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Public peers, accounting comparability, and value relevance of private firms' financial reporting

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Abstract

We examine whether higher accounting comparability between public and private firms leads to higher value relevance of private firms' reported financial information. To help develop our hypotheses, we conduct a series of interviews with M&A valuation experts. The experts indicate that comparable accounting between public and private firms allows them to apply public firms' valuation multiples directly to private firms, which facilitates the use of private firms' financial reporting in their valuations. Using a large sample of M&A transactions with private target firms in the European Union around the mandatory adoption of IFRS by public firms, we find that private firms' reported financial information has higher value relevance when it has higher accounting comparability to that of public firms. Furthermore, we find that the impact of accounting comparability is stronger when public peer information is more precise. Our findings are consistent with higher accounting comparability facilitating a spillover of valuation information from public to private markets, which leads to greater value relevance of private firms' reported financial information.

Keywords Value relevance · Private firms · Information spillovers · Comparability

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1 Introduction

Private firms constitute the majority of companies worldwide. Within the United States alone, there are approximately 6 million private companies in operation (US Census Bureau 2016; Reamer 2019). In the course of a private company's life, the two most common ways for shareholders to exit their positions in that firm are through an initial public offering or, much more frequently, in a merger or acquisition (M&A). While some research examines the use of venture capital-backed private firms' accounting information for valuations around IPOs (Hand 2005; Armstrong et al. 2006), little empirical evidence exists about the importance of private firms' reported financial information for valuations in M&As. We add to this area of research by examining whether accounting comparability to publicly traded firms impacts the value relevance of private firms' financial reporting in such transactions.

Due to the scarcity of academic research on this topic, we conduct 25 semi-structured interviews with private firm M&A experts to help inform our hypotheses regarding the impact of accounting comparability to public firms on the value relevance of private firms' reported financial information. These experts indicate that trading multiples from public firms' stock prices are a vital source of information for the valuation of private firms.[1,2] Having comparable accounting information across public and private firms allows them to apply public firms' multiples directly to the financial reporting of private firms; therefore public valuations can contribute to determinations of firm value when private firms' reported financial information is more comparable to that of their public peers.[3] This suggests that greater accounting comparability to public firms reduces the valuation uncertainty of private firms' reported financial information, potentially leading investors to place more weight on their reported accounting information in valuations, which results in higher value relevance.

To examine our research question empirically, we focus on privately held companies in the European Union. Unlike in the United States, both public and private firms above certain size thresholds must provide publicly available financial statements, which allows us to observe private firms' reported financial information (Beuselinck et al. 2021). Moreover, the mandatory adoption of IFRS by public

[1] Multiples reflect the relation between firm value and accounting information, and using them is a well-established method to exploit information embedded in the valuations of peers when valuing firms (Bhojraj and Lee 2002; Liu et al. 2002; Bai et al. 2016; Murfin and Pratt 2019).

[2] This is consistent with survey results by Gompers et al. (2016), who indicate that private firm investors often rely on multiples to evaluate their investments. For example, Gompers et al. (2016) state: "Despite the prominent role that discounted cash flow valuation methods play in academic finance courses, few PE investors use discounted cash flow or net present value techniques to evaluate investments."

[3] The experts indicate that, when private firms do not follow the same accounting practices as public firms, their reported financial information is routinely adjusted internally or by a hired public accounting firm to increase its comparability. This highlights how important it is to the experts to have comparable financial information between public and private firms.

firms in the European Union in 2005 and private firms' choice of whether to adopt the new public standard provide variation in the similarity of the reporting standards between public and private companies (De George et al. 2016). We exploit this variation to capture differences in accounting comparability between public and private firms.

We combine a large sample of private firm valuations from M&As (obtained from Bureau van Dijk's Zephyr database) with the corresponding private firms' financial reports (obtained from Bureau van Dijk's Orbis database). We obtain a final sample of 14,417 private M&As from 1997 to 2017 and measure the value relevance of the financial reports as the explanatory power of regressions of transaction valuations on the book value of equity and net income (Barth et al. 2012; McInnis et al. 2018). Our descriptive findings show that the financial reporting of both public and private firms is value relevant but that of public firms is more so.

To test whether the value relevance of private firms' reported financial information is greater when it is more comparable to that of public firms, we first examine the difference between the value relevance of private firms that follow IFRS and the value relevance of those that follow local GAAP. We find that the reported financial information of private firms that adopt IFRS has higher explanatory power for their valuations in M&As (i.e., it exhibits higher value relevance) than that of private firms that use local GAAP. Next, consistent with the impact of losing accounting comparability to public firms, private firms that continue providing financial reports following local GAAP after 2005 exhibit lower value relevance than private firms before 2005. Overall, these findings suggest that the value relevance of private firms' reported financial information is greater when it is more comparable to that of public firms, which is consistent with our prediction.

One potential concern is that our findings reflect differences in the quality of different accounting regimes rather than the effect of accounting comparability. Interestingly, the experts indicated that they do not consider local GAAP standards to be of a different quality than IFRS standards. To address this concern empirically, we examine the value relevance of private firms' financial reporting around the adoption of IFRS by public firms in the United Kingdom. UK GAAP is known for being highly transparent (Bae et al. 2008); therefore differences in value relevance between UK private firms that do and do not adopt IFRS are less likely to be driven by differences in the quality of accounting standards (Ahmed et al. 2013; Brochet et al. 2013). Again consistent with the impact of accounting comparability, we find that private firms in the United Kingdom that follow IFRS exhibit an increase in the value relevance of their reported financial information, while those that continue following UK GAAP exhibit a decrease.

Intuitively, the impact of accounting comparability to public firms on the value relevance of private firms' reported financial information likely depends on the precision of the information gleaned from public peers. The M&A experts emphasize that having a larger group of public peers reduces idiosyncratic noise in public firms' trading multiples, allowing them to garner a more precise signal from public peers.[4]

[4] Research suggests that the relation between public companies' accounting information and firm value is more certain when they have more comparable public peers, which supports the experts' statements (Young and Zeng 2015).

They also indicate that they generally place more weight on multiples when the precision of the multiples signal from public peers is greater. These insights suggest that greater precision of the signal from public peers reduces uncertainty about the implications of private firms' financial reporting for valuation, leading to higher value relevance of private firms' reported financial information. Consistent with this, we find that the difference in value relevance between IFRS and local GAAP private firms' reporting is higher for private firms that operate in industries with more public companies than for private firms that operate in industries with fewer public companies. This result also further alleviates concerns that the self-selection of more transparent firms into IFRS adoption or differences in the quality of IFRS and local GAAP standards fully explain our main results. (In other words, these alternative possibilities cannot explain why differences in value relevance associated with precision exist within local GAAP and IFRS private firms separately.)

Additional analyses further support our conclusions and offer insights into how and under which conditions accounting comparability affects the value relevance of private firms' reported financial information. First, we examine which accounting items most likely drive the observed effect of comparability on value relevance. The valuation experts reveal that, for local GAAP firms, several accounting line items routinely require complex translations to make them comparable to IFRS. For instance, comparability issues arise from differences in the recognition of (self-generated) intangible assets or project revenues, but they are particularly prevalent regarding the recognition and measurement of liabilities, such as leasing liabilities and certain provisions. Results from a decomposition analysis are consistent with these interview insights and support the notion that, in our setting, the liability side contributes most to the observed effect of comparability on value relevance. Next, we provide cross-sectional evidence that the impact of accounting comparability on value relevance is less pronounced for turnaround targets, that is, target firms with significant losses, which is consistent with public peer multiples being less applicable for these firms. Lastly, we address the important concern that differences in the variation of growth and risk expectations across firms that do and do not adopt IFRS might affect the results from our empirical analyses. (We defer the discussion of this to Section 5.2.) While we cannot rule out this possibility, our findings suggest that these differences are unlikely to fully explain our results.

This study contributes to the literature in several ways. First, it highlights the importance of private firms' financial reporting for valuation purposes. Research on the use of private firms' financial statements has examined the impact of auditing on debt financing (Minnis 2011; Lisowsky et al. 2017; Breuer et al. 2018) and the role of financial statements in monitoring by debtholders (Minnis and Sutherland 2017). More closely related to our study, which focuses on equity valuations, research has analyzed the importance of venture capital-backed firms' accounting information for valuations around their IPOs using relatively small

samples (Hand 2005; Armstrong et al. 2006). [5] Our study documents the importance of private firms' accounting information in M&As, which is the most common type of exit for private firm investors, and is the first to provide large-sample evidence of the value relevance of private firms' financial reporting.

Second, our findings contribute to the nascent literature on the effect of public peer information on private firms. While there is extensive research on the impact of comparables pricing and the spillover of information across public firms (e.g., Foster 1981; Han et al. 1989; Young and Zeng 2015), only a few studies examine the impact of spillovers from public to private markets. These studies find evidence of spillovers in the context of private firm debt financing (Shroff et al. 2017) or investment efficiency within private firms (Badertscher et al. 2013). We contribute to this stream of research by showing that accounting comparability between private and public firms facilitates investors' understanding of how accounting information relates to market valuations, which impacts the value relevance of private firms' reporting. This finding also relates our study to the broader literature on the determinants of value relevance and the importance of contextual information in facilitating the translation of book values into market prices (Yu 2013; Müller et al. 2015; Fiechter and Novotny-Farkas 2017; Ferreira et al. 2019).

