
M&A disclosure post-global financial crisis: the influence of family ownership

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Abstract: This study investigates whether acquirers provide higher-quality disclosures for mergers and acquisitions (M&As) after the global financial crisis (GFC) compared to before, in an effort to restore investors' trust and secure access to credit in a country, Italy, that lengthily recovered from the severe GFC. By employing a comprehensive mandatory disclosure index, we conduct empirical research on a sample of M&As spanning the pre-GFC (2006–2008) and post-GFC (2015–2017) periods in Italy. Our findings show heightened M&A disclosure quality post-GFC compared to the pre-crisis period, with the improvement being significantly more pronounced in family-owned acquirers than in non-family ones. This outcome remains robust after matching family and non-family observations through propensity-score matching. The study enriches extant knowledge on disclosure quality and offers practical implications to regulators, standard setters, and investors who may evaluate different responses to the GFC in a crucial area of disclosure.

Keywords: disclosure quality; mandatory disclosure; M&A; mergers and acquisitions; business combinations; IFRS 3; goodwill; family firms; ownership; GFC; global financial crisis; Italy.

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1 Introduction

Mergers and acquisitions (M&As) serve as a strategic tool for companies to achieve growth and exploit potential synergies (Hitt et al., 2009; Baker and Kiyamaz, 2011). They represent one of the major corporate resource allocation decisions involving substantial investments and considerable risk of failure (Moschieri and Campa, 2009; Bens et al., 2012; Ferreira et al., 2014; Renneboog and Vansteenkiste, 2019). Therefore, M&A disclosures are crucial for shareholders, lenders, and other stakeholders to understand the nature, scope, and purpose of the transaction, thereby enabling them to evaluate its effects on the acquirer's future earnings and cash flows (Tuch and O'Sullivan, 2007; Ferreira et al., 2014). Notably, M&A disclosure ranks as the second-most demanded information in financial statements' notes (Johansen and Plenborg, 2013). According to extant literature, acquirers offering robust M&A disclosure benefit from a lower cost of debt compared to those providing limited disclosures (Florio et al., 2018). At the same time, however, accounting for M&As is a complex and controversial area for financial statement preparers, particularly regarding the purchase price allocation (PPA) on the acquisition date. Indeed, the latter requires in-depth knowledge of the acquired company and its industry as well as the pertinent accounting rules. It also often requires knowledge and experience in the selection and application of the most appropriate methodologies for estimating the fair value of tangible and intangible assets as well as financial assets and liabilities (Bloom, 2009; Shalev, 2009; Shalev et al., 2013; Durocher and Georgiou, 2022).

Despite the requirement of IFRS 3 – *Business combinations* (International Accounting Standards Board, 2004b, 2008) to include information about the newly acquired entity, the reasons behind the acquisition, the consideration amount, the acquired net assets, and the outcomes of the acquisitions, empirical evidence collected before the global financial crisis (GFC) indicates that acquirers tend not to comply with such requirements. Conversely, the extent of mandatory disclosure offered depends on

country-, acquirer-, and transaction-specific factors (Glaum et al., 2013; Mazzi et al., 2016; Florio et al., 2018). Among the latter, the materiality of the M&A for the acquirer is found to be a disclosure driver, while the recognition of goodwill as a result of the PPA deters disclosure (Florio et al., 2018).

Originated in 2007 by the bursting of the housing bubble in the United States (US), which had resulted from imprudent lending policies, the GFC spilled overseas after the collapse of Lehman Brothers in September 2008. Although the global economy was starting to recover in the second half of 2009, it was interrupted by the eruption of the sovereign debt crisis in Europe in 2010 (International Monetary Fund, 2018; Visco, 2018). As prior financial crises, the GFC determined “*a disruption to financial markets*” (Mishkin, 1992, p.115) and unforeseen uncertainty about firms’ fundamentals. This, in turn, made access to risk and debt capital more difficult and costly (Campello et al., 2010; Fosberg, 2012; Persakis and Iatridis, 2015; Bafundi and Imperatore, 2023). The GFC has been likened to a “*once-in-a-century credit tsunami*” and described as “*a disaster in which the loss of trust and confidence played key precipitating roles and the recovery from which [...] require[s] the restoration of these crucial factors*” (Earle, 2009, p.785).

