FINANCIAL REPORTING QUALITY AND PEER GROUP SELECTION

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This version: November 2019

We gratefully acknowledge valuable comments from Jan Bouwens, Liesbeth Bruynseels, Ilia Dichev, Rene Garcia, Ann Gaeremynck, Florencio Lopez-de-Silanes, Martin Jacob, Eva Labro, Laurence van Lent, Scott Liao, Garen Markarian, Max Mueller, Harm Schuett, Thorsten Sellhorn, Jae Yong Shin, and seminar participants at EDHEC Business School, LMU Munich, Tilburg University, University of Leuven, WHU Otto Beisheim School of Management, the 2016 EAA Annual Congress, and the 2016 AAA Management Accounting Section Meeting.

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ABSTRACT

Similarity between a firm and a potential peer firm with respect to important economic characteristics is a first-order criterion to select peer firms. As economic characteristics are often captured through information disclosed in publicly available financial reports, financial reporting quality (FRQ) of a potential peer firm could influence peer group selection. We hypothesize that potential peer firms with higher FRQ are more likely to be included in the peer group of another firm because the reduced information asymmetry and lower reputation costs connected to higher FRQ of potential peer firms can influence the board of directors' evaluation of similarity between the firm and a potential peer firm. Analyzing the peer groups used by S&P 900 firms for benchmarking executive compensation packages, we find support for our hypothesis and the channels we specify in our theory. Our results are robust across several measures for FRQ, albeit they are somewhat weaker when FRQ is measured by means of internal control deficiencies, fraud, and AAERs. Using alternative specifications to define the potential peer group and controlling for corporate governance strength does not change our inferences and our results also hold when we control for the presence of the potential peer firm in the peer group of the previous year. This study contributes to previous research on peer groups by examining the accounting information environment around peer group composition.

Keywords: compensation peer groups, financial reporting quality, information asymmetry, reputation cost

JEL Classifications: M12, M40, M41

Data Availability: Data are available from the public sources cited in the text.

1. INTRODUCTION

Self-selected peer groups are often used in corporate governance processes related to executive compensation (Albuquerque et al., 2013; Bizjak et al., 2011; Faulkender and Yang, 2010; 2013; Gong et al., 2011). The board of directors, which is often advised by compensation consultants, selects peer firms by evaluating the economic similarity between the firm and potential peer firms. Economic similarity is often determined based on characteristics such as size, industry, business model, geographical presence, firm complexity, and innovation potential.[1] Proxies for these characteristics are commonly based on information disclosed in potential peer firms' publicly available financial reports. For instance, sales and total assets are well-known proxies for firm size, R&D expenses and advertising expenses are useful to get insight into a potential peer firm's business model and innovation potential, and segment data can be used to capture the geographical presence and the breadth of the CEO's responsibilities. Information disclosed in financial reports can, however, be biased, potentially impacting the board of directors' evaluation of economic similarity between the firm and the potential peer firm. This study analyzes the quality of financial information in the context of peer group selection and examines whether financial reporting quality (FRQ) of potential peer firms, which we define as the extent to which the financial reports faithfully represent the peer firm's economic characteristics, influences peer group selection.

The starting point of this study is that similarity with respect to economic characteristics, such as size, business model, complexity, and innovation potential, is a first-order criterion to select peer firms. As economic characteristics of potential peer firms are often captured through information disclosed in publicly available financial reports, FRQ could influence peer group selection. Importantly, we do not claim that the board of directors looks at FRQ per se or that FRQ in itself helps the board of directors directly to screen for managerial talent or benchmark executive compensation. The main argument we aim to develop and test in this paper is whether FRQ influences peer group selection because information from financial reports is used to capture economic characteristics that are of first-order importance in evaluating the economic similarity between a firm and potential peer firms. We develop two arguments supporting the hypothesis that firms are more likely to select peer firms with higher

[1] As an example, the Compensation and Discussion Analysis of the 2016 Proxy Statement of Johnson & Johnson mentions, "The Executive Peer Group, which is reviewed by the Committee on an annual basis, consists of companies that generally: (1) are similar to J&J in terms of certain factors, including one or more of the following: size (i.e., revenue, net income, market capitalization), industry, gross margin, global presence and research and development investment; (2) have named executive officer positions that are comparable to ours in terms of breadth, complexity and scope of responsibilities; and (3) compete with us for executive talent."

FRQ. Each of these arguments focuses on an aspect of the evaluation of similarity between the firm and a potential peer firm and how FRQ can influence the evaluation of similarity and thus peer group selection.

The first argument is grounded in the idea that evaluating and reliably justifying economic similarity between the selecting firm and the potential peer firm with respect to important economic characteristics is easier when information asymmetry is lower. Because information asymmetry between the selecting firm and the potential peer firm is a function of the potential peer firm's FRQ, we predict that firms are more likely to select peer firms with higher FRQ (Bhattacharya et al., 2012; Bhattacharya et al., 2013; Biddle et al., 2009; Bushman and Smith, 2001; Leuz and Verrecchia, 2000; Verrecchia, 2001). Second, by evaluating a potential peer firm as similar and including it in the peer group, the selecting firm establishes a relationship with the peer firm. As a result, the selecting firm and its board of directors are potentially vulnerable to spillover from the peer firm's negative reputation. As FRQ is known to be one aspect of firm reputation, the selecting firm and its board members face higher reputation costs when selecting a peer firm with low FRQ (or with low expected FRQ in the future) (Cao et al., 2012). To the extent that reputation costs caused by selecting a peer firm with low FRQ are considered material by the board of directors, firms are more likely to select peer firms with higher FRQ. Overall, FRQ is likely to have a positive effect on peer group selection because the reduced information asymmetry and lower reputation costs connected to higher FRQ likely influence the board of directors' evaluation of economic similarity between the firm and the potential peer firm.

The expectation that firms are more likely to select peer firms with higher FRQ is not straightforward for at least two reasons. First, it could be that financial reports are not used to capture important economic characteristics of potential peer firms. It could, for instance, be that the firm's compensation consultant has other information sources to capture potential peer firms' important economic characteristics. Second, as it is frequently echoed that the design of executive compensation contracts is determined by flawed corporate governance mechanisms, it could be that the board of directors is not sensitive enough to variation in FRQ so that FRQ influences peer group selection. Previous research, for instance, documented that better paying potential peer firms are more likely to be included in peer groups used for benchmarking executive compensation as this allows to justify higher CEO pay in the selecting firm (Faulkender and Yang, 2010; 2013). The more important opportunistic reasons are in selecting peer firms, the less likely it is that FRQ will play a role in peer group selection. Thus, it remains

an empirical question whether variation in FRQ among potential peer firms determines peer group selection.

To examine whether FRQ influences peer group selection in the context of evaluating economic similarity between a firm and potential peer firms, we analyze the composition of the self-selected peer groups that S&P 900 firms use to benchmark executive compensation packages (compensation peer groups). We acknowledge that accounting numbers intuitively play an important role in case of peer groups used for relative performance evaluation (performance peer groups) because accounting numbers are used to evaluate economic similarity between a firm and potential peer firms as well as to assess relative performance between the firm and the chosen peer firms (Gong et al., 2011). However, despite the higher overall importance of accounting numbers in case of performance peer groups, we argue that compensation peer groups provide us with a better setting to examine the role of FRQ for peer group selection *in the context of evaluating economic similarity with potential peer firms*. First, in case of compensation peer groups, accounting numbers are solely used to evaluate economic similarity with potential peer firms while accounting numbers are also used for relative performance evaluation in case of performance peer groups. Thus, although it could be easier to find a role for FRQ in performance peer group selection, finding a role for FRQ in compensation peer group selection makes it easier to interpret the role of FRQ in the context of evaluating economic similarity with potential peer firms.

Our second and third argument are grounded in the econometric problems that would arise when using performance peer groups to examine the role of FRQ for peer group selection in the context of evaluating economic similarity with potential peer firms. Second, if relative performance evaluation is the purpose of the peer group, additional characteristics of accounting numbers become important and will likely play a role for performance peer group selection. For instance, Lobo et al. (2018) document that higher accounting comparability between the firm and a potential peer firm increases the potential peer firm's likelihood of being selected into the performance peer group. The problem that arises because of the dual role of accounting numbers in case of performance peer group selection is that the additional characteristics of accounting numbers that are important in the context of relative performance evaluation are likely correlated with FRQ. This implies that the coefficient of FRQ in analyses of performance peer group selection is contaminated by these other characteristics when we do not control for them but also that empirically controlling for these other characteristics can lead to multicollinearity problems. Rather than trying to control for characteristics of accounting numbers that are important for relative performance evaluation, we prefer a cleaner research

design in which the purpose of accounting numbers is limited to evaluating economic similarity with potential peer firms, which is the focus of our study.

Our third argument relates to the correlation between FRQ and firm performance. Previous research on performance peer group selection has documented that firms are more likely to select poorly performing firms as this enables outperforming the performance peer group (Gong et al., 2011). As FRQ may be negatively correlated with firm performance, the coefficient of FRQ in analyses of performance peer group selection could also pick up the preference for poorly performing firms. Thus, the coefficient of FRQ in analyses of performance peer group composition is potentially contaminated by an effect that is opposite to the hypothesized effect and that is unrelated to the evaluation of economic similarity between a firm and potential peer firms. Fourth, data-driven arguments also justify our choice for analyzing compensation peer groups. That is, a larger proportion of firms in the S&P900 use compensation peer groups. Also, compensation peer groups contain more non-industry peer firms. As a result, when using compensation peer groups, our analyses are less likely to be affected by a selection bias or any other problem derived from a lack of data. [2] Overall, next to some data-driven advantages of analyzing compensation peer groups, compensation peer groups are a better setting to examine the role of FRQ in the context of justifying economic similarity between a firm and potential peer firms because of the cleaner research design in case of compensation peer groups and econometric issues that could arise if we would use performance peer groups.

We collect data about the self-selected peer groups of S&P 900 firms used to benchmark executive compensation packages from 2006 to 2011. We find that 734 (536) firms disclose the use of a self-selected peer group in 2011 (2006). To measure FRQ, we use accrual quality, earnings persistence, internal control deficiencies, occurrence of fraud, and SEC investigations. Relying on previous research in accounting, economics, and finance about peer group selection, we control for several economic factors that capture relevant similarities between the selecting firm and the potential peer firm, the quality of the external information environment of a potential peer firm, the stock volatility of the potential peer firm, and the compensation of the CEO of the potential peer firm (Faulkender and Yang, 2010; 2013). Our

[2] In 2011, which is the last year of our sample period, 81.55% of the S&P900 firms compose a compensation peer group but only 21.44% of the S&P900 firms compose a performance peer group. Also, in 2011, compensation (performance) peer groups contained 60.4% (52.9%) peer firms that do not belong to the same SIC 2-digit industry). The proportion of non-industry peer firms is important to test our hypothesis as financial reports are more likely to be consulted when one needs to capture economic characteristics of firms one is less familiar with, such as non-industry firms.

results are consistent with the hypothesis that firms with higher FRQ are more likely to be included in the peer group of another firm. Albeit somewhat weaker when FRQ is measured by means of internal control deficiencies, fraud, and AAER, our main result is robust across our indicators for FRQ and across the years of our sample period. We also document the relation between FRQ and peer group selection when we control for the presence of the potential peer firm in the peer group of the previous year. Next, controlling for the strength of corporate governance of potential peer firms does not alter our inferences. Further, when we use the same two-digit SIC industry as the potential peer group or the methodology proposed by Cadman and Carter (2014) to define the potential peer group, our inferences do not change, albeit our results are somewhat weaker when using the latter methodology. Finally, we acknowledge that there are other channels through which information about potential peer firms can be transferred. We therefore control for selecting firms and potential peer firms that share the same compensation consultant or auditor and find that our results are robust to the inclusion of these controls.

