The Quality of Earnings Information in Dual-Class Firms:

Persistence and Predictability

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Abstract

A dual-class firm structure, in which one class of shares confers more votes per share than the other, creates a gap between voting rights and cash flow rights. In this paper, we examine the quality of the financial reports of dual- versus single-class firms publicly traded in the U.S. over the 2012–2017 period, as measured by persistence and predictive ability of earnings and cash flows. The results are based on comprehensive information from financial statements analyzed using across-sample and within-sample tests. An additional external indicator of financial restatement filings is also used to support the results. The findings demonstrate that the quality of financial reports is higher for dual-class firms than for single-class firms and increases over time. This suggests that the freedom from market pressures is stronger than agency costs, encouraging founders to provide investors with higher-quality information in exchange for superior voting rights. The results uncover important and counterintuitive evidence about the existence of a tradeoff between the dilution of voting rights and enhancement of the credibility of information provided to investors.

Keywords: dual-class, earnings quality, financial reports, earnings persistence, earnings prediction, cash flow prediction, restatements, agency problems, disclosure, corporate governance

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1 Introduction

The initial public offering (IPO) of Snap Inc., Silicon Valley's social media star, attracted considerable attention. On March 2, 2017, the company went public with a dual-class capital structure, following other well-known technology firms that issued dual-class shares, such as Google (now Alphabet) and Facebook.[1] Snap's IPO highlights the long-standing debate on dual-class capital structure and its implications for corporate governance and investor protection. This study contributes to this debate by providing policymakers with important insights into the quality of financial reporting of dual-class firms, as gauged by persistence and predictive value.

An increasing number of firms are raising capital using dual-class capital structures. The proportion of corporations that have gone public by listing dual-class shares on U.S. stock exchanges increased from 1% in 2005 to 26% in the first half of 2019 (Council of Institutional Investors, 2019). Facebook, Google, Lyft, and Snap are noticeable examples of this trend. Since the use of this capital structure is rising, it is an appropriate time to examine its policy implications for investor protection.

The dual-class capital structure creates a gap between voting rights and cash flow rights (Bebchuk *et al.*, 2000). Founders wanting to raise capital without surrendering effective control of the company can issue different classes of shares with unequal voting rights; one class confers more votes per share than the other. While the founder holds stock with ten or more votes per share, public shareholders hold stock with one vote per share or even no votes at all as in the Snap case.

Proponents offer two main incentives for going public with the dual-class structure. First,

[1] However, in contrast to Google and Facebook, which issued low voting shares to their public investors, the public float in Snap's IPO conferred no voting rights (Solomon, 2020).

it enables the company's founders to pursue their idiosyncratic vision for producing above-market returns (Goshen and Hamdani, 2016). Second, it insulates management from short-term market pressures and thus promotes long-termism (Jordan *et al.*, 2016).

However, there are two fundamental characteristics of a dual-class firm's controlling shareholders that give rise to agency problems: weak ownership incentives and entrenchment (Bebchuk and Kastiel, 2019). The combination of these characteristics produces situations where controlling shareholders might have substantially deviating interests from those of public shareholders, and there is no threat of replacement to prevent the controllers from pursuing these interests. This may lead to a distortion of various business choices, such as the extraction of private benefits of control at the expense of other shareholders.

The debate over the dual-class structure and its effects on investor protection has direct policy implications. Investors have urged the U.S. Securities and Exchange Commission (SEC) to reconsider its policy regarding this capital structure (SEC, 2018). Indeed, the then SEC commissioner, Robert Jackson Jr., expressed his concern regarding perpetual dual-class structures (Jackson, 2018). Moreover, scholars have uncovered transparency issues concerning dual-class structures and called for enhancing some disclosure requirements (Bebchuk and Kastiel, 2019; Solomon, 2020).

Previous studies yield mixed results regarding the quality of information provided by dual-class firms. Francis *et al.* (2005) and Lobanova *et al.* (2019) suggest that measuring the predictability of future returns may be associated with the credibility of the accounting information and find this association is weaker for dual-class firms. Another suggested measure, manipulation of earnings, yielded conflicting results. Some of these studies provide evidence that management's insulation from market pressures reduces the incentive to manipulate earnings to achieve short-

term goals and thus increases the quality of dual-class firms' financial reports (Chen, 2008; Nguyen and Xu, 2010; Li and Zaiats, 2017), while others document that dual-class firms exacerbate earnings management by increasing the abnormal accruals (Jiraporn, 2005). However, these studies suffer from both fundamental and methodological issues.

The fundamental issues arise because the measures are unable to adequately capture earnings quality. This can be due to the inferior information environment in which dual-class firms operate (Lobanova *et al.*, 2019), the change in earnings quality over time, or the measures' inability to capture the true quality of the information provided. The methodological issues have to do with the application of partial information from the financial statements and the use of the appropriate sample to compare dual- and single-class firms.

In this study, we explore the quality of the information provided to investors over the period in which the dual-class structure became more prevalent. Specifically, we examine the quality of the financial reports of dual- versus single-class firms based on persistence and predictive ability.

We compare the financial information of dual- and single-class publicly traded firms in the U.S. over the 2012–2017 period using both a full sample of single-class firms (same 3-digit SIC code as the full sample of dual-class publicly traded firms) and a matched-pair sample (where the performance of a dual-class firm is matched with a similar single-class firm). We also examine an external outcome variable, *restatement*, which is ex post evidence of inadequate financial reporting (Dechow *et al.*, 2010).

The results show that over most tests, the earnings of dual-class firms are more informative than those of single-class firms. Dual-class earnings are more persistent, measured as the ability of earnings to continue over future values of itself (Lipe, 1986; Jones and Smith, 2011) and increase over time. These earnings also have a higher predictive ability, measured as the ability of

an item to forecast future earnings (Sloan, 1996; Cready *et al.*, 2010) and future cash flows (Nam *et al.*, 2012; Nallareddy *et al.*, 2020), and are associated with fewer restatement filings (Dechow *et al.*, 2010; Rowe and Sivadasan, 2021). The findings suggest that for dual-class firms, earnings quality is affected more by the freedom from market pressures than by agency costs, thus they can provide investors with higher quality information in exchange for superior voting rights.

The relationships between founders and investors of dual-class firms may provide some explanatory power for our results. Investors weigh the benefits of enabling founders to pursue their idiosyncratic visions against the agency costs (Goshen and Hamdani, 2016). If investors believe the founders have unique skills and visions for the company, they may buy shares in dual-class firms despite the agency costs. To be viewed as trustworthy, founders must provide investors with high-quality information. Furthermore, dual-class firms have strong incentives to maintain the credibility of their financial reports even after their IPO (Mailath and Samuelson, 2006).

Given the prevalence of the dual-class capital structure and the debate over the provision of high-quality information to investors, our findings are important to policymakers. The findings provide counterintuitive support to the tradeoff between the dilution of voting rights and the credibility of information provided to investors.

This study also advances the research by attempting to reconcile the different results of previous studies through overcoming fundamental and methodological issues. It uses both across-sample and within-sample analysis to measure earnings persistence and cash flow prediction over different time periods while using comprehensive financial data.

The paper proceeds as follows: We review the literature in Section 2. In Section 3, we outline the data. In Section 4, we investigate the characteristics of dual- and single-class firms. In Section 5, we discuss the methodology for testing whether dual-class firms provide credible

information to investors and present the results. The external outcome variable, *restatement*, is examined in Section 6. In Section 7, we discuss the policy implications and provide concluding remarks.

2 Literature Review

In this section, we review the academic literature. First, we shed light on the policy debate over the desirability of the dual-class structure by discussing the incentives for using this capital structure and the agency problems that characterize it. Then, we review the current research on the quality of financial information provided by dual-class firms. Finally, we discuss the methodological literature on measuring the quality of financial data and explain the methodology chosen for this study.

2.1 Dual-Class Capital Structure

Dual-class capital structures help company founders retain the majority of voting rights in shareholder meetings, allowing them to maintain control of the firm even once it is public. Debates surrounding the appeal of these capital structures have intensified (Howell, 2017; Solomon, 2020).

Some studies examine the impact of a change from a single- to a dual-class structure and find that such changes have positive effects. (Dimitrov and Jain, 2006; Bauguess *et al.*, 2012). However, there is conflicting evidence suggesting that the unification of dual-class shares into a single-class structure overcomes agency problems and yields positive consequences, especially for public shareholders (Dittman and Ulbricht, 2007; Smart *et al.*, 2008; Lauterbach and Pajuste, 2015).