Recovering from such a deep crisis was indeed lengthy and demanding, with output losses persisting even a decade later. The lack of credit access following the GFC, coupled with weak expectations of future growth and profitability, is pointed out as the determinant of the investment shortfalls. According to the International Monetary Fund (2018, p.74), “[*l]ess credit intermediation – from a combination of supply and demand factors – is a significant channel [...]. On the supply side, impaired financial systems cannot intermediate credit to the same extent as before the crash, and postcrisis regulatory tightening can also affect loan origination*”. Upon shifting the attention to the demand side, whether companies have changed their behaviour towards M&A disclosure in the aftermath of the GFC compared to the pre-crisis period remains an empirical question. In this study, we contend that M&A disclosure quality after the crisis is higher than before because companies need to reduce information asymmetries with capital providers and signal that they deserve support for their investment projects (Jensen and Meckling, 1976; Bafundi and Imperatore, 2023). This appears crucial not only because M&As are risky ventures but also because they represent a valuable tool for corporate strategic redirection and renewal post-crisis (Martynova and Renneboog, 2008; Campello et al., 2010; DePamphilis, 2022; Thanos et al., 2020).

Furthermore, this study examines whether companies’ response to the GFC varies based on ownership, i.e., whether it is in the hands of a family or not. Family firms, as opposed to non-family firms, are characterised by different agency conflicts (Jensen and Meckling, 1976). They are more affected by financial crises and might react differently to such events compared to companies owned by institutional or other types of investors (Miller and Le Breton-Miller, 2006; Macciocchi and Tiscini, 2016). Moreover, anecdotal evidence shows that after the GFC, “*family businesses rebounded to build back opportunities in a shattered world economy*” (PwC, 2021, p.2), as they were both more trusted and more resilient than other institutions. Therefore, we expect that post-GFC family acquirers will place a greater emphasis on M&A disclosure compared to non-family acquirers.

We conduct empirical research on a sample of 490 M&As carried out by Italian non-financial listed firms during the three-year periods preceding and following the GFC (2006–2008 and 2015–2017), here intended as an exogenous shock. Italy, with its

specific institutional characteristics (Leuz, 2010), substantial concentration of family-owned businesses (Bianchi and Bianco, 2006; Macciocchi and Tiscini, 2016), subpar reporting practices (Leuz, 2010), and the profound and enduring impact of the financial crisis (Gotti and Fasan, 2020), provides a fitting context for investigating these issues. Additionally, the M&A market was highly active before the GFC (Moschieri and Campa, 2009), but it suffered a severe setback during the crisis and gradually regained momentum afterward (KPMG, 2014, 2016; Puato, 2020).

Relying on a proprietary, hand-collected database and a comprehensive M&A mandatory disclosure quality measure previously defined by Florio et al. (2018), we adopt a quantitative research approach to validate our hypotheses. The results indicate a significant variation (increase) in M&A disclosure quality after the GFC compared to the pre-crisis period. However, this variation is not homogeneous: indeed, we identify cross-sectional variations in the improvement of M&A disclosure quality across family and non-family acquirers. As expected, the improvement of M&A disclosure quality is significantly more pronounced in family firms than in non-family firms. This outcome remains robust even after matching family and non-family observations through propensity-score matching. Furthermore, our findings confirm previous evidence of the positive impact of M&A materiality on disclosure, regardless of the acquirer's ownership. Moreover, the negative impact of goodwill on disclosure is observed only among the subset of non-family acquirers.

With these findings, the study responds to several calls for research raised regarding M&A disclosure (Shalev, 2009; Glaum et al., 2013; Mazzi et al., 2016; Florio et al., 2018), post-GFC disclosure (Arthur et al., 2015; Dyer et al., 2017; Louie et al., 2019), and differences in family vs. non-family firms' behaviour towards disclosure (Salvato and Moores, 2010; Prencipe et al., 2014). Moreover, they hold practical implications for investors, regulators, and standard setters who can evaluate distinct responses to the GFC in a critical area of disclosure.