Lastly, we add to the literature on the impact of IFRS adoption on accounting comparability (e.g., Daske et al. 2008; Yip and Young 2012; Brochet et al. 2013; Wang 2014; Cascino and Gassen 2015; Byard et al. 2017). In particular, understanding the implications of accounting comparability between public and private firms for the value relevance of private firms' reported accounting information can contribute to discussions about regulating their financial reporting. Currently, there is substantial variation across jurisdictions, with some imposing strict requirements on private firms' financial reporting, while others allow considerable discretion (Allee and Yohn 2009; André 2017). This heterogeneity has led to questions about the rationale for regulating the financial reporting of private firms and the associated consequences of doing so (e.g., Minnis and Shroff 2017). Our study illuminates one of the potential implications of accounting standard harmonization between public and private firms.

2 Interviews with private firm M&A experts and hypothesis development

2.1 Interviews with private firm M&A experts

2.1.1 Overview

We first conduct a series of semi-structured interviews with M&A experts to support the development of hypotheses regarding the impact of accounting comparability

[5] Hand (2005) examines the value relevance of financial information from 204 privately held US biotech firms and finds that their financial statements are generally value relevant. He also finds that the value relevance of financial statement items increases with firm maturity but that the value relevance of nonfinancial statement information (e.g., patent information) decreases with firm maturity. For a sample of 502 venture capital funded companies, Armstrong et al. (2006) show that reported financial information related to investment activities (e.g., R&D) is more value relevant in the pre-IPO period.

between public and private firms on the value relevance of private firms' financial reporting in corporate transactions.[6] These interviews offer insights into the private firm M&A process not found in academic research and help ground our predictions and the interpretations of our findings in practice. This section presents our central findings from these interviews and provides further details and contextual information on the interviewing process. This additional information meets the transparency criteria for incorporating interviews in research studies, as suggested by Aguinis and Solarino (2019).

The experts we interviewed work primarily in corporate M&A departments or as investment managers or advisers in the private equity industry in the European Union. They have from seven to 20 years of experience in private firm valuations and are all employed as managers, directors, or partners at their respective firms. The experts are part of the authors' personal or professional networks. They were initially contacted via an email that included a short factsheet containing information about the research team, the topic of the research project (framed in general terms as "the role of valuation multiples in private firm acquisitions"), and the purpose of the interview. (See Appendix 1 for the fact sheet.) In total, we contacted 25 potential interviewees, all of whom agreed to participate in a phone interview that would last approximately 20 minutes. [7]

The M&A experts broadly match the authors of this study in age, social status, and educational backgrounds. The phone interview atmosphere was professionally friendly, and we do not characterize the interaction as having an imbalance of power or hierarchy in either direction. At the beginning of each interview, a member of the research team briefly explained the research study's topic in broad terms. We further reiterated that we would not ask for proprietary or sensitive information, nor would we publicly disclose their identity or that of their employer.[8]

During each interview, one member of the research team asked questions following the general guidelines presented in Appendix 2 and allowed flexibility for the interviewees to elaborate on topics or questions they considered important or warranting further discussion. A second member of the research team took notes during the interview to document the answers and intervened only when clarification was necessary. (We notified the interviewees that a second member of the research team was present on the call at the beginning of the interview.)

Next, we present our findings and conclusions from the semi-structured interviews. We found significant overlap in the answers that we received from the M&A experts, which suggests that there generally is consensus in their views on the use of private firms' accounting information for valuation purposes. The subsections below indicate

[6] Using expert interviews in this way follows the paradigm of "theory-generating expert interviews" (Bogner et al. 2009).

[7] Our semi-structured interviews occurred in two rounds. In the first, we performed 15 interviews in which we discussed how the experts view and deal with differences between local GAAP and IFRS for valuation purposes. In the second, we conducted 10 additional interviews to gain further insight into the specific accounting line items for which an IFRS translation would be vital. In the second round, we first confirmed our findings from the first round with the interviewee before proceeding with the discussion of specific accounting line items.

[8] The identities and affiliations of the experts were disclosed to the journal editor.

the general topic area under discussion when the interviewees made the following statements.

2.1.2 Importance of financial statement information for private firm valuations

All interviewees consider financial statements to be one of the most important information sources for valuing private firms. Some participants emphasized that, relative to information about public targets, information available about private firms is generally limited. For instance, there tends to be less information provided by intermediaries, such as analysts and the business press. The responses we received suggest that financial statement information is a critical input in the interviewees' valuations for private firms and, in many cases, is one of the few relevant sources of information available.

2.1.3 Use of financial statement multiples in the valuation of private firms

All interviewees indicated that, together with formal financial modeling, they use multiples as a standard component of their methodology to value private firms. The relative importance of multiples valuation depends on the investors' business model and market segment. Institutional private equity investors generally indicated that multiples are highly relevant for their valuations. They are important not only as a standalone valuation method but also because a leveraged buyout (LBO) model, which is generally preferred in private equity over a discounted cash flow (DCF) model, incorporates an exit multiple that reflects the intention of re-selling target firms after five to 10 years. Some corporate investors explained that they rely primarily on some variation of a DCF model and use multiples as an initial valuation benchmark and as a complementary check of the modeled firm value. One expert, who works for a mid-cap private equity investment company, stated that formal DCF and LBO models are practically irrelevant in his firm, and valuation is based almost exclusively on multiples and senior executives' intuition.

All of the experts stated that multiples are a common and expected topic of discussion in internal meetings and price negotiations. Proposed prices outside of the range of comparable multiples from peer firms are possible but require plausible justification. Also, both internally and externally, acquisition prices are nearly exclusively expressed in terms of multiples, for example, as in statements like "We paid 9x" or "We needed to pay an additional turn."[9]

2.1.4 Multiples based on current market prices versus prices from past private firm transactions

Multiples based on current market prices of public firms (trading multiples) and multiples from past private firm transactions (transaction multiples) are both considered in private M&A valuations. The experts emphasized that trading multiples—which are the primary focus of our study, as they capture information spillovers from public stock

[9] In these examples, "9x" refers to a valuation of nine times the firms' earnings, and "an additional turn" implies that the price had to be increased by an additional amount equivalent to one times earnings.

markets—are often more relevant because they are more recent, more comparable, and more easily attainable.

2.1.5 Local GAAP standards versus IFRS, comparability, and adjustments to financial statements

All of the experts stated that the financial statements of private targets that follow local GAAP are adjusted (at least in part) to IFRS. They perform these adjustments to facilitate comparability with prior (similar) transactions and, more importantly, public peers. The experts indicated that the "quality" of different GAAP systems is not a motive for performing these translations. The responses suggest that there is variation in the extent of the adjustments made. While some interviewees (most of whom can be classified as large-cap institutional investors) regularly hire a public accounting firm to produce a complete audited IFRS translation, others indicate that they create a full translation of the financial statements or perform adjustments of specific accounting items internally.

We also asked whether specific line items require an IFRS translation because they are particularly difficult to compare between local GAAP and IFRS financial statements. There was considerable similarity in the types of line items mentioned by the interviewees**.** These line items generally represent complex and potentially discretionary accruals (which are difficult to value for purposes of recognition and subsequent measurement) that are treated differently under local GAAP and IFRS. For instance, the experts repeatedly cited difficulties associated with the recognition of (self-generated) intangible assets, the capitalization of research and development (R&D) expenses, the depreciation of fixed assets, or the valuation of inventories and unfinished goods. In the income statement, the interviewees suggested that problems regularly arise from differences in revenue recognition, particularly in connection with long-term or project contracts. Interestingly, however, comparability issues appear to be most pervasive in the recognition and measurement of liabilities. [10] The most commonly mentioned accounting item in this area was the treatment of leasing liabilities, but provisions, particularly for pensions, appear to be equally problematic.

2.1.6 Peer groups and the usefulness and applicability of peer multiples

The experts stated that the set of peer multiples they use varies depending on the specifics of the M&A and the target firm. Moreover, there are no fixed rules or guidelines on what constitutes an adequate number of comparable firms. However, they generally suggest that having a larger group of peers is more advantageous because this allows for more noise to be filtered out of the information gathered from peers. More peers also offer more opportunities to find particularly well-fitting and highly comparable firms for their evaluations. Consistent with this, the experts indicated that when more peers are available, they emphasize multiples and perceive the reasonable range of peer valuations as more binding (both for internal procedures and for negotiations).

[10] The experts often refer to these issues in terms of the enterprise value to equity bridge, that is, they estimate the firm's entity value and then subtract liabilities to arrive at equity value.

The interviewees also indicated that the applicability of peer multiples depends on the life cycle and the business model of target firms. For idiosyncratic private target firms, public peers are usually unavailable, preventing information spillovers. Most notably, M&A experts in turnaround management stressed that public peer information is of little relevance for distressed targets. They also suggested that it is difficult to identify applicable peers for early-stage start-up firms with high growth potential. In a similar spirit, multi-segment target firms or firms with volatile business models are less suited to the application of peer multiples than firms with a single business line and steady revenue.

2.2 Hypothesis development

Generally speaking, investors' valuations of private firms are a function of firms' financial reporting and other available information. When determining how reported accounting information relates to firm value, investors can observe the stock market valuations of public peer firms, relative to their reported accounting information. If private firms' investors expect that the multiple gleaned from public peers captures relevant information about the relation between value and financial accounting information, then knowing this public peer multiple will reduce investors' uncertainty about the valuation implications of private firms' reporting. Moreover, since investors generally place more weight on information they better understand (Kim and Verrecchia 1991), this spillover of information from public valuations plausibly leads them to place greater weight on private firms' reported financial information. Thus these investors may exploit price production in public stock markets to substitute for other information sources and costly private information collection, for example, through extensive due diligence (Wangerin 2019).