Empirical studies confirm that agency costs arise in dual-class firms. Villalonga and Amit

(2009) explored the mechanisms for separating control rights from cash flow rights and find that pyramid structures have a positive effect on firm value,[2] while dual-class shares exert the opposite effect. Bennedsen and Nielsen (2010) observe the lower market value of firms with a separation of cash flow rights and control rights, and find that dual-class shares are associated with significantly larger value discounts than shares of pyramids. Claessens *et al.* (2002) report that firm value rises along with the cash flow rights of the largest shareholder but falls when voting rights exceed cash flow rights. They also find that the value discount generally increases in line with the size of the wedge between cash flow and voting rights. The Investor Responsibility Research Center Institute (IRRCI) and the Institutional Shareholder Services (ISS) (2016) report that dual-class firms underperform compared to their single-class counterparts over one, three, five, and ten-year periods with respect to return on equity, revenue growth, total shareholder returns, and dividend payout ratio. The authors note that dual-class firms perform better when it comes to return on assets. Based on an analysis of a comprehensive list of U.S. dual-class firms, Gompers *et al.* (2010) find that firm value is negatively (positively) associated with insiders' voting rights (cash flow rights). Furthermore, firm value declined as the wedge between controllers' voting rights and cash flow rights increased. Using the same dataset, Masulis *et al.* (2009) evaluate how the gap between insider voting and cash flow rights in dual-class firms impacts the extraction of the private benefits of control. They find that as the gap widens, CEOs receive more compensation, corporate cash holdings become worthless to outside shareholders, insiders are more likely to make value-destroying acquisitions, and capital expenditures make a lower contribution to firm value. Taken together, these results reinforce the agency hypothesis that

[2] A firm is classified as having a pyramidal ownership structure if it has an owner who controls the firm indirectly through another corporation that it does not fully control (Bennedsen and Nielsen, 2010).

insiders endowed with voting rights in excess of their cash flow rights are more likely to seek out private benefits at the expense of outside shareholders. Moreover, they explain why firm value falls as insiders' ratio of voting rights to cash flow rights increases.

2.2 Quality of Financial Information

Research on the quality of financial information provided by dual- and single-class firms has provided conflicting results. Francis *et al.* (2005) adopt the traditional measure of informativeness, which evaluates the quality of accounting information, focusing on its usefulness to investors. Their sample included 205 dual-class firms from 1990 to 1999 and a matched-industry sample taken from 5,764 single-class firms. They find that the returns-earnings relation is flimsier for dual-class shares. The results suggest that increased agency costs would cause dual-class firms to provide less credible accounting information, thus reducing he informativeness of their financial reports.

The findings of Francis *et al.* (2005) are consistent with those of Fan and Wong (2002), who ascertain that agency conflicts between controlling shareholders and outside investors in concentrated ownership firms result the reported earnings being less credible. They examine the returns-earnings relation based on the ownership structure of 977 firms in seven East Asian economies between 1991 and 1995.[3] Even though these authors did not address dual- versus single-class structures, they did study the separation between voting rights and cash flow rights using pyramidal and cross-holding structures (ownership structures common in these countries). The results indicate that earnings informativeness decreases as the disparity between cash flow rights

[3] The East Asian economies examined were Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan, and Thailand.

and voting rights and the extent of managerial ownership increase.

Jiraporn (2005) uses a different measure of informativeness, abnormal discretionary accruals compared to industry peers, and reached the same conclusions. The author examines the annual reports of 145 dual-class firms that were filed with the SEC in 1993, 1995, and 1998 and finds that dual-class firms exacerbate earnings management by increasing abnormal accruals by 2.6% on average.

In sum, the results of the studies cited above suggest that controllers are perceived as reporting accounting information for their self-interest, which causes reported earnings to lose credibility among outside investors.

Other studies provide evidence that because dual-class firms are under less market pressure, they have fewer incentives to manipulate earnings to achieve short-term goals; consequently, the quality of their reports is higher (Chen, 2008; Nguyen and Xu, 2010; Lobanova *et al.*, 2019).

Lobanova *et al.* (2019) examine a sample of dual-class firms in the 1993–2012 period. Using a traditional method to assess the relation between earnings and returns, and similar to Francis *et al.* (2005), they find a significant lower association compared to a matched sample of single-class firms, suggesting dual-class earnings provide less information. However, they argue that an inferior information environment is a plausible explanation for these results. When they examine earnings quality using discretionary accruals, long-term discretionary accruals compared to the industry average, and the difference between net income and operating cash flow, the results are reversed, suggesting higher-quality earnings for dual-class firms. Their conclusion is supported by Dechow *et al.* (2010), who argue that it may not be appropriate to use the earnings-returns association measure to draw conclusions about earnings quality when firms operate in a poor

information environment.

Chen (2008) measures the quality of the information on financial statements based on the level of earnings management, or manipulation of earnings. An annual average of the earnings management behavior of 190 dual-class firms, for 1994–2006, is compared to a matched sample of single-class firms. The author finds that dual-class firms report lower earnings management on all measures examined. The results corroborate the hypothesis that reduced capital market pressures lead to less short-term earnings manipulation among dual-class firms and lends greater credibility to their reports.

Chen's (2008) results were affirmed by Nguyen and Xu (2010), using a comprehensive sample of dual-class firms from 1995 to 2006 and measuring earnings management using both the magnitude of absolute abnormal accruals and the frequency of earnings that meet or just beat analysts' forecasts. They find that dual-class firms are likely to have smaller abnormal accruals and are less likely to meet or beat analysts' earnings forecasts, indicating that the managers of these firms engage less in earnings management.

Rose *et al.* (2013) conduct an experiment with 72 active corporate directors where management insisted on aggressive earnings management, but the chief audit executive proposed a more moderate approach. They find that directors who own stock are concerned with preserving their reputation. These directors perceived that investors would recognize that earnings management is self-serving for stock-owning directors and therefore decreased their support of management's attempt to manipulate earnings.

Two opposing explanations may account for these varied results regarding the quality of financial information provided by dual-class firms. On the one hand, according to agency theory, controllers in a dual-class firm would be interested in providing less credible information, while,

on the other hand, reduced market pressure would encourage them to provide more credible information. Our study contributes to the ongoing debate by studying two of the common measures of the quality of financial reports, persistence and predictive ability, of dual- versus single-class firms, to determine whether either of the two rivaling explanations is valid.

2.3 Measuring the Quality of Financial Data

The academic and professional accounting literature has not reached an agreement on the definition of quality financial information. A conventional approach views earnings quality as defined only in the context of a specific decision model (Dechow *et al.*, 2010). The decision context we discuss focuses on the usefulness of the information to equity investors for the purpose of valuation.

Previous studies suggest that the quality of information is represented by the ability of financial information to predict future market value. However, the predictive ability of financial information for market value, especially in the short run, is relatively low (Ball and Brown, 1968; Beaver, 1968; Foster *et al.*, 1984; Bernard and Thomas, 1990). One explanation for this result implies that it is because market price does not reflect the firm's intrinsic value and its stock may be under- or over-priced (Ou and Penman, 1989). Another explanation is the effect of the information environment. Dechow *et al.* (2010) suggest that it may not be appropriate to draw conclusions about the quality of earnings from the earnings-returns association measure in the presence of a poor information environment.

A more contemporary view assumes that the information provided by the financial statement indicates the firm's intrinsic value. That information can reveal value not reflected in the market price and identify overpriced and underpriced stock. Lev and Gu (2016) argue that

forecasting corporate earnings is a major endeavor of financial analysts. Analysts use these forecasted earnings to form their stock recommendations, and those forecasts also serve as the main benchmark for evaluating firm performance. Dichev *et al.* (2013) find that 94.7% of CFOs rated earnings as very important for investors valuing their company.

Dechow *et al.* (2010) find that earnings are associated with other attributes of a firm's information environment, which suggests that alternative measures of quality other than market value are needed. If the quality of a firm's information environment is poor, then either the market will not be able to unbiasedly incorporate the earnings' implications, or other value-relevant (non-earnings) information will not be reflected in the prices.

In this study, we use two measures of earnings quality based on deliberations related to the joint Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) project on financial statement presentation:[4] persistence and predictive ability of earnings. Persistence is measured as the ability of earnings to continue over future values of itself (Lipe, 1986; Jones and Smith, 2011). Predictive ability measures the ability of earnings to forecast future earnings (Sloan, 1996; Cready *et al.*, 2010).

However, while persistence and prediction are two important measures of earnings quality proxies and are considered useful inputs in equity valuations, they have a major weakness. Both earnings-based measures depend not only on the firm's fundamental performance but also on the accounting measurement system. The persistence and predictability of earnings may be achieved

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[4] For example, see the minutes of the March 21, 2007 board meeting (http://www.fasb.org/board_meeting_minutes/03-21-07_fsp.pdf) or the preliminary discussion paper (Financial Accounting Standards Board - FASB, 2008, paragraph BC2.11. page 39). Empirical studies using these two measures include Penman and Zhang (2002), who measure the quality of financial information based on persistence, and Ou and Penman (1989), who were the first to use financial ratios to examine the ability of financial information to predict the movement of future earnings.

in the short run by engaging in earnings management (Dechow *et al.*, 2010). We therefore employ two additional measures to examine the quality of earnings: the ability of earnings to predict future cash flows and an external measure of restatement filings.

The fundamental objective of financial statements is to provide information that is useful in assessing a firm's ability to generate future cash flows (FASB, 1978) and therefore the quality of earnings may be measured as their ability to predict future cash flows. Cash flow measures also tend to be better stock return predictors than profitability measures because cash-related measures are economically "cleaner" than profitability measures and are more closely related to how firms are valued (Foerster *et al.*, 2017). The major difference between earnings and cash flow is in the timing. Earnings can be manipulated over time by management either by the reporting method chosen or by their actions (e.g., delaying or accelerating bill payments) and thus cash flows are more closely related to investor returns (Ball *et al.*, 2016). We therefore measure the quality of earnings as their ability to predict future cash flows.

In addition to the aforementioned financial statement indicators of earnings and cash flows, we use an external indicator of restatements of previously issued financial statements. Researchers, auditors, and regulators view financial statement restatements as a reliable proxy for financial reporting quality (Rowe and Sivadasan, 2021). Dechow *et al.* (2010) note that restatements are a reliable external indicator with a low Type I error rate.