The study is timely and even more relevant because, in March 2024, the International Accounting Standard Board (2024) issued the Exposure Draft titled *Business Combinations – Disclosures, Goodwill and Impairment*, where it proposed to add new disclosure requirements about (a) the acquisition-date key objectives and related targets for a strategic business combination, and the subsequent extent of achievement, and (b) quantitative information about the synergies expected to arise from a business combination. Such requirements, deemed necessary by the users of financial statements to assess the performance of a business combination, are a matter of concern for preparers, who fear both the costs of disclosing this information and the exposure to related litigation risk, and complain that such commercially sensitive information should not be required (International Accounting Standard Board, 2024).

The remainder of this paper is organised as follows: Section 2 introduces the theoretical background, reviews pertinent literature, and develops the hypotheses. Section 3 describes the key features of the Italian setting relevant to this study, while Section 4 expounds on the research design. Section 5 presents and discusses the empirical results, encompassing univariate, multivariate, and robustness analyses. Finally, Section 6 provides concluding remarks.

2 Theoretical background, prior literature, and hypotheses

2.1 M&A disclosure quality

Corporate disclosure functions as an external control mechanism aimed at mitigating conflicts of interest between capital providers and a firm's managers (*Type I agency conflict*). Managers, with their superior knowledge of the firm, may exploit this advantage to engage in opportunistic behaviours, prioritising personal gains over the interests of shareholders and creditors (Jensen and Meckling, 1976). Better disclosure is found to reduce information asymmetries and mitigate adverse selection costs, consequently reducing capital costs (Francis et al., 2005). It also enhances stock liquidity and forecast accuracy (Beyer et al., 2010; Frino et al., 2013). M&A disclosure plays a role in mitigating *Type I agency conflict*, as improved M&A disclosure is associated with decreased costs of both debt (Florio et al., 2018) and equity (Mazzi et al., 2016). Nevertheless, accounting literature contends that acquirers may offer low-quality M&A disclosure in an attempt to lessen scrutiny from financial statement users. By maintaining a certain information asymmetry with stakeholders, acquirers may preserve flexibility for future accounting decisions (Lobo and Zhou, 2001).

Consistent with these arguments, empirical evidence indicates that M&A disclosure is poor, to the extent of lacking compliance with the requirements of IFRS 3 – *Business combinations* and IAS 36 – *Impairment of assets* (International Accounting Standards Board, 2004a) among European companies (Glaum et al., 2013; Mazzi et al., 2016). Disclosure decisions are related to country-, acquirer-, and transaction-specific factors. Among the former, Glaum et al. (2013) show that the strength of legal enforcement, the stock market size, and the accounting traditions are associated with compliance with disclosure requirements provided by the accounting standards mentioned. Regarding acquirer-specific characteristics, Glaum et al. (2013) demonstrate that compliance is influenced by prior IFRS experience and corporate governance (e.g., auditor type and ownership structure). In turn, Florio et al. (2018) reveal that larger, more profitable companies provide a higher extent of disclosure. In terms of transaction-related features, evidence suggests that better mandatory disclosure is offered for increasingly material M&As while disclosure is reduced upon goodwill recognition through the PPA process (Shalev, 2009; Florio et al., 2018). As a matter of fact, goodwill recognition and subsequent accounting treatment is a long-standing issue in accounting,¹ especially because goodwill is a non-verifiable accounting value at the time of recognition; it should signify anticipated M&A synergies but might merely indicate overpayment (Bartov et al., 2021). Unsurprisingly, acquirers tend to decrease M&A disclosure if they are afraid of goodwill impairment in the medium term post-acquisition (Florio et al., 2018).