When private firms' reported accounting information is comparable to that of public firms, investors can apply the multiple from public peers directly to private firms' reporting, as they are of the same accounting base. In other words, the multiple from public peers provides relevant information on how accounting information under the accounting rules applied by public firms is associated with firm value. Conversely, multiples from public peers are not directly applicable to private firms' reported financial information when they are not comparable. Therefore the availability of these multiples would not lead to a similar increase in the weight of private firms' reported accounting information. These arguments suggest that greater accounting comparability between public and private firms facilitates such information spillovers, leading to higher value relevance of private firms' reported financials.[11] Likewise, it suggests that a *decrease* in accounting comparability reduces the potential for these spillovers,

[11] As outlined in Section 2.1, the M&A experts frequently mentioned that they use (partial) translations of financial reports from local GAAP to IFRS in their valuations: if private firms do not provide reports following IFRS, they often translate the reported local GAAP accounting information into a parallel set of reports following IFRS. Since this parallel set of financial reports follows the same standards as public firms, this allows the experts to apply public peer multiples to these reports more directly. This parallel set of financial information is not the financial information *reported* by firms, nor is it observable. Availability of a parallel IFRS-translated set of financial reports still leads to the same prediction that less weight is placed on private firms' *reported* financial information that follows local GAAP, resulting in lower value relevance.

resulting in lower value relevance of private firms' reported financial information when private firms lose comparability to public peers.

Studies, however, find that public and private firms' reporting environments and incentive structures differ fundamentally (e.g., Ball and Shivakumar 2005; Burgstahler et al. 2006). These differences could lead to underlying disparities in the information that public and private firms report (Breuer et al. 2018; Bonacchi et al. 2019), which may prevent information spillovers from public to private markets. Thus, a priori, it isn't clear if or to what extent accounting comparability between public and private firms impacts the value relevance of private firms' reporting. Our first hypothesis, stated in the null form, is as follows.

> *Hypothesis 1 – The value relevance of private firms' reported financial information does not depend on the level of accounting comparability between private and public firms.*

Research suggests that the effect of information on investors' decisions increases with the precision of that information (Kim and Verrecchia 1991). When information is more precise, investors are more certain of its implications and weigh it more in their decisions. Insights from our interviews further support this intuition.[12] These arguments suggest that the relation between accounting comparability between public and private firms and the value relevance of private firms' reporting is increasing with the precision of the information from public firms. Our second hypothesis, stated in the null form, is as follows.

> *Hypothesis 2 – The impact of accounting comparability between private and public firms on the value relevance of private firms' reported financial information does not depend on the precision of the valuation signal from public firms.*

3 Research design and data

3.1 Measuring the value relevance of financial reports

We measure the value relevance of private firms' financial reporting as the explanatory power of regressions of transaction prices on the book value of equity and net income (Collins et al. 1997; Francis and Schipper 1999; Ali and Hwang 2000; Barth et al. 2012; McInnis et al. 2018; Kent and Birt 2021).[13,14] Evaluating value relevance in

[12] The experts generally suggest that having more public peers available increases the precision of public peer information, leading them to weigh the information from public peers more in their valuation decisions for private companies (see Section 2.1.2). Following this insight from the experts, we use the number of available public peers as a proxy for the precision of information from public peers (see Section 4.2).

[13] In our setting, we do not observe continuous prices but rather typically only one transaction price per private firm. Thus it is not possible to employ a returns-based model.

[14] When investors use EBITDA multiples to estimate private firms' *entity* value, our hypothesis would predict a higher association between entity value and accounting information when the accounting is more comparable between public and private firms. This also implies (ceteris paribus) a higher association between *equity* value and accounting information, which is the conceptual notion of value relevance in the accounting literature.

terms of transaction prices aligns with our study's focus, which is concerned with the extent to which accounting information reflects firm value rather than the timeliness of accounting numbers (Kothari and Zimmerman 1995; Barth et al. 2001). Following prior research, we include a separate slope coefficient for loss firms to allow for differences in the valuation of profits and losses (Core et al. 2003). Our baseline measure of value relevance is the adjusted R^2 from the following model.

$$MV_{i,t} = \beta_0 + \beta_1 *EQ_{i,t} + \beta_2 *EARN_{i,t} + \beta_3 *LOSS_{i,t} + \beta_4 *LOSS_{i,t} *EQ_{i,t} + \beta_5 *LOSS_{i,t} *EARN_{i,t} + \varepsilon_{i,t}, \quad (1)$$

where $MV_{i,t}$ is the market value of equity, $EQ_{i,t}$ is the book value of equity, $EARN_{i,t}$ is net income, and $LOSS_{i,t}$ is a loss indicator.

3.2 Comparing value relevance across different samples

Our tests of differences in value relevance are based on comparisons of the amount of variation explained in a regression of the valuations of private firms on their accounting numbers across various subsamples of firms, as indicated by the adjusted R^2s from the regression. However, comparisons of adjusted R^2s across different samples can be problematic, as differences in adjusted R^2s may be driven by differences in scale (Easton and Sommers 2003; Gu 2007; Barth and Clinch 2009). To address this issue, we employ two alternative regression approaches. For the first, following Gu (2007), we match each firm in one group with a firm of similar size (using nearest neighbor matching without replacement and with a maximum allowed difference in total assets smaller than 20%) in the other group for each sample split. [15] For the second, we deflate all variables by the respective firm's market value of equity so that the dependent variable becomes a vector of unit values, as suggested by Easton and Sommers (2003).[16]

Since we have only a single observation of the adjusted R^2 for each subsample, we employ a bootstrapping approach to test the statistical significance of differences in value relevance across subsamples (Dichev and Tang 2009; Barth et al. 2012). To compare the adjusted R^2s for a given sample split, we randomly split the overall sample 1000 times (holding the original number of observations for each subsample constant), calculate adjusted R^2s for the pseudo-subsamples, and record the difference between the pseudo-subsamples to generate a simulated distribution of the differences in adjusted R^2s. We then nonparametrically examine whether the observed difference in adjusted R^2s between the original subsamples is smaller/larger than 95%, 97.5%, and

[15] While our matching algorithm allows for differences in size of up to 20%, effective matches are much closer, with an average absolute size difference of less than 1%.

[16] This effectively transforms the OLS to a weighted least squares specification, where the residuals can be interpreted as percentage errors. The estimated coefficients can still be interpreted similarly to those from a standard OLS regression. The regressions do not include a constant term, as doing so would perfectly predict the vector of unit values.

99.5% of the simulated differences, which correspond to two-tailed 10%, 5%, and 1% levels of significance, respectively.[17]

3.3 Discussion of value relevance versus valuation levels

Our analysis does not examine the level of private firm valuation multiples or differences in the level of multiples between public and private firms. Using public peer multiples as a reference point does not imply that these multiples are applied without adjustments in private firms' valuations. We argue that incorporating multiples from public firms can reduce investors' uncertainty of the valuation implications of private firms' reporting, consequently leading to higher value relevance, but, for example, investors might still apply a uniform discount to private firms (Officer 2007; De Franco et al. 2011). Also, given that many of our tests are based on examining differences in value relevance across accounting standards, variation in the average valuation multiple could be driven by differences in the level of accounting conservatism required by the respective accounting standards (more conservative accounting standards mechanically imply higher valuation multiples, and vice versa). Therefore we only provide adjusted R^2s across different samples in our main specifications. For completeness, we report the coefficients from estimating the value relevance models for our tests that compare public to private firms (columns (1) and (2) of Table 11) and private firms that use local GAAP to private firms that use IFRS (columns (3) and (4) of Table 11) in Appendix 3.

3.4 Sample selection and descriptives

To examine the value relevance of private firms' reported financial information, we match valuations from M&A transactions with private firm targets to their corresponding financial statement information. Our sample selection starts with all completed M&As with a target firm located in the European Union from Bureau van Dijk's Zephyr database. To determine the implied market value of equity, we use data on the transaction price and the share acquired. We calculate the share acquired as the difference between the acquirer's final stake and the initial stake before the transaction, as indicated by Zephyr. If the final or initial stake is unavailable, where possible, we collect data on the share acquired from the deal description. [18] We drop all observations for transactions with missing data about the share acquired or the transaction price. We also require targets to have a valid Bureau van Dijk ID number, which is necessary to merge the deal information with the financial statements from Bureau van Dijk's Orbis database. [19]

[17] We alternatively calculate a z-statistic as the observed difference in adjusted R^2s minus the mean simulated difference in adjusted R^2s divided by the standard deviation of the simulated differences in adjusted R^2s. The level of statistical significance of our empirical findings based on the z-statistic is always the same as that of our findings based on the nonparametric approach (not tabulated).

[18] For example, when the deal type is "Acquisition 100%," we replace missing information on the final stake with 100%.

[19] If there are repeated transactions for the same target in a given year, we aggregate them and calculate the deal value as the weighted average of market valuations.

We match each deal from Zephyr to the target's financial statements for the last year available before the transaction date. After merging the two databases, our sample consists of 107,260 completed deals with available target accounting information. The Orbis database only reports static information on a firm's listing status (i.e., listing information refers to the latest database update before the download). However, for the analyses in this paper, it is critical to correctly identify the listing status at the time of the deal. To obtain correct time-series information on a target firm's listing status, we use the historical Orbis tapes for each sample year to extract the corresponding data (Beuselinck et al. 2021), which are available for 88,980 deals.