In a next step, we investigate whether the documented association between FRQ and peer group selection can be explained through the information asymmetry channel and the reputation cost channel. If FRQ mitigates the information asymmetry between the selecting firm and the potential peer firm, we expect the association between FRQ and peer group selection to be stronger when the role of hard information, such as financial reports, in mitigating information asymmetry increases or, conversely, when the cost of acquiring soft information increases. Our measure for the cost of acquiring soft information is the geographical distance between the selecting firm and the potential peer firm, because physical distance increases the difficulty, and thus the cost, to collect soft information (Ayers et al., 2011; Costello 2013). Consistent with the information asymmetry channel, the association of FRQ with peer group selection is stronger for remote potential peer firms than for local potential peer firms. Our test for the reputation cost channel is grounded in revealed preference theory, which holds that preferences of groups and individuals can be inferred from observable behavior and decisions (Mas-Colell et al., 1995; Samuelson, 1938). We argue that the FRQ of the selecting firm reveals the selecting firm's preference for FRQ. A derivation of this argument is that the reputation cost of selecting a peer firm with low FRQ is higher for selecting firms with higher FRQ, ceteris paribus. Consistent with the reputation cost channel, the association between potential peer firm's FRQ and peer group selection is stronger for selecting firms with higher FRQ. Collectively, our results support the hypothesis that firms with higher FRQ are more likely to be included in the peer group of another firm and this can, at least partially, be

explained by the reduced information asymmetry and lower reputation costs of including peer firms with higher FRQ.[4]

Scholarly interest in peer group selection since the 2006 SEC requirement, which states that firms have to be transparent about their executive compensation design process, has mainly focused on the relation between peer group selection and CEO compensation (Albuquerque et al., 2013; Bizjak et al., 2011; Faulkender and Yang, 2010; 2013). This study contributes to this recent stream of studies by considering peer group selection from an accounting information perspective. We build on the idea that evaluating the economic similarity between a firm and potential peer firms with respect to important economic characteristics could happen through information disclosed in publicly available financial reports. Next, we develop theory and provide evidence showing that peer group selection is associated with FRQ of potential peer firms in the predicted direction. To the best of our knowledge, we are the first to analyze the role of accounting information for peer group selection and to document that FRQ matters for peer group selection. Importantly, our results do not imply that FRQ is a first-order characteristic for peer group selection but solely imply that the properties of information about first-order economic characteristics used for evaluating similarity between a firm and potential peer firms matter.

This study also sheds some more light on the claim made by most firms that peer firms are selected based on similarity with respect to important economic characteristics. As accounting information allows to capture important economic characteristics of potential peer firms, accounting offers rich ground to examine this claim made by firms. Relying on the assumption that similarities with respect to important economic characteristics can be more

[4] A vast number of studies on peer group selection are predicated upon the idea that peer firms should operate within the same competitive arena as the firm composing the peer group. More recently, it has been put forward that firms also include 'aspirational peer firms' in their peer group. Aspirational peer firms are those firms that are already engaged in value-enhancing strategies that a selecting firm should strive to emulate. Including aspirational peer firms in compensation peer groups most likely leads to higher executive compensation relative to when the peer group only consists of peer firms operating in the same competitive arena. Including aspirational peer firms in compensation peer groups can thus possibly help to avoid the departure of managerial talent. This reasoning is largely consistent with the finding of Albuquerque et al. (2013) that including better paying peer firms, which could be aspirational peer firms, in compensation peer groups serves as a reward for unobserved managerial talent. Including aspirational peer firms in performance peer groups provides an incentive for managers to pursue new value-enhancing strategies (Ball et al., 2018). In the context of our study, we expect that the use of publicly available financial reports to proxy for important economic characteristics will not be lower in case the selecting firm wants to include aspirational peer firms. Specifically, the selecting firm still needs to evaluate the economic similarity between the firm and the potential aspirational peer firm, albeit evaluating the *targeted* economic similarity becomes more important than evaluating the *current* economic similarity. As the availability of proxies for important economic characteristics remains important in case of selecting aspirational peer firms, we do not expect that testing our hypothesis about the relationship between potential peer firms' FRQ and peer group selection is hampered by the inclusion of aspirational peer firms in peer groups.

properly evaluated when more reliable information about a potential peer firm is available, the documented positive association between FRQ and the likelihood of being included in the peer group of another firm supports the idea that firms pay attention to similarities with respect to important economic characteristics. Stated differently, if firms do not care about similarities with respect to important economic characteristics, we do not expect them to be sensitive to variation in the quality of the information about these economic characteristics. As we document a pattern of peer group selection that is consistent with the claims made by firms, our results put a more positive view on peer group selection compared to some prior work in this area and can thus enrich the discussion about the peer group selection process.

2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 Compensation Peer Groups

To benchmark executives' compensation packages and screen for managerial talent, firms often use self-selected peer groups. For instance, firms often report setting the target pay level for each component of the compensation package at the 50th percentile of the distribution generated by peer firms' compensation data. The SEC requirement that firms with fiscal years ending on or after December 15, 2006 have to disclose the peer groups they use for compensation design has fueled research into the relationship between peer group selection and the level of CEO compensation. Faulkender and Yang (2010) and Bizjak et al. (2011), analyzing the self-selected peer groups from the proxy statements for the 2006 fiscal year, document that higher CEO compensation at a potential peer firm is associated with an increased likelihood that this firm will be chosen as a peer. Faulkender and Yang (2013) examine the self-selected peer groups for later years and find that this association holds over time. Collectively, these results are consistent with the idea that firms select highly paid peers to bias executive compensation upward. Albuquerque et al. (2013), however, find that the association between CEO compensation at a potential peer firm and the likelihood of being chosen as a peer firm mostly represents a compensation for executive talent.

The peer group selection process typically starts with a long list of potential peer firms put together by the compensation consultant. Some of the potential peer firms are included in the peer group without an extensive analysis of the available information about these firms. Examples of such firms are, for instance, direct competitors as these firms compete for the same managerial talent. Other potential peer firms are analyzed in more detail in order to evaluate the similarity with respect to important economic characteristics, such as size, complexity, geographical presence, and innovative potential. To capture these important

economic characteristics, information disclosed in publicly available financial reports can be used (Pae, 2002). A common theme in the accounting literature, however, is that accounting numbers are imperfect reflections of the economic characteristics they aim to capture. Consistent with prior research, we label the imperfect nature of accounting numbers as financial reporting quality (FRQ) and define it as the extent to which the reported accounting numbers faithfully represent the peer firm's economic characteristics. Previous research has documented that FRQ determines the usefulness of the accounting numbers for decisions made by parties internal and external to the firm (see Dechow et al. (2010) for an overview). As accounting numbers can be used to capture important economic characteristics that are used to evaluate the economic similarity between the firm and potential peer firms, this study focuses on examining how variation in FRQ among potential peer firms influences peer group selection. We develop two channels through which FRQ can influence peer group selection.

2.2 Information Asymmetry and Peer Group Selection

The first channel is grounded in the idea that evaluating and reliably justifying similarity between firms based on important economic characteristics becomes easier when the information asymmetry between the selecting firm and the potential peer firm is lower. Such information asymmetry can be reduced by means of accounting information (Pae, 2002; Simmonds 1986). In the context of peer group selection, accounting numbers that can be used to capture important economic characteristics are, for instance, total revenues, net profit, R&D investment, segment disclosures, and all ratios that use accounting-based and market-based numbers (Bizjak et al., 2011). Importantly, some firms explicitly state that they track accounting numbers, such as total assets, revenues, net income, and gross margin, and market-based numbers, such as market capitalization and market-to-book ratios, when deciding whether to include a firm in or delete a firm from the peer group (Bizjak et al., 2011). Also, some firms strongly rely on the accounting numbers of potential peer firms, including in their peer group only those firms with a particular accounting number, such as earnings or revenues, within a range of 0.5 to 2 times the firm's value for the same accounting number.[5]

[5] For instance, the Compensation Discussion and Analysis of the 2012 Proxy Statement of CalAtlantic Group states, "In March 2012, upon the recommendation of Steven Hall &Partners, the Committee modified the pay comparator peer group historically used by the Committee for purposes of assessing competitive market practice with respect to pay levels. The new pay comparator group includes prior comparators Beazer Homes USA, Inc., Hovnanian Enterprises, Inc., M.D.C. Holdings, Inc., Meritage Homes Corp., The Ryland Group, Inc., and Toll Brothers, Inc. and two new comparators, KB Home and M/I Homes, Inc. The pay comparator peer group provides the Committee with a source of marketplace data regarding compensation levels and consists of companies in the Company's industry with similar size, scope and complexity, within a range of 0.5 to 2 times the Company's revenues."

Although accounting numbers have the potential to reduce information asymmetry between the selecting firm and a peer firm, the effect ultimately depends on the peer firm's FRQ. Previous research regarding the role of FRQ in reducing information asymmetry between firms and outsiders has developed along several lines, but the available evidence supports the idea that higher FRQ reduces information asymmetry between the reporting firm and different types of outsiders in capital markets and debt contracting settings (Ball et al., 2008; Bhattacharya et al., 2012; Bhattacharya et al., 2013; Costello and Wittenberg-Moerman, 2011; Costello, 2013; Francis et al., 2005; Healy and Palepu, 2001). Given these findings, we argue that higher FRQ reduces the information asymmetry between the selecting firm and a potential peer firm and thereby facilitates evaluating and justifying economic similarities between the selecting firm and a potential peer firm. Therefore, we hypothesize that potential peer firms with higher FRQ are more likely to be included in the selecting firm's peer group.

2.3 Reputation Cost and Peer Group Selection

The second channel originates in the idea that including a firm in the peer group establishes a relationship with that firm, making the selecting firm and its board of directors potentially vulnerable to spillover from the peer firm's negative reputation. One aspect of firm reputation is FRQ.[6] Cao et al. (2012), for example, document a negative association between established firm reputation and both the likelihood of misstatements and the absolute value of performance-matched discretionary accruals, which are frequently used measures for FRQ. Because FRQ is one aspect of firm reputation, the reputation cost of selecting a peer firm is at least partially determined by that peer firm's FRQ. Specifically, the reputation cost of selecting a peer firm increases as the peer firm's FRQ decreases. Assuming that the firm and its board members want to minimize reputation costs, we expect that potential peer firms with lower FRQ are less likely to be included in the peer group.

Our reputation cost argument goes one step further than previous research, which finds that the firm and parties directly involved in the production of low FRQ, such as the CEO, the CFO, board members, and auditors, bear reputation costs (Fich and Shivdasani, 2007; Francis et al., 2008; Srinivasan, 2005). There are at least two reasons supporting our argument that board members of a selecting firm will exhibit some sensitivity to the reputation costs of selecting a peer firm with low FRQ. First, although the board of directors is advised by a

[6] Reputation is a multidimensional concept and has been defined in various ways. Most definitions share that reputation is (1) a perception held by outsiders that cannot be manipulated over the long run and (2) constructed through actions of the party whose reputation is being assessed.

compensation consultant, the final responsibility for the composition of the peer group lies with the board of directors. Their responsibility intensifies in the case of a self-selected peer group, as opposed to an industry or market index, as the selection of peer firms signals that the board of directors has considered the costs and benefits of each peer firm separately. Second, the design process of executives' compensation is closely monitored by outsiders. Recognizing the importance of reputation, we expect that board members will be conservative in including peer firms that can harm their own reputation and the reputation of the firm (Lorsch and MacIver, 1989).

Overall, based on the decreased information asymmetry and the lower reputation costs of potential peer firms with higher FRQ, we formulate the following hypothesis:

> ***H1:*** Potential peer firms with higher financial reporting quality have a higher probability of being included in the peer group of another firm.

3. METHODOLOGY

3.1 Data and Sample

Our sample consists of the S&P 500 and S&P MidCap 400 firms from 2006 to 2011. We refer to this sample as the S&P 900 and retrieved the sample from Compustat in September 2012. We identify 905 unique firms in the S&P 900. Peer groups are manually collected from the Compensation Discussion and Analysis section in the SEC DEF-14A filing for all fiscal years ending on or after December 15, 2006, which is the date the new disclosure rules took effect, until December 31, 2011. We delete all firm-year observations that do not disclose a self-selected peer group. Importantly, we also delete firm-year observations that disclose a list of peer firms but that upon closer reading have in fact used an industry or market index, such as the Dow 30 or Fortune 50, or a compensation survey. 817 firms disclose a self-selected peer group for at least one year during our sample period. Use of peer groups increases over time: in 2006 (2011), 536 (734) firms disclose a self-selected peer group. The proportion of firms using self-selected peer groups is similar to that documented in prior research (Faulkender and Yang, 2010; 2013). In our main analyses, we use data for 2011, the most recent year in our sample. We reproduce all our analyses for the other years in our sample, as well as for a pooled dataset containing all sample years.

3.2 Financial Reporting Quality (FRQ)

To measure FRQ of a potential peer firm, we rely on two principal earnings attributes: accrual quality and earnings persistence. In further analyses, we consider as indicators of FRQ

whether the potential peer firm has experienced internal control deficiencies, whether the potential peer firm has issued any fraud-related restatements, and whether the SEC has issued any enforcement releases against the potential peer firm.

