

Peer effects and earnings management in private firms.

Peer effect and earnings management in private firms

Abstract: This study investigates the association between peer effects and earnings management among private firms. Previous studies provide compelling evidence that earnings management, whether accrual- or real activity-based, is common practice among privately held European firms. Yet, the underlying assumption of this stream of research is that firms engage in earnings management practice independently of their peers' choice, despite the extant theoretical literature has long been recognising the crucial role of mimicking competitors. We provide a bridge between these two streams of research by focusing on a sample of private Italian firms during the period 2014-2019. We adopt a two-stage-least square approach in which peer's idiosyncratic profitability serves as instrumental variable for peers' earnings management. We document that the association between peers' effects and earnings management is statistically significant and economically meaningful. This result holds when private firms engage in real accrual-based earnings management and intensifies in the presence of real activity manipulation. Our findings also confirm the association between earnings management and other factors that are traditionally documented in prior studies: leverage, tax minimization, size, etc. Overall, our study suggests that when private firms engage in earnings management their negative effects are not limited to the quality of their financial statements and their economy, but they worryingly spread over the financial statements and the economy of their competitors. Under these circumstances, mimicking peers potentially becomes a severe obstacle against both the earnings quality of financial reporting and, more worryingly, the future prosperity of the firms.

Keywords: accrual-based earnings management, real manipulation activities, peer effect, private firms

JEL: M4; M41

1 Introduction

This paper investigates whether private firms engage in earnings management practice as a result of peer effect. The accounting literature recognises the pervasiveness of accrual and real earnings management practices and their negative impact on the quality of financial reporting also in the field of private firms. Tax minimisation, facilitating debt contracting, organizational structure, dividend distribution, are all fundamental factors that prior research identifies as drivers of earnings management in these settings. Minimising the tax payable is only important incentive that shape private firms' financial reporting (Ball

& Shivakumar, 2005). Kosi and Valentincic (2013) show that the write-offs of private Slovenian firms remain significant still after an adverse fiscal change. Mafrolla and D'amico (2017) document that private Italian, Spanish and Portuguese firms successfully manage earnings to achieve better borrowing capacity. More widely, Gassen and Fülbier (2015) show that European private firms report smoother earnings when larger shares of creditor financing are present. Bigus and Häfele (2016) further support the claim that earnings management serves a debt contracting role in German private firms. Bonacchi et al (2019) demonstrate that also organizational structure drive earnings management practice, by showing that private stand-alone European firms register the lowest level of earnings quality in comparison with private groups and public firms. Yet these analyses fail to consider whether mimicking competitors' earnings management is a concurrent factor that explain the spread of earnings management activities among private firms.

In contrast, a promising field of study shows how extensively firms' choices can affect peers. Firms interact with their peers in the same industry and in the same geographical area. They can observe how competitors act and, unavoidably, peers can influence their corporate policies to such an extent that imitative phenomenon is a well-known theme in business sciences (Lieberman and Asaba, 2006). Several theoretical studies explain the imitating behaviour of firms (Lieberman and Asaba (2006). The empirical studies are still at an early stage and are mainly focussed on public firms. Graham and Harvey (2001)' reports that the major part of chief executive officers they interviewed refers that the choice of the financial structure of their peer is a critical element they consider to take their own choice. Leary e Roberts (2014) collect archival evidence that confirms that the financial structure' choice of competitors is the most important factor explaining the firm's own financial structure decision. Mimicking intensifies especially when firms are smaller and less profitable. Evidence of peer effect is also documented in the field of tax planning (Armstrong et al., 2019; Bird et al., 2018), dividend distribution (Grennan, 2019), buyback of own shares (Adhikari e Agrawal, 2018) share split decisions (Kaustia e Rantala, 2015). Yet, none of these studies relate to private firms, despite the fundamental role that these firms play in the world economy, and none of them focus on potentially damaging activities such as earnings management.

We provide a bridge between these two streams of research by investigating whether peer effect has to be included among the factors that explain the diffusion of earnings management in private firms.

We focus on private stand-alone Italian firms. This institutional setting ensures fundamental features that are suitable at the same time for inferences that are generalizable to the broader population of private firms in continental Europe and for coping with the methodological challenges of capturing peer effect. First, private firms dominate the entrepreneurial system in Italy, as it happens in most continental European countries (Nagar et al., 2011; Hope & Vyas, 2017). Second, this setting offers a rich coverage of private firms' financial statements adopting the same accounting regime (Beuselinck, Elfers, Gassen, Pierk, 2021). In 2019, 15% (23%) of (continental) European observations covered in the Amadeus database – a popular source in accounting studies – are from independent private Italian firms. They have to comply with local GAAP (as prescribed by the Civile Code and Organismo Italiano di Contabilità, OIC), which are shaped by the European directives, as it happens in all EU countries. Using accounting data from a homogeneous accounting regime facilitates the identification of causal peer effect thus avoiding confounding effects of cross-country regulatory differences. Third, these firms heavily rely on bank and trade credit to finance their investments. At the same time, in line with the accounting tradition of most continental European countries, Italian GAAP are closely related to tax rules (Gavana et al., 2013). High corporate taxation provides strong incentives for Italian private firms to minimise taxable income and ultimately the tax burden (Mura et al., 2013).

To analyse whether accrual and real manipulative activities are driven by corresponding peers' behaviours, we adopt a Two Stage Least Square approach (2SLS) in which peers' idiosyncratic earnings before tax, depreciation, and amortization (EBIDTA) over total assets serves as instrument for peers' earnings management. Using a sample of around 30,000 private stand-alone firms during the period 2014-2019, we document that peer effects are statistically and economically significant in earnings management decisions. Our results indicate that private Italian firms engage in both accrual and real manipulation activities to respond to peers' earnings manipulation activities. More worryingly, the association between peer effect and real earnings manipulation appears stronger than that between peer effect and accrual-

based management. In effect, real earnings management is a more harmful management practice as its implications are not limited to the decreasing quality of financial reporting but can ultimately compromise to the long-run firm survival (Alhabad et al. 2015). Consistently with analytical studies, peer pressure for manipulation appears a powerful enough incentive to push peers toward manipulative actions, despite the negative long-term consequences of this technique. Overall, the presence of peer effect as determinant of earnings management suggests a problematic scenario where not only firms' choices are detrimental for the quality of their own financial statements and their own prosperity, but they spread over their competitors thus potentially affecting the financial reporting quality and the prosperity of the firms in the same industry.

