subsidiaries of \$20,650,366). Percentages listed below Total Assets represent the mean value of Total Assets as a percentage of Consolidated Entity Total Assets.

TABLE 4
Sample Composition

	Firm	Firm- Years
Panel A: Sample Development		
German public company traded on a German stock exchange on Datastream/Worldscope for 2005-2012	883	5,367
Less firms missing entity structure on Factset	16	83
Less firm-years with indeterminable category	12	118
Less firm-years missing market/financial data on Datastream/Worldscope	62	836
Final Sample	793	4,330

Panel B: Sample by Public Company Category (firm-years)

(1) Consolidated Entities with domestic (German) public subsidiaries	64	1.5%
(2) Consolidated Entities with foreign public subsidiaries	102	2.4%
(3) Consolidated Entities with only private subsidiaries	2,584	59.7%
(4) Public Subsidiaries with domestic (German) public parents	98	2.3%
(5) Public Subsidiaries with foreign public parents	145	3.3%
(6) Public Subsidiaries with private parents	573	13.2%
(7) Stand-alone entities without subsidiaries	764	17.6%
Full Sample of Public Companies	4,330	100.0%

Panel C: Sample by Year (firm-years)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Total
2005	5	10	330	11	21	80	92	549
2006	11	14	316	16	24	77	87	545
2007	11	15	336	14	21	76	98	571
2008	7	15	361	10	24	81	127	625
2009	10	9	348	12	16	77	128	600
2010	9	15	352	12	16	73	110	587
2011	9	13	353	14	14	70	104	577
2012	2	11	188	9	9	39	18	276
Total	64	102	2,584	98	145	573	764	4,330

Panel D: Sample by Accounting Standards Used (firm-years)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Total
Domestic GAAP	0	0	99	20	6	75	557	757
IFRS or U.S. GAAP	64	102	2,485	78	139	498	207	3,573
Total	64	102	2,584	98	145	573	764	4,330

Panel E: Sample of Consolidated Entities with Public Subsidiaries by Number of Public Subsidiaries (firm-years)

	(1)	(2)	Total
1 public subsidiary	59	58	117
2 public subsidiaries	5	30	35
3 public subsidiaries	0	5	5
4 public subsidiaries	0	9	9
	64	102	166

TABLE 4 (continued)
Sample Composition

Panel F: Sample of Consolidated Entities with Public Subsidiaries by

Subsidiary Country (sub-years)	(1)	(2)	Total
Australia	0	5	5
Belgium	0	4	4
Canada	0	3	3
Croatia	0	10	10
Czech Republic	0	7	7
Denmark	0	6	6
France	0	4	4
Germany	69	42	111
Hungary	0	22	22
India	0	28	28
Indonesia	0	7	7
Malaysia	0	1	1
Pakistan	0	8	8
Peru	0	3	3
Poland	0	5	5
South Africa	0	6	6
Switzerland	0	8	8
	69	169	238

Panel G: Sample of Consolidated Entities with Public Subsidiaries by

Consolidated Entity & Subsidiary Industry (sub-years)	(1)		(2)		Total
	Sam	Dif	Sam	Diff	
	€	f	€	Diff	
Mining & Construction	0	0	0	5	5
Manufacturing	15	3	75	12	105
Transportation, Communications, Electric, Gas, And Sanitary Services	2	2	62	1	67
Wholesale & Retail Trade	7	0	0	0	7
Finance, Insurance, And Real Estate	28	0	10	1	39
Services	12	0	3	0	15
	64	5	150	19	238

Panel H: Sample of Consolidated Entities with Public Subsidiaries by

Subsidiary Accounting Standards Used (sub-years)	(1)	(2)	Total
Domestic GAAP	16	58	74
IFRS or U.S. GAAP	53	111	164
	69	169	238

Notes:

Sub-years refers to the subsidiary-firm-years for the firm-years of the consolidated entities

There are two reasons that the number of public subsidiaries with German public parents (98 firm-years for Category 4 in Panel B) does not equal the number of public subsidiaries from Germany for German consolidated entities (111 sub-years in Panel F). First, Panel B requires that the German public company be traded on a German stock exchange; however, I do not impose this restriction on the public subsidiaries in Panel F, resulting in 30 sub-years in Panel F that are not included in Panel B. Second, data restrictions for Panel B led to the deletion of a consolidated entity with German public subsidiaries (Categories 1 and 2), but not the deletion of the German public subsidiary (Category 4), resulting in 17 firm-years in Panel B that are not included in Panel F.

TABLE 5
Decomposed Descriptive Statistics for Consolidated Entities with Public Subsidiaries

	(CE) n=166			(PS) n=166			(CE-PS) n=166			Mean Difference p-value			Median Difference p-value		
	Consolidated Entity			Public Subsidiaries			Remainder			(CE) vs.	(CE) vs.	(PS) vs.	(CE) vs.	(CE) vs.	(PS) vs.
	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	(CE) vs. (PS)	(CE) vs. (CE-PS)	(PS) vs. (CE-PS)	(CE) vs. (PS)	(CE) vs. (CE-PS)	(PS) vs. (CE-PS)
Test Variables:															
R _{i,t}	0.149	0.479	0.109	0.181	0.549	0.073									
E _{i,t} / P _{i,t-1}	0.054	0.203	0.061	0.019	0.032	0.008	0.035	0.202	0.049	0.029	0.390	0.319	0.000	0.002	0.000
ΔE _{i,t} / P _{i,t-1}	0.008	0.302	0.007	0.007	0.031	0.001	0.001	0.302	0.003	0.974	0.838	0.798	0.151	0.311	0.656
Control Variables:															
GROWTH _{i,t}	0.091	0.190	0.063	0.119	0.483	0.056	0.244	2.089	0.063	0.500	0.350	0.452	0.372	0.690	0.637
SIZE _{i,t}	16.057	2.475	17.078	13.203	2.672	13.233	15.904	2.852	17.045	0.000	0.603	0.000	0.000	0.368	0.000
LEV _{i,t}	0.260	0.163	0.247	0.128	0.159	0.058	0.292	0.208	0.252	0.000	0.112	0.000	0.000	0.254	0.000
LOSS _{i,t}	0.090	0.288	0.000	0.072	0.260	0.000	0.199	0.400	0.000	0.547	0.005	0.001	0.549	0.005	0.001

This table presents the descriptive statistics for the consolidated entities (entity $i = CE$) with public subsidiaries (Categories 1 and 2), decomposed into that from the public subsidiaries (entity $i = PS$) and that from the remainder of the consolidated entity (CE-PS). With the exception of LOSS_{*it*}, numbers for mean (median) differences present two-tailed p-values from t-tests (Wilcoxon rank sum tests) of paired differences. For LOSS_{*it*}, numbers for mean (median) differences present two-tailed p-values from chi-square tests (Wilcoxon rank sum tests) of paired differences. Variables are defined as follows (continuous variables for the consolidated entity are winsorized at the 1st and 99th percentiles):

R _{<i>it</i>}	Buy-and-hold security return inclusive of dividends (Datastream, RI) for entity i over the 12-month period ending 4 months after fiscal-year t end (Worldscope, WC05350);
E _{<i>it</i>}	Earnings before extraordinary items for entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t);
ΔE _{<i>it</i>}	Change in earnings before extraordinary items for entity i from fiscal year $t-1$ to t in EUR (using average annual exchange rates for fiscal years $t-1$ and t);
P _{<i>it-1</i>}	Price for entity i at the beginning of fiscal year t (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year t);
GROWTH _{<i>it</i>}	Growth of entity i over fiscal year $t =$ percentage change in sales revenue (Worldscope, WC01001);
SIZE _{<i>it</i>}	Size of entity i at the end of fiscal year $t =$ natural log of total assets (Worldscope, WC02999) in EUR (using average daily exchange rate at the end of fiscal year t);
LEV _{<i>it</i>}	Leverage of entity i at the end of fiscal year $t =$ total debt (Worldscope, WC03255) / total assets (Worldscope, WC02999);
LOSS _{<i>it</i>}	Indicator variable equal to one when E _{<i>it</i>} is less than zero.