2.2 Disclosure quality and the GFC

The significance of disclosure quality intensifies and becomes of paramount importance in cases of long and severe disruptions to financial markets (Morris et al., 2011). Indeed, “[i]f accounting information is of low quality, investors face more difficulties in evaluating firm types; thus, they are either less willing to finance firms or require a greater investment return” (Bafundi and Imperatore, 2023, p.9). This is exactly what happened with the GFC, as it brought about a disruption in the vital flow of risk and debt capital to companies. Due to market instability and uncertainty about firms’

fundamentals, the equity risk premium increased, leading to a higher cost of equity capital (Persakis and Iatridis, 2015) and fewer issuances of securities (Fosberg, 2012). On the one hand, firms raised their demand for liquidity for both immediate funding needs and precautionary motives; on the other hand, banks curtailed the supply of liquidity, strengthened their monitoring activities, implemented more demanding lending standards, and augmented risk premia. As a result, firms' access to credit also became more challenging, both during and after the crisis: Persakis and Iatridis (2015) report that the costs of both equity and debt were higher compared to the pre-crisis period, with the increment being more severe in countries where investor protection and legal enforcement are weak, including Italy.

In similar circumstances, companies are expected to leverage financial reporting to meet the increased demand for disclosure (Morris et al., 2011) and reduce the information asymmetry with capital providers to obtain equity and debt capital under acceptable conditions (Myers and Majluf, 1984). Existing empirical evidence suggests that companies tend to enhance their reporting behaviour in response to financial crises. Sutthachai and Cooke (2009) demonstrate that mandatory financial disclosure was significantly higher during and following the 1997 economic crisis in Thailand compared to the period before. Similarly, Ismail et al. (2013) report that Islamic financial institutions have enhanced their mandatory risk disclosure considerably between the pre- and post-GFC periods. They conclude that these firms "*learned from the crisis and exerted efforts to promote better transparency [...] for future benefits*" (Ismail et al., 2013, p.428). Ressas and Hussainey (2014) demonstrate that UK financial companies disclosed more bad news during and after the GFC than they did before, while disclosing less good news. Finally, international evidence shows that earnings quality improved during the GFC compared to the pre-crisis period due to the attention paid to financial reporting by standard setters and capital market regulators. Additionally, managers made attempts to disclose reliable values to support investors' confidence and, consequently, market liquidity (Filip and Raffournier, 2014; Arthur et al., 2015).

To the best of our knowledge, empirical evidence regarding M&A disclosure quality after the GFC is still lacking. The only relevant study is the one by Dyer et al. (2017), which indicates that, in the US, the section of the 10-K describing the business structure and M&A increased in length during the 1996–2013 period. This expansion provided more information on subsidiaries and cooperation through diverse forms of partnerships, trusts, joint ventures, and acquisitions. However, the study did not attempt to link M&A disclosure with the GFC. We aim to bridge this gap and propose that, in their recovery from the GFC through M&As, acquirers leverage disclosure as a key means to reduce information asymmetries with capital providers and obtain financial support for their investment projects. Therefore, we formulate the following hypothesis:

Hp1: *M&A disclosure quality after the GFC is higher than disclosure quality before the GFC.*

2.3 *Disclosure quality, family ownership, and the GFC*

Both theory and prior empirical evidence suggest that disclosure choices depend on a firm's ownership, focusing on the distinction between family-owned and non-family companies. In the context of family businesses, *Type I agency conflict* is likely to be mitigated because family members are often both controlling shareholders and managers

or because they hold a close relationship with external managers and strictly monitor them. This overlap or alignment of interests between managers and dominant shareholders is likely to lead to a long-term investment horizon (Jensen and Meckling, 1976; Stein, 1988; Prencipe et al., 2014; Macciocchi and Tiscini, 2016). However, in family firms, *Type II agency conflict* (i.e., principal-principal) may be exacerbated because dominant family members may abuse their position to extract private benefits to the detriment of minority shareholders who are comparatively less informed and less influential (Jensen and Meckling, 1976; Villalonga and Amit, 2006; Prencipe et al., 2014). Indeed, the stock market does not appreciate that family members sit on the board of directors (Rossignoli et al., 2021).

This peculiar characterisation of the agency conflicts within family firms leads to divergent theoretical predictions about their financial reporting practices compared to non-family firms. Increased *Type II agency conflict* is likely to result in more opaque financial statements, potentially aimed at concealing evidence of wealth expropriation activities. Conversely, reduced *Type I agency conflict* is likely to result in better reporting practices because of the family's concerns regarding the firm's long-term viability, access to capital, and reputation (Anderson and Reeb, 2003; Villalonga and Amit, 2006; Tong, 2007; Cascino et al., 2010).