The study contributes to the extant literature in three main respects. First, we extend the literature on earnings management documenting the crucial role exerted by industry peers in shaping real and accrual activities manipulation decisions. Previous studies have shown that the content of firms' financial reporting affects peers in several ways, such as in their investment decisions (Beatty et al., 2013; Li, 2016) and in their use of accounting discretion (Bratten et al., 2016). However, while evidence of associations among firms' accounting misreporting has also been found (Chiu et al., 2013; Kedia et al., 2015; Charles et al., 2018; Parsons et al., 2018), these different streams of studies have largely neglected to consider the potential effects of accrual and real earnings management on private firms' competitors. Thus, building on this work, our study examines the impact of peers' earnings management in private firms. Second, documenting that firms' mimic behaviours are also common to these firms' decisions, we add to the growing literature on peer effects in corporate policies. This literature has documented peer influence in several domains (e.g. Leary & Roberts, 2014; Armstrong et al., 2019; Seo, 2020), but it is still unclear if these mimicking behaviours are optimal for firms (Fairhurst and Nam, 2020). Due to the explicit detrimental nature of this manipulative strategy, we provide evidence concerning the optimality of mimicking behaviours, adding to the literature above and emphasizing the perils of peer influence. Third, we contribute to the accounting literature on private firms, highlighting the worrying implications of the spread of accrual and real earnings management as a result of peer effect.

The remainder of the paper is organized as follows: Section 2 reviews related literature; Section 3 develops the hypothesis to be tested; Section 4 presents the sample and research design; Section 5 reports the empirical results; Section 5 concludes.

2 Background information and related literature

A large and expanding stream of research has shown how pervasively firms' choices can affect peers. Evidence of peer influence has been found in financial policies (Leary and Roberts, 2014; Kaustia and Rantala, 2015; Grennan, 2019), corporate tax planning (Bird et al., 2018; Armstrong et al., 2019), disclosure decisions (Seo, 2021; Matsumoto, 2021) as well as corporate social responsibility practices (Cao et al., 2019), providing a rich picture of circumstances under which companies consider it appropriate to follow peers. Nevertheless, despite this increasing interest in peers' influence, little is known about potential peer effects in private firms (Aghamolla and Thakor, 2022). Hence, this study adds to this stream of literature examining whether private firms' behaviours are characterized by mimicking propensity.

The extant earnings management literature has long recognized private firms' peculiar financial reporting incentives (Burgstahler, Hail and Leuz, 2006; Hope, Thomas and Vyas, 2013). In effect, private firms are not subject to capital market pressure, have generally lower ownership dispersion and greater managerial ownership. Their managers' compensations are not tied to share price so that the typical public incentives play a minor role in private firms. However, financial reports are the primary (often the unique) source of information for stakeholders in private firms, making accounting information economically important. In this sense, stakeholder-related agency problems are not absent, and incentives to manage earnings also arise for these firms (Coppens and Peek, 2005). One important motive for misreporting in private firms is related to financing concerns. Through financial statements, firms signal their creditworthiness to actual and future creditors, which means that their borrowing capacity and the related cost depend on this signal (Mafrolla and D'Amico, 2017). Similarly, since private firms find in trade credit an important complementary source of financing, obtaining better terms in their negotiations with suppliers have the potential to drive opportunistic adjustments in reported earnings (Hope and Vyas, 2017). Among external parties, also customers and employees' information requests could put pressure to report favourable

financial results, to the extent that robust performance is reassuring about the company's ability to meet all different forms of obligations (Coppens and Peek, 2005).

3 Hypothesis

3 Hypotheses development

Earnings management choices are likely to influence peers' decisions for several reasons. First, observing competitors' earnings management allow firms to acquire important information about manipulative activities that can be incorporated into their own strategies. Among industrial peers the similarity of operations is expected to be high, and firms may ascertain how and to what extent specific techniques can be successfully implemented (Kedia et al., 2015; Chiu et al., 2013). If, by interacting with peers, firms learn about the most suitable strategies to manage earnings, the benefits of misreporting and other relevant and innovative information, this can lead to mimicking behaviours in earnings management strategies.

Second, firms can mimic peers to keep pace with competitors in their search for financial sources as well as in the product market. In fact, through accounting numbers, firms signal their creditworthiness to actual and future creditors so that their borrowing capacity and the related cost depend on this signal (Mafrolla and D'Amico, 2017). While this means that companies have sufficient motivation to improve their image in the eyes of financial institutions, if competitors engage in misrepresentation, this motivation inevitably increases, because lenders generally acquire and compare information about future clients and similar firms before conceding funds (Bagnoli and Watts, 2001). Therefore, if firms artificially inflate their results, peers may feel tempted to respond accordingly with inflated earnings. Also, given the importance of trade credit for private companies, this argument can be extended to suppliers, who should be less willing to grant credit to firms perceived as underperforming.

In addition, competing in the product market can also lead firms to mimic peers' misreporting activities. This is particularly true for real activity manipulation that has the potential to hurt competitors (Schaffer, 1989; Einhorn et al., 2018; Bagnoli and Watts, 2010). For example, if competitors grant customers price

discounts or more favourable credit terms, their peers, feeling threatened by these behaviours, could decide to do so as well, thus imitating peers' strategies. There are also situations where imitating peers may become an effective safeguard against external controls. The tax incentive of minimizing the tax payable that commonly stimulates private firms earnings management may become more difficult to detect by fiscal authorities and auditors when it is the result of mimicking competitors' aggressive tax accounting. Under these circumstances, firms will effectively protect each other complicating the tasks of external monitors.

Based on the discussions above, we formalize our hypothesis as follows:

H: Earnings management decisions are influenced by peers' earnings management decisions.

While we argue for the presence of the peer effect in earnings manipulation choices, we recognize that distinct dynamics may exist regarding different manipulative tools. Specifically, we posit that there are at least three reasons why peer influence might differ between accrual-based and real earnings management practices. First, engaging in Rem is generally more demanding, and finding out peers' manipulative choices gives firms valuable insight into how effectively engage in real misreporting. Notably, observing peers' actions leads firms not only to learn about new manipulative techniques or the most efficient way to alter their operations but also how to capitalize on resources allocated to abnormal activities and reduce the risk of detection. However, the room for learning from peers through their accrual-based strategies is not substantial. Obviously, firms can learn about auditor margins of tolerance by observing peers' experiences or about which accounts are more suitable to be adjusted, but this process should not be as crucial as for real strategies. This is not trivial because, unlike accrual-based, which essentially concerns ordinary activities of companies (estimates and assessments subject to some margin of discretion), real operations pertain to extraordinary activity: that of undertaking suboptimal decisions.