TABLE 6
Incremental Informativeness of Public Subsidiary Earnings

Eq. (2) $R_{i,t} = \alpha_0 + \alpha_1 E_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_{i,t} / P_{i,t-1} + \varepsilon_{it}$

Eq. (3) $R_{i,t} = \alpha_0 + \alpha_1 E_SUBS_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_SUBS_{i,t} / P_{i,t-1} + \alpha_3 (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_4 \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \varepsilon_{it}$

Panel A: Regression Results

	Eq. (2)		Eq. (3)	
	Informativeness of Consolidated Entity Earnings		Informativeness of Decomposed Consolidated Entity Earnings	
	Coef.	p-value	Coef.	p-value
Intercept	0.147	0.000	0.081	0.031
$E_{i,t} / P_{i,t-1}$	-0.077	0.785		
$\Delta E_{i,t} / P_{i,t-1}$	0.868	0.000		
$E_SUBS_{i,t} / P_{i,t-1}$			3.341	0.001
$\Delta E_SUBS_{i,t} / P_{i,t-1}$			1.569	0.145
$(E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1}$			-0.214	0.433
$\Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1}$			0.922	0.000
No. Obs.	166		166	
Adjusted R-Square	26.2%		31.8%	
Marginal Effects:				
Consolidated Entity	0.791	0.000	5.618	0.000
Public Subsidiaries			4.910	0.000
Consolidated Entity without Public Subsidiaries			0.709	0.000

Panel B: Test Statistics

	Statistic	p-value	Preferred Model
Vuong [1989]	-1.771	0.077	Eq. (3)
Clarke [2001]	-29.000	0.000	Eq. (3)

This table reports the results of estimating Eq. (2) and Eq. (3) for the consolidated entities with public subsidiaries (Categories 1 and 2). P-values reported are two-tailed. Vuong [1989] and Clarke [2001] test statistics for non-nested models use maximum likelihood estimation. Variables are defined as follows (continuous variables for the consolidated entity are winsorized at the 1st and 99th percentiles):

$R_{i,t}$	Buy-and-hold security return inclusive of dividends (Datastream, RI) for consolidated entity i over the 12-month period ending 4 months after fiscal-year t end (Worldscope, WC05350);
$E_{i,t}$	Earnings before extraordinary items for consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t);
$\Delta E_{i,t}$	Change in earnings before extraordinary items for consolidated entity i from fiscal year $t-1$ to t in EUR (using average annual exchange rates for fiscal years $t-1$ and t);
$P_{i,t-1}$	Price for the consolidated entity i at the beginning of fiscal year t (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year t);
$E_SUBS_{i,t}$	Summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t);
$\Delta E_SUBS_{i,t}$	Summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t).

TABLE 7
Incremental Informativeness of Public Subsidiary Earnings Controlling for ERC Determinants

$$\text{Eq. (6)} \quad R_{i,t} = \alpha_0 + \alpha_1 E_SUBS_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_SUBS_{i,t} / P_{i,t-1} + \alpha_3 (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_4 \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} \\ + \alpha_5 E_{i,t} / P_{i,t-1} * CONTROL_{i,t} + \alpha_6 \Delta E_SUBS_{i,t} / P_{i,t-1} * CONTROL_{i,t} + \alpha_7 (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} * CONTROL_{i,t} \\ + \alpha_8 \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} * CONTROL_{i,t} + \alpha_9 CONTROL_{i,t} + \varepsilon_{it}$$

	CONTROL											
	GROWTH			SIZE			LEV			LOSS		
	Coef.	p-value	VIF	Coef.	p-value	VIF	Coef.	p-value	VIF	Coef.	p-value	VIF
Intercept	0.091	0.027	0.000	0.312	0.287	0.000	0.048	0.613	0.000	-0.055	0.397	0.000
E_SUBS _{i,t} / P _{i,t-1}	1.999	0.135	1.946	3.286	0.688	71.525	6.231	0.045	10.465	5.049	0.000	1.742
ΔE_SUBS _{i,t} / P _{i,t-1}	1.350	0.487	3.774	-5.334	0.479	55.376	0.007	0.998	8.275	0.416	0.716	1.330
(E _{i,t} - E_SUBS _{i,t}) / P _{i,t-1}	-0.218	0.525	5.070	-0.130	0.963	335.981	0.611	0.529	40.439	1.826	0.020	26.773
Δ(E _{i,t} - E_SUBS _{i,t}) / P _{i,t-1}	0.948	0.000	3.954	0.925	0.599	291.364	1.189	0.250	102.879	0.309	0.282	8.088
E_SUBS _{i,t} / P _{i,t-1} * CONTROL _{i,t}	11.330	0.218	2.674	-0.029	0.958	73.275	-7.178	0.491	12.604	-0.386	0.955	7.792
ΔE_SUBS _{i,t} / P _{i,t-1} * CONTROL _{i,t}	3.264	0.633	3.878	0.546	0.364	56.342	4.604	0.700	8.683	0.250	0.983	7.173
(E _{i,t} - E_SUBS _{i,t}) / P _{i,t-1} * CONTROL _{i,t}	-3.428	0.330	5.252	-0.001	0.997	332.327	0.558	0.872	266.081	-1.603	0.292	69.867
Δ(E _{i,t} - E_SUBS _{i,t}) / P _{i,t-1} * CONTROL _{i,t}	3.855	0.153	3.830	-0.004	0.977	295.472	-2.177	0.597	387.872	-0.181	0.901	57.575
CONTROL _{i,t}	0.118	0.644	2.506	-0.014	0.453	2.253	-0.099	0.766	3.148	-0.027	0.879	2.896
No. Obs.	166			166			166			166		
Adjusted R-Square	32.3%			30.4%			26.0%			33.5%		
Marginal Effects:												
Consolidated Entity	5.450	0.000		6.973	0.001		6.950	0.000		7.427	0.000	
Incremental Effect	4.079	0.029		-1.253	0.889		8.038	0.011		7.600	0.000	
Control Effect	1.372	0.219		8.226	0.347		-1.089	0.699		-0.173	0.469	
Public Subsidiaries	4.682	0.001		6.252	0.003		5.570	0.000		5.453	0.000	
Incremental Effect	3.349	0.069		-2.048	0.819		6.238	0.044		5.465	0.000	
Control Effect	1.333	0.238		8.300	0.342		-0.668	0.811		-0.012	0.939	
Consolidated Entity without Public Subsidiaries	0.768	0.000		0.721	0.009		1.380	0.000		1.974	0.000	
Incremental Effect	0.729	0.000		0.795	0.684		1.800	0.003		2.135	0.000	
Control Effect	0.039	0.635		-0.074	0.969		-0.420	0.361		-0.161	0.465	

This table presents the results of analyses performed to control for economic determinants of ERCs identified by prior research for the consolidated entities with public subsidiaries (Categories 1 and 2). P-values reported are two-tailed. VIF corresponds to the Variance Inflation Factors. Marginal effects are evaluated at the means of the data for the control variables. Variables are defined as follows (continuous variables for the consolidated entity are winsorized at the 1st and 99th percentiles):

R _{i,t}	Buy-and-hold security return inclusive of dividends (Datastream, RI) for the consolidated entity <i>i</i> over the 12-month period ending 4 months after fiscal-year <i>t</i> end (Worldscope, WC05350);
E _{i,t}	Earnings before extraordinary items for consolidated entity <i>i</i> for fiscal year <i>t</i> (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year <i>t</i>);
ΔE _{i,t}	Change in earnings before extraordinary items for consolidated entity <i>i</i> from fiscal year <i>t-1</i> to <i>t</i> in EUR (using average annual exchange rates for fiscal years <i>t-1</i> and <i>t</i>);
P _{i,t-1}	Price for the consolidated entity <i>i</i> at the beginning of fiscal year <i>t</i> (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year <i>t</i>);
E_SUBS _{i,t}	Summation of earnings before extraordinary items for all public subsidiaries of consolidated entity <i>i</i> for fiscal year <i>t</i> (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year <i>t</i>);
ΔE_SUBS _{i,t}	Summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity <i>i</i> from fiscal year <i>t-1</i> to <i>t</i> (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years <i>t-1</i> and <i>t</i>);
GROWTH _{i,t}	Growth of consolidated entity <i>i</i> over fiscal year <i>t</i> = percentage change in sales revenue (Worldscope, WC01001);
SIZE _{i,t}	Size of consolidated entity <i>i</i> at the end of fiscal year <i>t</i> = natural log of total assets (Worldscope, WC02999) in EUR (using average daily exchange rate at the end of fiscal year <i>t</i>);
LEV _{i,t}	Leverage of consolidated entity <i>i</i> at the end of fiscal year <i>t</i> = total debt (Worldscope, WC03255) / total assets (Worldscope, WC02999);
LOSS _{i,t}	Indicator variable equal to one when E _{i=c,t} is less than zero.