Previous studies examining the financial reporting quality of dual- versus single-class firms have used different measures for quality. One measure is the traditional measure of the earnings-returns relation, which was found to be weaker for dual-class firms than for single-class firms (Francis *et al.*, 2005; Lobanova *et al.*, 2019). However, other studies suggest that this weak relation may be attributable to the poor information environment in which dual-class firms operate. That

environment, as measured by analyst forecast dispersion, absolute forecast error, illiquidity measures, and the bid-ask spread, has been found to be poorer both globally (Li and Zaiats, 2017) and in the U.S. (Lobanova *et al.*, 2019). This poor information environment suggests that the earnings-returns relation might not be a good measure for dual-class firms.

There are conflicting results when other measures are used on the same data. Francis *et al.* (2005) use an additional measure of the relation between dividends and market price. This measure yielded mixed results and therefore could not reliably be used to assess the differences between the quality of the two groups. When Lobanova *et al.* (2019) examined the quality of earnings based on the same data but using other measures, the results show that the firms provided high-quality financial information.

While earnings may be subject to manipulation, studies use other methods to measure the quality of earnings by examining earnings management by dual-class firms. Chen (2008) uses three measures to examine earnings manipulation. The first measure examines the distribution properties of the earnings surprises of dual- versus single-class firms. The results exhibit a discontinuity around the threshold of zero for single-class firms that is not exhibited by dual-class firms, suggesting that managers in single-class firms manage earnings. The second and third measures examine whether dual-class firms tend to distort economic performance through financial reporting choices (accrual management) and/or through operating decisions (cutting R&D expenses to boost short-term earnings). The results suggest that dual-class firms exhibit fewer extreme accruals relative to single-class firms and that dual-class firms appear less prone to release earnings reserves to satisfy short-term earnings objectives.

Nguyen and Xu (2010) reach the same conclusions as Chen (2008) when they examine earnings management activities in dual-class firms. Their measures are the magnitude of absolute

abnormal accruals and the frequency of earnings meeting or beating analysts' forecasts. However, using the same method of absolute abnormal accruals, Jiraporn (2005) finds conflicting results suggesting that dual-class firms exacerbate earnings management by increasing abnormal accruals by 2.6% on average, in comparison to single-class firms.

While the measure of restatement has not, to our knowledge, been used in the direct context of unequal voting rights, Larcker *et al.* (2007) do use this measure in the context of its relation with corporate governance. Their sample contains 9% dual-class firms and they consider unequal voting rights as one of 15 anti-takeover provisions. They find a positive but not significant association between anti-takeover provisions and restatements. They conclude that there is little evidence that corporate governance impacts accounting restatements.

The conflicting results of these studies regarding the quality of the financial information provided by dual- versus single-class firms may be due to fundamental and methodological concerns. The fundamental concern involves how studies measure information quality. They measure short-term factors, such as market price and accounting manipulation, and not the ability of financial statements to report the intrinsic value of the firm. We address this issue by using fundamental analysis, cash flow prediction, and sample comparison over shorter and longer time periods.

The first methodological concern is with the measurements used. Previous studies examining dual-class structures use only some of the information from financial statements, which may create model selection mistakes that produce a bias due to omitted variables (Feng *et al.*, 2020), as can be seen from the different measures and controls used and the different results (Francis *et al.*, 2005; Chen, 2008; Gompers *et al.*, 2010; Cremers *et al.*, 2020). In order to overcome this methodological issue, we employ fundamental analysis based on a comprehensive list of ratios

that capture all aspects of the information in the financial statements (see Palas and Baranes, 2019). We also capture different quality aspects of the information, specifically consistency and prediction value.

The second methodological concern is with sample selection. Analyzing the full sample may yield results based on other significant differences (Tucker, 2010) besides earnings quality, or, in a setting where one sample is much larger than the other sample, the logistic model may accurately classify the larger sample but not the smaller sample (Larcker *et al.*, 2007). Matched-pair analysis, on the other hand, where the performance of a dual-class firm is matched with a similar single-class firm, yields a comparable sample. While this is an accepted technique (Stuart, 2010), the quality and scope of the match raises the concern that firms that select into dual-class structures differ in important ways from those that adopt single-class structures (Fisch and Solomon, 2019).

We avoid this issue by using two different methodologies. The first methodology involves testing the full sample and then testing a matched-pair sample. A second methodology is employed as both an across-sample test, which explicitly controls for factors influencing ownership structure and earnings quality, and a within-sample test, which implicitly controls for factors associated only with ownership structure. The within-sample test design avoids the necessity of relying on inconsistent identifiers to distinguish between dual- and single-class firms.

The third methodological concern is with the data used, data from the financial statements. While financial statement information relies on internal data and may be subject to manipulation, restatements, which is an external indicator, has the important advantage that an outside source has identified a problem with earnings quality (Dechow *et al.*, 2010). We use, for the first time to our knowledge, the number of restatements issued by both dual- and single-class firms as an

additional indicator of earnings quality.

3 Data

We used the eXtensive Business Reporting Language (XBRL) to construct the data. XBRL is a SEC-mandated financial reporting system whose contents are easily downloaded from the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. The SEC created the XBRL U.S. GAAP Financial Reporting Taxonomy, a compilation of accounting rules and data concepts, which allow firms to present their financial reports electronically. All public U.S. GAAP firms have been required to file their financial reports using XBRL since June 15, 2011. XBRL has been found to be useful and accurate for financial statement analysis (Boritz and No, 2020; Chychyla and Kogan, 2015; Yen and Wang, 2015; Palas and Baranes, 2019).

We used FinDynamics' XBRL Analyst[5] to acquire the quarterly financial data. It is a plugin for Microsoft Excel that enables access to a firm's XBRL tagged data from its SEC filing. This software allows us to extract and calculate any missing balances. For instance, if an original XBRL filing does not contain the amount reported in each XBRL filing for total liabilities, it can be estimated using XBRL Analyst. The data include filings by 5,303 firms, comprising quarterly filings from Q1/2012 to Q4/2017 (a total of 24 quarters).[6]

Dual-class firms were identified from their XBRL data filings as those having more than one type of stock. These firms were then compared to the Council of Institutional Investors dual-class firms list,[7] and any missing firms were added. The final sample included 245 firms with dual-

[5] https://findynamics.com/xbrlanalyst.

[6] An additional quarter, Q4/2011, was added only for the purpose of measuring the change in earnings.

[7] https://www.cii.org/dualclass_stock.

class stock that reported their financial statements using the XBRL format.

We identified the industries of the dual-class firms using four-digit SIC codes. We use three-digit SIC codes to identify and extract single-class firms from within the same industry as the dual-class firms. This reduced the single-class sample to 2,809 firms.

We identified the outliers to avoid bias or change in the fit estimates and predictions. The simple method of discarding the top 2.5% and bottom 2.5% was chosen. Any data value beyond these limits in a firm's record was recognized as an outlier and removed.[8] Those fields were then treated as missing data and completed through imputation.

XBRL data have been found to be incomplete (Chychyla and Kogan, 2015; Williams, 2015). An accounting element may not be extractable from an XBRL firm filing due to several reasons, including that the preparer erroneously did not tag the accounting element, the preparer used the wrong tag for an accounting element, or the SEC's protocol for preparing XBRL firm filings set forth in the EDGAR Filer Manual did not permit or require a tag. This means that even though a firm may be in the database, it may not have all the relevant variables.

In the dataset, an average of 58% (63%) of the variables was available for single-class (dual-class) firms. These results are consistent with previous studies, which found that on average, 42% of 19 variables were available in XBRL filings in 2010 (Debreceny *et al.*, 2010), and an average of 73% of 10 variables were available for filings between 2011 and 2015 (Pustylnick *et al.*, 2017). Pustylnick (2013) found that only 25% of the firms were suitable when a requirement of having non-zero values for at least 14 out of 16 variables was used (in our dataset, only 20% of

[8] There are no accepted guidelines for setting the percentage of observations to be dropped as outliers. The percentage ranges from 1% to 10% (Kennedy *et al.*, 1992). Following the approach used in several studies, attempts were made to eliminate only 1% and then 2% of the data, but the results of the models were less robust, and we deemed 2.5% to be more appropriate.

the firms were suitable when we required 9 out of 13 available variables).

We employed multiple imputation (MI) to fill in the missing variables. MI, which involves filling in the missing values multiple times and creating multiple "complete" datasets, is one of the best methods for overcoming the problem of complex incomplete data (Rubin, 1996), specifically in financial statement information (Gorisek and Pahor, 2017). Madley-Dowd *et al.* (2019) show that when auxiliary[9] data are available, using MI is less biased and more efficient, even when up to 90% of the data are missing. The authors suggest that MI provides better results, compared to the more common approach for dealing with missing data—complete case analysis—which restricts the analysis to firms with complete data. MI has two additional advantages over other missing data approaches. First, MI procedures are very flexible and can be used in a broad range of settings. Second, analyses of MI data take into account the uncertainty in the imputations by examining multiple predictions that yield accurate standard errors. The MI process substituted all missing variables to be used in the analysis, thus none of the original data needed to be discarded.