Empirical evidence collected in this regard indicates that family firms often tend to report better quality earnings compared to non-family businesses (Ali et al., 2007; Tong, 2007; Jiraporn and DaDalt, 2009; Lakhali, 2015), even within the Italian setting (Cascino et al., 2010; Prencipe et al., 2011; Greco et al., 2015) and regarding goodwill accounting (Greco and Neri, 2021). Concerning disclosure practices, Chen et al. (2008) reveal that US family firms provide fewer earnings forecasts but more bad news earnings warnings compared to non-family firms. Additionally, Louie et al. (2019) underline that Australian companies disclose greater amounts of strategic and future-oriented information compared to their non-family counterparts. Overall, empirical evidence collected in ordinary times suggests that family owners have a longer investment horizon, hold managers more accountable, prioritise concerns about litigation-related and reputation costs, and are more inclined to signal their growth potential to the market.

With reference to crisis periods, prior literature underscores that when stock market prices are depressed due to a climate of distrust, family firms tend to be more penalised compared to non-family firms. This is primarily due to the thinner market for their floating shares and the tendency of controlling shareholders to make financial choices aimed at reducing the default risk and safeguarding their families' main source of wealth (Macciocchi and Tiscini, 2016). Moreover, during financial turmoil, while controlling shareholders with a short-term horizon "*have incentive to take an opportunistic behaviours, increasing the magnitude of private benefits extraction and minorities expropriation to sustain their total benefits, thus compensating for the decline in cash flow generation*", controlling shareholders of family firms "*cannot take on opportunistic behaviours, because they would increase the scarcity of financial resources and the likelihood of a firm's bankruptcy in the short term, thus reducing the total expected benefits in the long term*" (Macciocchi and Tiscini, 2016, p.297). Conversely, family-controlling shareholders have a strong incentive to intensify their efforts in supporting the company during crises. This commitment aims to enable the company to weather the crisis, sustain competitiveness in the market, pursue internal growth as well as growth through M&As, and ultimately reap substantial benefits over the long term (Miller and Le Breton-Miller, 2006). Therefore, prior literature argues that *Type II agency conflict* is less

pronounced during financial crises. Moreover, some evidence indicates that Italian family firms, during the GFC, received additional financial resources from family owners and achieved superior accounting performance compared to non-family firms (Macciocchi and Tiscini, 2016).

In accordance with the aforementioned theoretical arguments suggesting that family firms are likely to assume an attentive behaviour to promptly overcome the GFC, along with prevailing evidence indicating that family firms offer superior financial reporting compared to non-family firms in ordinary times, we expect that family firms also provide higher disclosure quality compared to non-family firms while carrying out M&As in the aftermath of the GFC. We, therefore, test the following hypothesis:

***Hp2:** M&A disclosure quality after the GFC is higher in family firms than in non-family firms.*

3 The Italian setting

The Italian stock market is relatively small and underdeveloped, features highly concentrated firm ownership and is characterised by notoriously weak investor protection and legal enforcement (La Porta et al., 1998; Leuz, 2010; Gotti and Fasan, 2020). When reporting on judicial recovery proceedings, the Governor of the Bank of Italy, Ignazio Visco, admitted that “*it takes an average of three years to obtain a lower court decision and more than seven years to process a bankruptcy proceeding; in the more virtuous EU countries, it takes less than a year on average in both circumstances*” (Visco, 2018, p.7). In such a context, less transparent reporting practices have been detected (Leuz, 2010), leading to poor compliance with the present disclosure requirements in force (Burgstahler et al., 2006; ESMA, 2013). Florio et al. (2018) find that mandatory M&A disclosures offered by Italian-listed companies before the GFC only amounted to 66% of the optimal expected disclosure (on average). Disclosure was particularly low as regards the acquired firm’s profit or loss since the acquisition date included in the consolidated financial statement, the pro-forma revenue and the profit or loss of the combined entity as if all the M&As were completed at the beginning of the year, and the description of the components of the purchase price and the factors that contributed to goodwill recognition.