TABLE 8
Cross-Sectional Variation in the Incremental Informativeness of Public Subsidiary Earnings

Eq. (4) $R_{i,t} = \alpha_0 + \alpha_X E_SUBS_X_{i,t} / P_{i,t-1} + \alpha_{X+n} \Delta E_SUBS_X_{i,t} / P_{i,t-1} + \alpha_{2n+1} (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_{2n+2} \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \epsilon_{it}$, where $X=(1,n)$ and n is the number of groups

	Cross-Sectional Variation													
	Relative Size of Subsidiary		Number of Public Subsidiaries		Country of Subsidiary		Operating & Structural Environment of Subsidiary		Industry of Subsidiary		Accounting Standards of Subsidiary		Fiscal Year End of Subsidiary	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Panel A: Pearson Correlation Matrix														
Relative Size of Subsidiary	1.000													
Number of Public Subsidiaries	-0.546	0.000	1.000											
Country of Subsidiary	-0.430	0.000	0.361	0.000	1.000									
Operating & Structural Environment of Subsidiary	-0.172	0.008	0.067	0.301	0.171	0.008	1.000							
Industry of Subsidiary	-0.170	0.009	0.130	0.046	0.162	0.012	-0.301	0.000	1.000					
Accounting Standards of Subsidiary	-0.286	0.000	0.185	0.004	0.168	0.009	0.066	0.311	0.174	0.007	1.000			
Fiscal Year End of Subsidiary	0.151	0.019	0.005	0.938	-0.222	0.001	-0.236	0.000	-0.124	0.056	-0.272	0.000	1.000	
Panel B: Regression Results														
Intercept	0.084	0.040	0.091	0.022	0.080	0.034	0.079	0.126	0.078	0.038	0.076	0.047	0.082	0.031
$E_SUBS_1_{i,t} / P_{i,t-1}$	0.971	0.934	3.343	0.001	3.211	0.007	1.274	0.493	3.874	0.001	3.114	0.003	3.787	0.001
$\Delta E_SUBS_1_{i,t} / P_{i,t-1}$	2.326	0.763	1.608	0.142	2.444	0.222	3.131	0.573	1.523	0.161	1.250	0.249	1.530	0.155
$E_SUBS_2_{i,t} / P_{i,t-1}$	3.326	0.002	-0.599	0.901	3.406	0.057	-0.355	0.934	-0.603	0.862	5.647	0.107	-13.097	0.185
$\Delta E_SUBS_2_{i,t} / P_{i,t-1}$	1.544	0.157	-2.722	0.678	1.228	0.348	3.150	0.443	6.511	0.395	9.889	0.074	40.601	0.119
$E_SUBS_3_{i,t} / P_{i,t-1}$							4.374	0.008						
$\Delta E_SUBS_3_{i,t} / P_{i,t-1}$							3.667	0.134						
$(E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1}$	-0.213	0.442	-0.213	0.435	-0.213	0.439	0.357	0.532	-0.253	0.357	-0.188	0.487	-0.223	0.414
$\Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1}$	0.922	0.000	0.922	0.000	0.920	0.000	1.527	0.002	0.944	0.000	0.906	0.000	0.929	0.000
No. Obs.	166		166		166		166		166		166		165	
Adjusted R-Square	31.0%		31.5%		31.1%		23.7%		31.8%		33.2%		32.6%	
Marginal Effects:														
Consolidated Entity	8.876	0.533	2.339	0.769	10.997	0.000	17.125	0.051	11.995	0.028	20.619	0.000	33.527	0.043
Public Subsidiaries	8.167	0.567	1.630	0.837	10.290	0.000	15.242	0.075	11.305	0.039	19.901	0.000	32.821	0.047
Group 1	3.297	0.814	4.951	0.000	5.655	0.003	4.404	0.379	5.396	0.000	4.365	0.000	5.317	0.000
Group 2	4.870	0.000	-3.321	0.668	4.635	0.008	2.796	0.595	5.908	0.256	15.537	0.002	27.504	0.095
Group 3							8.042	0.004						
Consolidated Entity without Public Subsidiaries	0.709	0.000	0.708	0.000	0.708	0.000	1.883	0.001	0.691	0.000	0.718	0.000	0.706	0.000

TABLE 8 (continued)
Cross-Sectional Variation in the Incremental Informativeness of Public Subsidiary Earnings

This table presents the results of analyses performed to identify sources of cross-sectional variation in the incremental informativeness of public subsidiary earnings. Earnings and change in earnings for the public subsidiaries have been decomposed into Groups $X=(1,n)$ based on cross-sectional variation in the nature of the information system of the subsidiaries. Groups are derived as follows:

Relative Size of Subsidiary	Public subsidiaries in group 1 (2) are relatively small (large) relative to the consolidated entity, based on a split on the median value of the relative size of the subsidiary of 2.08%, where relative size is defined as the total assets (Worldscope, WC02999) of the subsidiary in EUR (using the average daily exchange rate at the end of fiscal year t) divided by the total assets (Worldscope, WC02999) of the consolidated entity in EUR (using the average daily exchange rate at the end of fiscal year t). The sample sizes for both groups 1 and 2 are 119 sub-years.
Number of Public Subsidiaries	The consolidated entity holds one (group 1) or multiple (group 2) public subsidiary(ies). The sample sizes for groups 1 and 2 are 117 and 121 sub-years, respectively.
Country of Subsidiary	Public subsidiaries in group 1 are in the same country as the consolidated entity (i.e., Germany), while those in group 2 are in a different country. The sample sizes for groups 1 and 2 are 111 and 127 sub-years, respectively.
Operating & Structural Environment of Subsidiary	Public subsidiaries are grouped conditional on an <i>ex ante</i> assessment of earnings measurement sensitivity to accounting recognition criteria based on Warfield and Wild (1992); specifically, low sensitivity subsidiaries (group 1) are from one-digit SIC codes 5, 7, and 8; medium sensitivity subsidiaries (group 2) are from one-digit SIC codes 4 and 6; and high sensitivity subsidiaries (group 3) are from one-digit SIC codes 0, 1, 2, and 3. The sample sizes for groups 1, 2, and 3 are 42, 105, and 91 sub-years, respectively.
Industry of Subsidiary	Public subsidiaries in group 1 are in the same industry as the consolidated entity, while those in group 2 are in a different industry. The sample sizes for groups 1 and 2 are 214 and 24 sub-years, respectively.
Accounting Standards of Subsidiary	Public subsidiaries in group 1 report under IFRS or U.S. GAAP, while those in group 2 report under domestic GAAP. The sample sizes for groups 1 and 2 are 164 and 74 sub-years, respectively.
FYE of Subsidiary	Public subsidiaries in group 1 have the same fiscal year-end as the consolidated entity, while those in group 2 have a fiscal year-end that precedes that of the consolidated entity. The sample sizes for groups 1 and 2 are 218 and 19 sub-years, respectively (one sub-year was excluded because it follows that of the consolidated entity).
P-values reported are two-tailed. Variables are defined as follows (continuous variables for the consolidated entity are winsorized at the 1st and 99th percentiles):	
$R_{i,t}$	Buy-and-hold security return inclusive of dividends (Datastream, RI) for the consolidated entity i over the 12-month period ending 4 months after fiscal-year t end (Worldscope, WC05350);
$E_{i,t}$	Earnings before extraordinary items for consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_{i,t}$	Change in earnings before extraordinary items for consolidated entity i from fiscal year $t-1$ to t in EUR (using average annual exchange rates for fiscal years $t-1$ and t)
$P_{i,t-1}$	Price for the consolidated entity i at the beginning of fiscal year t (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year t)
$E_SUBS_X_{i,t}$	Summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i in group X for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_SUBS_X_{i,t}$	Summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i in group X from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t)
$E_SUBS_{i,t}$	Summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_SUBS_{i,t}$	Summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t)

TABLE 9
Descriptive Statistics by Public Company Category for Consolidated Entities