4 Basic Characteristic Differences between Single- and Dual-Class Firms

The number of firms in each industry is presented in Table 1, broken down by single- and dual-class firms. We find that there are more single-class firms in traditional industries, such as manufacturing and finance, insurance, and real estate (60.66% vs. 41.30% of the dual-class firms) and more dual-class firms in the more technological industries, such as transportation, communication, retail trade, and services (54.65% vs. 28.42% of the single-class firms). The results suggest that when the single-class sample is reduced to firms with the same three-digit SIC

[9] The auxiliary data refers to the other variables for the same company.

code as the dual-class firms, these general comparisons remain broadly similar.

Table 1
Industry Characteristics of Firms in the Dataset

No.	SIC Code[a]	Single-Class	Single-Class – same SIC Code[b]	Dual-Class
1	01-09	0.51%	0.04%	0.41%
2	10-14	6.94%	0.00%	0.00%
3	15-17	1.06%	1.14%	1.63%
4	20-39	37.15%	36.67%	24.90%
5	40-49	7.98%	8.05%	16.33%
6	50-51	2.41%	0.43%	1.22%
7	52-59	4.39%	5.20%	10.20%
8	60-67	23.51%	28.55%	16.73%
9	70-89	16.05%	19.94%	28.57%

[a] The SIC codes represent the following industries: Agriculture, Forestry, and Fishing (01-09); Mining (10-14); Construction (15-17); Manufacturing (20-39); Transportation, Communications, Electric, Gas, and Sanitary Services (40-49); Wholesale Trade (50-51); Retail Trade (52-59); Real Estate (60-67); and Services (70-89).
[b] Matched with dual-class firms based on three-digit SIC code.

We use six well-known characteristics (e.g., Francis *et al.*, 2005; Chen, 2008; Jordan *et al.*, 2016; Cremers *et al.*, 2020) to compare the single- and dual-class firms, in addition to the industry:[10] listing age, size, profitability, leverage, growth, and valuation.

While most studies find that dual-class and single-class firms have different characteristics, the results are mixed as to what these characteristics are. Studies find that dual-class firms are more leveraged and more profitable (e.g., Francis *et al.*, 2005; Chen, 2008; Jordan *et al.*, 2016; Cremers *et al.*, 2020); however, different groups of characteristics are examined. Many studies find dual-class firms are larger when measured in terms of total asset value, market value (Francis *et al.*,

[10] The data already has some bias in reference to industry. The single-class firms were matched to the dual-class firms using 3-digit SIC codes.

2005; Chen, 2008; Gompers *et al.*, 2010; Lei *et al.*, 2019), and sales revenue (Francis *et al.*, 2005; Jordan *et al.*, 2016; Lei *et al.*, 2019); however, others find them to be smaller when measured in terms of total sales (Chen, 2008). Some studies find dual-class firms have lower valuation (Francis *et al.*, 2005; Gompers *et al.*, 2010; Cremers *et al.*, 2020), while others find the opposite (Chen, 2008; Jordan *et al.*, 2016; Lei *et al.*, 2019). Growth opportunities (as measured by sales growth and R&D expenditures) also exhibit mixed results: higher for dual-class firms in some studies (Chen, 2008; Jordan *et al.*, 2016) and lower in others (Cremers *et al.*, 2020; Lei *et al.*, 2019).[11]

Table 2 reports the differences of these characteristics based on the quarterly means.[12] For each sample, single- and dual-class values are reported separately, in addition to the *p*-value for whether the means are statistically different across the samples.

[11] The different results based on different measures might suggest a selection bias or omitted variable bias, as suggested by Feng *et al.* (2020).
[12] Results based on median values yield similar inferences and are not reported.

Table 2
Mean Differences between Single-Class and Dual-Class Firm Characteristics

Category	Variable	Single-Class[k]	Dual-Class	Test of Difference[l]
Listing Age	Years Since IPO	19.16	17.63	<0.0001
Size[a]	Sales Revenue	353	586	<0.0001
	Market Value	2,971	4,426	<0.0001
	Total Assets	4,241	5,527	<0.0001
	Stockholders' Equity	1,158	1,589	<0.0001
Profitability	Profit Margin[b]	-0.006	0.004	<0.0001
	Operating Income Margin[c]	0.040	0.054	<0.0001
	ROA[d]	-0.018	0.006	<0.0001
	ROE[e]	-0.003	0.022	<0.0001
Leverage	Debt Percentage[f]	0.280	0.279	0.4756
Growth	Change in Revenues[g]	0.022	0.016	<0.0062
	R & D Expense[h]	0.514	0.334	<0.0001
Valuation	Price/Earnings Ratio[i]	108.74	106.98	0.0724
	Price/Book Value Ratio[j]	3.33	3.53	<0.0001

[a] Measured in millions of dollars.
[b] Net income in quarter *t* as a percentage of sales revenues in quarter *t*.
[c] Operating income in quarter *t* as a percentage of sales revenues in quarter *t*.
[d] Net income in quarter *t* as a percentage of total assets in quarter *t*.
[e] Net income in quarter *t* as a percentage of stockholders' equity in quarter *t*.
[f] Total debt in quarter *t* as a percentage of total assets in quarter *t*.
[g] Sales revenues in quarter *t* minus sales revenues in quarter *t*-1 divided by sales revenues in quarter *t*-1.
[h] R&D expenses in quarter *t* as a percentage of sales revenues in quarter *t*.
[i] Market value in quarter *t* divided by net income in in quarter *t*.
[j] Market value in quarter *t* divided by total assets in in quarter *t*.
[k] Matched with dual-class firms based on three-digit SIC code.
[l] Test of difference shows the *p*-values for the *t*-test of whether the mean value of each variable differs between the dual-class sample and the single-class measure. The Wilcoxon and robustness tests were also applied with similar results.

Table 2 shows that, except for leverage measurement, there are significant differences between the characteristics of single- and dual-class firms. Unlike Kim and Michaely (2019), we find that single-class firms are "older" than dual-class firms. When examining the mean measurements of the two types of firms, we find that dual-class firms are larger than single-class firms in all four size measurements, more profitable in all profitability measurements, less leveraged, and have a lower growth rate. The two valuation measurements present conflicting

results. In the subsequent analysis, we include these characteristics as controls for factors influencing the relation between the single- and dual-class structure and the quality of reporting.

The results in Table 2 suggest that single- and dual-class firms have different characteristics, confirming the inferences of earlier studies. While we may mitigate selection bias by incorporating control variables to hold constant these differences in firm characteristics, the regression approach imposes a linear relation between the control variables and earnings quality that can result in further biases (Tucker, 2010).

We address this potential concern by using a matching estimator to construct a control sample of single-class firms that are matched to dual-class firms along the variables characterizing the differences between these firms. In order to choose the matching estimator, we examined three different matching methodologies: propensity score, coarsened exact matching, and entropy balancing. The quality of the resulting matched samples from all three methodologies were assessed using the covariate balance in the matched groups, where balance is defined as the similarity of the empirical distributions of the full set of covariates in the matched treatment and control groups (Stuart, 2010). Although the results for all three methodologies were similar, propensity score matching delivered a slightly more balanced sample, which we used. To conduct the propensity score matching process, we employed a probit regression of an indicator variable (1 for single, 0 for dual). Similar to Hsu *et al.* (2021), the estimated coefficients were then used to perform the nearest-neighbor match. For each observation in the dual-class sample, a match was found by applying the propensity score with replacement using a standard tolerance (0.005 caliper).

Table 3 reports the differences between the dual-class firms and the propensity score matched control single-class firms. We find no significant differences based on the quarterly

means[13] of these characteristics, minimizing the likelihood of a substantial initial difference between single- and dual-class firms, and mitigating the selection effect.

Table 3
Mean Differences between Matched-Pair Sample Characteristics

Category	Variable	Single-Class[k]	Dual-Class	Test of Difference[l]
Listing Age	Years Since IPO	18.8	18.5	
Size[a]	Sales Revenue	536,	583	
	Market Value	3,974	4,432	
	Total Assets	5,145	5,469	
	Stockholders' Equity	1,545	1,584	
Profitability	Profit Margin[b]	-0.000	0.003	
	Operating Income Margin[c]	0.047	0.051	
	ROA[d]	-0.001	0.006	
	ROE[e]	-0.005	0.012	
Leverage	Debt Percentage[f]	0.283	0.280	
Growth	Change in Revenues[g]	0.017	0.016	
	R & D Expense[h]	0.492	0.394	
Valuation	Price /Earnings Ratio[i]	107.86	107.23	
	Price /Book Value Ratio[j]	3.35	3.55	

[a] Measured in millions of dollars.
[b] Net income in quarter *t* as a percentage of sales revenues in quarter *t*.
[c] Operating income in quarter *t* as a percentage of sales revenues in quarter *t*.
[d] Net income in quarter *t* as a percentage of total assets in quarter *t*.
[e] Net income in quarter *t* as a percentage of stockholders' equity in quarter *t*.
[f] Total debt in quarter *t* as a percentage of total assets in quarter *t*.
[g] Sales revenues in quarter *t* minus sales revenues in quarter *t*-1 divided by sales revenues in quarter *t*-1.
[h] R&D expenses in quarter *t* as a percentage of sales revenues in quarter *t*.
[i] Market value in quarter *t* divided by net income in in quarter *t*.
[j] Market value in quarter *t* divided by total assets in in quarter *t*.
[k] Matched with dual-class firms based on three-digit SIC code.
[l] Test of difference shows the *p*-values for the *t*-test of whether the mean value of each variable differs between the dual-class sample and the single-class measure. The Wilcoxon and robustness tests were also applied with similar results.

[13] Results based on median values yield similar inferences and are not reported.