The M&A market in Italy was very active prior to the GFC (Moschieri and Campa, 2009) but suffered a severe setback after the Lehman Brothers’ collapse in September 2008. A lack of liquidity and the uncertainty about the financial soundness of borrowers led Italian banks to reduce the credit availability to clients and increase the amount of collateral required for new loans (Di Quirico, 2010). Given that Italian companies rely heavily on debt financing (Zattoni, 1999; Gotti and Fasan, 2020), this issue became critical. The cost of equity capital also increased in Italy more than in countries with stronger investor protection and legal enforcement (Persakis and Iatridis, 2015). Despite Berlusconi’s government implementing several policies to support banks (to avoid the domino effect of their collapse) and large firms (to help them retain employees), the crisis proved to be profound; so much so that it was considered the worst one the country has ever faced (Di Quirico, 2010; Macciocchi and Tiscini, 2016; Visco, 2018; Gotti and Fasan, 2020). Its impacts on the real economy stem clearly from the data collected by the Bank of Italy: the Gross Domestic Product declined by almost 8% points from 2008 to

2009 and by over 5% points from 2011 to 2013. From 2007 to 2013, industrial production plummeted by nearly a quarter, and investments dropped by almost 30%. Within the same timeframe, more than a million jobs were lost (Visco, 2018). Concerning M&As, encompassing all (listed and unlisted) Italian companies, the overall value amounted to 148 billion Euros in 2007 and the number of M&A deals reached a peak of 495 in 2008. In 2009, both figures dropped dramatically, with a 60% decrease in deals and a 77% decrease in counter value. The M&A market remained depressed in the subsequent years, aligning with a tenuous post-crisis recovery (Sorrentino, 2018). The effective resurgence began in 2015, with approximately 600 concluded deals totalling 56 billion euros (KPMG, 2014, 2016).

Italian firms often have concentrated ownership within families, exerting stringent control over managers or directly involving themselves in the firm's management (Zattoni, 1999; Bianchi and Bianco, 2006; Cascino et al., 2010). Gotti and Fasan (2020) report that in 63% of Italian listed companies, representing one-third of the overall market capitalisation, the ultimate controlling agent is a family. Family firms traditionally play a key role in the M&A market, to the extent that they represent the majority of "serial buyers" in the decade from 2010 to 2019. Overall, 15 out of 25 main acquirers are family firms, with four of them ranking among the primary five acquirers (e.g., Edizione by the Benetton family, Fininvest by the Berlusconi family, Exor by the Agnelli family, and DeAgostini by the Borolo-Drago family). Anecdotal evidence illustrates that M&As are an important lever for the growth of Italian family firms, as those engaging in acquisitions have also experienced the most substantial growth (Puato, 2020).

All these features related to the institutional environment, the lengthy recovery from the GFC, and the active role of family firms in the M&A market, render Italy a suitable and intriguing setting for exploring acquirers' post-crisis behaviour regarding M&A disclosure.

4 Research design

4.1 Sample

The GFC in Italy spanned from the very end of 2008² to the end of 2014. During these years, the economy slowed down, and the M&A market significantly resized, only regaining momentum in 2015 (KPMG, 2014, 2016). Consequently, our analysis encompasses M&A covering three years before the GFC (2006–2008) and three years after the GFC (2015–2017).

To define our sample of M&As, we identified non-financial firms listed on the Italian Stock Exchange (all 2-digit SIC codes except for 60 to 67). We manually collected their annual reports during the analysis period, employing a keyword search for the Italian equivalents of the terms *merger*, *acquisition*, and *business combination*. We also scrutinised all section titles and notes to ensure that all M&As were identified, excluding those that were individually immaterial and/or provisionally recognised. This meticulous approach yielded 490 M&As (i.e., observations) carried out by 127 distinct acquirers.

We categorised acquirers who had executed at least one M&A within the sample into two groups: family and non-family acquirers. We define "family acquirers" as those

acquirers whose shares are owned directly or indirectly (through financial holdings or family business agreements) by a family for at least 30% (Corbetta and Minichilli, 2006; Minichilli et al., 2010; Prencipe et al., 2011). We manually collected this information from the corporate governance and ownership structure reports. Of the 127 unique acquirers, 47 are classified as family-acquirers, and 80 are categorised as non-family acquirers. Table 1 provides a summary of the sample composition.