	Full Sample						Propensity-Score Matched Samples					
	(1) Mean Std. Dev.	(2) Mean Std. Dev.	(3) Mean Std. Dev.	(1) v (2) Mean Diff. p-value	(1) v (3) Mean Diff. p-value	(2) v (3) Mean Diff. p-value	(1) Mean Std. Dev.	(3) Mean Std. Dev.	(1) v (3) Mean Diff. p-value	(2) Mean Std. Dev.	(3) Mean Std. Dev.	(2) v (3) Mean Diff. p-value
Test Variables:												
R _{i,t}	0.225	0.101	0.116	0.105	0.113	0.905	0.238	0.186	0.623	0.107	0.114	0.928
	0.575	0.403	0.587				0.582	0.554		0.434	0.576	
E _{i,t} / P _{i,t-1}	0.075	0.045	-0.004	0.168	0.008	0.036	0.072	0.055	0.452	0.046	0.059	0.647
	0.111	0.150	0.240				0.112	0.129		0.159	0.186	
ΔE _{i,t} / P _{i,t-1}	0.030	-0.013	0.025	0.131	0.979	0.167	0.024	0.028	0.912	-0.009	0.011	0.429
	0.235	0.137	0.316				0.237	0.211		0.149	0.177	
Control Variables:												
GROWTH _{i,t}	0.131	0.067	0.124	0.034	0.809	0.201	0.141	0.142	0.983	0.080	0.205	0.138
	0.256	0.128	0.525				0.261	0.493		0.135	0.742	
SIZE _{i,t}	14.374	17.113	12.180	0.000	0.000	0.000	14.002	14.098	0.817	16.801	16.812	0.972
	2.417	1.855	2.148				2.124	2.366		1.959	1.960	
LEV _{i,t}	0.292	0.240	0.224	0.045	0.002	0.213	0.290	0.252	0.307	0.248	0.279	0.232
	0.189	0.142	0.212				0.195	0.208		0.150	0.176	
LOSS _{i,t}	0.078	0.098	0.285	0.663	0.000	0.000	0.085	0.153	0.255	0.100	0.125	0.617
	0.270	0.299	0.451				0.281	0.363		0.302	0.333	
No. Obs.	64	102	2,301				59	59		80	80	

This table presents the descriptive statistics for the full and propensity-score matched samples of (1) consolidated entities with domestic public subsidiaries, (2) consolidated entities with foreign public subsidiaries, and (3) consolidated entities with only private subsidiaries. Propensity scores were calculated using the following logit regression model:

$$\text{Eq. (5) } \text{Prob}(\text{PUB_SUB}_{i,t} = 1) = f(\beta_0 + \beta_1 \text{GROWTH}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{LEV}_{i,t} + \beta_4 \text{LOSS}_{i,t} + \varepsilon_{it})$$

A consolidated entity with only private subsidiaries (Category 3) was then matched, without replacement, to a consolidated entity with public subsidiaries (Categories 1 and 2) that has the closest predicted value from Equation (5) within a maximum caliper distance of 3 percent. With the exception of LOSS_{i,t}, numbers for mean differences present two-tailed p-values from t-tests of paired differences. For LOSS_{i,t}, numbers for mean differences present two-tailed p-values from chi-square tests of paired differences. Variables are defined as follows (continuous variables are winsorized at the 1st and 99th percentiles):

R _{i,t}	Buy-and-hold security return inclusive of dividends (Datastream, RI) for entity <i>i</i> over the 12-month period ending 4 months after fiscal-year <i>t</i> end (Worldscope, WC05350)
E _{i,t}	Earnings before extraordinary items for entity <i>i</i> for fiscal year <i>t</i> (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year <i>t</i>)
ΔE _{i=t,t}	Change in earnings before extraordinary items for entity <i>i</i> from fiscal year <i>t-1</i> to <i>t</i> in EUR (using average annual exchange rates for fiscal years <i>t-1</i> and <i>t</i>)
P _{i,t-1}	Price for entity <i>i</i> at the beginning of fiscal year <i>t</i> (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year <i>t</i>)
GROWTH _{i,t}	Growth of entity <i>i</i> over fiscal year <i>t</i> = percentage change in sales revenue (Worldscope, WC01001)
SIZE _{i,t}	Size of entity <i>i</i> at the end of fiscal year <i>t</i> = natural log of total assets (Worldscope, WC02999) in EUR (using average daily exchange rate at the end of fiscal year <i>t</i>)
LEV _{i,t}	Leverage of entity <i>i</i> at the end of fiscal year <i>t</i> = total debt (Worldscope, WC03255) / total assets (Worldscope, WC02999)
LOSS _{i,t}	Indicator variable equal to one when E _{i,t} is less than zero

TABLE 10
Effect of Holding Public Subsidiaries on the
Informativeness of Consolidated Entity Earnings

$$\text{Eq. (6)} \quad R_{i,t} = \alpha_0 + \alpha_1 E_{i,t} / P_{i,t-1} + \alpha_2 \Delta E_{i,t} / P_{i,t-1} + \alpha_3 E_{i,t} / P_{i,t-1} * \text{PUB_SUB}_{i,t} + \alpha_4 \Delta E_{i,t} / P_{i,t-1} * \text{PUB_SUB}_{i,t} + \alpha_5 \text{PUB_SUB}_{i,t} + \varepsilon_{i,t}$$

	Propensity-Score Matched Samples					
	(3) Matched to (1) and (2)		(3) Matched to (1)		(3) Matched to (2)	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
Intercept	0.134	0.003	0.181	0.013	0.127	0.013
$E_{i,t} / P_{i,t-1}$	-0.120	0.697	0.038	0.950	-0.628	0.950
$\Delta E_{i,t} / P_{i,t-1}$	0.949	0.000	0.104	0.775	2.112	0.775
$E_{i,t} / P_{i,t-1} * \text{PUB_SUB}$	0.124	0.838	1.702	0.190	0.569	0.190
$\Delta E_{i,t} / P_{i,t-1} * \text{PUB_SUB}$	0.482	0.302	0.786	0.230	-0.963	0.230
PUB_SUB	0.021	0.750	-0.089	0.463	-0.007	0.463
No. Obs.	278		118		160	
Adjusted R-Square	16.7%		20.5%		21.3%	
Marginal Effects:						
Entity	1.435	0.000	2.630	0.012	1.089	0.019
Main effect	0.829	0.002	0.142	0.793	1.483	0.003
Incremental effect of public Subsidiaries	0.606	0.133	2.488	0.033	-0.394	0.424

This table presents the results of investigating whether holding public subsidiaries affects the informativeness of consolidated entity earnings for consolidated entity returns using propensity-score matched samples of (3) consolidated entities with only private subsidiaries matched to (1) consolidated entities with domestic public subsidiaries and (2) consolidated entities with foreign public subsidiaries, combined and then separately.

To derive the propensity-score matched samples, propensity scores were calculated using the following logit regression model:

$$\text{Eq. (5)} \quad \text{Prob}(\text{PUB_SUB}_{i,t} = 1) = f(\beta_0 + \beta_1 \text{GROWTH}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{LEV}_{i,t} + \beta_4 \text{LOSS}_{i,t} + \varepsilon_{i,t})$$

A consolidated entity with only private subsidiaries (Category 3) was then matched, without replacement, to a consolidated entity with public subsidiaries (Categories 1 and 2) that has the closest predicted value from Equation (5) within a maximum caliper distance of 3 percent. Variables are defined as follows (continuous variables are winsorized at the 1st and 99th percentiles):

$R_{i,t}$	Buy-and-hold security return inclusive of dividends (Datastream, RI) for entity i over the 12-month period ending 4 months after fiscal-year t end (Worldscope, WC05350)
$E_{i,t}$	Earnings before extraordinary items for entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_{i,t}$	Change in earnings before extraordinary items for entity i from fiscal year $t-1$ to t in EUR (using average annual exchange rates for fiscal years $t-1$ and t)
$P_{i,t-1}$	Price for entity i at the beginning of fiscal year t (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year t)
PUB_SUB $_{i,t}$	Indicator variable equal to one for consolidated entities with public subsidiaries (Categories 1 and 2)
GROWTH $_{i,t}$	Growth of entity i over fiscal year t = percentage change in sales revenue (Worldscope, WC01001)
SIZE $_{i,t}$	Size of entity i at the end of fiscal year t = natural log of total assets (Worldscope, WC02999) in EUR (using average daily exchange rate at the end of fiscal year t)
LEV $_{i,t}$	Leverage of entity i at the end of fiscal year t = total debt (Worldscope, WC03255) / total assets (Worldscope, WC02999)
LOSS $_{i,t}$	Indicator variable equal to one when $E_{i,t}$ is less than zero

TABLE 11
Additional Tests of the Effect of Holding Public Subsidiaries on the Informativeness of Consolidated Entity Earnings:
Relative Growth and Profitability of the Public Subsidiaries

Eq. (4) $R_{i,t} = \alpha_0 + \alpha_X E_SUBS_X_{i,t} / P_{i,t-1} + \alpha_{X+n} \Delta E_SUBS_X_{i,t} / P_{i,t-1} + \alpha_{2n+1} (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \alpha_{2n+2} \Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1} + \epsilon_{i,t}$, where $X=(1,n)$ and n is the number of groups