5 Quality of Reporting

We use three major methods to examine the quality of the financial information reported by dual-class versus single-class firms. The first is earnings persistence, which is the ability of earnings to continue over future values of itself. The second is the ability of earnings to predict future cash flows. The third is the ability of earnings to predict future earnings.

5.1 Earnings Persistence

Earnings persistence is considered an important quality of financial reporting (Sloan, 1996; Barth *et al.*, 2012; Lambert *et al.*, 2017; Ndubizu and Sallehu, 2017; Nezlobin *et al.*, 2021). Similar to Dechow and Dichev (2002), we measure persistence as the regression of future earnings on current earnings. The differences in the slope coefficients between single- and dual-class firms provide evidence about the quality of the earnings information (Teoh and Wong, 1993; Francis *et al.*, 2005).

In the first stage of measuring persistence, we examine the regression of earnings[14] for period *t* on earnings for the drift[15] period.[16] Earnings per share (EPS) are used as a proxy measure for earnings similar to Abarbanell and Bushee (1997). While there may be concern that EPS can be manipulated through stock repurchases (Almeida, 2019), EPS is still considered the most important performance target (Graham *et al.*, 2005). In addition, manipulation through repurchases is often associated with real economic actions, which affect earnings as well as EPS (Cooper *et*

[14] EPS is the earnings measurement we use.
[15] The drift term was estimated as the mean EPS over the four quarters prior to the estimated quarter (see Ou and Penman, 1989).
[16] The drift term was chosen to avoid the seasonality effect as much as possible. An additional test was run using earnings for period *t*-1 instead of the drift, with less significant results.

al., 2018; Almeida, 2019), and the repurchase effect seems to be discounted by the market (Hribar *et al.*, 2006). It therefore seems unlikely that any single measure of performance can completely eliminate manipulation (Almeida, 2019).

The only control variable at this stage is the type of firm, single- or dual-class. In this stage, we present a polynomial regression, which is appropriate when a nonlinear relation exists between the dependent and independent variables. A polynomial regression addresses not only the interaction between the relevant independent variables and the dependent variable, but also the interaction *within* the relevant independent variables. The suitability of the polynomial regression and the number of degrees appropriate can be determined by comparing the adjusted R^2 of the equation (Stimson *et al.*, 1978) and the Akaike information criterion (AIC) (Hurvich *et al.*, 1998).[17]

The main regression equation is:

$$EPS_{j,t} = \propto_0 + \propto_1 EPS_{j,dt} + \propto_2 TYPE_{Single-Dual} + \propto_3 EPS_{j,dt} * TYPE_{Single-Dual} + e_{j.t} \quad (1)$$

where $EPS_{j,t}$ is firm *j*'s *EPS* for quarter *t*, $EPS_{j,dt}$ is firm *j*'s average EPS over the drift, and $TYPE_{Single-Dual}$ is a dummy variable (1 for single, 0 for dual) representing firms as having a single- or dual-class structure. The main variable of interest is the interaction variable, which answers the question: Are single-class firms' earnings more persistent than dual-class firms? A negative $\propto_3$ suggests that dual-class firms are more persistent than single-class firms.

[17] A linear regression was also applied to the data; the polynomial regression appears to provide a stronger presentation of the relation, having both a larger adjusted R^2 (for the linear regression 0.4548) and a lower AIC (for the linear 8962).

Table 4
Tests of the Relation between Current Earnings and Past Earnings of Single-Class vs. Dual-Class Firms

	Full Sample		Matched Sample[e]	
	Coefficient	***P*-value[f]**	**Coefficient**	***P*-value[f]**
Intercept	0.541	***	0.092	***
$EPS_{j,dt}$[a]	0.803	***	0.734	***
$TYPE_{Single-Dual}$[b]	-0.029	***	-0.031	***
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.025	**	-0.009	***
Adjusted R^2	0.458		0.489	
AIC[d]	89122		89125	

[a] Firm *j* earnings per share over the drift (the mean EPS over the four prior quarters).
[b] A dummy variable representing whether the firm is single-class (1) or dual-class (0).
[c] The interaction between the two independent variables.
[d] Akaike information criterion.
[e] Matched based on propensity score matching.
[f] *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-tailed tests) for the logistic regression specifications.

The results for both the full and matched sample are similar in Table 4. As can be expected, the results show a positive coefficient relating this period's earnings to those of the previous period (i.e., the *p*-values are significant). With respect to the main variable of interest, single-class or dual-class firm, for both samples, the coefficient for the interaction between earnings and type, $EPS_{j,dt} * TYPE_{Single-Dual}$, is negative and significant. The results suggest that the slope coefficient relating the current period's earnings to the next period's earnings is 2.5% more precipitous, and therefore more informative, for dual-class firms compared to single-class firms, for the full sample, and 0.9% for the matched sample. While this may not seem a major distinction in earnings persistence, it does suggest the higher quality of dual-class firms and these results improve as additional controls are added.

An important question is whether these results are constant over time. We examine this issue by following Nallareddy *et al.* (2020) methodology. We examine earnings persistence, the

relation between the current period and the next, for dual- and single-class firms for each quarterly period. We then examine the trend of the explanatory power of each model over time, measured as the adjusted R^2. The coefficient estimate is obtained from each of the quarterly persistence specifications.

Table 5
Tests of the Relation between Current Earnings and Past Earnings of Single-Class vs. Dual-Class Firms Over Time

	Full Sample		Matched Sample[d]	
Variable	**Single**	**Dual**	**Single**	**Dual**
Average Adjusted R^2 [a]	0.1753	0.9055	0.2234	0.9055
Trend[b]	-0.0031	0.0037	-0.0022	0.0037
P-value[c]				

[a] The explanatory power of the relationship between this period's EPS and next period's measured for each quarter.
[b] The coefficient estimate obtained by regressing quarterly estimates (adjusted R^2) obtained from each of the quarterly persistence specifications on the time variable.
[c] For the trend coefficient. *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-tailed tests) for the logistic regression specifications.
[d] Matched based on propensity score matching.

The explanatory power of persistence is higher, on average, for dual-class (0.91) firms than for single-class firms (0.18 for the full sample vs. 0.22 for the matched sample). The explanatory power increased by 0.4% on average over time for the dual-class firms and decreased for the single-class firms (by 0.3% for the full sample vs. 0.2% for the matched sample);[18] however, this trend is not significant.

We next add variables previously linked to dual- or single-class structure to control for other effects on earnings quality. In the first stage, all variables representing industry, listing age,

[18] The adjusted R^2 for each specific period for all tests was not consistent over time: for some periods, it increased, and for others, it decreased.

size, profitability, leverage, growth, and valuation are entered as controls (Tables 1 and 2).

After the first run of the regression, we only retain those variables we find are significantly associated (p-value < 0.10) with $EPS_{j,t}$ for the full sample.[19] This stage removed 5 of the 15 variables, all of the size variables (Sales Revenue, Market Value, Total Assets, and Stockholders' Equity) and one of the profitability variables (Profit Margin).[20]

The regression was then run on the remaining variables:

$$EPS_{j,t} = \propto_0 + \propto_1 EPS_{j,dt} + \propto_2 TYPE_{Single-Dual} + \propto_3 EPS_{j,dt} * TYPE_{Single-Dual} + \propto_4 IND_{j,t} + \propto_5 IPO_{j,t} + \propto_6 OPM_{j,t} + \propto_7 ROA_{j,t} + \propto_8 ROE_{j,t} + \propto_9 DAS_{j,t} + \propto_{10} CRV_{j,t} + \propto_{11} R\&D_{j,t} + \propto_{12} P/E_{j,t} + \propto_{13} P/B_{j,t} + e_{j.t} \quad (2)$$

Industry ($IND_{j,t}$) was characterized by SIC code and separated into eight different industries corresponding to Table 1. Listing age ($IPO_{j,t}$) denotes the number of years since IPO. The total number of years was divided into six groups (1–2 years since IPO, 3–4 years, 5–6 years, 7–8 years, 9–10 years, and more than 10 years since IPO).

Profitability is represented by three variables: $OPM_{j,t}$ is the operating profit margin of firm j at quarter t, $ROA_{j,t}$ is the ROA of company j at time t, and $ROE_{j,t}$ is the ROE of firm j at time t. Leverage is denoted by $DAS_{j,t}$, and total debt is a percentage of total assets of firm j at time t.

[19] As an additional measure to ensure the right controlling variables were selected a separate regression was run adding each independent controlling variable to equation 1. Only those variables where the p-value associated with the F-statistic were significant (p-value < 0.10) remained (Witten *et al.*, 2013). Results for both tests provided the same significant controlling variables.

[20] This procedure of elimination was applied to the controlling variables as a first stage for each one of the regressions analyzed.

Growth includes two variables: *Change in Revenues*, measured as *Sales Revenues* in quarter *t* minus *Sales Revenues* in quarter *t*-1 divided by *Sales Revenues* in quarter *t*-1, and R&D expense, measured as *R&D Expense* in quarter *t* as a percentage of *Sales Revenues* in quarter *t*. ($CRV_{j,t}$ and $R\&D_{j,t}$, respectively). Valuation also includes two variables for firm *j* at time *t*: Price to Earnings ratio ($P/E_{j,t}$) and Price to Book Value ratio ($P/B_{j,t}$). The test results are in Table 6.