Accrual Quality. Accrual accounting offers some flexibility and leaves room for firms to shift income to the future or borrow from future income. As a result, the accrual component of earnings is a useful measure for FRQ (Dechow et al., 1995). The difference between earnings and cash from operations equals the amount of reported accruals. It is a standard practice to focus on the magnitude and/or variability of accruals to measure accrual quality. Our primary measure of accrual quality uses the Modified Jones Model as described in Dechow et al. (1995) and as applied in Larcker et al. (2007). This model is frequently used to distinguish between discretionary and nondiscretionary accruals and looks as follows:

$$TA_{i,t} = \alpha + \beta_1(\Delta Sales - \Delta Rec)_{i,t} + \beta_2 PPE_{i,t} + \beta_3 BM_{i,t} + \beta_4 CFO_{i,t} + \varepsilon_{i,t} \quad (1)$$

Total Accruals ($TA_{i,t}$) equals net income before extraordinary items minus operating cash flow, as disclosed in the cash flow statement. *ΔSales* is the change in sales between year *t* and year *t* – 1. *ΔRec* is the difference in accounts receivable between year *t* and year *t* – 1. $PPE_{i,t}$ is property, plant, and equipment. Book-to-market (*BM*) is the ratio of the book value of common equity on the market value of equity and proxies for expected future growth. Finally, we include cash flow from operations (*CFO*) in the model, as prior literature shows that the model is more likely to be misspecified in cases of extreme performance (Dechow et al. 1995). With the exception of BM, all variables are scaled by lagged total assets and winsorized so that the absolute values are not larger than 1. BM is winsorized at the 2nd and 98th percentiles. We run the model for each two-digit SIC industry separately and require at least ten firms per year per industry.[7] Our primary measure of accrual quality, *σ (abn. acc.)*, for the year 2011 is the firm-specific standard deviation of abnormal accruals measured over the period between 1991 and 2010.[8] A higher residual standard deviation reflects lower FRQ.[9]

Earnings Persistence. We measure earnings persistence as the slope coefficient of a regression of current earnings on lagged earnings. Specifically, we regress earnings per share

[7] We exclude SIC 6000-6999, because our measures for FRQ are unsuitable for banks and insurance and real estate companies.

[8] When testing our hypothesis for the years 2006 to 2010, we calculate *σ (abn. acc.)* from 1991 up to and including the year before the year in which the peer groups are disclosed in the proxy statements.

[9] In additional tests, we use three alternative measures of accrual quality. First, instead of calculating total accruals as net income minus cash flow from operations, we measure accruals by subtracting depreciation from changes in working capital. Second, instead of using the Modified Jones Model, we capture abnormal current accruals by testing the model from Dechow and Dichev (2002), as used in Bharath et al. (2008) and Francis et al. (2005). Third, we also run regressions using the absolute value of abnormal accruals averaged over all years available since 1991. Untabulated findings with these alternative measures of accrual quality do not change our inferences.

of year *t* (measured as net income before extraordinary items divided by common shares outstanding) on earnings per share from year *t* – 1:

$$EPS_{i,t} = \alpha + \beta_i EPS_{i,t-1} + \varepsilon_{i,t} \quad (2).$$

We run this model for each firm-year observation using a five-year rolling window; accordingly, regression results for 2011 are based on earnings persistence between 2006 and 2010.[10] Values of β_i closer to one indicate higher earnings persistence, and thus higher FRQ, while values closer to zero are indicative of highly transitory earnings, and thus lower FRQ.

Internal Control Deficiencies. A material weakness in the internal controls of a firm potentially indicates low FRQ. Internal control deficiency (*icd*) for the year 2011 equals 1 if the auditor of the potential peer firm has reported one or more material weaknesses in the SOX 404 report between 2004 and 2010 and zero otherwise. Data about internal control deficiencies are retrieved from Audit Analytics.

Fraud. A restatement related to financial fraud or irregularities in one or more previous financial statements is a potential indicator of low FRQ. Fraud-related restatements for the year 2011 (*fraud*) equals 1 if the potential peer firm has done a restatement related to financial fraud or irregularities in one or more previous financial statements between 2004 and 2010 and zero otherwise. In Audit Analytics, fraud-related restatements are labelled as "Res_fraud."[11]

AAER. An Accounting and Auditing Enforcement Release (AAER) is issued by the SEC during or at the end of an investigation for alleged accounting or auditing misconduct against a firm, an auditor, or a manager. We rely on the dataset on AAERs provided by the Center for Financial Reporting and Management at UC Berkeley. A detailed description of the data collection is available in Dechow et al. (2011). An indicator variable (*aaer*) is equal to 1 if the potential peer firm experienced one or more AAERs in the period 2004-2010 and zero otherwise. In additional tests, we also expand this period to 2004–2012 for all years in our sample, as it is highly likely that the SEC investigation was leaked to the public before the release of the AAER.

- INSERT TABLE 3 HERE -

3.3 Model Design

[10] As a robustness check, we use a ten-year period instead of a five-year period to measure earnings persistence. In untabulated findings, none of the inferences differ from those relating to the tabulated results.

[11] Often, the suspicion of fraud, or even its confirmation, precedes the fraud-related restatement. In additional tests for analyses of the year 2011, we expand the period in which a fraud-related restatement can be reported for fraud to 2012, which is the year after the peer groups have been composed. Untabulated findings of these analyses do not change our inferences.

To examine whether potential peer firms with higher FRQ are more likely than potential peer firms with lower FRQ to be included in another firm's peer group, we test the following probit regression model based on Faulkender and Yang (2010; 2013):

$$actpeer_{ij} = \alpha + \beta_1 FRQ_j + \beta_2 \, ln\ peer\ sales_j + \beta_3 peer\ stock\ volatility_j + \beta_4 \, analysts_j + \beta_5 accuracy_j + \beta_6 \, ln(peer\ total\ pay)_j + \beta_7 \, no\ of\ peers_i + \beta_8 \, matchsic2d_{ij} + \beta_9 \, matchsic3d_{ij} + \beta_{10} \, assetmatch_{ij} + \beta_{11} \, salesmatch_{ij} + \beta_{12} \, mcapmatch_{ij} + \beta_{13} \, dow30match_{ij} + \beta_{14} \, largecapmatch_{ij} + \beta_{15} \, midcapmatch_{ij} + \varepsilon_{ij} \quad (3).$$

The dependent variable $actpeer_{ij}$ takes a value of one if the potential peer firm *j* is included in the peer group of firm *i* and zero otherwise. FRQ_j is the indicator for financial reporting quality (i.e. *σ (abn. acc.)*, *persistence*, *icd*, *fraud* or *aaer*) of the potential peer firm *j*. We predict a negative coefficient on *σ (abn. acc.), icd*, *fraud*, and *aaer* and a positive coefficient on *persistence*.

Peer selection is potentially a function of several other factors we need to control for. We refer to Appendix A for a detailed description of the control variables. First, we include a measure for the size of the potential peer firm (*ln peer sales*), as larger firms generally exhibit greater transparency. Also, larger potential peer firms are more likely to be selected than smaller potential peer firms as they often serve as a role model. Second, we include the volatility of the stock price of the potential peer firm (*peer stock volatility)*. Potential peer firms with more volatile market values are less useful for benchmarking purposes. Also, including a measure for the stock volatility of a potential peer firm decreases the probability that *σ (abn. acc.)* and *persistence* may partially capture stock volatility. Third, we include indicators that capture the quality of the information transmission channels surrounding a potential peer firm. For a given level of FRQ, better information transmission channels surrounding the peer firm can reduce information asymmetries between the potential peer firm and the selecting firm. Drawing on prior literature, we consider the extent to which a potential peer firm is followed by professional analysts (*analysts*) and the accuracy with which these analysts forecast the potential peer firm's future earnings (*accuracy*) (Byard et al., 2011; Lang and Lundholm, 1996; Lang and Maffett, 2011). Fourth, we control for several economic factors that capture relevant similarities between the potential peer firm and the selecting firm. We include indicator variables that measure whether the selecting firm and the potential peer firm are in the same two-digit and three-digit SIC industry, whether the potential peer firm is within a 50%–200% range of the selecting firm in terms of total assets, revenues, and market value, and whether the selecting firm and the potential peer firm are both part of the Dow 30, the S&P 500 index and the S&P 400 MidCap index. Fifth, we include the number of peer firms (*no of peers*) in the

peer group. Finally, we add the total pay of the CEO of the potential peer firm (*ln peer total pay*), as Faulkender and Yang (2010; 2013) document that potential peer firms with highly paid CEOs are more likely to be selected. Standard errors are clustered at the firm level. In our main analyses, we focus on the peer groups of 2011. We redo all tests for the other years, as well as for all years pooled together.

An important design choice is the composition of the potential peer group. We consider three potential peer groups to mitigate the possibility that our results are driven by this design choice. In line with previous research about peer groups after the SEC disclosure requirement, we use the S&P 900 as a potential peer group (Faulkender and Yang, 2010; 2013). As the S&P 900 sample contains 905 firms, there are 904 potential peer firms for each selecting firm. The second potential peer group contains all firms belonging to the same two-digit SIC industry as the firm that selects the peer group.[12] The advantages of using an industry-based potential peer group is that it allows us to control for industry-related similarities and to consider peer firms that do not belong to the S&P 900. The downside of the industry-based potential peer group is that we cannot consider peer firms outside of the industry. The number of observations for the regressions on the industry-based potential peer group is lower than the number of observations for the regressions on the S&P 900 potential peer group, as most firms have fewer than 904 firms in their two-digit SIC industry. The third potential peer group stems from Cadman and Carter (2014). They propose an alternative way to identify the labor market for executives by considering the following three groups of firms as potential peer firms to the selecting firm: (1) the selected peer firms themselves; (2) the peer groups of the selected peer firms; and (3) the firms that have chosen the selecting firm as a peer firm. This methodology leads to a smaller potential peer group than the S&P 900 potential peer group and the industry-based potential peer group. We refer to this potential peer group as the Cadman-Carter potential peer group.

3.4 Descriptive Statistics

Table 1, Panel A provides descriptive statistics for the 734 firms that disclose self-selected peer groups in 2011. The descriptive statistics are similar to those of other papers that use the S&P 900. Although the FRQ of the selecting firms is not the focus of our analysis, we also calculate our FRQ-measures for the selecting firms. We were able to calculate σ *(abn. acc.)* for 591 firms and *persistence* for 733 firms. Between 2004 and 2010, 11.7% of the firms

[12] We remove the matching variable on the two-digit SIC industry ($matchsic2d_{ij}$) when using the industry-based potential peer group.

reported at least one internal control deficiency, 1.6% of the firms reported at least one fraud-related restatement, and 1.8% of the firms registered an AAER.

Table 1, Panel B shows descriptive statistics on the structure of the peer groups.[13] The median (average) peer group contains 16 (17.84) peer firms. On average, 39.6% of selected peer firms have the same two-digit SIC code and 26.7% the same three-digit SIC code as the selecting firm. Measured by sales, assets, and market value, respectively, 61.8%, 55.1% and 51.7% of peer firms are within the 50-200% range of the selecting firm's sales, assets, and market value. Furthermore, if the selecting firm is in the Dow 30, then 40% of its peer firms are also in the Dow 30. However, if the selecting firm is not part of the Dow 30, this percentage falls to only 4.5%. On average, 83.4% of the peer firms chosen by S&P 500 firms also belong to the S&P 500, while only 54.9% of the peer firms chosen by S&P 400 MidCap firms come from the S&P 400 MidCap. Collectively, these findings suggest that firms tend to select peers that are either similar or larger in size.

- INSERT TABLE 1 HERE -

Table 2 shows the results from univariate tests. Panel A categorizes S&P 900 firms according to the number of times they were selected in 2011 by another S&P 900 firm and subsequently shows average *σ (abn. acc.)* and *persistence* per group. We find that firms selected at least 11 times in 2011 by another S&P 900 firm (i.e., firms in groups 4 and 5) have higher accrual quality and more persistent earnings than firms selected a maximum of 5 times in 2011 by another S&P 900 firm (i.e., firms in groups 1 and 2). In Panel B, we present descriptive statistics on the selection of firms that have experienced an internal control deficiency. When we consider all firms available in the Compustat universe as the potential peer group, which is an extreme case given that not all firms in the Compustat universe belong to the potential peer group of much larger S&P 900 firms, we find that firms that have experienced an internal control deficiency in a particular year are selected as a peer firm less often the next year. Potential peer firms from the Compustat universe that have experienced at least one internal control deficiency in 2004-2010 are selected as a peer firm less often in 2011. When we consider the S&P 900 as the potential peer group, our inferences are similar, although the results are statistically weaker when we distinguish potential peer firms based on whether they experienced at least one internal control deficiency in 2004-2010.