	Relative GROWTH		Relative Profit Margin		Relative LOSS	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
Intercept	0.075	0.045	0.081	0.032	0.074	0.057
$E_SUBS_I_{i,t} / P_{i,t-1}$	5.400	0.000	3.865	0.001	-3.890	0.663
$\Delta E_SUBS_I_{i,t} / P_{i,t-1}$	0.910	0.460	1.039	0.384	4.603	0.118
$E_SUBS_2_{i,t} / P_{i,t-1}$	2.031	0.107	1.099	0.636	3.658	0.001
$\Delta E_SUBS_2_{i,t} / P_{i,t-1}$	1.987	0.410	3.382	0.191	1.106	0.337
$(E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1}$	-0.224	0.409	-0.209	0.445	-0.238	0.386
$\Delta (E_{i,t} - E_SUBS_{i,t}) / P_{i,t-1}$	0.926	0.000	0.917	0.000	0.936	0.000
No. Obs.	166		166		166	
Adjusted R-Square	32.5%		31.7%		31.8%	
Marginal Effects:						
Consolidated Entity	11.031	0.000	10.094	0.005	6.176	0.507
Public Subsidiaries	10.329	0.000	9.386	0.010	5.477	0.556
Group 1	6.310	0.000	4.904	0.000	0.713	0.939
Group 2	4.019	0.086	4.482	0.172	4.764	0.000
Consolidated Entity without Public Subsidiaries	0.702	0.000	0.708	0.000	0.699	0.000

This table presents the results of analyses performed to further investigate H2. Earnings and change in earnings for the public subsidiaries have been decomposed into Groups $X=(1,n)$. Groups are derived as follows:

Relative GROWTH Public subsidiaries in group 1 (2) do (do not) report higher GROWTH than the consolidated entity, where GROWTH is defined as percentage change in sales revenue (Worldscope, WC01001). The sample sizes for groups 1 and 2 are 124 and 114 sub-years, respectively.

Relative Profit Margin Public subsidiaries in group 1 (2) do (do not) report higher profit margins than the consolidated entity, where profit margin is defined as earnings before extraordinary items (Worldscope, WC01706) divided by sales (Worldscope, WC01001). The sample sizes for groups 1 and 2 are 160 and 78 sub-years, respectively.

Relative LOSS Public subsidiaries in group 1 (2) do (do not) report higher extent of losses (LOSS) than the consolidated entity, where LOSS is an indicator variable equal to one when earnings before extraordinary items (Worldscope, WC01706) is less than zero. The sample sizes for groups 1 and 2 are 14 and 224 sub-years, respectively.

P-values reported are two-tailed. Variables are defined as follows (continuous variables for the consolidated entity are winsorized at the 1st and 99th percentiles):

$R_{i,t}$	Buy-and-hold security return inclusive of dividends (Datastream, RI) for the consolidated entity i over the 12-month period ending 4 months after fiscal-year t end (Worldscope, WC05350)
$E_{i,t}$	Earnings before extraordinary items for consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_{i,t}$	Change in earnings before extraordinary items for consolidated entity i from fiscal year $t-1$ to t in EUR (using average annual exchange rates for fiscal years $t-1$ and t)
$P_{i,t-1}$	Price for the consolidated entity i at the beginning of fiscal year t (Datastream, P) in EUR (using average daily exchange rate at the beginning of fiscal year t)
$E_SUBS_X_{i,t}$	Summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i in group X for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_SUBS_X_{i,t}$	Summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i in group X from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t)
$E_SUBS_{i,t}$	Summation of earnings before extraordinary items for all public subsidiaries of consolidated entity i for fiscal year t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal year t)
$\Delta E_SUBS_{i,t}$	Summation of change in earnings before extraordinary items for all public subsidiaries of consolidated entity i from fiscal year $t-1$ to t (Worldscope, WC01706) in EUR (using average annual exchange rates for fiscal years $t-1$ and t)

References

- Afshar, K. A., R. J. Taffler, and P. S. Sudarsanam. 1992. The effect of corporate divestments on shareholder wealth: The UK experience. *Journal of Banking & Finance* 16 (1): 115–135.
- Ahearne, A. G.; W. L. Grier; and F. E. Warnock. 2004. "Information Costs and Home Bias: An Analysis of U.S. Holdings of Foreign Equities." *Journal of International Economics* 62: 313–36.
- Ajinkya, B. B. 1980. An empirical evaluation of line-of-business reporting. *Journal of Accounting Research* 18 (2): 343–361.
- Akhigbe, A., A. D. Martin, and A. M. Whyte. 2007. Partial acquisitions, the acquisition probability hypothesis, and the abnormal returns to partial targets. *Journal of Banking & Finance* 31 (10): 3080–3101.
- Alford, A., J. Jones. R. Leftwich, and M. Zmijewski. 1993. "The Relative Informativeness of Accounting Disclosure in Different Countries." *Journal of Accounting Research* 31 (Supplement): 183-223.
- Ali, A., T.-Y. Chen, and S. Radhakrishnan. 2007. Corporate disclosures by family firms. *Journal of Accounting and Economics* 44 (1-2): 238–286.
- Ali, A., and P. Zarowin. 1992. The Role of Earnings Levels in Annual Earnings>Returns Studies. *Journal of Accounting Research* 30 (2): 286–296.
- Allen, J. W., and J. J. McConnell. 1998. Equity Carve-Outs and Managerial Discretion. *The Journal of Finance* 53 (1): 163–186.
- Aman, H., and H. Okamura. 2013. Equity carve-outs and the parent-subsidary structure in Japan.
- Anderson, M. J. 1988. A comparative analysis of information search and evaluation behavior of professional and non-professional financial analysts. *Accounting, Organizations and Society* 13 (5): 431–446.
- Anderson, R. C., and D. M. Reeb. 2003. Founding-family ownership and firm performance: Evidence from the S&P 500. *The Journal of Finance* 58 (3): 1301–1327.
- Anderson, R. C., S. A. Mansi, and D. M. Reeb. 2004. Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics* 37 (3): 315–342.
- Aoki, M. 1993. *The Japanese firm as a system of attributes: a survey and research agenda*. 288. Center for Economic Policy Research, Stanford University.
- Ashbaugh, H. and M. Pincus. 2001. Domestic Accounting Standards, International Accounting Standards, and the Predictability of Earnings. *Journal of Accounting Research* 39: 417-434.
- Ashbaugh, H., and T. D. Warfield. 2003. Audits as a corporate governance mechanism: Evidence from the German market. *Journal of International Accounting Research* 2 (1): 1–21.
- Atanasov, V., A. Boone, and D. Haushalter. 2010. Is There Shareholder Expropriation in the United States? An Analysis of Publicly Traded Subsidiaries. *Journal of Financial and Quantitative Analysis* 45 (01): 1–26.
- Atanasov, V. 2005. How much value can blockholders tunnel? Evidence from the Bulgarian mass privatization auctions. *Journal of Financial Economics* 76 (1): 191–234.
- Atanasov, V., A. Boone, and D. Haushalter. 2010. Is there shareholder expropriation in the United States? An analysis of publicly traded subsidiaries.
- Atiase, R. K. 1985. Predisclosure information, firm capitalization, and security price behavior around earnings announcements. *Journal of Accounting Research* 23 (1): 21–36.

- . 1987. Market implications of predisclosure information: Size and exchange effects. *Journal of Accounting Research* 25 (1): 168–176.
- Bae, K.H., J.K. Kang, and J.M. Kim. 2002. Tunneling or value added? Evidence from mergers by Korean business groups. *The journal of finance* 57 (6): 2695–2740.
- Bae, K.H., HP. Tan, and M. Welker. 2008. International GAAP differences: The impact on foreign analysts. *Accounting Review* 83 (3): 593–628.
- Baek, J.S., J.K. Kang, and I. Lee. 2006. Business groups and tunneling: Evidence from private securities offerings by Korean chaebols. *The journal of finance* 61 (5): 2415–2449.
- Balakrishnan, R., T. S. Harris, and P. K. Sen. 1990. The Predictive value of Geographic Segment Disclosures. *Journal of Accounting Research* 28 (2): 305–325.
- Baldwin, B. A. 1984. Segment Earnings Disclosure and the Ability of Security Analysts to Forecast Earnings Per Share. *The Accounting Review* 59 (3): 376–389.
- Ball, R., and P. Brown. 1968. An empirical evaluation of accounting income numbers. *Journal of accounting research*: 159–178.
- Ball, R., S. P. Kothari, and A. Robin. 2000. "The Effect of International Institutional Factors on Properties of Accounting Earnings." *Journal of Accounting and Economics* 29 (I): 1–51.
- Ball, R., A. Robin, and J. S. Wu. 2003. Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of accounting and economics* 36 (1-3): 235–270.
- Barry, C. B., and S. J. Brown. 1984. Differential information and the small firm effect. *Journal of Financial Economics* 13 (2): 283–294.
- . 1985. Differential Information and Security Market Equilibrium. *Journal of Financial and Quantitative Analysis* 20 (04): 407–422.
- Barth, M. E., W. H. Beaver, and W. R. Landsman. 1992. The market valuation implications of net periodic pension cost components. *Journal of Accounting and Economics* 15 (1): 27–62.
- Barth, M. E., W. R. Landsman, and M. H. Lang. 2008. International accounting standards and accounting quality. *Journal of Accounting Research* 46 (3): 467–498.
- Bartov, E., S. R. Goldberg, and M. Kim. 2005. Comparative value relevance among German, US, and international accounting standards: A German stock market perspective. *Journal of Accounting, Auditing & Finance* 20 (2): 95–119.
- Bates, T. W., M. L. Lemmon, and J. S. Linck. 2006. Shareholder wealth effects and bid negotiation in freeze-out deals: are minority shareholders left out in the cold? *Journal of Financial Economics* 81 (3): 681–708.
- Beaver, W. H. 1968. The informativeness of annual earnings announcements. *Journal of Accounting Research*: 67–92.
- Beaver, W. H., R. A. Lambert, and S. G. Ryan. 1987. The information content of security prices: A second look. *Journal of Accounting and Economics* 9 (2): 139–157.
- Beaver, W., R. Lambert, and D. Morse. 1980. The information content of security prices. *Journal of Accounting and Economics* 2 (1): 3–28.
- Berger, P. G., and R. Hann. 2003. The impact of SFAS No. 131 on information and monitoring. *Journal of Accounting Research* 41 (2): 163–223.
- Berle AA, and GC Means. 1932. *The modern corporation and property*. New York: Harcourt, Brace&World.
- Bertrand, M., P. Mehta, and S. Mullainathan. 2002. Ferreting out tunneling: An application to Indian business groups. *The Quarterly Journal of Economics* 117 (1): 121–148.