Second, while observing peers' choices should help firms rationalise misreporting practices, we believe this effect should be stronger for real earnings management. This is because the least appealing aspect of real strategies concerns the negative consequences for future competitiveness. This means that knowing that peers are deviating from the optimal business path should allow firms to alleviate worries about the

unsustainability of their choices. In effect, if peers engage in sub-optimal business choices, the risk of strategically falling behind competitors decreases, thus making the use of Rem less costly. On the other hand, by virtue of the minimal impact of accounting adjustments on business activities, firms should generally have less hesitation to use their accounting discretion when needed, whether or not peers are doing likewise. Finally, using earnings management strategies is not unconstrained: managers are accountable for their decisions to owners and other parties. Hence, they might try to avoid excessive or strictly unnecessary use of accrual misreporting because, unlike real manipulation, which is challenging to undercover and hard to dispute, accrual adjustments are under the continuous inspection of auditors. For these reasons, we are not able to predict a systematic pattern on the use of different earnings management techniques as a response of peers earnings activities.

4 Data and Research Design

Sample construction

The sample used in this study is drawn from the AIDA database, managed by Bureau Van Dijk, and it is the result of the application of various selection criteria. The selection procedure begins with all Italian private limited liability companies covered by the database during 2011-2019. First, we exclude financial firms and utilities due to their highly regulated environments and different financial reporting incentives. Next, to avoid any confounding effect due to the application of different or simplified accounting rules, we exclude firms that do not comply with Italian GAAP and firms that release an abridged version of financial statements. Then, we exclude firms that are part of a business group because their earnings management activities are proved to be influenced by the parent company's interests and directives (Bonacchi et al., 2018). Furthermore, we restrict our attention to purely private firms, that is, firms with no public debt, because the presence of public debt affects reporting behaviours and makes these companies differ from the others (Badertscher et al., 2019; Givoly et al., 2010). We also impose that each firm-year observation has the data necessary to compute all the variables used in the analysis. This implies that, due to lag requirements in the construction of our earnings management proxies, we limit our

analysis to the period 2014-2019. Finally, since we intend to examine peer group dynamics, we require each firm-year observation to have at least two peers so that each group has a minimum of three firms. These exclusion criteria yield a homogenous sample of medium-large sized purely private standalone firms where incentives to manipulate earnings should be dictated by similar dynamics and subject to analogous limitations. Since, according to Bonacchi et al. (2019), standalone private firms exhibit the lowest earnings quality, this is where the problem of peer mimicking should be of greater concern and worthy of special investigation. Table 1 (Panel A) shows our sample selection process. The final sample consists of 119,796 firm-year observations, corresponding to 23,275 unique firms, over the period 2014-2019.

Table 1 Here

For each firm-year observation, we define peers based on industry classification: specifically, we identify as a firm's peer any firm that belongs to the same two-digit ATECO classification (which is the Italian version of the European classification Nace Rev 2) in each sample year. This results in 66 industry groups whose size ranges from a minimum of 3 units to a maximum of 4,468 units. Table 1 (Panel B) reports peer group statistics. On average, each peer group consists of 1,289 firms, with a standard deviation of 1,373 peers, and approximately half of the firms have at least 787 peers.

Industry peers are likely to be highly relevant in our setting of private firms because they compete for external financing, customers, workforce and general recognition. The extant literature has emphasized that industry peers are the natural starting point for a variety of performance comparisons carried out by either external or internal parties (Jennings et al., 2020; Gong et al., 2019; Albuquerque, 2009). Hence, in the absence of any prior studies focusing on how firms interact or which peers matter most, industrial membership is likely to be the best criterion to identify peer firms.

Earnings management metrics

Following previous literature (Bonacchi et al., 2018), we analyse two different methods of managing earnings: real and accrual-based earnings management. We consider the abnormal cash flow from operations as a proxy for the first type of manipulative strategy (Roychowdhury, 2006) and, precisely, for firms' attempt to generate additional sales or accelerate them through unsustainable policies, whereas abnormal accruals as a proxy for the latter type (Kothari, 2005; Jones, 1991). All measures are estimated following the approach proposed by Huang et al. (2020) and Kothari et al. (2016), where abnormal behaviours are identified by the residuals of the corresponding first-order autoregressive models incorporating fixed effects (see Appendix). Specifically, we estimate abnormal cash flow from operations as follows:

$$CFO_{i,t} = \alpha_0 + \alpha_1 CFO_{i,t-1} + \alpha_2 1/Assets_{i,t-1} + \alpha_3 Sales_{i,t} + \alpha_4 \Delta Sales_{i,t} + \varepsilon_{i,t}$$

Where $CFO_{i,t}$ is computed starting from the firm's net income, adding depreciation and amortisation, and subtracting the change in net working capital. CFO is scaled by lagged total assets; $CFO_{i,t-1}$ is its lagged value; $Assets_{i,t-1}$ is lagged total assets; $Sales_{i,t}$ is sales during the year scaled by total assets and $\Delta Sales_{i,t}$ is the sale growth scaled by lagged total assets. First, every firm's variable in the model is differenced from the cross-sectional mean for that year. Second, for every firm, the annual deviation of each variable from the cross-sectional mean is differenced from the corresponding deviation in the previous year. Then, the model is estimated yearly, yielding a time-series of residuals for every firm. Finally, for each firm, the mean value of the residual across all years is subtracted from the firm-year residual and then multiplied by -1, yielding abnormal cash flow.

Similarly, we obtain abnormal accrual as the residuals from the following model:

$$Acc_{i,t} = \alpha_0 + \alpha_1 Acc_{i,t-1} + \alpha_2 1/Assets_{i,t-1} + \alpha_3 (\Delta Sales - \Delta Ar)_{i,t} + \alpha_4 PPE_{i,t} + \alpha_5 Ni_{i,t} + \varepsilon_{i,t}$$

Where $Acc_{i,t}$ is the change in noncash current assets minus the change in nondebt current liabilities minus depreciation and amortisation expense, scaled by lagged total assets. $Acc_{i,t-1}$ is its lagged value; $Assets_{i,t-1}$ is lagged total assets; $(\Delta Sales - \Delta Ar)_{i,t}$ is the change in sales minus the change in receivables during the year scaled by lagged total assets; $PPE_{i,t}$ is the net value of property, plant and

equipment scaled by lagged total assets and $Ni_{i,t}$ is net income scaled by lagged total assets. We follow the same procedure described for Abnormal Cash Flow, except that the mean value of the residual across all years, subtracted from the firm-year residual, is not multiplied by -1.