[13] The descriptive statistics are based on the peer firms for which we find a match in Compustat. Peer firms for which we do not find a match in Compustat and foreign peer firms are not included in these descriptive statistics.

In Panel C, we present descriptive statistics on the selection of firms that have issued a fraud-related restatement or have been subject to an AAER. When all firms in the Compustat universe or all S&P 900 firms are considered as the potential peer group, we do not find that firms with an AAER in the period 2004-2010 are selected less often. Matching each firm with an AAER in the period 2004-2010 with a S&P 900 firm that is closest in size and belongs to the same two-digit SIC industry, we find that firms with an AAER in the period 2004-2010 are selected less often. We find a similar result when following the same approach with firms that have issued a fraud-related restatement in the period 2004-2010. However, caution is warranted here as there are only 16 firms with an AAER in the period 2004-2010 and 16 firms with a fraud-related restatement in the period 2004-2010.[14] A somewhat surprising result is that firms that have issued a fraud-related restatement in the period 2004-2010 are selected more often compared to all firms in the Compustat universe that have not issued a fraud-related restatement. Likely, this result is due to larger firms having a higher probability of having fraud detected and having a higher probability to be included in the peer group of another firm. When only S&P 900 firms are considered as the potential peer group, this result disappears.

- INSERT TABLE 2 HERE -

4. RESULTS

4.1 Main Results

Table 3, Panel A, presents the regression summary statistics when the S&P 900 is used as the potential peer group. Consistent with our hypothesis that potential peer firms with higher FRQ are more likely to be included in the peer group of another firm, we find a significantly negative coefficient on *σ (abn. acc.)* and a significantly positive coefficient on *persistence* in the five different specifications. That is, accrual quality, as reflected by a lower value for *σ (abn. acc.)*, is negatively associated, and earnings persistence is positively associated with the likelihood of being included in the peer group of another firm. When the sales, stock volatility, analyst following, and analyst forecast accuracy of the potential peer firm and *σ (abn. acc.)* and *persistence* are included in the same regression, the magnitude of the coefficients on *σ (abn. acc.)* and *persistence* decreases but their significance remains.[15] Table 3, Panel B, presents the

[14] The group of firms that issued a fraud-related restatement in the period 2004-2010 partially overlaps with the group of firms that has been subject to an AAER in the period 2004-2010.

[15] Economically, if a potential peer is in the selecting firm's three-digit industry (both the potential peer firm and the selecting firm are in the S&P 500, they are similar in size in terms of assets and sales, and we keep the non-indicator variables at their sample mean), an increase from the 25th percentile to the 75th percentile in *σ (abn. acc.)* of the potential peer firm decreases the likelihood of being included in the peer group of another firm from 37.5% to 35.8%. The same increase in *persistence* of the potential peer firm increases the likelihood of selection from

findings when the same two-digit SIC industry is used as the potential peer group. The results are similar to those obtained with the S&P 900 as the potential peer group, except that the coefficient on *persistence* is not significant when the sales, stock volatility, analyst following, and analyst forecast accuracy of the potential peer firm and *σ (abn. acc.)* and *persistence* are included in the same regression. When using the Cadman-Carter potential peer group, we find a significantly negative coefficient on *σ (abn. acc.)* and a significantly positive coefficient on *persistence* in the five different specifications (see Table 3, Panel C). Taken together, the findings in Table 3 are consistent with our hypothesis that potential peer firms with higher FRQ are more likely to be included in the peer group of another firm.

Regarding the control variables, our results are broadly in line with those of prior research. Consistent with Faulkender and Yang (2010; 2013), we find that potential peer firms with highly paid CEOs are more likely to be included in another firm's peer group. Potential peer firms that are in the same two-digit and three-digit SIC industry are also more likely to be selected in the peer group of another firm. Potential peer firms that are similar to the selecting firm with respect to sales, total assets, and market value are also more likely to be included in another firm's peer group. Finally, potential peer firms belonging to the Dow 30 index or to the S&P 500 index are more likely to be included in a selecting firm's peer group when the selecting firm is also part of the index.

- INSERT TABLE 3 HERE -

4.2 Alternative Measures of FRQ: icd, fraud, aaer

Table 4 presents the results of the tests that use the incidence of an internal control deficiency, a fraud-related restatement, and an AAER as measures for FRQ. The variables *icd*, *fraud*, and *aaer* indicate whether the potential peer firm experienced, respectively, an internal control deficiency, a fraud-related restatement, or an AAER between 2004 and 2010. When considering the S&P 900 as the potential peer group, we find a significantly negative coefficient on *fraud* and *aaer* but an insignificant coefficient on *icd*. When considering the same two-digit SIC industry as the potential peer group, we find a significantly negative coefficient for *icd, fraud,* and *aaer*. Using the potential peer group proposed by Cadman and

33% to 36.5%. In addition, the same increase in *σ (abn. acc.)* of the potential peer firm decreases the likelihood of selection from 5.8% to 4.5% if the potential peer firm is otherwise similar but outside the firm's three-digit industry. The same increase in *persistence* of the potential peer firm increases the likelihood of selection from 4.4% to 7.3%.

Carter (2014), we find negative coefficients for *icd* and *fraud*, but an insignificant coefficient for *aaer*. Albeit somewhat weaker, these results are broadly in line with our hypothesis that potential peer firms with higher FRQ are more likely to be included in the peer group of another firm.[16]

- INSERT TABLE 4 HERE -

4.3 Results for 2006–2010

Table 5 summarizes the results of the regression estimations for the years 2006 to 2010, as well as for the pooled sample years. For the sake of brevity, we report the coefficients for the FRQ measures only. When considering the pooled sample years, we find that for the S&P 900 and the industry-based potential peer group the coefficients for all the FRQ measures are significant in the predicted direction. For the Cadman-Carter potential peer group, we find significant coefficients for *σ (abn. acc.), persistence* and *fraud*, but insignificant ones for *icd* and *aaer*. When analyzing the individual years using the industry-based potential peer group, the coefficients for each of the FRQ measures are significant in the predicted direction for all years, except for the regression for 2006 that used *aaer* as the FRQ measure and the regressions for 2006 and 2010 that used *fraud* as the FRQ measure. When analyzing the individual years using the S&P 900 as the potential peer group, the coefficients are significant in the predicted direction for all years for *σ (abn. acc.)* and *fraud*. For *persistence*, we find a positive and significant coefficient only in 2009 and 2010, for *aaer* we find a negative and significant coefficient for all years except 2007, and we do not find any significant result for *icd.* When analyzing the individual years for the Cadman-Carter potential peer group, we find a significant result in the predicted direction for *persistence* in every single year, for *σ (abn. acc.)* in the years 2007, 2009 and 2010, and for *fraud* in 2008.[17]

- INSERT TABLE 5 HERE -

[16] Economically, in the specification with the S&P 900 as the potential peer group, when a potential peer firm is in the selecting firm's three-digit industry, similar in size on all dimensions and when both the potential peer firm and the selecting firm are in the S&P 500 index, the likelihood of being selected in the peer group of another firm is 33.8%. This likelihood of selection decreases to 31.7% if the potential peer firm experienced an internal control deficiency, which is both economically and statistically insignificant. Moreover, when the potential peer firm experienced a fraud case or an AAER, the likelihood of selection decreases from 33.8% to 21.6% and 22.1%, respectively.

[17] The results for the Cadman-Carter potential peer group are weaker for the alternative measures of FRQ, most likely due to the substantially lower number of observations. Another reason could be that the Cadman-Carter potential peer groups most likely contain a higher percentage of potential peer firms that have already been selected as a peer firm (i.e. the peer firms of the peer firms) and thus most likely already passed the evaluation of economic similarity. The variation in FRQ, and in particular in more salient measures of FRQ, will thus be lower in the Cadman-Carter peer groups. That said, it could be that firms select their peer firms from a potential peer group that exhibits low variation in FRQ. However, as we do not aim to contribute to the methodological discussion concerning the selection criteria of potential peer groups, we believe that presenting the results for the different alternative peer groups currently available gives a true and fair view to the reader.

4.4 Controlling for the Lagged Dependent Variable

To verify the robustness of our main results and to deepen our understanding of the role FRQ plays in the selection of peer firms, we want to test whether FRQ also explains changes in the peer group composition. As peer group composition is quite persistent, we need an estimation technique that allows us to test whether FRQ explains the variance that remains after this persistence has been controlled for. As our measures for FRQ are not well-suited to difference-in-difference regressions, we run a regression in levels, controlling for the lagged values of the dependent variable, which is an equivalent estimation procedure (see, for instance, Azar et al. (2016), Opler et al. (1999) and Rozenbaum (2018)). By including the variable *actpeer in prior year*, which is equal to one if the potential peer firm was included in the selecting firm's peer group in the previous year, we control for the persistence in the composition of peer groups.

Table 6 presents the results of our analyses that test whether FRQ explains variance in the selection of peer firms after controlling for the presence of the potential peer firm in last year's peer group. The results are pooled across all sample years to exploit the maximum possible variance in the peer group composition. As expected, the explanatory power of the model increases considerably to levels of about 70%. Also, z-statistics of 60 and higher for *actpeer in prior year* indicate that presence in the firm's peer group in the previous year is a very good predictor of the presence in the current year's peer group. Importantly, our measures for FRQ explain part of the variance that remains after controlling for persistence in peer group composition. When using the S&P 900 and the same SIC two-digit industry as the potential peer group, we find significant coefficients in the predicted direction for all our measures for FRQ, except for *persistence* when using the S&P 900 as the potential peer group. When using the Cadman-Carter potential peer group, we only find significant coefficients in the predicted direction for *persistence* and *fraud*. Although the results for the Cadman-Carter potential peer group are weaker, the results after controlling for the lagged dependent variable are mainly consistent with the idea that FRQ has some explanatory power in determining the probability that an absent (included) firm in the previous year will be selected (omitted) in the current year.

- INSERT TABLE 6 HERE –

4.5 Information Asymmetry and Peer Group Selection

To test for the information asymmetry channel, we build on the notion that information asymmetry between the selecting firm and the potential peer firm can be mitigated through

both hard information, such as financial reports, and soft information, which is information that is more subtle, hard to put down on paper or store electronically, and arises through familiarity and relationship-building (Butler, 2008; Petersen and Rajan, 2002; Stein 2002). If the information asymmetry channel indeed explains our results, then we expect the effect of FRQ on peer group selection to be stronger when financial reports are a more important information source to reduce the information asymmetry. Stated differently, we expect the effect of FRQ on peer group selection to strengthen when the cost of acquiring soft information increases. Our measure for the cost of acquiring soft information is the geographical distance between the selecting firm and the potential peer firm, as prior research suggests that physical distance increases the difficulty of collecting soft information (Ayers et al., 2011; Butler, 2008; Costello, 2013; Coval and Moskovitz, 1999). If better FRQ reduces the information asymmetry between the selecting firm and the potential peer firm, then we expect the effect of FRQ on peer group selection to increase with the distance between the selecting firm and the potential peer firm. That is, while the selecting firm will likely have greater access to soft information about local potential peer firms, soft information about remote potential peer firms may be lacking, in which case financial reports become a more important information source.

To test for the information asymmetry channel, we run our regression separately for local potential peer firms (i.e., whose headquarters are within 100 miles of the selecting firm's headquarters) and remote potential peer firms (i.e., whose headquarters are farther than 100 miles from the selecting firm's headquarters). We also augment the regression by inserting *ln distance*, which is the log of the distance in miles between the headquarters of the selecting firm and the headquarters of the potential peer firm, as calculated using Microsoft MapPoint. By doing so, we control for the variation in distance *within* the group of local and remote potential peer firms. Table 7 summarizes the results when using the S&P 900 as the potential peer group. In specification (0), we document the effect of distance for the entire sample. Consistent with the idea that local firms are subject to the same market forces and are more likely to compete for the same managerial talent, we find a significantly negative coefficient for *ln distance*, which suggests that a local potential peer firm is more likely to be selected than a remote potential peer firm. In specifications (1)–(10), we test the effect of FRQ separately for local potential peer firms and remote potential peer firms. We find a significantly negative coefficient for *σ (abn. acc.)* and *aaer* and a significantly positive coefficient for *persistence* when analyzing the remote potential peer firms. For local potential peer firms, we find insignificant coefficients for *σ (abn. acc.)* and *aaer* and a weakly negative coefficient for *persistence*. Potential peer firms that have committed fraud have a lower probability of being

included in another firm's peer group, irrespective of the distance between the potential peer firm and the selecting firm. We do not find significant coefficients for *icd*.