- Betton, S., and B. E. Eckbo. 2000. Toeholds, bid jumps, and expected payoffs in takeovers. *Review of financial studies* 13 (4): 841–882.
- Betton, S., B. E. Eckbo, and K. Thorburn. 2008. Corporate takeovers. *Elsevier/North-Holland Handbook of Finance Series*.
- Beyer, A., D. A. Cohen, T. Z. Lys, and B. R. Walther. 2010. The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics* 50 (2–3): 296–343.
- Bhattacharya, N., F. Ecker, P. M. Olsson, and K. Schipper. 2011. Direct and mediated associations among earnings quality, information asymmetry, and the cost of equity. *The Accounting Review* 87 (2): 449–482.
- Biddle, G. C., and G. S. Seow. 1991. The estimation and determinants of associations between returns and earnings: evidence from cross-industry comparisons. *Journal of Accounting, Auditing & Finance* 6 (2): 183–232.
- Blackwell, D. 1953. Equivalent comparisons of experiments. *The Annals of Mathematical Statistics* 24 (2): 265–272.
- Bodnar, G. M., and J. Weintrop. 1997. The valuation of the foreign income of US multinational firms: A growth opportunities perspective. *Journal of Accounting and Economics* 24 (1): 69–97.
- Botosan, C. A., and M. Stanford. 2005. Managers' Motives to Withhold Segment Disclosures and the Effect of SFAS No. 131 on Analysts' Information Environment. *The Accounting Review* 80 (3): 751–772.
- Bricker, R., and M. DeBruine. 1993. The effects of information availability and cost on investment strategy selection and experiment. *Behavioral Research in Accounting* 5 (1): 31–57.
- Brown, S. 1979. The Effect of Estimation Risk on Capital Market Equilibrium. *Journal of Financial and Quantitative Analysis* 14 (02): 215–220.
- Brown, L. D., R. L. Hagerman, P. A. Griffin, and M. E. Zmijewski. 1987. An evaluation of alternative proxies for the market's assessment of unexpected earnings. *Journal of Accounting and Economics* 9 (2): 159–193.
- Bulow, J., M. Huang, and P. Klemperer. 1999. Toeholds and takeovers. *Journal of Political Economy* 107 (3): 427–454.
- Burkart, M., and F. Panunzi. 2003. Mandatory bids, squeeze-out, sell-out and the dynamics of the tender offer process. *ECGI Law WP* (10).
- Bushman, R. M., J. D. Piotroski, and A. J. Smith. 2004. What determines corporate transparency? *Journal of accounting research* 42 (2): 207–252.
- Callen, J. L., O.-K. Hope, and D. Segal. 2005. Domestic and foreign earnings, stock return variability, and the impact of investor sophistication. *Journal of Accounting Research* 43 (3): 377–412.
- Charkham, J. P. 1994. Keeping good company: A study of corporate governance in five countries.
- Chen, P. F., and G. Zhang. 2003. Heterogeneous Investment Opportunities in Multiple-Segment Firms and the Incremental Value Relevance of Segment Accounting Data. *The Accounting Review* 78 (2): 397–428.
- Chernenko, S., C. F. Foley, and R. Greenwood. 2012. Agency costs, mispricing, and ownership structure. *Financial Management* 41 (4): 885–914.

- Cheung, Y.-L., P. R. Rau, and A. Stouraitis. 2006. Tunneling, propping, and expropriation: evidence from connected party transactions in Hong Kong. *Journal of Financial Economics* 82 (2): 343–386.
- Choi, D. 1991. Toehold acquisitions, shareholder wealth, and the market for corporate control. *Journal of Financial and Quantitative Analysis* 26 (03): 391–407.
- Christophe, S. E., and R. J. Pfeiffer Jr. 2002. The valuation of MNC international operations during the 1990s. *Review of Quantitative Finance and Accounting* 18 (2): 119–138.
- Claessens, S., S. Djankov, J. P. Fan, and L. H. Lang. 2002. Disentangling the incentive and entrenchment effects of large shareholdings. *The Journal of Finance* 57 (6): 2741–2771.
- Claessens, S., S. Djankov, and Larry H.P Lang. 2000. The separation of ownership and control in East Asian Corporations. *Journal of Financial Economics* 58 (1-2): 81–112.
- Clarke, K.A. 2001. Testing Nonnested Models of International Relations: Reevaluating Realism. *American Journal of Political Science*, 45:3, 724-744.
- Coles, J. L., and U. Loewenstein. 1988. Equilibrium pricing and portfolio composition in the presence of uncertain parameters. *Journal of Financial Economics* 22 (2): 279–303.
- Coles, J. L., U. Loewenstein, and J. Suay. 1995. On Equilibrium Pricing under Parameter Uncertainty. *Journal of Financial and Quantitative Analysis* 30 (03): 347–364.
- Collins, D. W. 1976. Predicting earnings with sub-entity data: Some further evidence. *Journal of Accounting Research*: 163–177.
- Collins, D. W., and S. P. Kothari. 1989. An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of accounting and economics* 11 (2): 143–181.
- Collins, D. W., S. P. Kothari, and J. D. Rayburn. 1987. Firm size and the informativeness of prices with respect to earnings. *Journal of Accounting and Economics* 9 (2): 111–138.
- Collins, D. W., and R. R. Simonds. 1979. SEC line-of-business disclosure and market risk adjustments. *Journal of Accounting Research* 17 (2): 352–383.
- Cooper, I., and E. Kaplanis. “Home Bias in Equity Portfolios, Inflation Herding and International Capital Market Equilibrium.” *Review of Financial Studies* (1994): 45–60.
- Core, J. E., W. R. Guay, and R. Verdi. 2008. Is accruals quality a priced risk factor? *Journal of Accounting and Economics* 46 (1): 2–22.
- Daske, H., L. Hail, C. Leuz, and R. Verdi. 2008. Mandatory IFRS Reporting around the World: Early Evidence on the Economic Consequences. *Journal of Accounting Research* 46 (5): 1085-1142.
- Davies, C. 1990. Introduction. *MLR* 53 731.
- Deitrick, J. 2010. What analysts should know about FAS No. 141R and FAS No. 160. *Financial Analysts Journal*, 66(3), 41-44.
- Denis, D. J., D. K. Denis, and K. Yost. 2002. Global diversification, industrial diversification, and firm value. *The Journal of Finance* 57 (5): 1951–1979.
- Devalle, Onali, and Magarini. 2010. Assessing the Value Relevance of Accounting Data After the Introduction of IFRS in Europe. *Journal of International Financial Management and Accounting* 21:2.
- Dhaliwal, D. S., K. J. Lee, and N. L. Fargher. 1991. The association between unexpected earnings and abnormal security returns in the presence of financial leverage. *Contemporary Accounting Research* 8 (1): 20–41.
- Dore, R. P. 2000. *Stock market capitalism: Welfare capitalism: Japan and Germany versus the Anglo-Saxons*. Oxford University Press, USA.