Table 6
Tests of the Relation between Current Earnings and Past Earnings of Single-Class vs. Dual-Class Firms using Control Variables

	Full Sample		Matched Sample[n]	
Variable	**Coefficient**	***P*-value[o]**	**Coefficient**	***P*-value[o]**
Intercept	0.3580	***	0.2486	***
$EPS_{j,dt}$[a]	0.4142	***	0.5953	***
$TYPE_{Single-Dual}$[b]	-0.0438	***	-0.0078	**
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.0258	***	-0.0972	***
$IND_{j,t}$[d]	0.0519	***	0.0048	
$IPO_{j,t}$[e]	0.0216	***	0.0022	
$OPM_{j,t}$[f]	0.0056	***	0.0006	
$ROA_{j,t}$[g]	0.3840	***	0.7814	***
$ROE_{j,t}$[h]	0.6224	***	0.8683	***
$DAS_{j,t}$[i]	-0.2036	***	-0.5394	
$CRV_{j,t}$[j]	0.1308	***	0.1787	***
$R\&D_{j,t}$[k]	-0.0064	***	-0.01297	***
$P/E_{j,t}$[l]	-0.0017	***	-0.0015	***
$P/B_{j,t}$[m]	0.0101	***	0.0070	***
Adjusted R^2	0.6307		0.5844	

[a] Firm *j* earnings per share over the drift (the mean EPS over the four prior quarters).
[b] A dummy variable representing whether the firm is single-class (1) or dual-class (0).
[c] The interaction between the two independent variables.
[d] Industry of firm *j* based on SIC codes (see Table 1).
[e] Listing age: number of years since IPO.
[f] Operating income in quarter *t* as a percentage of sales revenues in quarter *t*.
[g] Net income in quarter *t* as a percentage of total assets in quarter *t*.
[h] Net income in quarter *t* as a percentage of stockholders' equity in quarter *t*.
[i] Total debt in quarter *t* as a percentage of total assets in quarter *t*.
[j] Sales revenues in quarter *t* minus sales revenues in quarter *t*-1 divided by sales revenues in quarter *t*-1.
[k] R&D expense in quarter t as a percentage of sales revenues in quarter *t*.
[l] Market value in quarter *t* divided by net income in in quarter *t*.
[m] Market value in quarter *t* divided by total assets in quarter *t*.
[n] Matched based on propensity score matching.
[o] *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-tailed tests) for the logistic regression specifications.

Consistent with the previous analysis, in Table 6 there is a positive coefficient relating the current period's earnings to the previous period's earnings, although not as strongly when we

include control variables in the regression (0.41 for the full sample and 0.60 for the matched sample, compared to 0.80 for the full sample and 0.73 for the matched sample without). The results are also consistent with respect to the main variable of interest, the interaction between single-class or dual-class firm persistence ($EPS_{j,dt} * TYPE_{Single-Dual}$). Despite the additional control variables, the coefficient is negative and significant for both samples, and it is higher for the matched sample.

All of the control variables are significantly associated with earnings for the full sample. For the matched sample, all but three of the control variables ($IND_{j,t}$, $IPO_{j,t}$, and $DAS_{j,t}$) are significant. As can be expected, all profitability measures are positively associated with earnings ($OPM_{j,t}, ROA_{j,t}, and\ ROE_{j,t}$ all had positive coefficients). Leverage ($DAS_{j,t}$) is found negatively associated with earnings. Growth variables show conflicting evidence as to the relation with earnings, change in revenue ($CRV_{j,t}$) is positively associated with earnings, while R&D expense ($R\&D_{j,t}$) is negatively associated with earnings. Valuation controls also yielded mixed results: the price to earnings ($P/E_{j,t}$) ratio is negatively associated with earnings, but price to book value ($P/B_{j,t}$) has a positive association. However, the effect of the price to earnings ratio, which reflects investors' expectations, should be regarded cautiously since the denominator of the ratio, EPS, will mechanically yield a negative association with the dependent variable EPS. Predictably, the explanatory value of the model (measured by the adjusted R^2) increased from 0.45 to 0.63 for the full sample and from 0.49 to 0.58 for the matched sample, suggesting that the chosen controls are associated with earnings.

The measurement of persistence over one quarter ahead of the drift raises an issue as to the ability of earnings to persist over a longer period of time. To examine this issue, we rerun Equation

2 (Panel A, Table 7) using the independent variable $EPS_{j,dt+4}$ (representing EPS four quarters, one year, ahead of the drift). We also reran Equation 1 over a longer period, $EPS_{j,dt+8}$ (EPS two years ahead of the drift).[21] The results are in Panel B, Table 7.

Table 7
Tests of the Relation between Current Earnings and One Year and Two Years Past Earnings of Single-Class vs. Dual-Class Firms

Panel A: Earnings Persistence with Controlling Variables One Year Past				
	Full Sample		**Matched Sample[n]**	
Variable	**Coefficient**	***P*-value[o]**	**Coefficient**	***P*-value[o]**
Intercept	0.4846	***	0.3886	***
$EPS_{j,dt}$[a]	0.0940	***	0.2504	***
$TYPE_{Single-Dual}$[b]	-0.1115	***	-0.0336	**
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.0087	*	-0.0899	***
$IND_{j,t}$	0.0665	**	0.1147	
$IPO_{j,t}$[e]	0.0338	***	0.0017	
$OPM_{j,t}$[f]	0.0064	***	0.0025	
$ROA_{j,t}$[g]	0.4115	***	0.6246	***
$ROE_{j,t}$[h]	0.6672	***	0.9303	***
$DAS_{j,t}$[i]	-0.2357	***	-0.0054	
$CRV_{j,t}$[j]	0.1077	***	0.1540	***
$R\&D_{j,t}$[k]	-0.0072	***	-0.0134	***
$P/E_{j,t}$[l]	-0.0018	***	-0.0015	***
$P/B_{j,t}$[m]	0.0123	***	0.0079	***
Adjusted R^2	0.6221		0.5689	

Panel B: Earnings Persistence without Control Variables for the Last Two Years				
	Full Sample		**Matched Sample[n]**	
Variable	**Coefficient**	***P*-value[o]**	**Coefficient**	***P*-value[o]**
Intercept	0.0462	**	0.1077	***
$EPS_{j,dt}$[a]	0.1037	**	0.0404	***
$TYPE_{Single-Dual}$[b]	-0.0594	***	-0.0094	
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.0376	**	-0.0175	
Adjusted R^2	0.4013		0.3036	

[21] No significant changes were found when controlling variables were added.

[a] Firm *j* earnings per share over the drift (the mean EPS over the four prior quarters).
[b] A dummy variable representing whether the firm is single-class (1) or dual-class (0).
[c] The interaction between the two independent variables.
[d] Industry of firm *j* based on SIC codes (see Table 1).
[e] Listing age: number of years since IPO.
[f] Operating income in quarter *t* as a percentage of sales revenues in quarter *t*.
[g] Net income in quarter *t* as a percentage of total assets in quarter *t*.
[h] Net income in quarter *t* as a percentage of stockholders' equity in quarter *t*.
[i] Total debt in quarter *t* as a percentage of total assets in quarter *t*.
[j] Sales revenues in quarter *t* minus sales revenues in quarter *t*-1 divided by sales revenues in quarter *t*-1.
[k] R&D expense in quarter *t* as a percentage of sales revenues in quarter *t*.
[l] Market value in quarter *t* divided by net income in in quarter *t*.
[m] Market value in quarter *t* divided by total assets in in quarter *t*.
[n] Matched based on propensity score matching.
[o] *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-tailed tests) for the logistic regression specifications.

Consistent with the previous analysis, in Table 7 there is a positive coefficient relating this year's earnings to the previous year's earnings for both regressions and both samples. The results are also consistent with respect to the main variable of interest, single-class or dual-class firm. Despite the additional time, the coefficient for the main variable of interest ($EPS_{j,dt} * TYPE_{Single-Dual}$) is negative. For one year ahead, the interaction $EPS_{j,dt} * TYPE_{Single-Dual}$ is significant, suggesting that dual-class firms' current year's earnings are more closely associated with the next year's earnings, compared to single-class firms. When we increase the time frame to two years ahead, the interaction variable remains negative; however, it is significant only for the full sample and not for the matched sample.

We find that all control variables have a consistent relation with earnings after one year as they do after one quarter for both samples. However, three factors ($IND_{j,t}$, $IPO_{j,t}$, and $DAS_{j,t}$) are insignificant for the matched sample, the same as in the one quarter ahead earnings.

The explanatory value of the model one year ahead (measured by the adjusted R^2) remains almost the same for both samples (decreased by one percentage point, from 0.63 to 0.62 for the

full sample and from 0.58 to 0.57 for the matched sample). For two years ahead, the explanatory value of the model deteriorates, as in Dichev and Tang (2009) (<0.00 for the full sample and 0.30 for the matched sample).

5.2 Cash Flow Prediction

While earnings persistence is one of the major measures of earnings quality, its major weakness is its dependence on not only the firm's performance but also the accounting measurement system. This weakness allows it to be susceptible to earnings manipulation in the short run (Dechow *et al.*, 2010). Cash flows tend to be more closely related to how firms are valued (Foerster *et al.*, 2017), and the ability of earnings to predict cash flows may be used as a proxy for earnings quality (Nam *et al.*, 2012).

We rerun Equation 2 again, but with cash flow per share ($CFS_{j,t}$), calculated as Total Cash Flows from Operations divided by the number of shares (as calculated in EPS), as the dependent variable.