In additional tests, we split the sample according to whether the potential peer firm is headquartered in the same state as the selecting firm. We find a significantly negative coefficient for *σ (abn. acc.)* and a significantly positive coefficient for *persistence* when analyzing the potential peer firms located out-of-state. The coefficients for *σ (abn. acc.)* and *persistence* are not significant in the regressions analyzing the potential peer firms located in-state. Potential peer firms that have experienced an internal control deficiency or committed fraud are significantly less likely to be included in the peer group of another firm, irrespective of their location. We do not find significant coefficients for aaer (results not tabulated). Overall, the evidence we present is mainly consistent with the idea that the effect of FRQ on peer group selection is stronger when the collection of soft information is costlier. These results thus support that FRQ influences peer group selection by reducing the information asymmetry between the selecting firm and the potential peer firm.

- INSERT TABLE 7 HERE -

4.6 Reputation Cost and Peer Group Selection

The reputation cost argument states that potential peer firms with lower FRQ are less likely to be included in another firm's peer group because of the reputation costs that firms and board members expose themselves to when selecting peer firms with low FRQ. To test for the reputation cost argument, we exploit cross-sectional variation in the reputation costs that firms and board members are expected to bear when they select a peer firm with low FRQ. To measure cross-sectional variation in the reputation costs of selecting a peer firm with low FRQ, we rely on revealed preference theory, which holds that preferences of individuals and groups can be inferred from observable behavior and decisions of these individuals and groups (Mas-Collell et al., 1995; Samuelson, 1938). We argue that the FRQ of a selecting firm reveals the selecting firm's preference for FRQ. A derivation of this argument is that the reputation cost of selecting a peer firm with low FRQ is higher for selecting firms with higher FRQ themselves. Thus, we expect that the effect of FRQ on peer group selection will be stronger for selecting firms with higher FRQ. To empirically examine the reputation cost argument, we split the sample according to an aggregated measure of the selecting firm's *σ (abn. acc.)* and *persistence*

as the average of their percentile ranked values.[18] We create four groups of observations: quartile 1 (4) contains the selecting firms with the lowest (highest) FRQ.

Table 8 presents the results of our split sample tests when using the S&P 900 as the potential peer group. For selecting firms in quartile 1, we find a positive and significant coefficient for *σ (abn. acc.)* and a negative and significant coefficient for *persistence*, which indicates that the probability of being included in the peer group of firms in quartile 1 increases when FRQ is lower. For selecting firms in quartiles 2 and 3, we find that potential peer firms with more persistent earnings are more likely to be included in the peer group of the selecting firms in quartile 3 only. For selecting firms in quartile 4, which are the selecting firms with the highest FRQ in our sample, we find a negative and significant coefficient for *σ (abn. acc.)* and a positive and significant coefficient for *persistence*, which indicates that the probability of being included in the peer group of firms in quartile 4 increases when FRQ of the potential peer firm is higher. Overall, our results for the split sample tests indicate that selecting firms with higher FRQ, who we assume bear a higher reputation cost when selecting a peer firm with low FRQ, are more likely to select peer firms with higher FRQ. These results support the reputation cost argument.

- INSERT TABLE 8 HERE -

4.7 Additional Analyses

In a final set of analyses, we attempt to further understand how potential peers are selected and how additional factors affect this process. Some of these factors are related to FRQ. We therefore also investigate whether including them alters our main findings. For brevity, we do not tabulate results on these tests but instead summarize the main findings.

Corporate Governance. Our findings documented in section 4.6 indicate that firms are sensitive to the reputational cost of including firms with low FRQ. However, reputational costs can also be caused by selecting peer firms with weak corporate governance, suggesting the need to control for corporate governance strength of potential peer firms. Doing so can also address the comment that our proxies for FRQ partially capture corporate governance strength (e.g. Larcker et al., 2007).[19] To address this concern, we include six commonly used proxies for corporate governance strength of potential peer firms as additional controls: (1) an indicator whether the CEO is the chairman of the board or not; (2) size of the board; (3)

[18] Untabulated findings from analyses on split samples based on either *σ (abn. acc.)* or *persistence* reflect no change in inferences relative to the tabulated findings.
[19] We thank a reviewer for pointing this out.

proportion of independent board members; (4) number of board meetings in a year; (5) size of the remuneration committee and (6) number of meetings of the remuneration committee in a year. We include the proxies for corporate governance strength as lagged variables and run regressions with the six proxies for corporate governance strength (both together in one regression as separately included) and regressions with the principal component of corporate governance strength.[20] Across our regressions, we find that several of the proxies of corporate governance strength carry significant coefficients. Board independence, board size, and number of board meetings are consistently significant in the predicted direction. Surprisingly, firms with a CEO who also chairs the board are more likely to be included in the peer group of another firm. Importantly, even after controlling for corporate governance strength, most of the proxies for FRQ continue to show significant signs in the predicted direction: higher accrual quality, higher earnings persistence, and a lower incidence of fraud and AAER are positively related to the inclusion in the peer group of another firm. The results for internal control deficiencies are somewhat weaker, which is similar to our results without controlling for corporate governance. Overall, corporate governance strength is positively associated with peer group selection but FRQ explains variation in peer group composition above and beyond the variation explained by corporate governance strength. Of course, it bears noting that, despite the significance of our proxies for FRQ when controlling for corporate governance strength, we cannot rule out the possibility that our proxies for FRQ, and most notably *fraud* and *icd*, may still capture, to some extent, the effect of corporate governance strength on the likelihood of being selected in the peer group of another firm.

Compensation Consultant Matching. Many firms hire a compensation consultant to assist them in designing their executive compensation contracts (Murphy and Sandino, 2010). As the compensation consultant is an information intermediary who can reduce the information asymmetry between the selecting firm and the potential peer firm, we argue that the probability of being included in another firm's peer group is higher when the selecting firm and the potential peer firm share a compensation consultant. When we include a dummy that equals 1 if the selecting firm and the potential peer firm share a compensation consultant, we find that sharing a compensation consultant increases the likelihood of being included in another firm's peer group ($z = 4.27$, $p < 0.01$). Including a variable for compensation consultant matching does not change our inferences regarding the effect of FRQ on peer group selection.

[20] We exclude the CEO-chair dummy from our principal component analysis as dummy variables are not well-suited for inclusion in principal component analyses.

Auditor Matching. A key role of the auditor is to enforce the application of proper accounting policies in firms. However, to avoid being dismissed by their clients, auditors may to some degree go along with lower quality earnings. A large body of literature shows that Big 4 auditors, which are larger and more reputable, are more likely to withstand the pressure to report lower FRQ than are non–Big 4 auditors (Francis and Krishnan, 1999; Teoh and Wong, 1993). Untabulated results show that potential peer firms with Big 4 auditors are more likely to be included in another firm's peer group than are otherwise similar peer firms with non–Big 4 auditors ($z = 3.93$, $p < 0.01$). Next, we investigate whether potential peer firms with the *same* auditor as the selecting firm have a higher probability of being included in that peer group. Information asymmetry between the selecting firm and the potential peer firm may be lower when both firms have the same auditor. We find a weakly positive coefficient on the auditor matching dummy ($z = 1.88$, $p < 0.10$), which suggests that sharing an auditor increases the likelihood of being included in another firm's peer group. Including a variable for auditor matching does not change our inferences regarding the effect of FRQ on peer group selection.

Fama and French Industry Classification. As an alternative industry classification to the SIC codes, we employ the forty-eight industry categories of Fama and French. Replacing the industry matching dummies (i.e., matchsic2d and matchsic3d) with a matching dummy for Fama-French industries does not change our inferences regarding the effect of FRQ on the composition of peer groups. As expected, the industry matching dummy based on Fama and French is significant in all regressions.

Peer Groups Used for Relative Performance Evaluation. Firms also use peer groups for relative performance evaluation. We collected data about the peer groups that our sample of S&P 900 firms used for relative performance evaluation between 2006 and 2011. In 2006 (2011), 14.81% (21.44%) of the firms in our sample used self-selected peer groups for relative performance evaluation. The structure of the peer groups used for relative performance evaluation differs from that of the peer groups used for benchmarking compensation contracts. Peer groups used for relative performance evaluation are significantly smaller (i.e., they contain on average 16.60 peer firms whereas those used for compensation benchmarking contain on average 17.84 peer firms), contain significantly more firms from the same SIC two-digit and three-digit industry as the selecting firm, and contain significantly more firms within the same range of total assets, sales, and market capitalization. When we run the same regression model that we used earlier in this study, we find that potential peer firms with higher FRQ have a higher probability of being included in another firm's peer group used for relative performance evaluation. Overall, the results we obtain for the peer groups used for relative performance

evaluation lead to similar inferences as those we obtain for the peer groups used for compensation benchmarking. It is important to note, however, that our analyses could suffer from the econometric problems that could arise when testing our hypothesis on performance peer groups, which we discussed in the introduction of the paper. Although our results indicate that FRQ matters for the composition of peer groups used for relative performance evaluation, we thus need to be careful to interpret the results in the context of evaluating economic similarity between a firm and potential peer firms.

5. CONCLUSION

Using self-selected peer groups to design executive compensation contracts is a common practice among firms. In this study, we highlight how the information environment within which peer group selection takes place influences the selection of peer firms. We start from the argument that financial reports can be used to develop proxies for economic characteristics, which are in turn used to measure the economic similarity between the selecting firm and potential peer firms. We hypothesize that potential firms with better FRQ are more likely be included in the peer group of another firm because of the reduced information asymmetry and lower reputation costs of including peer firms with higher FRQ. Our results support this hypothesis and the channels through a reduced information asymmetry and lower reputation cost that is connected to higher FRQ. Additional analyses show that FRQ explains variation in peer group composition above and beyond the variation explained by corporate governance strength. Employing additional control variables and alternative econometric specifications does not alter our inferences.

This study contributes to the corporate governance literature in general and the literature on peer group composition in particular by examining the broader accounting information environment within which peer groups are composed. We argue that accounting information can play an important role in the peer group composition process as the board of directors can use accounting information to proxy for the economic characteristics used to evaluate the economic similarity between a firm and potential peer firms. The distinction between an economic characteristic and the information that is used to proxy for the economic characteristic, which is at the core of accounting, is often neglected in the literature in finance and economics on peer group composition. By documenting that FRQ matters predictably for peer group composition, our study shows that it is important to distinguish between the economic characteristic and the information used to proxy for the economic characteristic. At

a broader level, our study lends support to the argument that accounting matters for peer group composition.

Our study is subject to limitations. First, as peer group composition is quite sticky, the data do not permit causal inferences. We tried to address this limitation by controlling for the presence of the potential peer firm in the peer group of previous year and this does not change our inferences. Second, our sample ends in 2011, which raises the question whether our results also hold for more recent years. Importantly, as SEC requirements about peer group composition and the disclosure thereof have not significantly changed after 2011, we believe that our theory could extend to more recent years. Third, given the low number of firm-years with internal control weaknesses, fraud, and AAERs in our sample, we are somewhat limited in testing our theory for these alternative proxies for FRQ.

References

Albuquerque, A.M., De Franco, G., Verdi, R.S., 2013. Peer choice in CEO compensation. J. Financ. Econ. 108(1),160-181.

Ayers, B.C., Ramalingegowda, S., Yeung, P.E., 2011. Hometown advantage: the effect of monitoring institution location on financial reporting discretion. J. Acc. Econ. 52(1), 41-61.

Azar, J.A., Kagy, J.F., Schmalz, M.C., 2016. Can changes in the cost of carry explain the dynamics of corporate "cash" holdings? Rev. Financ. Stud. 29(8), 2194-2240.

Ball, R., Bushman, R.M., Vasvari, F.P., 2008. The debt-contracting value of accounting information and loan syndicate structure. J. Acc. Res. 46(2), 247-287.

Ball, R.T., Bonham, J., Hemmer, T., 2018. Does it pay to 'Be Like Mike'? Aspirational peer firms and relative performance evaluation. Working Paper.

Bhattacharya, N., Ecker, F., Olsson, P.M., Schipper, K., 2012. Direct and mediated associations among earnings quality, information asymmetry, and the cost of equity. Acc. Rev. 87(2), 449-482.

Bhattacharya, N., Desai, H., Venkataraman, K., 2013. Does earnings quality affect information asymmetry? Evidence from trading costs. Contemp. Acc. Res. 30(2), 482-516.

Biddle, G.C., Hilary, G., Verdi, R.S., 2009. How does financial reporting quality relate to investment efficiency. J. Acc. Econ. 48(2-3), 112-131.