- Duff, P. W. 1971. *Personality in Roman private law*. Vol. 1938. AM Kelley.
- Dyck, A., and L. Zingales. 2004. Private benefits of control: An international comparison. *The Journal of Finance* 59 (2): 537–600.
- Easley, D., and M. O'hara. 2004. Information and the cost of capital. *The journal of finance* 59 (4): 1553–1583.
- Easton, P. D., and T. S. Harris. 1991. Earnings As an Explanatory Variable for Returns. *Journal of Accounting Research* 29 (1): 19–36.
- Easton, P. D., and M. E. Zmijewski. 1989. Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of accounting and economics* 11 (2): 117–141.
- Eckbo, B. E., and K. S. Thorburn. 2008. Corporate restructuring: breakups and LBOs. *Handbook of Corporate Finance: Empirical Corporate Finance* 2: 431–496.
- Elder, J., and P. Westra. 2000. The reaction of security prices to tracking stock announcements. *Journal of Economics and Finance* 24 (1): 36–55.
- Elsas, R., and Y. Löffler. 2001. *Equity carve-outs and corporate control in Germany*. Univ., Fachbereich Wirtschaftswiss.
- Ettredge, M. L., S. Y. Kwon, D. B. Smith, and P. A. Zarowin. 2005. The Impact of SFAS no. 131 Business Segment Data on the Market's Ability to Anticipate Future Earnings. *The Accounting Review* 80 (3): 773–804.
- Faccio, M., and L.H.P. Lang. 2002. The ultimate ownership of Western European corporations. *Journal of financial economics* 65 (3): 365–395.
- Fan, J. P.H, and T. J. Wong. 2002. Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of accounting and economics* 33 (3): 401–425.
- Francis, J., R. LaFond, P. Olsson, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2): 295–327.
- Freeman, R. N. 1987. The association between accounting earnings and security returns for large and small firms. *Journal of Accounting and Economics* 9 (2): 195–228.
- French, K., and J. Poterba. "Investor Diversification and International Equity Markets." *American Economics Review* (1991): 222–26.
- Frost, C.A., E.A. Gordon, and A.F. Hayes. 2006. Stock exchange disclosure and market development: An analysis of 50 international exchanges. *Journal of Accounting Research* 44 (3): 437-483.
- Givoly, D., C. Hayn, and J. D'Souza. 2000. Measurement Errors and Information Content of Segment Reporting. *Review of Accounting Studies* 4 (1): 15–43.
- Gordon, J. N. 2002. An American perspective on the new German anti-takeover law. *Harvard Law School John M. Olin Center for Law, Economics and Business Discussion Paper Series*: 407.
- Gow, I. D., G. Ormazabal, and D. J. Taylor. 2010. Correcting for cross-sectional and time-series dependence in accounting research. *The Accounting Review* 85 (2): 483–512.
- Gregory, H.J. and R.T. Simmelkjaer. 2002. Comparative Study of Corporate Governance Codes Relevant to the European Union and its Member States. European Commission. http://ec.europa.eu/internal_market/company/docs/corpgov/corp-gov-codes-rpt-part1_en.pdf
- Guedhami and Pittman. 2006. Ownership Concentration in Privatized Firms: The Role of Disclosure Standards, Auditor Choice, and Auditing Infrastructure. *Journal of Accounting Research* 44 (5): 889-929.

- Guillén, M. F. 2000. Corporate governance and globalization: is there convergence across countries? *Advances in International Comparative Management* 13: 175–204.
- Hail, L., and C. Leuz. 2006. International differences in the cost of equity capital: Do legal institutions and securities regulation matter?. *Journal of Accounting Research* 44 (3): 485-531.
- Harris, T., M. Lang, and H. P. Moeller. 1994. "The Value Relevance of German Accounting Measures: An Empirical Analysis." *Journal of Accounting Research* 32 (Autumn): 187-209.
- Hanlon, M., E. L. Maydew, and T. Shevlin. 2008. An unintended consequence of book-tax conformity: A loss of earnings informativeness. *Journal of Accounting and Economics* 46 (2): 294–311.
- Hayn, C. 1995. The informativeness of losses. *Journal of accounting and economics* 20 (2): 125–153.
- Hill, J. G. 2010. Takeovers, Poison Pills and Protectionism in Comparative Corporate Governance.
- Hirshleifer, D., and S. Titman. 1990. Share tendering strategies and the success of hostile takeover bids. *Journal of Political Economy* 98 (2): 295.
- Holderness, C. G., and D. P. Sheehan. 1988. The role of majority shareholders in publicly held corporations: An exploratory analysis. *Journal of financial economics* 20: 317–346.
- Holderness, C., and D. P. Sheehan. 2000. Constraints on large-block shareholders. In *Concentrated corporate ownership*, 139–176. University of Chicago Press.
- Hope, O.-K., T. Kang, W. Thomas, and F. Vasvari. 2009. The effects of SFAS 131 geographic segment disclosures by U.S. multinational companies on the valuation of foreign earnings. *Journal of International Business Studies* 40: 421-443.
- Hoyer-Ellefsen. 2006. Characteristics of Emerging Markets. Darden Business Publishing: University of Virginia.
- Hughes, J. S., J. Liu, and J. Liu. 2007. Information asymmetry, diversification, and cost of capital. *The Accounting Review* 82 (3): 705–729.
- Hulburt, H. M. 2003. Equity carve-outs and changes in corporate control. *Journal of Applied Business Research (JABR)* 19 (1).
- International Accounting Standards Board (IASB). 2010a. *The Conceptual Framework for Financial Reporting*. London: International Accounting Standards Board.
- . 2010b. *The Conceptual Framework for Financial Reporting: The Reporting Entity*. London: International Accounting Standards Board.
- . 2010c. *International Financial Reporting Standard 10: Consolidated Financial Statements*. London: International Accounting Standards Board.
- . 2003. *International Accounting Standard 27: Consolidated and Separate Financial Statements*. London: International Accounting Standards Board.
- Institutional Shareholder Services (ISS). 2007. *Poison Pills in France, Japan, the U.S. and Canada: Takeover Barriers Rise in Europe and Japan, but Fall in North America* <http://www.complianceweek.com/s/documents/PoisonPillPrimer.pdf>.
- Itoh, H., and O. Hayashida. 1997. Hiving off and the delegation of authority: An incomplete contract approach. *Bunsya-ka to Kengen Ijyo: Fu-kanbi Keiyaku Approach" in Japanese*, *Nippon Keizai Kenkyu* 34: 89–117.

- Jeong-Bon Kim, and C.H. Yi. 2006. Ownership Structure, Business Group Affiliation, Listing Status, and Earnings Management: Evidence from Korea. *Contemporary Accounting Research* 23 (2): 427–464.
- Johnson, S., R. L. Porta, F. Lopez-de-Silanes, and A. Shleifer. 2000. Tunneling. *The American Economic Review* 90 (2): 22–27.
- Joos, P., and M. Lang. 1994. "The Effects of Accounting Diversity: Evidence from the European Union." *Journal of Accounting Research* 32 (Supplement): 141-168.
- Jungmann, C. 2006. The Effectiveness of Corporate Governance in One-Tier and Two-Tier Board Systems—Evidence from the UK and Germany—. *European Company and Financial Law Review* 3 (4): 426–474.
- Kanda, H. 2010. Takeover Defenses and the Role of Law in Japan. *UT Soft Law Review* 2: 3-4.
- . 2011. *Patterns in Takeover Regulations in the World: Puzzles and Explanations*. Presentation at the Conference of International Takeover Regulators (September 9th, 2011).
- Khanna, T. 2000. Business groups and social welfare in emerging markets: Existing evidence and unanswered questions. *European Economic Review* 44 (4): 748–761.
- Khanna, T., and K. Palepu. 1997. Why focused strategies may be wrong for emerging markets. *Harvard Business Review* 75 (4): 41–48.
- Kinney Jr, W. R. 1971. Predicting earnings: entity versus subentity data. *Journal of Accounting Research*: 127–136.
- Kinney, W. R. 1972. Covariability of segment earnings and multisegment company returns. *The Accounting Review* 47 (2): 339–345.
- Klein, A., J. Rosenfeld, and W. Beranek. 1991. The two stages of an equity carve-out and the price response of parent and subsidiary stock. *Managerial and Decision Economics* 12 (6): 449–460.
- Kormendi, R., and R. Lipe. 1987. Earnings Innovations, Earnings Persistence, and Stock Returns. *The Journal of Business* 60 (3): 323–345.
- Kuznetsov, A., R. Kapelyushnikov and N. Dyomina. 2008. Performance of closely held firms in Russia: evidence from firm-level data. *The European Journal of Finance*, 14 (4) 337–358.
- La Porta, R., F. Lopez-de-Silanes and A. Shleifer. 1999. Corporate Ownership around the World. *Journal of Finance* 54: 471-518.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny. 1997. Legal determinants of external finance. *Journal of Finance* 52, 1131-1150.
- . 1998. Law and Finance. *Journal of Political Economy* 106: 1113-55.
- . 2002. Investor protection and corporate valuation. *Journal of finance*: 1147–1170.
- Lambert, R. A., C. Leuz, and R. E. Verrecchia. 2011. Information asymmetry, information precision, and the cost of capital. *Review of Finance* 16 (1): 1–29.
- Lawrence, A., M. Minutti-Meza, and P. Zhang. 2011. Can Big 4 versus non-Big 4 differences in audit-quality proxies be attributed to client characteristics? *The Accounting Review* 86 (1): 259–286.
- Lambert, R., C. Leuz, and R. E. Verrecchia. 2007. Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research* 45 (2): 385–420.
- Lazonick, W., and M. O’Sullivan. 1996. Organization, finance and international competition. *Industrial and Corporate Change* 5 (1): 1.