It is worth noting that this estimation approach allows us to overcome one of the recognized drawbacks of these measures. Specifically, earnings management proxies are typically criticized for potential misspecification and implausible magnitude estimates (Cohen et al., 2020; Srivastava, 2019; Owens et al., 2017; Kothari et al., 2016). While the complexity of distinguishing between a firm's manipulation and its competitive strategy or fundamental factors is always a concern, employing fixed effects in the estimation model helps to mitigate these issues and ensure desirable properties to final proxies, as also pointed out by Siriviriyakul (2021).

The peer effects model

In line with peer effect literature (Leary and Roberts, 2014; Seo, 2020), we employ the following structural model to test whether earnings management practices in private firms are influenced by corresponding peers' choices:

$$EM_{ijt} = \beta_0 + \beta_1 Peers_EM_{ijt} + \beta_2 X_{ijt-1} + \beta_3 \bar{X}_{-ijt-1} + FirmFE + YearFE + \varepsilon_{ij} \quad (1)$$

Where EM_{ijt} is one of our alternative proxies for earnings management for firm i in peer group j in year t (Abn_Acc , Abn_Cfo) and $Peers_EM_{ijt}$ is the average earnings management of firms in peer group j in year t excluding firm i ($Peers_AAcc$, $Peers_ACfo$). X_{ijt-1} and \bar{X}_{-ijt-1} are vectors of lag values of firm's i characteristics and peer firms' characteristics, respectively. In this way, we control for observable factors that previous studies have shown to impact firms' manipulation, such as firm size ($Size$), growth opportunities ($Sale_growth$), leverage (Lev), the firm's marginal tax rate (MTR), age (Age), and the presence of loss ($Loss$) (Bonacchi et al., 2018; Cohen & Zarowin, 2010; Cheng et al., 2016; Zang 2012). Also, we replicate the same control variables for peer groups ($Peers_Size$, $Peers_Salegrowth$, $Peers_Lev$, $Peers_MTR$; $Peers_Age$, $Peers_Loss$,) to isolate firms' responses to peer characteristics from firms' responses to peers' actions (All variables are defined in Appendix). While we keep the model as

parsimonious as possible, we expect our covariate to explain firms' earnings management decisions effectively. Firms' size and, to a lesser extent, age should negatively affect firms' ability to engage in earnings management practices since larger and older firms face a stronger demand for high-quality earnings from external parties and their actions are generally more scrutinized and visible. Also, while firms that experience higher growth should be less tempted to engage in misreporting due to the naturally optimistic prospects, firms that have already incurred a loss should be less likely to manage earnings because they might have already suffered poor performance consequences. On the contrary, we expect leveraged firms to exhibit a great use of earnings management because they need to avoid being perceived as low performing by their lenders. Moreover, private firms' misreporting activities are especially tied to tax minimization, which we account for with the firm's marginal tax rate. According to private firms' literature, the need to minimize taxable income is stronger for firms with higher marginal tax rates. For this reason, we expect a negative relation between MTR and the firm's income increasing misreporting. Last, we include firm and year fixed effects to account for time-invariant firm characteristics and common time trends. ε_{ij} is the error term, for which we assume heteroskedasticity and within firm dependence. We estimate model (1) through a Two Stage Least Square approach (2SLS). Specifically, we perform a first stage regression in which we regress the endogenous variable *Peers_EM* against an instrumental variable (IV) and the set of control variables as follows:

$$Peers_EM_{-ijt} = \beta_0 + \beta_1 IV_{-ijt} + \beta_2 X_{ijt-1} + \beta_3 \bar{X}_{-ijt-1} + FirmFE + YearFE + \varepsilon_{ij} \quad (2)$$

Then, in the second stage, we regress EM on the fitted values of *Peers_EM* from the first stage and on the same set of control variables as in the first stage:

$$EM_{ijt} = \beta_0 + \beta_1 \widehat{Peers_EM}_{-ijt} + \beta_2 X_{ijt-1} + \beta_3 \bar{X}_{-ijt-1} + FirmFE + YearFE + \varepsilon_{ij} \quad (3)$$

This approach is indispensable to overcome the issue that arises in the attempt to infer whether the average outcome of group *j* influences the outcome of firm *i*, which is part of group *j*, namely the reflection problem (Manski, 1993). This is a particular type of endogeneity for which the presence of correlation between the firm's measure and the group's measure does not imply causality, due to reciprocal influence. As in previous studies, our strategy relies on identifying a source of variation in

peers' earnings management, which is exogenous to firm's i own real earnings management. We adopt peer firms' idiosyncratic profitability as such source of variation and employ it as an instrument for $Peers_EM_{ijt}$ in the Two Stage Least Square estimation of model (1).

The instrumental variable

The instrumental variable utilised in this study is peers' idiosyncratic profitability, which is constructed following Fiordelisi and Ricci (2014), as EBITDA¹ over total assets (Roa). First, each firm's measure of profitability (Roa) is decomposed into a systematic component (industry-specific) and an idiosyncratic component (firm-specific) by the following regression:

$$Roa_{ijt} = \beta_0 + \beta_1 PeersRoa_{ijt} + \varepsilon_{ijt} \quad (4)$$

Where Roa_{ijt} is the profitability of firm i in peer-group j in year t , and $PeersRoa$ is the average profitability of firms in peer-group j in year t , excluding firm i . Following Fiordelisi and Ricci's approach (2014), we estimate Eq. (4) for each year, obtaining a common beta for all the firms in the sample. Then, idiosyncratic profitability is obtained for each firm as the difference between observed Roa at time t and fitted Roa at time t :

$$\hat{\varepsilon}_{ijt} = Roa_{ijt} - \hat{\beta}_0 - \hat{\beta}_1 \widehat{PeersRoa}_{ijt} \quad (5)$$

Finally, we lag $\hat{\varepsilon}_{ijt}$ one year and obtain the profitability shock experienced by each firm in time $t-1$ (IShock). Our instrument is constructed by aggregating IShock experienced by firms in group j in time $t-1$, excluding firm i (PShock).

We believe this is a valid instrumental variable in our setting since peer profitability shocks are expected to influence peers' earnings management (relevance condition) but not the focal firm's earnings

¹ In our context, the use of EBITDA, rather than net profit, has two main advantages. First, EBITDA has been widely appreciated as an indicator of core business performance to compare companies across and within sectors. Second, EBITDA omits items, such as depreciation and amortization, which depend heavily on management discretion and (potentially) manipulative intentions. Then, these reasons and the intent to be consistent with Fiordelisi and Ricci (2020) guided our choice.

management (exclusion condition). In effect, the extant literature has documented that attenuating the impact of performance shocks is for firms a primary reason for managing earnings (Gerakos and Kovrijnykh, 2013). Since firms use their discretion to hide poor economic performance and ameliorate their financial results (Butgstahler et al., 2006), when they experience unusually low profitability, their need to resort to misreporting activities increases. In these cases, the interest in showing better results prevails and increases the need of income-increasing earnings management. For this reason, we expect a strong negative correlation between performance shocks experienced by firms and their subsequent earnings management activities. At the same time, since we consider only idiosyncratic components in the construction of performance shock, we do not expect any influence from the instrument to focal firm earnings management, thus ensuring the exogeneity condition. Anyway, to alleviate any concern about remaining common variation between the idiosyncratic components of profitability among firms, we include the firm's own performance shock in all regressions.