Following prior research, we eliminate observations where the target has a negative value of book equity (e.g., Collins et al. 1997; Brown et al. 1999; Core et al. 2003). Furthermore, we restrict our sample to deals with a minimum change of ownership of 1% to ensure that observed deal values are not influenced by noise trading. Finally, we remove implausible observations with a market-to-book ratio of less than 0.01 or above 100 or a return on assets of less than −1 or above 10, and we remove extreme outliers in terms of book equity and market value. [20] Our sample for the initial comparison of public and private firms, which serves as a benchmark for comparing the levels of value relevance that we document throughout our analyses, consists of 32,914 deals over the period from 1997 to 2017 (with corresponding financial statements from 1995 to 2016), of which around 56% are public firm transactions (18,497 deals).[21] The main sample for testing our hypotheses consists of 14,417 private firm transactions. Table 1 summarizes the sample selection criteria and presents each criterion's effect on the number of observations in the sample.

Table 2 shows the descriptive statistics separately for public and private firms in panel A and private firms that use local GAAP and private firms that use IFRS in panel B. The average private (public) firm in our sample has a market value (*VALUE*) of approximately 355.8 (901.2) million EUR and book equity (*EQUITY*) of around 146.5 (482.9) million EUR (panel A). In total, 12,632 private firms use local GAAP, and 1785 private firms use IFRS (panel B); that is, approximately 12.4% of private sample firms follow IFRS. Fig. 1 presents a geographic overview of the percentage of firms

[20] We delete these extreme outliers to balance firm size for the initial comparison of public and private firms. We define the cutoff for outliers as those firms with book equity or market values of less than 0.1 million EUR or above 22.5 billion EUR. Figures 2, 3 and 4 in Appendix 4 show the public and private firm samples before and after outlier deletion. As this procedure mainly affects the public firm sample, our main analyses, which are based only on time-series and cross-sectional variation within private firms, are not sensitive to using other cutoffs. Following prior research (e.g., Balachandran and Mohanram 2011; Barth et al. 2012), we winsorize all variables used in our analyses at the 1% and 99% levels of the respective base samples to further mitigate the effect of outliers on our inferences.

[21] Byard et al. (2021) highlight the importance of understanding other institutional details surrounding the 2005 IFRS introduction. Many of these changes, including the so-called IFRS regulation (EC/1606/2002) and the IPO prospectus directive (2003/71/EC), apply to firms listed on "EU-regulated" markets but not to firms listed on "exchange-regulated" markets. Firms listed on both markets are publicly listed firms, i.e., their shares are traded on stock exchanges, and firms can generally choose to list on an EU-regulated market or an exchange-regulated market (Byard et al. 2021; Pierk 2018). However, since our research question and main analyses focus on within private firm variation, neither the IFRS regulation nor the IPO prospectus directive applies.

Table 1 Sample selection

Completed M&A transactions in the EU on Zephyr, 1997–2017	370,726	
Less: Unknown stake acquired		(100,512)
Less: Missing transaction value		(130,450)
Less: Missing target identifier		(4,826)
Less: No match with financial data from Orbis		(27,678)
Less: No time series data on public/private status available		(1,480)
Less: Missing variables		(16,800)
Less: Negative equity		(4,808)
Less: Ownership change <1%		(32,853)
Less: Duplicate transactions per firm-year		(16,471)
Less: Extreme values (MTB, ROA, Size)		(1,821)
Final sample	32,914	
of which:		
Public firm target M&A transactions	18,497	
Private firm target M&A transactions	14,417	

The table provides an overview of our sample selection.

that follow IFRS across our sample countries.[22] IFRS adoption in our sample ranges from 2.4% in the Czech Republic to around 40% in Greece. Compared to private firms that use local GAAP, private firms that use IFRS have, on average, higher market value, higher equity, and higher earnings (*EARN*), and they are larger in terms of total assets (*SIZE*).

3.5 Value relevance of public versus private firms' financial reporting

We begin by examining the baseline level of value relevance of public and private firms' reported financial information in our sample. These descriptive results offer a benchmark for comparing the levels of value relevance we document throughout our analyses. Columns (1), (2), and (3) of Table 3 present the results using the full sample, the size-matched sample, and the full sample using deflated variables, respectively. Rows (a) and (b) show the adjusted R^2s for public and private firms, respectively. In our baseline model in column (1), we find that the adjusted R^2 for the sample of public firms is 77.1%, while it is 66.0% for private firms. For our results using the matched sample, the adjusted R^2 is 76.2% for public firms and 70.7% for private firms in column (2). In column (3), using deflated variables, it is 46.2% for public firms and 35.9% for private firms. The differences in adjusted R^2s across the three columns are −11.9%, −5.5%, and −10.3%, respectively, and are all statistically significant at the 1% level. From these results, we conclude that, while the financial reporting of both public

[22] The IFRS adoption rate varies across countries. However, we do not find evidence that any particular country drives our findings. Specifically, removing any particular country from our sample and re-running our analyses does not affect our results (untabulated).

Table 2 Descriptive statistics

Panel A. Public firms versus private firms

Public firms							Private firms						
Variable	N	Mean	Std. Dev.	p25	p50	p75	Variable	N	Mean	Std. Dev.	p25	p50	p75
VALUE	18,497	901.2	2,189.8	20.2	100.2	543.7	*VALUE*	14,417	355.8	1,184.7	10.7	41.1	183.8
EQUITY	18,497	482.9	1,189.3	11.4	56.3	287.2	*EQUITY*	14,417	146.5	579.7	3.0	12.5	58.6
EARN	18,497	39.4	147.6	−1.6	1.5	20.7	*EARN*	14,417	10.7	72.2	−0.1	0.9	5.1
SIZE	18,497	1,676.3	4,831.7	22.2	117.1	750.7	*SIZE*	14,417	518.4	2,424.7	9.2	35.5	165.8
LOSS	18,497	0.375	0.5	0.0	0.0	1.0	*LOSS*	14,417	0.269	0.4	0.0	0.0	1.0
IFRS	18,497	0.674	0.5	0.0	1.0	1.0	*IFRS*	14,417	0.124	0.3	0.0	0.0	0.0
LEVRAT	18,497	0.491	0.251	0.3	0.5	0.7	*LEVRAT*	14,417	0.578	0.242	0.4	0.6	0.8

Panel B. Private firms using local GAAP versus private firms using IFRS

Private firms using local GAAP							Private firms using IFRS						
Variable	N	Mean	Std. Dev.	p25	p50	p75	Variable	N	Mean	Std. Dev.	p25	p50	p75
VALUE	12,632	262.6	771.3	9.6	36.0	149.9	*VALUE*	1,785	730.7	1,459.8	31.3	140.0	597.0
EQUITY	12,632	95.8	319.2	2.6	9.9	43.2	*EQUITY*	1,785	332.4	669.7	18.3	67.4	265.4
EARN	12,632	7.5	40.3	−0.0	0.8	4.3	*EARN*	1,785	19.9	77.6	−2.1	2.2	19.1
SIZE	12,632	291.2	1,051.4	8.1	28.9	123.2	*SIZE*	1,785	1,227.7	2,550.9	44.2	178.8	847.6
LOSS	12,632	0.261	0.4	0.0	0.0	1.0	*LOSS*	1,785	0.329	0.5	0.0	0.0	1.0
LEVRAT	12,632	0.578	0.241	0.4	0.6	0.8	*LEVRAT*	1,785	0.579	0.249	0.4	0.6	0.8

The table reports the descriptive statistics for the main variables used in our analyses for different subsamples. *VALUE* is the transaction-implied market value of equity in EUR million. *EQUITY* is the reported book value of equity in EUR million. *EARN* is earnings in EUR million. *SIZE* is total assets in EUR million. *LOSS* is a binary indicator variable equal to one for firms with negative earnings and zero otherwise. *IFRS* is a binary indicator variable equal to one for firms that use IFRS and zero for firms that use local GAAP. *LEVRAT* is (total assets - equity) / total assets.

Country	N	% IFRS adopters
Austria (AT)	46	28.3%
Belgium (BE)	396	8.3%
Bulgaria (BG)	54	25.9%
Czech Republic (CZ)	248	2.4%
Germany (DE)	590	22.2%
Denmark (DK)	262	9.9%
Estonia (EE)	132	18.2%
Spain (ES)	1,458	12.3%
Finland (FI)	438	5.7%
France (FR)	1,485	6.1%
United Kingdom (GB)	5,641	10.0%
Greece (GR)	84	40.5%
Hungary (HU)	114	5.3%
Ireland (IE)	110	20.0%
Italy (IT)	670	31.3%
Lithuania (LT)	70	4.3%
Latvia (LV)	64	20.3%
The Netherlands (NL)	313	11.2%
Poland (PL)	878	17.0%
Portugal (PT)	242	36.0%
Romania (RO)	176	6.8%
Sweden (SE)	844	8.9%
Other countries	102	34.3%
Total	**14,417**	**12.4%**

Fig. 1 IFRS adoption rates. The figure shows the proportion of private firm M&A targets in our sample that adopted IFRS for all countries with at least 30 observations

and private firms is value relevant, on average, the value relevance of private firms' financial reporting is lower.