Table 8
Tests of the Relation between Current Cash Flows and Past Earnings of Single-Class vs. Dual-Class Firms

	Full Sample		Matched Sample[k]	
Variable	**Coefficient**	***P*-value**[l]	**Coefficient**	***P*-value**[l]
Intercept	0.8127	***	1.3267	***
$EPS_{j,dt}$[a]	0.7111	***	0.7437	***
$TYPE_{Single-Dual}$[b]	-0.0053		-0.2141	*
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.2325	**	-0.2412	*
$IND_{j,t}$[d]	-0.6601	***	0.3343	**
$IPO_{j,t}$[e]	0.1858	***	-0.0535	***
$OPM_{j,t}$[f]	-0.0091	**	-0.0084	
$ROA_{j,t}$[g]	-0.6870	***	-0.1312	
$ROE_{j,t}$[h]	0.4363	***	0.9780	***
$CRV_{j,t}$[i]	-0.0816	**	0.0877	
$P/E_{j,t}$[j]	-0.0013	***	-0.0016	***
Adjusted R^2	0.3838		0.4318	

[a] Firm *j* earnings per share over the drift (the mean EPS over the four prior quarters).
[b] A dummy variable representing whether the firm is single-class (1) or dual-class (0).
[c] The interaction between the two independent variables.
[d] Industry of firm *j* based on SIC codes (see Table 1).
[e] Listing age: number of years since IPO.
[f] Operating income in quarter *t* as a percentage of sales revenues in quarter *t*.
[g] Net income in quarter *t* as a percentage of total assets in quarter *t*.
[h] Net income in quarter *t* as a percentage of stockholders' equity in quarter *t*.
[i] Sales revenues in quarter *t* minus sales revenues in quarter *t* -1 divided by sales revenues in quarter *t* -1.
[j] Market value in quarter *t* divided by net income in in quarter *t*.
[k] Matched based on propensity score matching.
[l] *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-tailed tests) for the logistic regression specifications.

The quality of the financial information of dual-class firms, as measured by the ability of earnings to predict cash flows, is consistent with the earnings persistence of dual-class financial reporting. The main variable of interest, single- or dual-class firm, as represented by the interaction term $EPS_{j,dt} * TYPE_{Single-Dual}$, is negative and significant in Table 8, suggesting that dual-class firms' current year's earnings are more closely associated with the next year's cash flows,

compared to single-class firms.

We use the same selection procedure as for Equation 2 to eliminate the insignificant controlling variables. Of the 15 original control variables, only seven are significant in this analysis. In addition to the size variables and the profit margin, we find that $DAS_{j,t}$, $R\&D_{j,t}$, and $P/B_{j,t}$ are not significantly associated with cash flow per share (CFS) in the first run of the full sample and were therefore eliminated in the second run and in running the matched-sample regression.

The explanatory value of the model (the adjusted R^2) is lower than that of the persistence measure, as expected; it is 0.38 for both full-sample models and 0.43 for both matched-sample models (without and with control variables).

The ability of earnings to predict cash flow over time increased for dual-class firms, however decreased for single-class.[22] In order to measure the ability of earnings to predict CFS over a longer period of time, we tested the model again with the dependent variable, one year ahead of the drift ($CFS_{j,t+4}$), and two years ahead of the drift ($CFS_{j,t+8}$).

[22] Following the methodology for Table 5, the explanatory power of persistence is higher, on average, for dual-class firms (0.93) than for single-class firms (0.62 for the full sample and 0.69 for the matched sample). The explanatory power increased by 0.4% over time, on average, for the dual-class firms and decreased for the single-class firms (by 0.3% for both the full and the matched sample); however, this trend is not significant.

Table 9
Tests of the Relation between Current Cash Flows One Year and Two Years Past Earnings of Single-Class vs. Dual-Class Firms

PANEL A: Cash Flow Predictability with Control Variables over the Last Year				
	Full Sample		**Matched Sample[l]**	
Variable	**Coefficient**	***P*-value[m]**	**Coefficient**	***P*-value[m]**
Intercept	0.9108	***	1.4320	***
$EPS_{j,dt}$[a]	0.4321	***	0.4888	***
$TYPE_{Single-Dual}$[b]	-0.0603		0.1874	
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.0150		-0.1810	
$IND_{j,t}$[d]	0.4502	**	0.3316	**
$IPO_{j,t}$[e]	0.1878	***	-0.0544	***
$OPM_{j,t}$[f]	-0.0085	***	-0.0052	
$ROA_{j,t}$[g]	-0.6584	***	-0.0704	
$ROE_{j,t}$[h]	0.4738	***	1.0383	***
$CRV_{j,t}$[i]	-0.1053	***	0.0644	
$P/E_{j,t}$[j]	-0.0014	***	-0.0016	***
$P/B_{j,t}$[k]	0.0061	*	-0.0091	
Adjusted R^2	0.3832		0.4286	
PANEL B: Cash Flow Predictability without Control Variables over the Last Two Years				
	Full Sample		**Matched Sample[l]**	
Variable	**Coefficient**	***P*-value[m]**	**Coefficient**	***P*-value[m]**
Intercept	1.1584	***	1.3549	***
$EPS_{j,dt}$[a]	0.2496		0.3106	**
$TYPE_{Single-Dual}$[b]	-0.0938	*	-0.2728	***
$EPS_{j,dt} * TYPE_{Single-Dual}$[c]	-0.0846		-0.1436	
Adjusted R^2	0.0002		0.0033	

[a] Firm *j* earnings per share over the drift (the mean EPS over the four prior quarters).
[b] A dummy variable representing whether the firm is single-class (1) or dual-class.
[c] The interaction between the two independent variables.
[d] Industry of firm *j* based on SIC codes (see Table 1).
[e] Listing age: number of years since IPO.
[f] Operating income in quarter *t* as a percentage of sales revenues in quarter *t*.
[g] Net income in quarter *t* as a percentage of total assets in quarter *t*.
[h] Net income in quarter *t* as a percentage of stockholders' equity in quarter *t*.
[i] Sales revenues in quarter *t* minus sales revenues in quarter *t* -1 divided by sales revenues in quarter *t* -1.
[j] Market value in quarter *t* divided by net income in in quarter *t*.
[k] Market value in quarter *t* divided by total assets in in quarter *t*.
[l] Matched based on propensity score matching.
[m] *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-

tailed tests) for the logistic regression specifications.

The results in Table 9 show that the ability of earnings to predict cash flows one year ahead is lower than that of earnings to predict future earnings for all samples and decreases over longer periods of time; however, the variable of interest, $EPS_{j,dt} * TYPE_{Single-Dual}$, is negative and not significant. The results suggest that reported earnings are more closely associated with future cash flows for dual-class firms than for single-class firms. Dual-class firms' ability to predict CFS based on the current period's earnings remains superior to single-class firms as the time horizon increases from one year ahead to two years. The main variable of interest, single-class or dual-class firm, represented by the interaction term $EPS_{j,dt} * TYPE_{Single-Dual}$, is negative, although not significant (p-value = 0.23). In addition to the seven control variables we find significant in the previous regression (Table 8), we find that $P/B_{j,t}$ is significant in the earnings-cash flow one-year-ahead relation.

5.3 Earnings Prediction

While the results provide evidence of higher earnings persistence for dual-class firms, we also examine the generalizability of the results by assessing the extent to which the earnings persistence regression can predict the earnings of an external sample that was not used to formulate the regression itself. For this analysis, the regression equation 1 (using the relevant coefficients) was applied to the independent variables of Q4/2017. We measure $EPS_{j,dt}$ as the average EPS for Q4/2016–Q3/2017.

The results of applying the regression to an out of sample data set produced a lower fit, as

expected (the adjusted R^2 decreased to 0.4289). However, Kolmogorov-Smirnov goodness-of-fit tests (Table 10) indicate that the level of error for dual-class firms is lower than for single-class firms. This suggests that earnings predictions by dual-class firms contain less error than the predictions of single-class firms. In other words, dual-class firm earnings have a better ability to predict future earnings than do single-class firm earnings.

Table 10
Kolmogorov-Smirnov Goodness-of-Fit Test on Out-of-Sample Data[a]

Sample	EDF[b] at Maximum	Deviation from Mean
Single-Class	0.569	0.796
Dual-Class	0.381	-0.2730
Total Sample	0.554	

[a] Asymptotic test of significance $p < 0.0001$.
[b] Empirical distribution function. Its value at a given point is equal to the proportion of observations from the sample that are less than or equal to that point.

So far we have compared the results of earnings quality, persistence, and prediction, *between* single- and dual-class firms. In this section, we compare the prediction ability *within* each sample. Because we use the firm as its own control, we avoid the need of using control variables that previous studies have shown are inconsistent identifiers for differences between dual- and single-class firms. Specifically, we measure the ability of each sample, dual-class or single-class, to predict earnings.

We develop an earnings prediction model measure the quality of information in the financial statements. Based Ou and Penman's (1989) seminal study, and following the methodology used by Solomon *et al.* (2020), we use a two-step approach to develop the model. The model allows us to examine the prediction ability of financial statements based on comprehensive information, rather than simply the information condensed in the "bottom line."

We utilize this comprehensive information to compile a list of 58 ratios (Ou and Penman, 1989) to attempt to mitigate the omitted variable bias problem.