Descriptive statistics

Table 2 presents an overview of firms included in our sample and the summary statistics for earnings management proxies and main control variables used in the analysis, for which we provide firm-specific and peer group values. On average, the firm's total assets are about 24 million euros, sales are roughly 27 million euros, debt is 14 million, and net income is 760 thousand euros. Return on assets is, on average, 8%, firms' annual growth is about 6%, firm age is 28 years, and the percentage of firm-years observations experiencing a loss is 16. As expected (e.g. Bianchi et al., 2020), the mean leverage value is considerable, accounting for 60% of total assets, thus suggesting the primary importance of debt incentives for our private firms.

Although the larger size of our sample makes a direct comparison difficult, we observe that the sampled companies are similar to those in previous studies analyzing Italian (Minichilli et al., 2022; Bianchi et al., 2020; Bianchi, 2018) and other European (Bigus and Hafele, 2018; Bigus et al., 2016; Gassen and Fulbier, 2015) private settings. For example, Bianchi (2018) reports a mean value of total assets equal to 26 million euros, a firm's average age of 23 years and sales growth of roughly 5%. In our sample, the mean (median)

value of the single earnings management proxies ranges from -0.003 (-0.001) to -0.001 (0.002), whereas the value of the total manipulation is -0.004 (0.000). This suggests that firms' misreporting is roughly 0.4% of total assets or, alternatively, 13% of net income. As regards peer group variables, we note that, by construction, their averages are close to their firm-specific counterpart, though aggregation lowers their standard deviation. Two aspects are noteworthy: first, earnings management proxies (both at firm and peer-level) refer to year t , whereas all the remaining variables refer to year $t-1$, consistent with our model. Second, peer-level variables are constructed as the yearly average of all firms in each peer group, excluding firm i 's observation.

Table 2 Here

5 Results

Peer effects estimate

In this section, we examine whether firms' manipulative choices influence their peers' choices. To this end, we estimate Eq. (1) using two different proxies for manipulative actions as dependent and main explanatory variables. Table 3 reports the Two-Stage Least Square estimation results. In the first-stage estimation, peers' shock (PShock) negatively predicts peers' misreporting activities with a level of significance of 1% across all proxies, even after controlling for known determinants of manipulative choices. Apparently, firms adopt income decreasing earnings management intervention after experiencing a positive shock return. This is consistent with Gerakos and Kovrijnykh's (2013) theory, according to which profitability shocks lead firms to mitigate such exceptional performance. Overall, this evidence and the F-test of the excluded instrument (greater than 10 in both cases) suggest that the instrument satisfies the relevance condition and that a potential weak instrument is not an issue.

In line with our expectations, the second stage results reveal causal peer effects in earnings management, regardless of the manipulation measure examined. Peers_AAacc coefficient is positive and statistically significant at the 10% level (Coeff: 0.906, t : 1.76), and Peers_ACfo is positive and statistically significant at the 1% level (Coeff: 1.041, t : 2.75), pointing to increase in firms' misreporting following peers'

manipulative choices. These peer effects are also economically meaningful. Depending on the manipulative strategy, a one standard deviation increase in peers' earnings management leads to an increase in a given firm's earnings management between 0.075 and 0.163 standard deviation. As discussed in Section 3, the impact of peers' real earnings management is stronger, both statistically and economically. This suggests that finding out peers' manipulative choices gives firms valuable insight into how effectively engage in real misreporting. Observing peers that are deviating from the optimal business path allows firms to rationalize such strategies and alleviate worries about the unsustainability of their choices.

Table 3 Here

The results on control variables are generally consistent with previous studies (Haga et al., 2018). We find some evidence that larger firms are less likely to engage in earnings management: presumably due to higher political costs (Watts and Zimmerman, 1978). We also find that more leveraged firms are more likely to engage in accrual-based and sales manipulation. This is not surprising, given that financing concern and related agency problem is a primary force behind private firms' misreporting (Mafrolla and D'Amico, 2017). Additionally, we observe that a greater marginal tax rate reduces sales manipulation, thus highlighting the interest of private companies in avoiding higher earnings and, consequently, high taxes (Bonacchi et al., 2019). Finally, while growth opportunities do not seem to exert any role in earnings management policies, loss reporting has a significant negative effect on firms' real strategies, in line with our expectations. As regards peer-level control variables, in almost all cases, their coefficients are only marginally significant (statistically or economically), suggesting that competitors' characteristics are not a driving force behind firms' decisions. Overall, size and leverage confirm their prominent role in shaping private firms' earnings management decisions (their statistical significance range from 0.205 to 0.543), even though our results shed new light on an additional motivation behind aggressive financial reporting choices. Accordingly, our findings indicate that peers' actions are a significant determinant of manipulative policies in private firms and that real earnings management practices and, to a lesser extent, firms' accrual earnings management spread into industries.

Robustness tests

In Table 4, we present the second stage results for two robustness tests. In the first analysis, we estimate a less parsimonious version of Eq. (1), adding assets growth, net operating assets, Altman's z-score and the length of operating cycle (both at firm and peer-level) as control variables. Results of this test are reported in columns 1 and 2. PeersEM coefficients are still statistically and economically significant. Actually, the statistical significance of Peers_AAacc increases with respect to the main specification, moving from 10% to 5% level, while Peers_ACfo confirm its statistical significance at the 1% level. Hence, omitted variables do not seem to be responsible for the effect described.

In the second analysis, we add to Eq (1) contemporaneous control variables (both at firm and peer-level) to ascertain that the timing of variable measurement does not affect peer effect identification. Results are reported in columns 3 and 4. Also in this case, the results are consistent with the previous one. Peers_AAacc coefficient is significant at the 5% level, Peers_ACfo coefficient confirms its statistical significance at the 1% level. Overall, the robustness tests validate our previous findings and confirm the presence of a significant peer effect among earnings management choices.