4.2 Measure of M&A disclosure quality

We gauged the M&A disclosure quality using the criteria established by Florio et al. (2018), who identified a comprehensive index of 27 mandatory disclosure items stipulated by paragraphs 66–77 of IFRS 3 – *Business combinations* (2004).³ These disclosure components encompass aspects like the fundamental characteristics of the M&A (e.g., entity acquired, ownership percentage acquired, primary reasons for the M&A), the values stemming from the PPA (e.g., carrying amount and fair value of net assets, consolidation difference, non-controlling interests if any), intangible assets and goodwill (e.g., economic factors that justify goodwill recognition), and the performance following the M&A (e.g., the amount of the acquired firm’s earnings since the acquisition, revenues of the combined entity, expected returns on investment).⁴

Table 1 Sample composition

Year	Number of M&A completed by:		Total observations
	Family acquirers	Non-family acquirers	
<i>Pre-GFC</i>			
2006	21	49	70
2007	26	81	107
2008	21	80	101
<i>Total observations pre-GFC</i>	68	210	278
<i>Post-GFC</i>			
2015	27	28	55
2016	30	40	70
2017	30	57	87
<i>Total observations post-GFC</i>	87	125	212
Total observations	155	335	490

Based on the above components, we computed the variable *DQuality* to furnish a composite evaluation of the calibre of mandatory M&A disclosure. In detail, we first identified available disclosure items through manual content analysis. This was based on the reading and interpretation of information provided by the acquirer in the notes regarding the consolidated financial statement, particularly in the sections dedicated to the consolidation area, M&As, and intangible assets.⁵ Second, we classified disclosure items into non-discretionary and discretionary categories. The former is related to quantitative data (e.g., purchase price, fair value of assets and liabilities acquired) and

qualitative pieces of information which are, by nature, precise and do not require further explanation (e.g., acquisition date). These items receive 1 point each when present and 0 when absent. Discretionary items provide qualitative descriptions (e.g., descriptions of the combined entities and reasons for the M&A) and can vary in completeness and effectiveness. A discretionary item receives 1 point if excellent (i.e., description is complete and highly effective), 0.75 points if good (i.e., quite explicative), 0.5 points if sufficient (i.e., present but not truly informative), and 0 if lacking. Third, because not all disclosure items demanded by IFRS 3 – *Business combinations* can be applied to every M&A, we classified them as relevant or non-relevant for the specific M&A. For instance, disclosure on goodwill is required only if the latter is recognised as a result of the PPA, making it non-relevant for M&As without goodwill recognition. Conversely, other items are supposed to always be available (e.g., name of the acquiree, date of acquisition). Finally, as indicated in Table 2, we computed the disclosure index for each M&A as the ratio between the number of relevant disclosure items disclosed by the acquirer ($Score_{ji}$) weighted by their quality, and the maximum number of items relevant to the M&A and disclosed optimally ($\max(Score_i)$). Therefore, $DQuality$ is computed as

$$DQuality_i = \frac{\sum_{j=1}^n Score_{ji}}{\max(Score_i)}$$

where $Score_{ji}$ represents the value assigned to disclosure item j of the M&A i .

Table 2 Variables definition

<i>Variables</i>	<i>Description</i>	<i>Source</i>
<i>DQuality</i>	Score measuring the quality of mandatory disclosure about each M&A as provided by the acquirer. It is the ratio between the number of mandatory disclosures provided on a M&A, weighted by their quality, and the maximum number of disclosures referred to the same M&A and disclosed optimally. It potentially ranges from 0 to 1	Annual report
<i>PostGFC</i>	Binary variable equal to 1 if the M&A has been completed in the post-GFC period (2015–2017), and 0 otherwise (2006–2008)	Public data
<i>Family</i>	Binary variable equal to 1 if the acquirer is a family firm, and 0 otherwise. Family firms are those whose shares are owned directly or indirectly (through financial holdings or family business agreements) by a family for at least 30%	Report on corporate governance
<i>M&APos</i>	Categorical variable indicating the position of the M&A on the sequence of transactions developed by the same acquirer over the year	Annual report
<i>M&AMat</i>	Continuous variable measuring the materiality of the M&A for the acquirer. It is the ratio between the consideration amount of the acquisition and the total assets of the acquirer at the beginning of the year	Annual report