Table 3 Public versus private firms

Model	Baseline (1)	Matched sample (2)	Deflated (3)
(a) adj. R^2 public firms	77.1	76.2	46.2
(b) adj. R^2 private firms	66.0	70.7	35.9
Diff. [(b) - (a)]	−11.9***	−5.5***	−10.3***
N (public firms)	18,497	13,028	18,497
N (private firms)	14,417	13,028	14,417

The table reports the results of comparing the explanatory power (adj. R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN* across the subsamples of public and private firms. In the first column, we present results from the baseline regression model in Eq. (1). In the second column, firms from both subsamples are matched on size (measured by total assets and using a caliper of 20%, without replacement). In the third column, all variables are deflated by the market value of equity, and the constant (β_0) is omitted from the regression. P-values for testing the difference in adjusted R^2 s across subsamples are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences in adjusted R^2 s across pseudo-subsamples. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

4 Empirical tests and findings

4.1 Accounting comparability and value relevance

Our first hypothesis states that the financial reporting of private firms with greater accounting comparability to that of public firms is more value relevant. To test this, we begin by comparing the adjusted R^2s from our models for the sample of private firms that follow local GAAP and the sample of private firms that follow IFRS. Table 4 presents the value relevance of the reporting of private firms that follow the local GAAP standards in row (a) and the value relevance of those following IFRS in row (b). Across all model specifications, we find that the difference in the adjusted R^2s between private firms that adopt IFRS and those that follow local GAAP is positive and statistically significant. The magnitude of the differences ranges from 8.1% to 8.3% across the different specifications. Furthermore, the adjusted R^2 for the sample of private firms that follow IFRS is similar to the adjusted R^2 of the sample of public firms reported in Table 3. Consistent with our expectations, these results show that the explanatory power of private firms' financial reporting for their valuations in M&A transactions is higher for private firms that follow IFRS.

We next test whether the explanatory power of private firms' reported financial information for M&A valuations changes around the mandatory adoption of IFRS by public companies in 2005 for those private firms that continue to follow local GAAP standards. In the period before the adoption of IFRS for publicly listed firms (the pre-period), the financial statements of private firms are more directly comparable to those of public firms within their country since both private and most public companies

Table 4 Local GAAP versus IFRS

Model	Baseline (1)	Matched sample (2)	Deflated (3)
(a) adj. R^2 Local GAAP firms	67.8	65.2	35.6
(b) adj. R^2 IFRS firms	76.1	73.3	43.7
Diff. [(b) - (a)]	8.3*	8.1*	8.1***
N (Local GAAP firms)	12,632	1,755	12,632
N (IFRS firms)	1,785	1,755	1,785

The table reports the results of comparing the explanatory power (adj. R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN* across the subsamples of private firms using local GAAP or IFRS. In the first column, we present results from the baseline regression model in Eq. (1). In the second column, firms from both subsamples are matched on size (measured by total assets and using a caliper of 20%, without replacement). In the third column, all variables are deflated by the market value of equity, and the constant (β_0) is omitted from the regression. P-values for testing the difference in adjusted R^2 s across subsamples are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences in adjusted R^2 s across pseudo-subsamples. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Local GAAP: Pre versus post mandatory IFRS adoption by public firms in 2005

Model	Baseline (1)	Matched sample (2)	Deflated (3)
(a) adj. R^2 pre 2005	73.2	70.3	39.3
(b) adj. R^2 post 2005	66.0	66.5	34.4
Diff. [(b) - (a)]	−7.2***	−3.8	−4.9***
N (pre 2005)	4,904	4,869	4,904
N (post 2005)	7,728	4,869	7,728

The table reports the results of comparing the explanatory power (adj. R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN*. The sample consists of private firms with local GAAP financial statements and is split across fiscal years before and beginning from 2005. In the first column, we present results from the baseline regression model in Eq. (1). In the second column, firms from both subsamples are matched on size (measured by total assets and using a caliper of 20%, without replacement). In the third column, all variables are deflated by the market value of equity, and the constant (β_0) is omitted from the regression. P-values for testing the difference in adjusted R^2 s across subsamples are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences in adjusted R^2 s across pseudo-subsamples. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

followed their countries' local GAAP standards.[23] In the post-period, however, the financial reporting of private firms that chose to continue following local GAAP has lower accounting comparability to the reporting of public firms, which now must follow IFRS. (There is no change in their accounting standards or direct impact on the number of public industry peers for local GAAP private firms due to public companies adopting IFRS.) As we argue, this lower comparability inhibits investors from applying public peer firms' valuation multiples directly.

Table 5 presents results from our tests that compare the value relevance of the reporting of private firms that follow local GAAP in the pre-period to their value relevance in the post-period. Row (a) shows the value relevance of private firms that follow local GAAP before 2005, and row (b) shows the value relevance of local GAAP private firms after 2005. In a manner largely consistent with our hypothesis, the reporting of private firms that follow local GAAP reporting standards has significantly lower explanatory power in the post-IFRS adoption period than in the pre-period in two of the three specifications (columns (1) and (3)).[24] In total, our findings in Tables 4 and 5 are consistent with our hypothesis that the value relevance of private firms' financial reporting is higher when it has higher accounting comparability to public firms' reporting.

[23] Some public firms voluntarily applied IFRS (or US GAAP) in the pre-2005 period.

[24] When we compare private local GAAP firms to private IFRS firms in the post-IFRS period only (row (b) of Table 5 versus row (b) of Table 5), the results are similar and again, throughout all specifications, the adjusted R^2s are statistically significantly higher for private firms that follow IFRS.

Table 6 UK only: Pre versus post mandatory IFRS adoption by public firms in 2005

Model	Baseline (1)	Matched sample (2)	Deflated (3)
(a) adj. R^2 UK GAAP firms, pre 2005	72.9	61.2	43.9
(b) adj. R^2 UK GAAP firms, post 2005	64.8	64.4	37.4
Diff. [(b) - (a)]	- 8.1	3.2	−6.5
(c) adj. R^2 IFRS firms, post 2005	77.9	74.0	48.1
Diff. [(c) - (a)]	5.0	12.8	4.2
Difference in the post-period [(c) - (b)]	13.1*	9.6	10.7***
N (UK GAAP firms, pre 2005)	2,539	519	2,539
N (UK GAAP firms, post 2005)	2,539	519	2,539
N (IFRS firms, post 2005)	563	519	563

The table reports the results of comparing the explanatory power (adj. R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN*. We compare three subsamples of private firms located in the United Kingdom: (a) firms using UK GAAP before 2005, (b) firms using UK GAAP in 2005 or later, and (c) firms using IFRS (only possible beginning from 2005). In the first column, we present results from the baseline regression model in Eq. (1). In the second column, firms from all three subsamples are matched on size (measured by total assets and using a caliper of 20%, without replacement). In the third column, all variables are deflated by the market value of equity, and the constant (β_0) is omitted from the regression. P-values for testing the difference in adjusted R^2 s across the post-2005 subsamples (UK GAAP versus IFRS) are based on a bootstrapping procedure where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences in adjusted R^2 s across pseudo-subsamples. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

A potential alternative explanation for our primary results is that IFRS accounting is inherently more informative than accounting under local GAAP standards, resulting in higher value relevance for firms that follow IFRS. In our interviews, however, the M&A experts explained that they do not consider local GAAP standards to be inferior to IFRS standards per se, which suggests that our findings are not driven by differences in the quality of the accounting system. Nonetheless, to empirically address the possibility that differences in accounting standards quality or characteristics drive our results, we separately examine the change in value relevance around the 2005 mandatory adoption of IFRS by public firms in the United Kingdom. UK GAAP is generally known to be of similar quality to IFRS (Ahmed et al. 2013; Brochet et al. 2013), and differences in value relevance are therefore less likely to be driven by the underlying quality of accounting standards but rather by the comparability with the accounting regime followed by public firms (IFRS).

In Table 6, we present findings that compare adjusted R^2s from our value relevance model computed for three samples of UK private firms: UK private firms that use local GAAP in the pre-period (row (a)), UK private firms that use local GAAP in the post-period (row (b)), and UK private firms that use IFRS in the post-period (row (c)).[25] The results in Table 6 generally indicate that private firms that continue to provide financial

[25] We cannot split on IFRS and local GAAP in the pre-period because, by construction, all UK sample firms use UK GAAP before 2005.

Table 7 Number of public peer firms (post 2005)

Model	Baseline (1)	Matched sample (2)	Deflated (3)
Panel A. Above-the-median number of public country-industry peers			
(a) adj. R^2 Local GAAP firms	65.5	62.3	31.8
(b) adj. R^2 IFRS firms	80.8	76.9	43.7
Diff. [(b) - (a)]	15.3***	14.6**	11.9***
N (Local GAAP firms)	4,021	884	4,021
N (IFRS firms)	930	884	930
Panel B. Below-the-median number of public country-industry peers			
(a) adj. R^2 Local GAAP firms	66.2	67.0	34.5
(b) adj. R^2 IFRS firms	71.8	71.0	42.1
Diff. [(b) - (a)]	5.6	4.0	7.6***
N (Local GAAP firms)	3,707	809	3,707
N (IFRS firms)	855	809	855
Panel C. Difference in differences			
Difference in differences (A – B)	9.7+ (15.3–5.6)	10.6 (14.6–4.0)	4.3+ (11.9–7.6)

The table reports the results of comparing the explanatory power (adjusted R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN*. We compare subsamples of private firms using IFRS or local GAAP, separately for firms with an above- (panel A) or below- (panel B) median number of public country-industry peer firms (source: Compustat Global). In panel C, we report tests on the difference in the differences between the respective IFRS and local GAAP subsamples across panels A and B. In the first column, we present results from the baseline regression model in Eq. (1). In the second column, firms from the subsamples are matched on size (measured by total assets and using a caliper of 20%, without replacement). In the third column, all variables are deflated by the market value of equity, and the constant (β_0) is omitted from the regression. P-values for testing the difference in adjusted R^2s across subsamples (or for testing the difference in differences across panels) are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences (or of differences in differences) in adjusted R^2s across pseudo-subsamples. + denotes one-sided statistical significance at the 10% level. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

reports following UK GAAP post-2005 exhibit a decrease in value relevance relative to that of UK private firms following UK GAAP pre 2005. This suggests that, with public firms switching to IFRS post-2005, the drop in comparability with UK private firms following UK GAAP induced a decrease in value relevance. On the other hand, UK private firms that adopt IFRS post 2005 exhibit higher value relevance in the post-period than in the pre-period. Therefore private firms that follow IFRS show higher value relevance than firms that continue following UK GAAP in the post-period. These differences in adjusted R^2s in the post-period range from 9.6% to 13.1% and are statistically significant at conventional levels in two of the three specifications. Overall these findings are consistent with greater accounting comparability to public firms leading to higher value relevance of private firms' financial reporting.