Table 4 Here

Peer effects among suspect firms

Having documented peer effect in accrual-based and real earnings management policies among private firms, we perform an additional test to understand whether firms are more or less likely to follow peers in the presence of an underlying firm-specific incentive. To this end, we verify if firms' behaviours differ when they are suspected of having managed earnings to meet the zero earnings target. Although these should not be the only firm-year observations to have managed their earnings, they may be the most likely to have done so. In fact, according to the earnings management literature, private firms' efforts to avoid losses but report a small profit are substantial (Haga, 2018).

Following previous studies (Haga, 2018; Gunny, 2010), we define firm-years just meeting the zero earnings target as those firms having net income scaled by total assets greater than, or equal to, zero but less than 0.01. Hence, we estimate Eq. (1) for two subsamples: Suspect and Not Suspect firms. Estimation results are shown in Table 5: each column presents second-stage results for peers' earnings management variables.

Table 5 Here

Among suspect firms, Peers_AAcc coefficient is positive and statistically significant at the 5% level (Coeff: 1.173, t: 2.39), thus increasing its statistical significance with respect to the entire sample results. On the contrary, Peers_AAcc lose its statistical significance among not suspect firms (Coefficient: 0.991, t: 1.35). Apparently, firm-year observations outside the suspect range are less likely to experience peer influence in accrual choices. This is consistent with peer conditioning acting as an additional force behind earnings management decisions, but not the only one. Intuitively, when firms are close enough to reaching their financial reporting objectives through misreporting, learning about firms' actions constitutes a crucial nudge toward accounting adjustments. On the contrary, when peers' unadjusted results are far from the suspect range, peers' choices are not able to exert a major role.

Regarding cash flow manipulation, we do not find a statistical difference in peer influence between the two groups. Peers_ACfo is significant at the 5% level in both subsamples of suspect and non-suspect companies (coefficient: 0.720, t: 2.08; coefficient: 0.941, t: 2.09, respectively). This is possibly due to the timing of real intervention. In fact, while accrual-based intervention occurs at the end of the fiscal year, the real-based takes place during the fiscal year, when the amount of misreporting necessary to meet the desired threshold is still unknown (Zang, 2012). In this sense, during the year, firms do not know if the abnormal intervention implemented will result in reaching the zero-profit range (it is likely that some companies will still fail to reach zero and that some even exceed the zero earnings benchmark). From this reasoning, it is not surprising that there is no difference in peer effects in real activities manipulation: firms will experience and respond to peer pressure regardless of whether they will eventually reach the earnings benchmark.

In summary, this additional test points to peer effect in real activity choices as a more pervasive mimicking phenomenon among manipulative strategies, which is also in line with our main findings.

The overall misreporting strategy

In the previous section, we focused on peers' influence within the same manipulative strategy, implicitly assuming that firms' use of a given misreporting tool would affect peers' use of the same tool. However, the peer effect in earnings management is likely to arise also through different methods. This may occur, for example, whether, despite companies' choices being informative for peers, the latter are unable to replicate the same strategy exactly, or they find a more suitable combination of misreporting choices. Moreover, since firms combine different tools to manage their earnings, it could be their total misreporting that affects a given firm's comprehensive misreporting strategy.

Following this reasoning, we reestimate the main model (1) using a comprehensive measure of earnings management as dependent (TotalEM) and main explanatory variable (Peers_TotalEM) (variables defined in Appendix). Table 6 presents the results for the main model and, for completeness, the robustness tests.

Table 6 Here

The coefficient of Peers_TotalEM is positive and statistically significant at the 1% level (coeff: 0.983; t: 2.58). Peer effect continues to be economically relevant: a one standard deviation increase in peers' total earnings management is associated with a 0.112 standard deviation increase in firm's *i* earnings management. Robustness tests confirm the first impression. Accordingly, these results show that competitors' total earnings management strategy affects the overall strategy of their peers, adding another dimension to peers' influence. This is an important finding because it implies that earnings management's contagion occurs even when firms cannot access a given tool of earnings management and that, due to peer effect, there is a general encouragement to adopt manipulative practices.

6 Conclusion

6 Conclusion

We introduce peer effect to the accounting literature of private firms and show the importance of its role in propagating earnings management among private Italian firms. We document that the association between peer effect and earnings management is statistically and economically meaningful whether firms adopt accrual or real earnings management, though in the latter case the association is even more intense. These findings withstand a battery of alternative tests where we control for the possibility that timing of variable measurement affects peer effect identification and for different set of factors that commonly explain earning management in private firms: debt contracting, tax incentives, size, organizational, etc. Yet, peer effect is also responsible for the low earnings quality of private firms, and future analyses cannot ignore this phenomenon.

Our evidence is important because it highlights that private firms that manage earnings do not only lower the earnings quality of their financial statements or potentially compromise their survival but they spread this practice and its negative effects over the entire sector. This is an issue for private firms' regulators, and stakeholders. For standard setters that aim at increasing the quality of financial reporting among private firms it becomes crucial to shape and enforce accounting standards having in mind the most imitated firms. This perspective will also help fiscal authorities, auditors, financial institutions and other direct users of private firms' financial statements. Future research can fruitfully identify the factors and channels that can mitigate the contagion of peer effect.

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Appendix. Variable definitions