Bizjak, J., Lemmon, M., Nguyen, T., 2011. Are all CEOs above average? An empirical analysis of compensation peer groups and pay design. J. Financ. Econ. 100(3), 538-555.

Bharath, S.T., Sunder, J., Sunder, S.V., 2008. Accounting quality and debt contracting. Acc. Rev. 83(1), 1-28.

Bushman, R.M., Smith, A.J., 2001. Financial accounting information and corporate governance. J. Acc. Econ.. 32(1-3), 237-333.

Butler, A.W., 2008. Distance still matters: evidence from municipal bond underwriting. Rev. Financ. Stud. 21(2), 763-784.

Byard, D., Li, Y., Yu, Y., 2011. The effect of mandatory IFRS adoption on financial analysts' information environment. J. Acc. Res. 49(1), 69-96.

Cadman, B., Carter, M.E., 2014. Compensation peer groups and their relation with CEO pay. J. Manage. Acc. Res. 26(1), 57-82.

Cao, Y., Myers, L.A., Omer, T., 2012. Does company reputation matter for financial reporting quality? Evidence from restatements. Contemp. Acc. Res. 29(3), 956-990.

Costello, A.M., Wittenberg-Moerman, R., 2011. The impact of financial reporting quality on debt contracting: evidence from internal control weakness reports. J. Acc. Res. 49(1), 97-136.

Costello, A.M., 2013. Mitigating incentive conflicts in inter-firm relationships: evidence from long-term supply contracts. J. Acc. Econ. 56(1), 19-39.

Coval, J.D., Moskowitz, T.J., 1999. Home bias at home: local equity preference in domestic portfolios. J. Financ. 54(6), 2045-2073.

Dechow, P.M., Sloan, R.G., Sweeney, A.P., 1995. Detecting earnings management. Acc. Rev. 70(2), 193-225.

Dechow, P., Dichev, I., 2002. The quality of accruals and earnings: The role of accrual estimation error. Acc. Rev. 77(1), 35-59.

Dechow, P., Ge, W., Schrand, C., 2010. Understanding earnings quality: a review of the proxies, their determinants, and their consequences. J. Acc. Econ. 50(2-3), 344-401.

Dechow, P.M., Ge, W., Larson, C.R., Sloan, R.G., 2011. Predicting material accounting misstatements. Contemp. Acc. Res. 28(1), 17-82.

Faulkender, M., Yang, J., 2010. Inside the black box: the role and composition of compensation peer groups. J. Financ. Econ. 96(2), 257-270.

Faulkender, M., Yang, J., 2013. Is disclosure an effective cleansing mechanism? The dynamics of compensation peer benchmarking. Rev. Financ. Stud. 26(3), 806-839.

Fich, E.M., Shivdasani, A., 2007. Financial fraud, director reputation, and shareholder wealth. J. Financ. Econ.. 86(2), 306-336.

Francis, J.R., Krishnan, J., 1999. Accounting accruals and auditor reporting conservatism. Contemp. Acc. Res. 16(1), 135-165.

Francis, J., LaFond, R., Olsson, P., Schipper, K., 2005. The market pricing of accruals quality. J. Acc. Econ. 39(2), 295-327.
Francis, J., Huang, A.H., Rajgopal, S., Zang, A., 2008. CEO reputation and earnings quality. Contemp. Acc. Res. 25(1), 109-147.
Gong, G., Li, L.Y., Shin, J.Y., 2011. Relative performance evaluation and related peer groups in executive compensation contracts. Acc. Rev. 86(3), 1007-1043.
Healy, P.M., Palepu, K.G., 2001 Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature. J. Acc. Econ. 31(1-3), 405-440.
Larcker, D., Richardson, S., Tuna, I., 2007. Corporate governance, accounting outcomes, and organizational performance. Acc. Rev. 82(4), 963-1008.
Lang, M.H., Lundholm, R.J., 1996. Corporate disclosure policy and analyst behavior. Acc. Rev. 71(4), 467-492.
Lang, M.H., Maffett, M., 2011. Transparency and liquidity uncertainty in crisis periods. J. Acc. Econ. 52(2-3), 101-125.
Leuz, C., Verrecchia, R., 2000. Economic consequences of increased disclosure. J. Acc. Res. 38(Supplement), 91-124.
Lorsch, J.W., MacIver, E., 1989. Pawns or potentates: the reality of America's corporate boards (Harvard Business School Press, Boston).
Lobo, G.J., Neel, M., Rhodes, A., 2018. Accounting comparability and relative performance evaluation in CEO compensation. Rev. Acc. Stud. 23(3), 1137-1176.
Mas-Colell, A., Dennis, M.D., Green, J.R., 1995. Microeconomic theory. Oxford University Press, New York.
Murphy, K.J., Sandino, T., 2010. Executive pay and "independent" compensation consultants. J. Acc. Econ. 49(3), 247-262.
Petersen, M.A., Rajan, R.G., 2002. Does distance still matter? The information revolution in small business lending. J. Financ. 57(6), 2533-2570.
Opler, T., Pinkowitz, L., Stulz, R., Williamson, R., 1999. The determinants and implications of corporate cash holdings. J. Financ. Econ. 52(1), 3-46.
Pae, S., 2002. Optimal disclosure policy in oligopoly markets. J. Acc. Res. 40(3), 901-932.
Rozenbaum, O., 2018. EBITDA and Managers' Investment and Leverage Choices. Contemp. Acc. Res. forthcoming.
Samuelson, P.A., 1938. A note on the pure theory of consumer's behavior. Economica 5(17), 61-71.
Simmonds, K., 1986. The accounting assessment of competitive position. Eur. J. Marketing. 20(1), 16-31.
Srinivasan, S., 2005. Consequences of financial reporting failure for outside directors: evidence from accounting restatements and audit committee members. J. Acc. Res. 43(2), 291-334.
Stein, J.C., 2002. Information production and capital allocation: decentralized versus hierarchical firms. J. Financ. 57(5), 1891-1921.
Teoh, S.H., Wong, T.J., 1993. Perceived auditor quality and the earnings response coefficient. Acc. Rev. 68(2), 346-366.
Verrecchia, R., 2001. Essays on disclosure. J. Acc. Econ. 31(1-3), 97-180.

Appendix A: Variable Definitions

Variable	Description
actpeer	Indicator variable equal to 1 if a potential peer firm (either part of the S&P 900 or the same two-digit SIC industry) is selected as a peer firm by the disclosing firm, and zero otherwise.
σ (abn. acc.)	Measure of accrual quality defined as in Larcker et al. (2007) and Chaney et al. (2011). Standard deviation of discretionary accruals (DA) with DA calculated using the cross-sectional modified Jones model (industry regressions with at least 10 firms per two-digit SIC industry) as the residual of a regression of total accruals on changes in sales minus changes in accounts receivable, capital intensity, cash flow from operations and book-to-market value. Total accruals are calculated as a firm's net income before extraordinary items minus cash flow from operations, as reported on the statement of cash flows.
persistence	The slope coefficient estimate from a regression model of current annual earnings per share explained by one-year lagged earnings per share, which we estimate using a five-year rolling window. Earnings per share are calculated as earnings before extraordinary items divided by the number of shares outstanding.
icd	Indicator variable that equals one if the auditor of the firm has reported one or more material weaknesses in the SOX 404 report in the period 2004-2010, and zero otherwise**.** Data are retrieved from Audit Analytics.
fraud	Indicator variable that equals one if the firm has reported one or more fraud-related restatements in the period 2004-2010, and zero otherwise**.** Data are retrieved from Audit Analytics (variable RES_FRAUD).
aaer	Indicator variable that equals one if the SEC had issued one or more Accounting and Auditing Enforcement Releases (AAERs) during or at the conclusion of an investigation against the peer, its auditor or a manager for alleged accounting and/or auditing misconduct in the period 2004-2010, and zero otherwise. Dataset is obtained from the Center for Financial Reporting and Management at UC Berkeley. A detailed description of the data collection is available in Dechow et al. (2011).
total assets	A firm's total assets in mln USD.
sales	A firm's total revenues in mln USD.
market cap	A firm's total market capitalization measured as the number of outstanding shares multiplied by the share price measured at the end of the fiscal period prior to investigation.
ln (peer total pay)	Log of total compensation (salary, bonus and long-term incentive plans) of the CEO of a potential peer firm in mln USD. Data are retrieved from ExecuComp.
ln (peer sales)	Natural log of total revenues in mln USD of the potential peer firm measured at the end of the year prior to investigation.
peer stock volatility	Standard deviation of monthly stock returns of a potential peer firm measured over a five-year window prior to the year of investigation**.**
peer analysts	Number of analysts following a potential peer firm (number of estimates from I/B/E/S).
peer accuracy	Forecast accuracy of the potential peer firm, defined as absolute difference between the (first) consensus forecast and actual annual earnings per share, divided by lagged price, multiplied by -1.
no of peers	The total number of selected or chosen peer firms by the disclosing firm.
matchsic2d	Indicator variable equal to one if a chosen peer firm is in the same two-digit SIC industry of the disclosing firm and zero otherwise.
matchsic3d	Indicator variable equal to one if a chosen peer firm is in the same three-digit SIC industry of the disclosing firm and zero otherwise.

salesmatch	Indicator variable equal to one if a chosen peer firm's revenues and the disclosing firm's revenues are within 50-200% of each other, zero otherwise.
assetmatch	Indicator variable equal to one if a chosen peer firm's total assets and the disclosing firm's total assets are within 50-200% of each other, zero otherwise.
mcapmatch	Indicator variable equal to one if a chosen peer firm's market capitalization and the disclosing firm's market capitalization are within 50-200% of each other, zero otherwise.
dow30match	Indicator variable equal to one if both a chosen peer firm and the disclosing firm are Dow 30 members, zero otherwise.
largecapmatch	Indicator variable equal to one if both a chosen peer firm and the disclosing peer are part of the S&P 500, zero otherwise.
midcapmatch	Indicator variable equal to one if both a chosen peer firm and the disclosing firm are part of the S&P 400 MidCap, zero otherwise.
ln distance	Natural log of the driving distance in miles between the selecting firm's zip code and the potential peer's zip code. Distances are calculated using Microsoft Mappoint.

TABLE 1

Descriptive Statistics

Panel A: Firms that Disclose Self-Selected Peer Groups in 2011

Selecting firms disclosing peers in 2011	Obs	Mean	Median	Std. Dev.	Min	Max
σ (abn. acc.)	591	0.064	0.050	0.064	0.006	0.890
persistence	733	0.803	0.754	0.448	-0.609	2.570
icd (2004-2010)	734	0.117	0.000	0.322	0.000	1.000
fraud (2004-2010)	734	0.016	0.000	0.127	0.000	1.000
aaer (2004-2010)	733	0.018	0.000	0.133	0.000	1.000
sales	734	12,168	3,796	28,574	143	406,103
total assets	734	33,729	6,392	155,621	310	2,300,000
market cap	734	15,277	5,225	31,819	461	364,064
book-to-market	734	0.514	0.441	0.337	-1.206	2.154
stock volatility	718	0.352	0.323	0.157	0.097	0.933
analysts	658	14.547	14.000	7.280	1.000	43.000
accuracy	657	-0.014	-0.006	0.027	-0.333	0.000
ln (total pay)	731	1.813	1.868	1.094	-13.816	4.436

Panel B: Peer Groups in 2011

Compensation peers selected in 2011	Obs	Mean	Median	Std. Dev.
no of peers	734	17.841	16.000	12.174
sic2dmatch	734	0.396	0.350	0.289
sic3dmatch	734	0.267	0.176	0.263
salesmatch	734	0.618	0.636	0.246
assetmatch	734	0.551	0.571	0.231
mcapmatch	734	0.517	0.529	0.226
peer is dow 30 if firm is dow 30	26	0.403	0.350	0.237
peer is sp500 if firm is sp500	435	0.834	0.938	0.226
peer is sp400 if firm is sp400	299	0.549	0.545	0.239

Table 1 presents descriptive statistics on the S&P 900 firms that disclose self-selected peer groups in 2011 (Panel A) and on the firms belonging to the self-selected peer groups disclosed in 2011 (Panel B). See Appendix A for variable definitions.

TABLE 2

Univariate Analysis

Panel A: Differences in Accrual Quality and Earnings Persistence by Number of Selections

Group	Number of Firms	Number of selections as peer in 2011	σ (abn. acc.)	persistence
1	35	0 times	0.062	0.625
2	235	between 1 - 5	0.072	0.737
3	231	between 6-10	0.065	0.756
4	299	between 11-20	0.058	0.850
5	105	>20 times	0.052	0.950
		diff. between group 1 and 5 (p-value) :	*0.362*	*0.000*
		diff. between groups 1/2 vs 4/5 (p-value) :	*0.005*	*0.000*

Panel B: Did the Firm Experience an ICD?