4.2 The precision of public peer information and value relevance

To further examine the impact of accounting comparability to public peers on the value relevance of private firms' reporting, we explore how it varies with the precision of available information from public peer firms (Hypothesis 2). In line with the findings from our expert interviews, we posit that the precision of the information gathered from public peers is higher when there are more public peers. To test our hypothesis, we split our sample of private firms into two groups depending on whether they have an above- or below-median number of publicly listed country-industry peers (based on their two-digit SIC industry code using data from Compustat Global). Panel A of Table 7 shows the value relevance of the financial reporting of private firms with many public peers. Rows (a) and (b) show the value relevance for private firms that follow local GAAP and IFRS, respectively. For these firms, we find that the reported financial information of private firms that follow IFRS has higher explanatory power than the information of those that follow local GAAP standards.

Panel B of Table 7 shows the explanatory power of private firms' reporting for private firms with fewer public peers. We find that the differences in adjusted R^2 between local GAAP (row (a)) and IFRS (row (b)) are less pronounced than in panel A. The differences in differences regarding the value relevance of IFRS and local GAAP adopters' reporting, shown in panel C, are 9.7%, 10.6%, and 4.3%, respectively.

In total, our findings are consistent with the argument that the impact of higher accounting comparability between public and private firms on the value relevance of private firms' reporting is conditional on the precision of the information that can be gathered from public peers.

5 Additional analyses

5.1 Determinants of comparability and information spillovers

We perform two additional analyses to gain more insights into what drives the difference in value relevance across private firms using local GAAP and IFRS in our setting. First, in panel A of Table 8, we decompose the book value of equity and net income into summary financial statement items to assess which line items likely impair the comparability of financial statements across accounting systems.[26] Following Givoly et al. (2017) and McInnis et al. (2018), we measure the relative contribution of each line item to the regression model's adjusted R^2 using Shapley values (Shapley 1953). Shapley values capture the contribution of an individual variable to a regression's total explanatory power using a generalized comparison of the adjusted R^2 from the regression including the variable and the adjusted R^2 from the regression excluding the variable. This allows us to calculate the individual contribution of each line item to the model's adjusted R^2, that is, the partial R^2, across the local GAAP and the IFRS sample.[27] Similar

[26] Specifically, we decompose the book value of equity and net income into intangible fixed assets, tangible fixed assets, other fixed assets, cash, other current assets, current liabilities, noncurrent liabilities, revenues, and expenses.

[27] As with Table 4, we perform this and the following analyses of Section 5 for the full sample of private firms with available data for the respective analyses. None of the inferences change when using the post-2005 sample only.

Table 8 Determinants of differences in value relevance

Panel A. Partial R^2 of major financial statement components

	Local GAAP (N=2,223)		IFRS (N=471)
	(1)		(2)
Assets			
INTANGIBLE FIXED ASSETS	2.0		4.2
TANGIBLE FIXED ASSETS	5.2		8.0
OTHER FIXED ASSETS	7.1		4.3
CASH	4.6		6.6
OTHER CURRENT ASSETS	6.1		6.1
Total	25.0		29.2
Diff. [(2)–(1)]		4.2	
Liabilities			
CURRENT LIABILITES	9.1		11.6
NON CURRENT LIABILITIES	9.8		13.7
Total	18.9		25.3
Diff. [(2)–(1)]		6.4*	
Income Statement			
REVENUES	13.8		13.7
EXPENSES	12.4		12.8
Total	26.2		26.5
Diff. [(2)–(1)]		0.3	
Total R^2	70.1		81.0
Diff. [(2)–(1)]		10.9+	

Panel B. Local GAAP versus IFRS: Restructuring

	Baseline	Matched sample	Deflated
	(1)	(2)	(3)
(a) Diff. IFRS / L. GAAP: Non-turnaround targets	7.7+	5.7	7.4***
(b) Diff. IFRS / L. GAAP: Turnaround targets	−3.1	24.5	−2.9
Difference in differences [(a) - (b)]	10.8***	−18.8	10.3***
N (Non-turnaround targets)	12,245	2,858	12,245
N (Turnaround targets)	2,172	648	2,172

Panel A reports results from a Shapley-Owen decomposition of the explanatory power (R^2) from estimating an extended version of Eq. (1) across subsamples of private firms using local GAAP or IFRS. We multiply the Shapley value for each financial statement item by the regression's overall R^2 to obtain its partial R^2. Panel B reports the differences in explanatory power (adjusted R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN* across private firms using IFRS and private firms using local GAAP, separately for non-turnaround targets and turnaround targets. Firms are defined as turnaround targets if return on assets is below minus 5% and zero otherwise. P-values for testing the difference in differences in adjusted R^2s (partial R^2s in panel A) across subsamples are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences in adjusted R^2s across pseudo-subsamples. + denotes one-sided statistical significance at the 10% level. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

to the results of Table 4, Table 8 shows that the difference in the overall adjusted R^2s between IFRS and local GAAP from the decomposed model is positive (10.9%). More importantly, the results shown in Table 8 indicate that the highest difference in value relevance between local GAAP and IFRS stems from the liability side (6.4%),[28] which is consistent with the interview findings from Section 2.1.[29]

Next, we provide additional exploratory analysis on how the role of accounting comparability for the value relevance of private firms' reported financial information is moderated not only by the extent of potential information spillovers from public peer valuations (section 4.2) but also by the characteristics of individual private target firms. In particular, the M&A experts emphasized that public peer valuations are mostly irrelevant for turnaround projects, that is, target firms with large losses. Table 8, panel B, presents results from our tests of the difference in value relevance between IFRS and local GAAP for such turnaround and non-turnaround targets.[30] We find that differences in value relevance between local GAAP and IFRS private firms generally exist for non-turnaround targets (ROA > −5%), but not for turnaround targets (ROA < −5%), and that the differences in these differences are significant in two out of three specifications. These results are consistent with the insights from the M&A experts and the argument that firm distress reduces the potential for information spillovers from publicly traded peers.

5.2 Self-selection and endogeneity

5.2.1 Overview

Because private firms in the European Union can choose whether to follow IFRS or local GAAP following the mandatory adoption of IFRS by public firms in 2005, self-selection bias is a potential concern. While our research design does not allow us to rule out self-selection issues, we base our conclusions on the triangulation of findings and arguments from academic research, empirical evidence, and direct insights from our experts. Thus alternative explanations related to self-selection that would rule out the proposed accounting comparability channel would have to explain all of this evidence.

One important issue related to self-selection is that the sample of private firms that choose to follow local GAAP standards may exhibit a lower adjusted R^2 in the value relevance regressions due to higher within-sample variation in the multiples applied by investors. Two key factors that impact the applied multiples are expectations about growth and risk (i.e., discount factors). Thus, absent public peer information, differences in the variation of expected growth and risk (which can ultimately lead to differences in the variance of applied multiples) between the samples could lead to differences in estimated value relevance. We address this concern in two ways. First,

[28] Table 2 shows that the leverage ratio is almost identical between private firms that use local GAAP and private firms that use IFRS.

[29] The lack of more granular financial reporting data for most private firms on the Bureau van Dijk Orbis database and the nonrecognition of certain assets and liabilities under individual local GAAP systems prevents us from further decomposing assets and liabilities into other specific line items mentioned by the interviewees (e.g., leasing, provisions). For a more detailed discussion of private firm accounting data availability in the European Union, see Beuselinck et al. (2021).

[30] For brevity, we only report the difference in adj. R^2s between IFRS and local GAAP firms.

we repeat our core tests using an alternative regression model that controls for the effect of country and industry composition on differences in value relevance. Second, we proxy and control for expectations of growth and risk using available historical accounting data.

5.2.2 Variation across countries and industries

Variation in growth expectations or discount factors across countries and industries could affect the translation of book equity and net income into firm value; therefore differences in the adjusted R^2s across samples may reflect heterogeneity in the respective samples' industry and country composition rather than differences in the actual relevance of accounting information (Barth et al. 2012). To account for this, we expand on the specification of our value relevance model by including separate interactions of industry and country fixed effects with book equity and net income, following Balachandran and Mohanram (2011).[31] Since we want the model to reflect only accounting information (including the extent to which accounting numbers reflect inter-industry differences in firm value), we do not include the constant terms in the following equation.

$$\begin{aligned} MV_{i,t} = {} & \beta_1 *EQ_{i,t} + \beta_2 *EARN_{i,t} + \beta_3 *LOSS_{i,t} *EQ_{i,t} + \beta_4 *LOSS_{i,t} *EARN_{i,t} \\ & + \sum_{m=1}^{10} \gamma_{m1} *IND_m *EQ_{i,t} + \sum_{m=1}^{10} \gamma_{m2} *IND_m *EARN_{i,t} \\ & + \sum_{n=1}^{27} \delta_{n1} *COUNTRY_n *EQ_{i,t} + \sum_{n=1}^{27} \delta_{n2} *COUNTRY_n *EARN_{i,t} + \varepsilon_{i,t}, \end{aligned} \tag{2}$$

where $MV_{i,t}$ is the market value of equity, $EQ_{i,t}$ is the book value of equity, $EARN_{i,t}$ is net income, IND_m is industry indicators based on the first digit of a target firm's SIC code, and $COUNTRY_n$ is country indicators.