Abn_Cfo	<p>Abnormal Cash Flow from Operations are the residuals from the following first-order autoregressive model incorporating fixed effects:</p> $CFO_{i,t} = \alpha_0 + \alpha_1 CFO_{i,t-1} + \alpha_2 1/Assets_{i,t-1} + \alpha_3 Sales_{i,t} + \alpha_4 \Delta Sales_{i,t} + \varepsilon_{i,t}$ <p>Where $CFO_{i,t}$ is computed starting from the firm's net income, adding depreciation and amortisation, and subtracting the change in net working capital. CFO is scaled by lagged total assets; $CFO_{i,t-1}$ is its lagged value; $Assets_{i,t-1}$ is lagged total assets; $Sales_{i,t}$ is sales during the year scaled by total assets; $\Delta Sales_{i,t}$ is the sale growth scaled by lagged total assets.</p> <p>We strictly follow the procedure outlined in Huang et al. (2020). First, every firm's cash flow from operations is differenced from the cross-sectional mean for that year. Second, for every firm, the annual deviation of cash flow from operations from the cross-sectional mean is differenced from the corresponding deviation in the previous year. All the explanatory variables in the model are also differenced twice in the same manner. Next, the model is estimated every year. Then, the firm-year residual minus the mean value of the residual across all years for the corresponding firm is multiplied by -1.</p>
Abn_Acc	<p>Abnormal Accruals are the residuals from the following first-order autoregressive model incorporating fixed effects:</p> $Acc_{i,t} = \alpha_0 + \alpha_1 Acc_{i,t-1} + \alpha_2 1/Assets_{i,t-1} + \alpha_3 (\Delta Sales - \Delta Ar)_{i,t} + \alpha_4 PPE_{i,t} + \alpha_5 Ni_{i,t} + \varepsilon_{i,t}$ <p>Where $Acc_{i,t}$ is the change in noncash current assets minus the change in nondebt current liabilities minus depreciation and amortisation expense, scaled by lagged total assets. $Acc_{i,t-1}$ is its lagged value; $Assets_{i,t-1}$ is lagged total assets; $\Delta Sales - \Delta Ar)_{i,t}$ is the change in sales minus the change in receivables during the year scaled by lagged total assets; $PPE_{i,t}$ is the net value of property, plant and equipment scaled by lagged total assets; $Ni_{i,t}$ is net income scaled by lagged total assets.</p> <p>We follow the same procedure described for Abn_Cfo. First, every firm's total accruals is differenced from the cross-sectional mean for that year. Second, for every firm, the annual deviation of total accruals from the cross-sectional mean is differenced from the corresponding deviation in the previous year. All the explanatory variables in the model are also differenced twice in the same manner. Next, the model is estimated every year. Finally, the firm-year residual minus the mean value of the residual across all years for the corresponding firm yields abnormal accruals.</p>
TotalEM	Abn_Cfo + Abn_Acc
Roa	EBITDA /Total assets
Size	Ln(total assets)
Leverage	Total debt/Total assets
Sales_growth	$\Delta Sales/Sales(t-1)$
Age	Ln(1+Age)
Loss	An indicator variable equal to one if the firm reports a loss, zero otherwise
MTR	An indicator variable equal to one if the firm's effective tax rate (tax expense from income statement divided by earnings before taxes) is equal to or higher than the statutory tax rate, zero otherwise
At_growth	$\Delta TotAssets/TotAssets (t-1)$
Noa	(Stockholders' equity - Cash and short-term investments + Long-term and short-term debt)/Lagged Sales)
Zscore	$(0.717 * \text{Current assets less current liabilities divided by total assets}) + (0.847 * \text{Retained earnings divided by total assets}) + (3.107 * \text{earnings before interest and taxes divided by total assets}) + (0.420 * \text{book value of equity divided by total liabilities}) + (0.998 * \text{sales divided by total assets})$

$$\ln\text{OpCycle} \quad \ln\left(\frac{\text{Inventory}}{\text{COGS}/365}\right) + \left(\frac{\text{Receivables}}{\text{Sales}/365}\right)$$

Table 1. Sample selection and group size statistics

Panel A: Sample selection

	<i>Observations</i>
All Italian private companies covered by AIDA during the period 2011-2019.	2,100,941
<i>Less observations of firm-years:</i>	
In financial and utility industries; With simplified financial statements; Adopting IFRS	(1,833,902)
With consolidated financial statements	(23,832)
With public debt	(9,335)
Without data available for all the variables; With less than two peers	(113,970)
Without at least two observations with full data availability	(106)
Final sample	119,796

Panel B: Group size statistics

	Mean	P5	P25	P50	P75	P95	SD
<i>Peers</i>	1,289.35	109	302	787	1,512	4,465	1,372.82

Panel A reports our sample selection procedure. The final sample drawn by AIDA database consists of 119,796 firm-year observations corresponding to 23,275 unique firms over the period 2011-2019. Panel B reports statistics on sample peer groups based on ATECO 2-digit classification.

Table 2. Descriptive statistics

	N	Mean	SD	P25	P50	P75
Total Assets	119.796	23.913.410	37.442.260	6.955.634	12.851.760	24.305.820
Sales	119.796	26.739.580	42.312.180	7.681.881	14.304.490	26.814.120
Net income	119.796	760.256	2.084.877	20.436	217.607	869.131
Debt	119.796	13.779.530	22.833.260	3.327.938	7.080.654	14.021.100
Return on Assets	119.796	0.084	0.088	0.039	0.071	0.121
Age (years)	119.796	27.65	15.29	16	26	37
<i>Firm-level variables</i>						
Abn_Acc	119.796	-0.001	0.376	-0.074	-0.001	0.072
Abn_Cfo	119.796	-0.003	0.480	-0.048	0.002	0.049
I_Shock	119.796	0.009	0.086	-0.036	-0.004	0.046
Size	119.796	9.309	1.409	8.823	9.425	10.057
Sale_growth	119.796	0.063	0.346	-0.049	0.029	0.121
Lev	119.796	0.600	0.230	0.433	0.629	0.781
MTR	119.796	0.760	0.427	1.000	1.000	1.000
Age	119.796	3.138	0.663	2.773	3.258	3.611

Loss	119.796	0.161	0.367	0.000	0.000	0.000
Asset_growth	118.313	0.055	0.200	-0.041	0.028	0.118
Noa	118.313	1.517	3.940	0.499	0.743	1.121
Zscore	118.313	2.033	1.213	1.275	1.868	2.603
Op	118.313	4.971	1.015	4.633	5.063	5.417
TotalEM	119.796	-0.004	0.743	-0.106	0.000	0.106
<i>Peer-level variables</i>						
Peers_Abn_Acc	119.796	0.000	0.031	-0.009	-0.000	0.009
Peers_Abn_Cfo	119.796	-0.000	0.075	-0.017	-0.001	0.011
P_Shock	119.796	0.009	0.015	0.002	0.007	0.013
Peers_Size	119.796	9.115	0.524	8.887	9.184	9.460
Peers_Sale_growth	119.796	0.096	0.050	0.064	0.088	0.116
Peers_Lev	119.796	0.610	0.051	0.572	0.608	0.652
Peers_MTR	119.796	74.851	7.785	71.168	76.834	80.518
Peers_Age	119.796	3.021	0.213	2.888	3.061	3.611
Peers_Loss	119.796	16.444	6.646	11.564	14.736	18.991
Peers_Asset_growth	118.313	0.075	0.029	0.054	0.073	0.087
Peers_Noa	118.313	1.586	1.462	0.929	1.099	1.367
Peers_Zscore	118.313	2.035	0.367	1.793	1.970	2.425
Peers_Op	118.313	4.963	0.437	4.813	4.976	5.194
Peers_TotalEM	119.796	-0.000	0.085	-0.021	-0.002	0.017

This table presents descriptive statistics for firms' characteristics and the main variables used in our analysis. Earnings management proxies (both at firm and peer-level) refer to year t, whereas all the remaining variables refer to year t-1, consistent with our model. Except for Peers_Loss and Peers_MTR (percentage of peer firms experiencing a loss; percentage of peers exhibiting a marginal tax rate higher than the statutory tax rate), peer firm averages are calculated as the average of all firms within a peer group-year combination, excluding the *i*th observation, where the peer group is defined by ATECO 2-digit classification. All variables are defined in Appendix and are winsorized at the 1st and 99th percentiles.