In the year prior to selection for peer groups in 2011, 2010, 2009, 2008, 2007, and 2006 (firm-year level analysis)?	Number of Peers	Average number of times the potential peer is selected	Median number of times the potential peer is selected
Potential Peer Group: ***All firms*** *available*			
YES	719	2.8	1
Difference (p-value)		*0.000*	*0.000*
NO	14169	4.9	2
Potential Peer Group: ***S&P 900***			
YES	147	6.4	5
Difference (p-value)		*0.000*	*0.000*
NO	5255	9.6	8
In the period 2004-2010 for peer groups in 2011? (firm-level analysis)	Number of Peers	Average number of times the potential peer is selected	Median number of times the potential peer is selected
Potential Peer Group: ***All firms*** *available*			
YES	500	19.6	8
Difference (p-value)		*0.000*	*0.000*
NO	2361	26	10
Potential Peer Group: ***S&P 900***			
YES	106	52.4	40
Difference (p-value)		*0.131*	*0.080*
NO	799	57.5	47

Panel C: Did the Firm Experience an AAER or Fraud in the Period 2004-2010?

Results for:	**AAER**	**AAER**	**AAER**	**Fraud**	**Fraud**	**Fraud**
	Number of Peers	Average number of times the potential peer is selected	Median number of times the potential peer is selected	Number of Peers	Average number of times the potential peer is selected	Median number of times the potential peer is selected
Potential Peer Group: ***All firms*** *available*						
YES	56	26.5	13	53	20.7	7
Difference (p-value)		*0.71*	*0.88*		*0.000*	*0.000*
NO	2890	24.7	10	9345	7.5	0
Potential Peer Group: ***S&P 900***						
YES	16	59.6	41	16	46.3	39
Difference (p-value)		*0.81*	*0.87*		*0.33*	*0.42*
NO	886	56.9	47	889	57.1	47
Potential Peer Group: ***S&P 900 – Matched Sample***						
YES	16	59.6	41	16	46.3	39
Difference (p-value)		*0.095*	*0.004*		*0.080*	*0.021*
NO	16	86.3	64	16	71.1	60

Table 2 presents results from univariate tests for the hypothesis. Panel A shows average values of *σ (abn. acc.)* and *persistence* of selected peer firms categorized on the number of times the firm has been selected as a peer firm in 2011. Panel B shows the number of times potential peer firms have been selected as a peer firm in 2011, 2010, 2009, 2008, and 2007 based on whether they have experienced an *icd* in the year prior to the selection (upper part) and the number of times potential peer firms have been selected as a peer firm in 2011 based on whether they have experienced an *icd* at least once in the period 2004-2010. Potential peer firms are either all firms in the Compustat universe or all S&P 900 firms. Panel C shows the number of times potential peer firms have been selected based on whether they have experienced an *aaer* or *fraud* in the period 2004-2010. Potential peer firms are all firms available in the Compustat universe, all S&P 900 firms or a matched sample of non-fraud and non-aaer firms from the S&P 900. The matched firm is the closest peer firm belonging to the S&P 900 in terms of sales within the same SIC two-digit industry. See Appendix A for variable definitions.

TABLE 3

Peer Group Composition and Financial Reporting Quality

Panel A: S&P 900 as the Potential Peer Group

DV = actpeer	(1)	(2)	(3)	(4)	(5)
σ (abn. acc.)	-1.151***		-0.404**		-0.312*
	(0.205)		(0.178)		(0.162)
persistence		0.170***		0.059***	0.072***
		(0.016)		(0.019)	(0.021)
ln peer sales			0.162***	0.156***	0.154***
			(0.012)	(0.011)	(0.012)
peer stock volatility			-0.279***	-0.259***	-0.286***
			(0.052)	(0.047)	(0.052)
peer analysts			0.007***	0.008***	0.008***
			(0.001)	(0.001)	(0.001)
peer accuracy			0.113	0.408***	-0.263
			(0.335)	(0.138)	(0.335)
ln peer total pay	0.095***	0.080***	0.022**	0.031***	0.023**
	(0.014)	(0.013)	(0.009)	(0.009)	(0.009)
no of peers	0.007***	0.006***	0.007***	0.007***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
matchsic2d	1.156***	1.209***	1.178***	1.249***	1.179***
	(0.040)	(0.037)	(0.041)	(0.038)	(0.041)
matchsic3d	0.748***	0.761***	0.800***	0.802***	0.804***
	(0.045)	(0.040)	(0.046)	(0.041)	(0.046)
salesmatch	0.524***	0.498***	0.588***	0.564***	0.588***
	(0.025)	(0.024)	(0.027)	(0.025)	(0.027)
assetsmatch	0.270***	0.274***	0.288***	0.312***	0.288***
	(0.017)	(0.016)	(0.017)	(0.017)	(0.017)
mcapmatch	0.100***	0.100***	0.146***	0.158***	0.145***
	(0.017)	(0.015)	(0.018)	(0.017)	(0.018)
dow30match	1.366***	1.304***	1.033***	1.006***	1.034***
	(0.140)	(0.135)	(0.144)	(0.138)	(0.144)
largecapmatch	0.428***	0.462***	0.289***	0.315***	0.289***
	(0.027)	(0.026)	(0.025)	(0.025)	(0.025)
midcapmatch	0.071**	0.078***	0.169***	0.164***	0.169***
	(0.030)	(0.027)	(0.031)	(0.029)	(0.031)
constant	-3.237***	-3.446***	-4.570***	-4.657***	-4.578***
	(0.040)	(0.041)	(0.105)	(0.092)	(0.105)
Observations	532,294	657,668	474,367	580,679	474,367
Log likelihood	-30400	-35667	-26937	-30972	-26925
Pseudo R-squared	0.271	0.290	0.284	0.309	0.284

Panel B: SIC Two-Digit as the Potential Peer Group

DV = actpeer	(1)	(2)	(3)	(4)	(5)
σ (abn. acc.)	-2.348***		-1.001***		-0.998***
	(0.315)		(0.254)		(0.260)
persistence		0.239***		0.021	0.001
		(0.036)		(0.036)	(0.044)
ln peer sales			0.231***	0.218***	0.230***
			(0.014)	(0.013)	(0.015)
peer stock volatility			-0.320***	-0.348***	-0.332***
			(0.097)	(0.075)	(0.095)
peer analysts			0.007***	0.005**	0.007***
			(0.002)	(0.002)	(0.002)
peer accuracy			-0.095	0.221*	-0.096
			(0.114)	(0.120)	(0.103)
ln peer total pay	0.220***	0.236***	0.044***	0.074***	0.045***
	(0.028)	(0.023)	(0.014)	(0.016)	(0.014)
no of peers	0.010***	0.010***	0.010***	0.011***	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
matchsic3d	0.689***	0.675***	0.778***	0.763***	0.779***
	(0.042)	(0.037)	(0.043)	(0.038)	(0.042)
salesmatch	0.441***	0.419***	0.483***	0.447***	0.482***
	(0.034)	(0.030)	(0.034)	(0.031)	(0.034)
assetsmatch	0.210***	0.213***	0.229***	0.235***	0.229***
	(0.033)	(0.031)	(0.034)	(0.031)	(0.034)
mcapmatch	0.271***	0.301***	0.274***	0.315***	0.275***
	(0.031)	(0.028)	(0.032)	(0.030)	(0.032)
dow30match	0.627***	0.584***	0.198	0.185	0.199
	(0.208)	(0.207)	(0.221)	(0.213)	(0.221)
largecapmatch	0.679***	0.703***	0.376***	0.440***	0.376***
	(0.043)	(0.038)	(0.044)	(0.042)	(0.044)
midcapmatch	0.469***	0.471***	0.448***	0.453***	0.445***
	(0.042)	(0.037)	(0.044)	(0.039)	(0.044)
constant	-2.494***	-2.849***	-4.040***	-4.040***	-4.025***
	(0.081)	(0.076)	(0.130)	(0.115)	(0.130)
Observations	43,762	53,093	36,372	44,476	36,305
Log likelihood	-10813	-13697	-9122	-11735	-9118
Pseudo R-squared	0.220	0.221	0.241	0.238	0.241

Panel C: Cadman-Carter Potential Peer Group

Potential Peers:	**Cadman-Carter (1)-(5)**				
DV = actpeer	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
σ (abn. acc.)	-0.633***		-0.439**		-0.349*
	(0.188)		(0.197)		(0.192)
persistence		0.106***		0.070***	0.065***
		(0.019)		(0.022)	(0.024)
ln peer sales			0.054***	0.055***	0.047***
			(0.013)	(0.012)	(0.013)
peer stock volatility			-0.169**	-0.137**	-0.170**
			(0.068)	(0.062)	(0.068)
peer analysts			0.006***	0.006***	0.007***
			(0.002)	(0.002)	(0.002)
peer accuracy			-0.144	-0.244	-0.464
			(0.454)	(0.380)	(0.456)
ln peer total pay	0.019**	0.014*	0.007	0.012	0.009
	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
no of peers	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
matchsic2d	0.579***	0.575***	0.607***	0.622***	0.610***
	(0.037)	(0.033)	(0.038)	(0.035)	(0.038)
matchsic3d	0.447***	0.452***	0.463***	0.466***	0.465***
	(0.040)	(0.035)	(0.042)	(0.036)	(0.042)
salesmatch	0.495***	0.459***	0.527***	0.504***	0.527***
	(0.032)	(0.030)	(0.033)	(0.032)	(0.033)
assetsmatch	0.177***	0.171***	0.183***	0.190***	0.182***
	(0.021)	(0.020)	(0.022)	(0.021)	(0.022)
mcapmatch	0.148***	0.160***	0.170***	0.194***	0.170***
	(0.021)	(0.020)	(0.022)	(0.021)	(0.022)
dow30match	0.655***	0.572***	0.532***	0.468***	0.533***
	(0.119)	(0.114)	(0.123)	(0.118)	(0.123)
largecapmatch	0.197***	0.229***	0.121***	0.145***	0.122***
	(0.026)	(0.026)	(0.028)	(0.029)	(0.028)
midcapmatch	0.180***	0.163***	0.232***	0.201***	0.232***
	(0.035)	(0.032)	(0.036)	(0.034)	(0.036)
constant	-1.736***	-1.839***	-2.252***	-2.382***	-2.263***
	(0.037)	(0.039)	(0.117)	(0.104)	(0.117)
Observations	43,486	50,203	39,428	44,833	39,428
Log likelihood	-18319	-21569	-16517	-19105	-16512
Pseudo R-squared	0.120	0.121	0.124	0.129	0.124

Table 3 presents the results of the probit regression analyses of peer group composition for the year 2011. The dependent variable, *actpeer*, is a dummy variable equal to one if a potential peer firm is selected by the disclosing firm and zero otherwise. In Panel A, the potential peer group is the S&P 900. In Panel B, the potential peer group contains all firms available in Compustat in the same two-digit SIC industry as the selecting firm. In Panel C, the potential peer group is based on Cadman and Carter (2014) and contains selected peers, firms that have chosen the selecting firm as a peer and the selected peers of the peers. All control variables are measured in 2010. See Appendix A for variable definitions. Standard errors are presented below the coefficients in parentheses and are clustered by firm. *, **, *** denote significance at the 10%, 5% and 1% level (two-sided).

TABLE 4

Alternative Measures of Financial Reporting Quality

Potential Peers:	**S&P 900 (1)-(3)**			**SIC 2-Digit (4)-(6)**			**Cadman - Carter (7)-(9)**		
DV = actpeer	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
icd (2004-2010)	-0.021			-0.053*			-0.047*		
	(0.019)			(0.028)			(0.026)		
fraud (2004-2010)		-0.121***			-0.271***			-0.158**	
		(0.044)			(0.072)			(0.061)	
aaer (2004-2010)			-0.117***			-0.243***			-0.052
			(0.039)			(0.070)			(0.056)
control variables	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*
Observations	581,412	581,412	581,412	44,604	44,604	44,565	44,863	44,863	44,863
Log likelihood	-31007	-31004	-31004	-11752	-11746	-11737	-19125	-19123	-19126
Pseudo R-squared	0.309	0.309	0.309	0.238	0.238	0.238	0.129	0.129	0.129

Table 4 presents the results of the probit regression analyses of peer group composition for the year 2011 using alternative measures for financial reporting quality. The dependent variable, *actpeer*, is a dummy variable equal to one if a potential peer firm is selected by the disclosing firm and zero otherwise. In specifications (1) – (3), the potential peer group is the S&P 900. In specifications (4) – (6), the potential peer group is the same two-digit SIC industry as the selecting firm. In specifications (7) – (9), the potential peer group is based on Cadman and Carter (2014) and contains selected peers, firms that have chosen the selecting firm as a peer and the selected peers of the peers. All control variables from Table 3 are included. All control variables are measured in 2010. See Appendix A for variable definitions. Standard errors are presented below the coefficients in parentheses and are clustered by firm. *, **, *** denote significance at the 10%, 5% and 1% level (two-sided).