- Lemmon, M. L., and K. V. Lins. 2003. Ownership structure, corporate governance, and firm value: Evidence from the East Asian financial crisis. *The journal of finance* 58 (4): 1445–1468.
- Lewis, K. K. 1999. Trying to Explain Home Bias in Equities and Consumption. *Journal of Economic Literature* 37 (2): 571–608.
- Liao, Q., T. Sellhorn, and H. A. Skaife. 2012. The cross-country comparability of IFRS earnings and book values: Evidence from France and Germany. *Journal of International Accounting Research* 11 (1): 155–184.
- Lipe, R. C. 1986. The information contained in the components of earnings. *Journal of Accounting Research* 24: 37–64.
- . 1990. The relation between stock returns and accounting earnings given alternative information. *Accounting Review*: 49–71.
- Lopes, A. I., and I. C. Lourenço. 2013. *Testing Value Relevance of Non-Controlling Interests: Evidence with European Countries*. SSRN Scholarly Paper. Rochester, NY: Social Science Research Network.
- Martynova, M., and L. Renneboog. 2006. Mergers and acquisitions in Europe. *Advances in corporate finance and asset pricing*: 13–75.
- McNichols, M., and J. G. Manegold. 1983. The effect of the information environment on the relationship between financial disclosure and security price variability. *Journal of Accounting and Economics* 5: 49–74.
- Meridian Securities Markets. 2011. *Exchange and Government Regulations*. <http://www.meridiansecurities.com>.
- Morck, R., M. Nakamura, and A. Shivdasani. 2000. Banks, Ownership Structure, and Firm Value in Japan. *The Journal of Business* 73 (4): 539–567.
- Mulford, C. & E. Quinn. 2008. The Effects on Measures of Profitability and Leverage of Recently Enacted Changes in Accounting for Minority Interests. Atlanta: College of Management, Georgia Institute of Technology.
- Nenova, T. 2003. The value of corporate voting rights and control: A cross-country analysis. *Journal of Financial Economics* 68 (3): 325–351.
- O’Sullivan, M. 2003. The political economy of comparative corporate governance. *Review of International Political Economy* 10 (1): 23–72.
- Ohlson, J. A., and S. H. Penman. 1992. Disaggregated accounting data as explanatory variables for returns. *Journal of Accounting, Auditing & Finance* 7 (4): 553–573.
- Otsubo, M. 2009. Gains from equity carve-outs and subsequent events. *Journal of Business Research* 62 (11): 1207–1213.
- . 2013. Value creation from financing in equity carve-outs: Evidence from Japan. *Journal of Economics and Business* 68: 52–69.
- Payne, J. W., J. R. Bettman, and E. J. Johnson. 1993. *The adaptive decision maker*. Cambridge University Press.
- Piotroski, J. D. 1999. The impact of discretionary segment reporting behavior on investor beliefs and stock prices. Ph.D., United States -- Michigan: University of Michigan.
- Prowse, S. 1994. Corporate governance in an international perspective: A survey of corporate control mechanisms among large firms in the United States, the United Kingdom, Japan and Germany.

- Ramakrishnan, R. T., and J. K. Thomas. 1998. Valuation of permanent, transitory, and price-irrelevant components of reported earnings. *Journal of Accounting, Auditing & Finance* 13 (3): 301–336.
- Rezaee, Z. and J.D. Spiceland. 2003. The impact of accounting standards on business combinations and intangible assets. *Corporate Finance Review*, 8 (2), 20-27.
- Rosenbaum, P. R., and D. B. Rubin. 1983. The central role of the propensity score in observational studies for causal effects. *Biometrika* 70 (1): 41–55.
- Schipper, K., and A. Smith. 1986. A comparison of equity carve-outs and seasoned equity offerings: Share price effects and corporate restructuring. *Journal of Financial Economics* 15 (1): 153–186.
- Schneper, W. D., and M. F. Guillén. 2004. Stakeholder rights and corporate governance: A cross-national study of hostile takeovers. *Administrative Science Quarterly* 49 (2): 263–295.
- Shleifer, A., and R. W. Vishny. 1986. Large shareholders and corporate control. *The Journal of Political Economy* 94 (3): 461.
- . 1997. A survey of corporate governance. *The journal of finance* 52 (2): 737–783.
- Simon, H. A. 1990. Invariants of human behavior. *Annual review of psychology* 41 (1): 1–20.
- Singh, R. 1998. Takeover bidding with toeholds: The case of the owner’s curse. *Review of Financial Studies* 11 (4): 679–704.
- Skaife, H. and P.Y. Friday. 2006. Corporate Governance and Non-U.S. Firms’ Mergers & Acquisitions. Working Paper.
- So, S. & M. Smith. 2009. Value relevance of IAS 27 (2003) revision on presentation of non-controlling interest: evidence from Hong Kong”, *Journal of International Financial Management and Accounting*, 20(2), 166-198.
- Strachan, H. W., and R. Vernon. 1976. *Family and other business groups in economic development: The case of Nicaragua*. Praeger New York.
- Suh, J. 2001. “Home Bias among Institutional Investors: A Study of the Economist Quarterly Portfolio Poll.” Working paper, SK Economic Research Institute.
- Swanson, Z. 2010. Minority stockholder information relevance: wealth effects and/or monitoring?, *Academy of Accounting and Financial Studies Journal*, 14 (4), 87- 101.
- Swenson, L. A. 2012. The influence of religion on financial reporting. Unpublished dissertation, University of Wisconsin - Madison.
- Tam, L. H. 2014. The impacts of parent’s listing status on subsidiary’s financial constraint and cost of equity capital: the case of equity carve-outs. *Accounting & Finance*.
- Tesar, L., and I. Werner. “Home Bias and High Turnover.” *Journal of International Money and Finance* 13 (1995): 467–93.
- Thomas, W. B. 2000. A test of the market’s mispricing of domestic and foreign earnings. *Journal of Accounting and Economics* 28 (3): 243–267.
- Tse, S. 1989. Attributes of industry, industry segment and firm-specific information in security valuation. *Contemporary Accounting Research* 5 (2): 592–614.
- Urbancic, F., 2008. Minority interest and the effect on financial leverage under FAS- 160”, *Commercial Lending Review*, 23(5), 12-18.
- Venkataraman, R. 2001. The impact of SFAS 131 on financial analysts’ information environment. Ph.D., United States -- Pennsylvania: The Pennsylvania State University.
- Vijh, A. M. 1999. Long-term returns from equity carveouts. *Journal of Financial Economics* 51 (2): 273–308.

- . 2002. The Positive Announcement-Period Returns of Equity Carveouts: Asymmetric Information or Divestiture Gains?. *The Journal of Business* 75 (1): 153–190.
- Villalonga, B., and R. Amit. 2006. How do family ownership, control and management affect firm value? *Journal of Financial Economics* 80 (2): 385–417.
- Vuong, Q. 1989. Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica*, 57: 307-334.
- Wang, D. 2006. Founding family ownership and earnings quality. *Journal of Accounting Research* 44 (3): 619–656.
- Wagner, H. F. 2005. The equity carve-out decision. Available at SSRN 524723.
- Walkling, R. A. 1985. Predicting tender offer success: A logistic analysis. *Journal of financial and Quantitative Analysis* 20 (04): 461–478.
- Warfield, T. D., and J. J. Wild. 1992. Accounting Recognition and the Relevance of Earnings as an Explanatory Variable for Returns. *The Accounting Review* 67 (4): 821–842.
- Yafeh, Y. 2003. An International Perspective of Corporate Groups and Their Prospects. In *Structural impediments to growth in Japan*, 259–284. University of Chicago Press.