Table 3. Peer effect in accrual and real earnings management

	(1) First Stage Peers_AAcc	(2) Second Stage Abn_Acc	(3) First Stage Peers_ACfo	(4) Second Stage Abn_Cfo
Peers_AAcc		0.906* (1.76)		
Peers_ACfo				1.041*** (2.75)
PShock	-0.341*** (-30.02)		-0.454*** (-14.68)	
IShock	-0.003 (-1.13)	0.226*** (3.67)	-0.008 (-0.84)	0.207** (2.54)
Size	-0.001** (-2.56)	-0.145*** (-2.80)	0.001 (1.26)	-0.217 (-1.43)
Peers_Size	-0.030*** (-5.16)	0.065** (2.02)	0.150** (2.21)	-0.110 (-0.85)
Sale_growth	0.001	0.022	-0.000	0.002

	(1.41)	(1.16)	(-0.26)	(0.11)
Peers_salegrowth	0.094***	0.001	0.358***	-0.287
	(7.37)	(0.01)	(3.63)	(-1.64)
Lev	-0.001	0.335***	-0.001	0.395***
	(-0.46)	(5.84)	(-0.33)	(5.21)
Peers_Lev	-0.061	0.001	0.125***	-0.245
	(-1.24)	(0.00)	(3.29)	(-1.08)
MTR	0.000	-0.005	0.001	-0.013***
	(0.43)	(-1.14)	(0.76)	(-2.87)
Peers_MTR	-0.000	-0.000	0.001***	-0.000
	(-0.05)	(-0.88)	(3.74)	(-0.62)
Age	0.001	-0.066	0.018***	-0.002
	(1.00)	(-1.33)	(3.46)	(-0.05)
Peers_Age	-0.054***	0.129	0.053*	-0.106*
	(-2.72)	(1.29)	(1.92)	(-0.94)
Loss	-0.000	0.007	0.001	-0.023***
	(-0.74)	(1.57)	(0.56)	(-3.59)
Peers_loss	-0.001***	-0.000	0.002***	-0.003*
	(-7.10)	(-0.03)	(2.73)	(-1.68)
F-test exclud. instrument	901.17		215.51	
Observations	119,796	119,796	119,796	119,796
R-squared	missing	missing	missing	missing
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

This table reports the 2SLS estimation results for model (1). Column 1 and Column 2 present, respectively, the first and second stage results of the main model with accrual-based earnings management as a proxy for misreporting. Column 3 and Column 4 present the first and second stage results of the main model with real earnings management as proxy for misreporting. The dependent variable is indicated at the top of each column. The endogenous variable is peers' earnings management (Peers_AAcc, Peers_ACfo), and the instrument is peers' profitability shock (PShock). Firm-specific variables correspond to firm *i*'s value in year *t*-1. Peer firms' average corresponds to the average value of all firms within a peer group, excluding firm *i*. The dependent variable and the endogenous variables refer to year *t* while all other variables are lagged one year. All variables are defined in Appendix. *, **, *** represent significance at the 10%, 5% and 1% level, respectively. T-statistics robust to heteroskedasticity and within-firm dependence in parentheses.

Table 4. Robustness tests

<i>Second stage</i>	<i>Less parsimonious model</i>		<i>Contemporaneous model</i>	
	(1)	(2)	(3)	(4)
	Abn_Acc	Abn_Cfo	Abn_Acc	Abn_Cfo
Peers_Measure	0.868**	0.976***	0.865**	0.769***
	(2.46)	(3.20)	(2.13)	(3.56)
F-test excluded instrument	811.04	147.49	462.98	256.22
Control variables. Firm- and Group-level	YES	YES	YES	YES
Contemporaneous variables Firm- and Group-level	NO	NO	YES	YES
Additional Controls Firm- and Group-level	YES	YES	NO	NO
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	118,313	118,313	117,607	117,607

This table presents the results of the second-stage estimation of two robustness tests using the 2SLS model. Columns 1 and 2 present the results of the main model (1) estimated by adding several control variables (asset growth, net operating assets, Altman z-score, operating cycle length) at both firm and peer levels. In columns 3 and 4, the results are obtained by adding the contemporaneous control variables (both at firm and peer levels) to the main model (1). *, **, *** represent significance at the 10%, 5% and 1% level, respectively. T-statistics robust to heteroskedasticity and within-firm dependence in parentheses.

Table 5. Peer effect in suspect firms

	<i>Suspect</i>	<i>Not Suspect</i>	<i>Suspect</i>	<i>Not Suspect</i>
<i>Second stage</i>	(1)	(2)	(3)	(4)
	Abn_Acc	Abn_Acc	Abn_Cfo	Abn_Cfo
Peers_Measure	1.173** (2.39)	0.991 (1.35)	0.720** (2.08)	0.941** (2.09)
Control variables. Firm- and Group-level	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	25.565	94.231	25.565	94.231

This table reports the second stage estimation results for model (1) using the subsamples of Suspect and Not Suspect firm-year observations. In Column 1 and 2 the dependent variable (main independent variable) is Abn_Acc (Peers_AAacc), in Column 3 and 4 the dependent variable (main independent variable) is Abn_Cfo (Peers_ACfo). *, **, *** represent significance at the 10%, 5% and 1% level, respectively. T-statistics robust to heteroskedasticity and within-firm dependence in parentheses.

Table 6. Peer effect in total earnings management

<i>Second stage</i>	(1)	(2)	(3)
	TotalEM	TotalEM	TotalEM
Peers_TotalEM	0.983*** (2.58)	0.926*** (3.34)	0.804*** (3.32)
F-test excluded instrument	519.88	422.09	404.73
Control variables. Firm- and Group-level	YES	YES	YES
Contemporaneous variables Firm- and Group-level	NO	NO	YES
Additional Controls Firm- and Group-level	NO	YES	NO
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	119,796	118,313	117,607

This table reports the 2SLS estimation results for model (1), in which the proxy for the firm's i and its peers' earnings management is a comprehensive measure of misreporting (TotalEM). Column 1 presents the second-stage estimation results from the main model (1). Column 2 presents the second-stage estimation results from the model (1) estimated by adding several control variables (both at the firm- and peer-level). Column 3 presents the second-stage estimation results from the model (1) estimated by adding contemporaneous control variables (both at the firm- and peer-level). *, **, *** represent significance at the 10%, 5% and 1% level, respectively. T-statistics robust to heteroskedasticity and within-firm dependence in parentheses.