Panel A of Table 9 shows the explanatory power of private firms' reporting for M&A valuations separately for private firms that follow local GAAP and for those that follow IFRS using the model in Eq. (2). The differences in adjusted R^2s between private firms that follow IFRS and those that follow local GAAP range from 7.7% to 11.1% across the different specifications and are statistically significant in all specifications. These results suggest that the value relevance of the financial reporting of private firms is higher when it has higher accounting comparability to public firms' reporting, which is consistent with our results in Table 4. In panel B of Table 9, we present results from repeating the analysis shown in Table 7 using the model in Eq. (2). Again, consistent with our original findings, the results suggest that the difference in value relevance between IFRS and local GAAP firms is more pronounced for private firms that operate in industries with more public peer companies.

In addition to including separate interactions of industry and country fixed effects with book equity and net income, we re-estimate the baseline regression model from Eq. (1) separately for each country with at least 30 IFRS observations. Panel C of

[31] Allowing for different slope coefficients by country also implicitly accounts for differences in conservatism across local GAAP systems, which could affect the dispersion in applied multiples as well.

Table 9 Alternative regression designs

Panel A. Local GAAP vs. IFRS

Interacted Model - Eq. (2)	Baseline	Matched sample	Deflated
	(1)	(2)	(3)
(a) adj. R^2 Local GAAP firms	73.6	74.5	36.1
(b) adj. R^2 IFRS firms	83.2	82.2	47.2
Diff [(b) - (a)]	9.6+	7.7**	11.1***
N (Local GAAP firms)	12,632	1,755	12,632
N (IFRS firms)	1,785	1,755	1,785

Panel B. Differences in adj. R^2 between IFRS and local GAAP: Number of public peer firms

Interacted Model - Eq. (2)	Baseline	Matched sample	Deflated
	(1)	(2)	(3)
(a) Diff. if number of peers above the median	12.9***	11.1**	11.6***
(b) Diff. if number of peers below the median	5.2	4.0	9.3
Difference in differences [(a) - (b)]	7.7+	7.1	2.3

Panel C. Differences in adj. R^2 between IFRS and local GAAP: Country-level regressions

Country	BE	DE	ES	FI	FR	GB	IT	PL	NL	SE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(a) Diff., Baseline	11.3	18.7+	6.8	14.2	19.0	9.0	7.1	−40.6***	−1.7	−13.2
(b) Diff., Deflated	4.2	18.7***	20.9**	19.6*	26.9*	7.8**	6.7	−3.0	34.0*	1.6
N (Local GAAP firms)	363	459	1,279	413	1,395	5,078	460	729	278	769
N (IFRS firms)	33	131	179	25	90	563	210	149	35	75

Panels A and B report the results of comparing the explanatory power (adjusted R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN*, and interactions of country and industry indicators with *EQUITY* and *EARN* as specified in Eq. (2). Panel A compares the adjusted R^2 between private firms using local GAAP or IFRS. Corresponding to Table 7, panel B compares the differences in adjusted R^2 between firms using local GAAP or IFRS, separately for firms with an above- and below-median number of public country-industry peer firms (source: Compustat Global). In the first column, we present results from the baseline regression model in Eq. (2). In the second column, firms from both subsamples are matched on size (measured by total assets and using a caliper of 20%, without replacement). In the third column, all variables are deflated by the market value of equity. Panel C reports the differences in adjusted R^2s from the regression model in Eq. (1) between IFRS and local GAAP, separately for all sample countries with at least 30 IFRS firms. In row (a), we present results from the baseline regression model. In row (b), all variables are deflated by the market value of equity, and the constant (β_0) is omitted from the regression. P-values for testing the difference (or difference in differences) in adjusted R^2s across subsamples are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences (or differences in differences) in adjusted R^2s across pseudo-subsamples. + denotes one-sided statistical significance at the 10% level. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9 shows the difference in the value relevance of private firms following IFRS and private firms following local GAAP for the baseline regression model from Eq. (1) and for the model using deflated variables. We do not report results using the matched sample approach, as the matching procedure yields very small subsamples for

individual countries. We find a positive difference in 16 of the 20 specifications, indicating again that private firms using IFRS have more value-relevant financial statements.

5.2.3 Further analyses of differences in the variation of expected growth and risk

A common practice in accounting research is to measure market participants' expectations using recent prior accounting information (e.g., Brown and Rozeff 1979). Therefore, to measure the variation of expected growth and risk in the absence of public peer information more directly, we calculate earnings growth (*GROWTH*) and,

Table 10 Impact of differences in the variation of growth and risk expectations

Panel A. Comparison of realized growth and risk across local GAAP and IFRS firms			
Estimation period:	t / t-2	t / t-3	t / t-4
	(1)	(2)	(3)
(a) sd(*GROWTH*) Local GAAP firms	0.161	0.170	0.176
(b) sd(*GROWTH*) IFRS firms	0.163	0.177	0.185
Difference [(a) - (b)]	−0.002	−0.007*	−0.009**
N (Local GAAP firms)	10,592	9,580	8,553
N (IFRS firms)	1,445	1,323	1,203
(c) sd(*RISK*) Local GAAP firms	0.103	0.108	0.118
(d) sd(*RISK*) IFRS firms	0.106	0.111	0.121
Difference [(c) - (d)]	−0.003	−0.003	−0.003
N (Local GAAP firms)	10,458	9,263	8,050
N (IFRS firms)	1,422	1,277	1,124
Panel B. Matching on realized growth and risk			
Matched on:		*GROWTH*	*RISK*
		(1)	(2)
(a) adj. R^2 Local GAAP firms		62.1	57.4
(b) adj. R^2 IFRS firms		78.4	74.0
Difference [(b) - (a)]		16.3**	16.6**
N (Local GAAP firms)		746	1,277
N (IFRS firms)		746	1,277

Panel A reports the standard deviations of *GROWTH* and *RISK* across the subsamples of private firms using local GAAP or IFRS. *GROWTH* is earnings growth prior to the M&A transaction. *RISK* is the standard deviation of earnings (scaled by total assets) prior to the M&A transaction. *GROWTH* and *RISK* are estimated over different time horizons from two to four years, as indicated at the top of each column. Panel B reports the results of comparing the explanatory power (adjusted R^2) of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN* across the subsamples of private firms using local GAAP or IFRS. In the first column, firms from both subsamples are matched on *GROWTH*, and, in the second column, firms from both subsamples are matched on *RISK*, with both *RISK* and *GROWTH* calculated over a three-year horizon. P-values for testing the difference in adjusted R^2s across subsamples are based on a bootstrapping procedure, where we randomly assign the split variable (holding the number of observations constant for each subsample) and re-run the regressions 1,000 times to generate a distribution of differences in adjusted R^2s across pseudo-subsamples. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

as a proxy for risk, earnings volatility (*RISK*, operationalized as the standard deviation of earnings, scaled by total assets) on a per-firm basis using firm-level data from the years prior to the M&A transaction. Both within the local GAAP and the IFRS sample, we then compute the standard deviation of *GROWTH* to measure variation in expected economic growth and the standard deviation of *RISK* to measure variation in economic risk. We use these measures to assess the potential impact of variation in expected growth rates and discount factors on our results.

Panel A of Table 10 presents the standard deviations of *GROWTH* and *RISK* for the local GAAP and the IFRS samples, calculated over different time horizons ranging from two to four years prior to the M&A transaction. The differences in the standard deviations of *GROWTH* between the local GAAP and IFRS samples (Difference [(a) - (b)]) suggest that the standard deviation of growth is generally smaller in the local GAAP sample compared to the IFRS sample. (A smaller standard deviation of growth would work against our findings because it would result in a higher adjusted R^2 in the local GAAP sample.) Next, the differences in the standard deviations of *RISK* (Difference [(c) - (d)]) indicate that the standard deviation of risk in the local GAAP sample is similar to that in the IFRS sample.

In panel B of Table 10, we present results from samples created by matching on *GROWTH* or *RISK*, which keeps the variation in *GROWTH* and *RISK* constant across the two samples. Using these matched samples, we still find that the value relevance of IFRS firms is greater than that of local GAAP firms. Compared to our main results shown in Table 4, the differences in the adjusted R^2 between local GAAP and IFRS from these tests are even more pronounced.[32]

Finally, our analysis in Table 7 shows that, within IFRS firms, more precise peer information (for firms in industries with many peers) is associated with greater value relevance of reported accounting information (80.8% in row (b) of panel A versus 71.8% in row (b) of panel B, for the baseline OLS model). However, within local GAAP firms, more precise peer information is not associated with higher value relevance (65.5% in row (a) of panel A versus 66.2% in row (a) of panel B, for the baseline OLS model). Thus private firms that use IFRS benefit from more precise public peer information, but local GAAP firms do not. Since these findings hold the GAAP system constant, differences in the variations of growth and risk expectations across local GAAP and IFRS firms cannot explain these results.[33, 34]

[32] We do not match on *GROWTH* and *RISK* simultaneously as doing so results in a very small sample, making inferences unreliable.

[33] Beyond potential differences in growth and risk, this result also mitigates concerns that other firm characteristics associated with the value relevance of financial reporting may be driving private firms' decision to adopt IFRS, as these characteristics are unlikely to relate to the number of peer firms (e.g., Bassemir 2018; André and Kalogirou 2020).

[34] In an out-of-sample placebo test, we divide *public* firms into pseudo-IFRS and pseudo-local GAAP firms based on their implied propensity to adopt IFRS (using coefficients from estimating the propensity to adopt IFRS within the private firm sample). Similar to the private firm sample, we classify the 13% of public firms with the highest propensity as pseudo-IFRS adopters, and all other public firms as pseudo-local GAAP firms. We find that the value relevance of reported financials is almost identical in these two subsamples, which indicates that differences in economics (most importantly, growth and risk) between these samples do not significantly impact value relevance. This gives further evidence that our results are driven by accounting comparability and not by differences in firms' economic characteristics.