TABLE 5

Analyses for 2006-2010 and Pooled Results

Financial Reporting Quality Measure:	***year*: 2006**		***year*: 2007**		***year*: 2008**		***year*: 2009**		***year*: 2010**		***pooled results:* 2006-2011**	
σ (abn.acc.)	S&P	-0.522**	S&P	-0.473***	S&P	-0.293*	S&P	-0.404***	S&P	-0.346**	S&P	-0.406***
	SIC	-0.437*	SIC	-1.274***	SIC	-1.151***	SIC	-1.128***	SIC	-1.114***	SIC	-1.122***
	CC	-0.152	CC	-0.553***	CC	-0.262	CC	-0.414**	CC	-0.0468**	CC	-0.486***
persistence	S&P	0.025	S&P	0.016	S&P	0.038	S&P	0.047**	S&P	0.070***	S&P	0.047***
	SIC	0.129**	SIC	0.304***	SIC	0.251***	SIC	0.239***	SIC	0.143***	SIC	0.144***
	CC	0.096***	CC	0.062*	CC	0.068**	CC	0.069***	CC	0.055**	CC	0.054***
icd (2004 - *year*)	S&P	-0.046	S&P	0.005	S&P	-0.030	S&P	-0.027	S&P	-0.024	S&P	-0.037**
	SIC	-0.104*	SIC	-0.096***	SIC	-0.092***	SIC	-0.066**	SIC	-0.055*	SIC	-0.096***
	CC	-0.044	CC	-0.015	CC	-0.025	CC	-0.013	CC	-0.020	CC	-0.012
fraud (2004 - *year*)	S&P	-0.138**	S&P	-0.111**	S&P	-0.134***	S&P	-0.136***	S&P	-0.098*	S&P	-0.146***
	SIC	0.157	SIC	-0.272***	SIC	0.228***	SIC	-0.180	SIC	-0.078	SIC	-0.232***
	CC	-0.099	CC	-0.071	CC	-0.101*	CC	-0.093	CC	-0.070	CC	-0.103**
aaer (2004 - *year*)	S&P	-0.136**	S&P	-0.061	S&P	-0.103**	S&P	-0.126***	S&P	-0.067*	S&P	-0.119***
	SIC	-0.133	SIC	-0.162**	SIC	-0.288***	SIC	-0.249***	SIC	-0.233***	SIC	-0.249***
	CC	0.018	CC	0.012	CC	-0.032	CC	0.005	CC	0.010	CC	0.027

Table 5 presents the results of the probit regression analyses of peer group composition for the years 2006-2010 and the results on the pooled dataset (2006-2011). S&P refers to the S&P 900 potential peer group; SIC refers to the SIC 2-digit potential peer group and includes all firms available in Compustat in the same two-digit SIC industry as the selecting firm; CC refers to the Cadman-Carter potential peer group and contains selected peers, firms that have chosen the selecting firm as a peer and the selected peers of the peers. The dependent variable, *actpeer*, is a dummy variable equal to one if a potential peer firm is selected by the disclosing firm and zero otherwise. Control variables are the same as in Table 3 and are measured in the year prior to the selection in the peer group. See Appendix A for variable definitions. Standard errors are clustered by firm but not reported for brevity. *, **, *** denote significance at the 10%, 5% and 1% level (two-sided).

TABLE 6

Peer Group Composition and Financial Reporting Quality after Controlling for the Lagged Dependent Variable

Potential Peers:	**S&P 900 (1)-(5)**					**SIC two-digit (6)-(10)**				
	σ (abn. acc.)	**persistence**	**icd (2004-*year*)**	**fraud (2004-year)**	**aaer (2004-year)**	**σ (abn. acc.)**	**persistence**	**icd (2004-*year*)**	**fraud (2004-year)**	**aaer (2004-year)**
DV = actpeer	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
FRQ	-0.183**	-0.007	-0.036**	-0.090***	-0.099***	-0.778***	0.071***	-0.062***	-0.138**	-0.170***
	(0.090)	(0.015)	(0.014)	(0.033)	(0.029)	(0.155)	(0.027)	(0.023)	(0.056)	(0.049)
actpeer in prior year	3.532***	3.501***	3.501***	3.501***	3.501***	3.083***	3.055***	3.056***	3.056***	3.056***
	(0.057)	(0.054)	(0.054)	(0.054)	(0.054)	(0.041)	(0.037)	(0.037)	(0.037)	(0.037)
ln peer sales	0.093***	0.095***	0.095***	0.095***	0.095***	0.118***	0.110***	0.118***	0.119***	0.118***
	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
peer stock volatility	-0.062*	-0.067*	-0.058	-0.060*	-0.065*	-0.105*	-0.193***	-0.204***	-0.212***	-0.213***
	(0.037)	(0.035)	(0.036)	(0.036)	(0.036)	(0.058)	(0.054)	(0.054)	(0.053)	(0.053)
peer analysts	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***	0.006***	0.006***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
peer accuracy	0.929***	0.520***	0.515***	0.515***	0.516***	0.009	0.060	0.064	0.064	0.066
	(0.184)	(0.142)	(0.142)	(0.142)	(0.141)	(0.055)	(0.048)	(0.048)	(0.048)	(0.048)
control variables	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*
Pseudo R-squared	0.720	0.727	0.727	0.727	0.727	0.687	0.683	0.683	0.683	0.683

Potential Peers:	**Cadman - Carter (11)-(15)**				
FRQ Measure:	**σ (abn. acc.)**	**persistence**	**icd (2004-*year*)**	**fraud (2004-year)**	**aaer (2004-year)**
DV = actpeer	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**
FRQ	-0.067	0.068**	-0.050	-0.152*	-0.032
	(0.289)	(0.028)	(0.036)	(0.085)	(0.068)
actpeer in prior year	3.188***	3.147***	3.145***	3.144***	3.145***
	(0.081)	(0.077)	(0.077)	(0.077)	(0.077)
ln peer sales	0.008	0.010	0.018	0.018	0.019
	(0.028)	(0.026)	(0.026)	(0.026)	(0.026)
peer stock volatility	0.024	0.063	0.051	0.039	0.037
	(0.100)	(0.092)	(0.092)	(0.092)	(0.092)
peer analysts	0.004	0.006***	0.005**	0.006**	0.006**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
peer accuracy	0.394	-0.140	0.139	0.142	0.153
	(0.627)	(0.499)	(0.483)	(0.487)	(0.481)
control variables	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*
Pseudo R-squared	0.669	0.662	0.662	0.662	0.662

Table 6 presents the results of the probit regression analyses of changes in peer group composition for the full panel (2006-2011). In specifications (1) – (5), the potential peer group is the S&P 900. In specifications (6) – (10), the potential peer group is the same two-digit SIC industry as the selecting firm. In specifications (11) – (15), the potential peer group is based on Cadman and Carter (2014) and contains selected peers, firms that have chosen the selecting firm as a peer and the selected peers of the peers. The dependent variable, *actpeer*, is a dummy variable equal to one if a potential peer firm is selected by the disclosing firm and zero otherwise. The additional explanatory variable, *actpeer in prior year*, is a dummy variable equal to one if a potential peer was chosen as a peer in the previous fiscal year and zero otherwise. All control variables from Table 3 are included. See Appendix A for variable definitions. Standard errors are presented below the coefficients in parentheses and are clustered by firm. *, **, *** denote significance at the 10%, 5% and 1% level (two-sided).

TABLE 7

Peer Group Composition and Geographical Distance between the Selecting Firm and the Potential Peer Firm

		ACCRUAL QUALITY		PERSISTENCE		ICD		FRAUD		AAER	
DV = actpeer	**(0)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Selecting firm and potential peer have:	Full Sample	distance < 100 miles	distance > 100 miles	distance < 100 miles	distance > 100 miles	distance < 100 miles	distance > 100 miles	distance < 100 miles	distance > 100 miles	distance < 100 miles	distance > 100 miles
ln distance	-0.100***	-0.129***	-0.115***	-0.136***	-0.114***	-0.137***	-0.116***	-0.139***	-0.116***	-0.137***	-0.116***
	(0.007)	(0.019)	(0.012)	(0.017)	(0.011)	(0.017)	(0.011)	(0.017)	(0.011)	(0.017)	(0.011)
σ (abn. acc.)		0.172	-0.582***								
		(0.259)	(0.198)								
persistence				-0.088*	0.059***						
				(0.050)	(0.019)						
icd (2004-2010)						-0.019	-0.025				
						(0.060)	(0.020)				
fraud (2004-2010)								-0.324**	-0.120**		
								(0.126)	(0.050)		
aaer (2004-2010)										-0.238	-0.095**
										(0.209)	(0.041)
control variables	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*
Observations	547,314	21,134	424,637	27,028	519,566	27,046	520,268	27,046	520,268	27,046	520,268
Log likelihood	-29104	-2573	-22536	-2977	-25990	-2981	-26022	-2977	-26019	-2980	-26020
Pseudo R-squared	0.320	0.284	0.291	0.303	0.319	0.302	0.318	0.303	0.318	0.302	0.318

Table 7 presents the results of the probit regression analyses of peer group composition for the year 2011. The models are the same as those we used for the main analyses. The table reports results separately for potential peers located within 100 miles of the headquarters of the selecting firm and those located further away. In the base model (specification (0)), the full sample is tested. In the remaining specifications (1) – (10), results are shown separately for potential peers located close by and those located further away. The dependent variable, *actpeer*, is a dummy variable equal to one if a potential peer firm is selected by the disclosing firm and zero otherwise. The additional explanatory variable, *ln distance*, is measured as the log of the driving distance in miles between the headquarters of the selecting firm and the potential peer firm. The potential peer group is the S&P 900. All control variables from Table 3 are included. All control variables are measured in 2010. See Appendix A for variable definitions. Standard errors are presented below the coefficients in parentheses and are clustered by firm. *, **, *** denote significance at the 10%, 5% and 1% level (two-sided).

TABLE 8

Peer Group Composition and Financial Reporting Quality of the Selecting Firm

Selecting firm has accrual quality and earnings persistence:	**below P25**	**between P25 and median**	**between median and P75**	**above P75**
DV = actpeer	**(1)**	**(2)**	**(3)**	**(4)**
σ (abn. acc.)	0.618***	-0.310	-0.666	-2.760***
	(0.209)	(0.263)	(0.526)	(0.592)
persistence	-0.145***	0.018	0.145***	0.220***
	(0.048)	(0.048)	(0.037)	(0.040)
analysts	0.097***	0.152***	0.170***	0.206***
	(0.028)	(0.025)	(0.021)	(0.025)
accuracy	-0.250**	-0.166	-0.457***	-0.339***
	(0.107)	(0.113)	(0.118)	(0.102)
control variables	*incl.*	*incl.*	*incl.*	*incl.*
Observations	97,564	88,519	96,915	98,848
Log likelihood	-6002	-5899	-6257	-6631
Pseudo R-squared	0.276	0.269	0.278	0.331

Table 8 presents the results of the probit regression analyses of peer group composition for the year 2011. The models are the same as those we used for the main analyses. We aggregate accrual quality and persistence of the selecting firms by calculating the average of the percentile ranked values of *σ (abn. acc.)* and *persistence*. Then, the sample is split based on the quarter that the selecting firm belongs to (1. below percentile 25; 2. between percentile 25 and median; 3. between median and percentile 75; 4. above percentile 75). Selecting firms belonging to the quarter "below P25" ("above P75") exhibit the lowest (highest) earnings quality. The dependent variable, *actpeer*, is a dummy variable equal to one if a potential peer firm is selected by the disclosing firm and zero otherwise. The potential peer group is the S&P900 in all specifications. All control variables from Table 3 are included. See Appendix A for variable definitions. Standard errors are presented below the coefficients in parentheses and are clustered by firm. *, **, *** denote significance at the 10%, 5% and 1% level (two-sided).