In the first stage, we use a univariate logistic regression model to evaluate the significance of each explanatory variable to the change in earnings, over the drift, in the next quarter. We conduct this analysis for each of the 12 quarters Q3/2014–Q2/2017. We only retain the variables that are significantly associated with the direction of EPS above the drift. Significance was determined by a *p*-value less than 0.10.

Next, we use a stepwise multivariate logistic regression model to identify the variables for inclusion in the final model. We develop a different model for each of the 12 quarters, Q4/2014 to Q3/2017, using quarterly data from the previous three years (12 quarters) of observations; for example, the forecast period for Q3/2015 is Q3/2012 to Q2/ 2015.

For the second stage, we use an iterative (backwards and forwards) approach to minimize the AIC measure of goodness-of-fit. At the backwards stage, all variables are first included in a single regression; variables that did not prove significant based on the AIC measure of goodness-of-fit were then progressively removed. In the forwards stage, the regression began with one variable, AIC was measured, and then an additional variable was added. A variable was considered insignificant if adding another variable increased the model's total AIC score.

Finally, we use the logistic models to forecast the probability that the company's EPS for the next quarter would exceed its current EPS. If the probability was greater than 0.6, a company stock was assigned to a "long" position (i.e., EPS are expected to increase); if the probability was less than 0.4, it was assigned to a "short" position (EPS are expected to decrease). We measure model accuracy as its ability to accurately predict, for each firm, the change in EPS from the current period to the next.

Table 11
Accuracy of Earnings Prediction[a] One Quarter Ahead

	Single-Class	Dual-Class
Average[b]	66.50%	74.41%
Average Kappa Score	0.29	0.45

[a] The percentage of the models to accurately predict, for each company, the change in EPS from the current period to the next.
[b] The average prediction for all periods.

As can be seen from Table 11, the ability of dual-class firms to predict future earnings one quarter ahead, on average, is almost 8 percentage points better than that of single-class firms (74.41% vs. 66.5%).

To examine the reliability of these results, we use a kappa statistical measure. The kappa coefficient takes into account all of the predictions and provides a consolidated measure of the level to which they all agree. A high kappa score denotes a high degree of agreement among the predictions, whereas a low kappa score denotes limited agreement (Gupta *et al.*, 2013). The kappa score for single-class firms ranges from 0.14 to 0.70 with an average of 0.29, whereas for the dual-class firms the kappa score ranged from 0.20 to 1.00 with an average of 0.45. These results suggest that dual-class firms' predictions are more accurate and more reliable.

6 External Indicators of Earnings Quality: Restatements

A restatement occurs when a previously issued financial statement contains a misstatement that is then corrected. Researchers, auditors, investors, and regulators view financial statement restatements as a reliable proxy for financial reporting quality (Rowe and Sivadasan, 2021). Dechow *et al.* (2010) suggest that restatements are a reliable external indicator of earnings quality with a low Type I error (low probability of misidentifying error-free financial statements as

misstated).

Previous studies use the GAO (2003) and (2006) Financial Statement Restatement Database, which were constructed using a Lexis-Nexis text search based on variations of the word "restate" and contains restatements between 1997 and 2005 (Dechow *et al.*, 2010). We collect our restatement data using the SEC's EDGAR system with a search for the years 2012–2017 based on the same variations of the word "restate" as used in the GAO Lexis-Nexis text search.

The search identified 2,334 firms that have filed 4,578 restatements during the 2012–2017 period. Panel A of Table 12 reports summary statistics for the sample, while Panel B reports regression results where the dependent variable takes the value 1 if the annual financial statement is restated and 0 otherwise. Panel C reports regression results where the dependent variable is the number of filings per period per firm (a firm may file more than one restatement per year). The independent variables include the type of company (a value of 1 for a single-class firm and 0 for a dual-class firm) and other control variables we find are associated with firm characteristics (see Table 2). We run the analysis on both the full sample and the matched-pair sample.

Table 12
Earnings Restatements

Panel A: Summary Statistics						
	Full Sample			**Matched Sample**		
Variable	**Single-Class**	**Dual-Class**	**Test of Difference[c]**	**Single-Class**	**Dual-Class**	**Test of Difference[c]**
Firms in Sample	12898	1482		1482	1482	
Filing Firms	2092	242		258	242	
Number of Filings	4210	368		516	368	
Average Restatement Rates	0.1622	0.1634		0.1741	0.1634	
Average Number of Filings per Firm	0.3264	0.2485	***	0.3482	0.2485	***

Panel B: Firms Filing Restatements by Type				
	Full Sample		**Matched Sample[b]**	
Variable	**Coefficient**	**P-value[d]**	**Coefficient**	**P-value[d]**
Intercept	0.1542	***	0.2590	***
$TYPE_{Single-Dual}$[a]	0.0002		0.0181	*
Adjusted R^2	0.0005		0.0072	

Panel C: Number of Restatement Filings by Type				
	Full Sample		**Matched Sample[b]**	
Variable	**Coefficient**	**P-value[d]**	**Coefficient**	**P-value[d]**
Intercept	0.2172	***	0.4494	***
$TYPE_{Single-Dual}$[a]	0.0784	***	0.1132	***
Adjusted R^2	0.0008		0.0073	

[a] A dummy variable representing whether the firm is single-class (1) or dual-class (0).
[b] Matched based on propensity score matching.
[c] Test of difference shows the *p*-values for the *t*-test of whether the mean value of each variable differs between the dual-class sample and the single-class measure. The Wilcoxon and robustness tests were also applied with similar results. *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
[d] *,**,*** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, (two-tailed tests) for the logistic regression specifications.

The results in Table 12 show that single-class firms file restatements, on average, more often than dual-class firms in the matched sample, although the results are not significant. Single-class firms, however, file more often per period than dual-class firms, and the results are significant. The results also show a higher rate for restating firms by type of company (significant for only the matched sample) and the number of restatements (significant for all samples) for

single-class firms. However, the adjusted R^2 for the models is low (0.0005 to 0.0073).

7 Conclusion

We empirically test the quality of financial reporting by dual-class firms. The issue we examine is which force is stronger: freedom from market pressures, provided by superior voting rights and encouraging founders to provide investors with higher-quality information, or agency costs, inhibiting founders from providing investors with the best information. The results are important and counterintuitive, reflecting a tradeoff between the dilution of voting rights and enhancement of the credibility of the information provided to investors.

We use earnings persistence to measure the quality of the financial reports, their ability to predict future cash flows, their ability to predict change in future earnings, and an external indicator of financial restatement filing. We use a comprehensive sample of firms publicly traded in the U.S. between 2012-2017 and match single-class firms to their dual-class counterparts.

We find that dual-class firm earnings are significantly more persistent one quarter ahead than single-class firm earnings, with this persistence increasing over time. These results remain consistent when we add control variables to the regression and the forecast horizon is increased to one and two years (although not all results are significant).

Dual-class firms' earnings are also better able to predict future cash flows, for one quarter-ahead, one-year ahead, and two-years ahead, than those of single-class firms, although the results are only significant for one-quarter ahead. Moreover, dual-class firms' earnings are better able to predict future earnings, based on past earnings and on a comprehensive list of financial ratios, and are more reliable than single-class firms.

Using an external indicator, restatements, we find that fewer dual-class firms file

restatements, and also the number of restatements filed by dual-class firms is smaller than that filed by single-class firms. These results support our previous results regarding the higher quality of earnings reported by dual-class firms.

These results suggest that dual-class firms provide credible information to their investors. Indeed, it seems that the founders of dual-class firms provide investors with higher-quality information in exchange for superior voting rights.[23]

Once dual-class firms have raised capital from the public, it may seem as though they no longer have incentives to provide credible information to investors. However, dual-class firms need to maintain good reputations even after their IPOs (Mailath and Samuelson, 2006). When dual-class firms need to raise more capital following their IPO, they may make a secondary share offering of their common stock. For example, the streaming-media company Roku, which originally went public with a dual-class structure in 2017, announced a secondary share offering of its Class A common stock on November 18, 2019. Indeed, the ability of dual-class firms to raise money in the capital markets may be severely impaired if investors doubt the credibility of their reports. Therefore, dual-class firms have strong incentives to maintain that credibility.

Academics and policymakers have called for enhancing the disclosure requirements of dual-class firms. Bebchuk and Kastiel (2019) examine dual-class firms with controllers holding a small minority of the firm's equity capital and suggest that investors should be informed as to the extent to which governance arrangements enable controlling shareholders to reduce their stake

[23] For example, when Google went public with a dual-class capital structure, its cofounders, Larry Page and Sergey Brin, sent shareholders a letter explaining their plans and the reasoning and values behind them (Page and Brin, 2004). Page and Brin spelled out in their letter that they "intend[ed] to take steps to help ensure shareholders are well informed." Moreover, they used the words of Warren Buffett, the chairman and CEO of the giant dual-class conglomerate Berkshire Hathaway, to promise shareholders, "We won't 'smooth' quarterly or annual results: If earnings figures are lumpy when they reach headquarters, they will be lumpy when they reach you."

without forgoing control. The SEC's Investor Advisory Committee endorsed their suggestion for improving the transparency of dual-class firms (SEC, 2018). Solomon (2020) focuses on dual-class structures in which public shares have no voting rights and suggests improving disclosures to nonvoting shareholders. Our findings suggest that as far as financial information is concerned, dual-class firms seem to already provide high-quality information to their investors. These findings should be taken into account by policymakers when considering whether and to what extent to enhance the disclosure requirements of dual-class firms.

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