In total, our empirical evidence, combined with the insights from the expert interviews, indicates that differences in the variation of growth and risk across local GAAP and IFRS samples are unlikely to explain our results. Nevertheless, we acknowledge that the potential for endogeneity calls for future research to corroborate the link between accounting comparability and the value relevance of private firms' financial reporting.

6 Conclusion

We examine whether higher accounting comparability between public and private firms impacts the value relevance of private firms' reported financial information in M&As. Given the limited amount of research on the use of private firms' financial reporting for valuations, we first conduct a series of semi-structured interviews with M&A experts to help develop and motivate our hypotheses and ground our predictions in practice. The core finding from these interviews is that greater accounting comparability between public and private firms facilitates the applicability of and increases reliance on public peer firms' valuation multiples in valuing private firms, suggesting that greater accounting comparability increases the value relevance of private firms' reported financial information.

Using a large sample of M&As with private firm targets in the European Union, we predict and find that the reported financial information of private firms that follow the same accounting standards as public firms has higher value relevance. Correspondingly, a loss of accounting comparability to public peers is associated with a reduction in private firms' reporting value relevance. Next, we find that differences in value relevance between private firms that follow the same accounting standards as public firms and those that do not are more pronounced when public peers' information is more precise. Further analyses mitigate concerns that our results are explained by differences in the quality of accounting standards or self-selection, offering additional support that higher accounting comparability between public and private firms leads to higher value relevance. While we cannot entirely rule out these alternative explanations, our body of evidence indicates that these concerns are unlikely to fully explain our results.

Our findings may provide useful evidence for standard setters worldwide who are considering whether to introduce different accounting standards for public and private firms or whether to allow private firms to deviate from generally accepted accounting principles. The FASB's Private Company Council, for example, is developing financial reporting standards for private firms that can differ from standard US GAAP. Our findings imply that if US private firms' financial reporting were to become less comparable to that of US public firms, the value relevance of the financial reporting of private firms might be reduced. This implication is important to consider when examining the cost-benefit trade-off of allowing private firms to deviate from public accounting standards or when deciding to mandate new accounting standards for some but not all firms.

Appendix 1 Factsheet for prospective interview participants

Columbia Business School

UIC BUSINESS

Erasmus School of Economics

Background Information - Phone Interview on Private Firm Transactions

Thank you for considering our request for a short phone interview!

The interview will last ca. 15 minutes and will be about the role of valuation multiples in private firm acquisitions. The purpose of the interview is to gather anecdotal evidence to support findings of a large-scale empirical study that we are conducting on private firm transactions in Europe.

Our interest in the topic is academic and we do not have any business or financial interests associated with our study. We will not ask for any proprietary or sensitive information, and your name and that of your employer will never be disclosed publicly or mentioned in our study.

The short interview is centered around the following questions:

- How do you use accounting-based valuation multiples, and how important are they relative to model-based valuations?
- What makes a 'good' multiple and how do you use trading vs. transaction multiples?
- How do you deal with differences in the accounting base when determining appropriate multiples (e.g., IFRS vs. local accounting standards)?

Having your insights on these questions will be extremely helpful for our research and we thank you in advance for your time!

Thomas Bourveau
Assistant Professor
Columbia University

Jason V. Chen
Assistant Professor
University of Illinois at Chicago

Ferdinand Elfers
Assistant Professor
Erasmus University Rotterdam

Jochen Pierk
Assistant Professor
Erasmus University Rotterdam

Appendix 2 Guiding questions for M&A expert interviews

The general role of financial statements and multiples valuation

- Do you use financial statements for the valuation of private firms?
- Do you rely on other (recent) valuations and corresponding multiples? Why do you think that makes sense?
- Are there reasons to use multiples other than learning about the target's intrinsic value?
- What is the relative importance you assign to valuations based on multiples versus DCF or other models?

(Accounting) characteristics of target and peer firms

- When valuing private firms, do you look at multiples from both public stock markets and prior private deals? Do you treat them differently? Why?
- Are multiples of public firms more useful if the private firm uses the same accounting standard as the peers?
- When looking at a local GAAP target, do you translate their financial statements to IFRS?
- Are there rules to determine appropriate peer samples? How many would you usually refer to? How do you go about looking for a set of peers?
- Are multiples of public firms more useful if the private firm has many peers?

The role of specific accounting items

- Are there specific conditions or firm characteristics that make private firm valuation particularly difficult?
- Are there specific conditions or firm characteristics that make (trading) multiples more or less relevant than a formal DCF/LBO model?
- If so, are there specific accounting items that are critical for the valuation of private firms?

Appendix 3 Full regression results

Table 11 Coefficients from value relevance tests (Table 3 column (1) and Table 4 column (1))

	Public Firms (1)	Private Firms (2)	Private Firms: Local GAAP (3)	Private Firms: IFRS (4)
EQUITY	0.901*** (0.012)	1.006*** (0.018)	1.173*** (0.021)	1.152*** (0.050)
EARN	6.660*** (0.101)	5.904*** (0.144)	7.545*** (0.166)	7.868*** (0.458)
EQUITY x LOSS	0.469*** (0.063)	1.031*** (0.069)	0.998*** (0.087)	1.119*** (0.216)
EARN x LOSS	−8.436*** (0.333)	−7.739*** (0.365)	−11.343*** (0.446)	−9.429*** (1.081)
LOSS	−141.806*** (17.662)	−74.181*** (13.861)	−34.355*** (9.700)	−93.926** (44.322)
Adj. R^2	77.1	66.0	67.8	76.1
N	18,497	14,417	12,632	1,785

The table reports the results of regressions of the market value of equity (*VALUE*) on the book value of equity (*EQUITY*), earnings (*EARN*), and the interactions of a binary *LOSS* indicator with *EQUITY* and *EARN* across the subsamples of public and private firms. Standard errors are shown to the right of their respective coefficients. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively.

Appendix 4 Outlier analysis

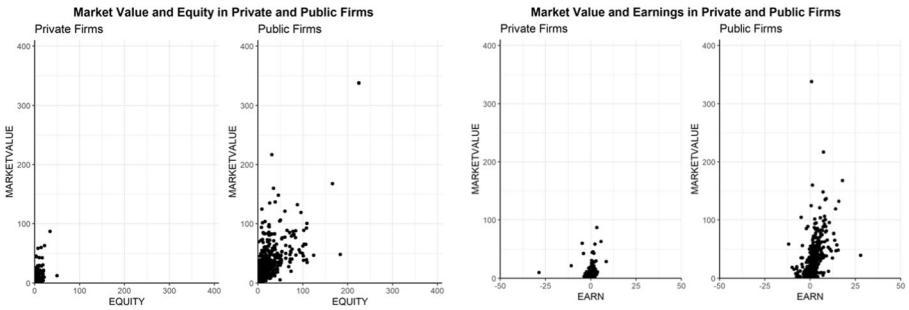

Fig. 2 Private versus public firms – Including outliers. The figures show the private and public firm samples before outlier deletion

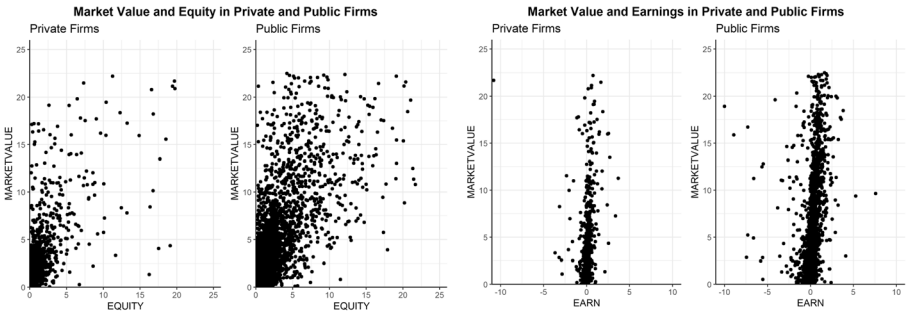

Fig. 3 Private versus public firms – Final sample. The figures show the private and public firm samples after outlier deletion. We define the cutoff for outliers as those firms with book equity or market values of less than 0.1 million EUR or above 22.5 billion EUR

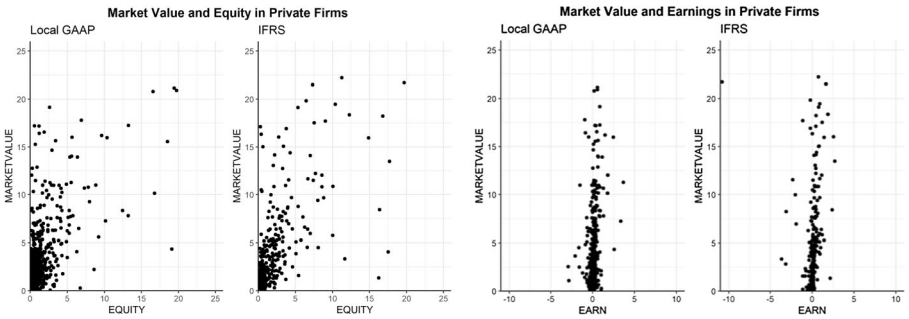

Fig. 4 Local GAAP versus IFRS in private firms - Final sample. The figures show local GAAP and IFRS firm samples after outlier deletion. We define the cutoff for outliers as those firms with book equity or market values less than 0.1 million EUR or above 22.5 billion EUR

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