Table 2 Variables definition (continued)

<i>Variables</i>	<i>Description</i>	<i>Source</i>
<i>GdwRec</i>	Binary variable equal to 1 if goodwill is recorded in the purchase price allocation, and 0 otherwise	Annual report
<i>GdwMat</i>	Continuous variable that indicates the materiality of the goodwill arising from the M&A. It is the ratio of goodwill recorded in the purchase price allocation over the consideration amount	Annual report
<i>Culture</i>	Continuous variable measuring, for each M&A, the distance between the country of the acquirer (i.e., Italy) and the country of the acquiree along the Hofstede (1980) dimensions of power distance, uncertainty avoidance, masculinity and individualism	Annual report; Hofstede website
<i>Size</i>	Natural logarithm of the acquirer market capitalisation at the end of each year	Datastream
<i>Roe</i>	Continuous variable measuring the acquirer's return on equity ratio	Annual report
<i>CGov</i>	Continuous variable estimating abnormal working capital accruals (<i>AWCA</i>) according to the formula by DeFond and Park (2001)	Annual report
<i>Big4</i>	Binary variable equal to 1 if the acquirer's annual report is audited by a Big 4 (Deloitte, EY, KPMG, PwC), and 0 otherwise	Annual report
<i>Industry</i>	Categorical variable indicating the industry in which the acquirer operates. It is equal to 1 for Consumer goods, 2 for Chemical and basic materials, 3 for Industrials, 4 for Oil and gas, 5 for Healthcare, 6 for Consumer services, 7 for Utilities, 8 for Technology, and 9 for Telecommunications	Italian Stock Exchange

Source: adapted from Florio et al. (2018)

4.3 Empirical models

To test the hypotheses, we employ multiple regression models where the dependent variable, *DQuality*, represents the measure of M&A mandatory disclosure quality as previously defined. Since the dependent variable ranges from 0 to 1, we employ fractional logit regression models with 2-digit SIC code industry fixed effects (δ_i) and with errors clustered at the deal-year level.

To test Hp1 we estimate the following regression model:

$$DQuality_{it} = \alpha + \beta_1 PostGFC_{it} + \gamma_i Control\ variables_{it} + \delta_i Industry\ fixed\ effect + \varepsilon \quad (1)$$

The test variable *PostGFC* equals 1 if the M&A is completed post-GFC and 0 otherwise. Hp1 predicts a positive coefficient on *PostGFC* (β_1), which is consistent with the likelihood that M&A disclosure tends to increase after the GFC compared to before it.

To evaluate Hp2, we detect the cross-sectional variations in the M&A disclosure quality between family and non-family acquirers post-GFC relative to pre-GFC.

We augment the regression model in equation (1) with the variable *Family* and the interaction between the independent variable of our interest (*PostGFC*) with the dummy variable *Family* (*PostGFC*Family*), thus estimating the following model:

$$DQuality_{it} = \alpha + \beta_1 Family_i + \beta_2 PostGFC_{it} + \beta_3 PostGFC_{it} * Family_i + \gamma_i Control\ variables_{it} + \delta_i Industry\ fixed\ effect + \varepsilon \quad (2)$$

The variable *Family* equals 1 if the acquirer is a family firm and 0 otherwise. Our variable of interest, *PostGFC*Family*, captures the differential change in the M&A disclosure quality for family acquirers relative to non-family acquirers in the post-GFC period. Hp2 predicts a positive coefficient on *PostGFC*Family* (β_3), consistent with the likelihood that M&A disclosure quality is higher for family acquirers than non-family acquirers post-GFC compared to pre-GFC.

In both models, we control for several M&A- and acquirer-specific factors that may affect M&A disclosure quality according to prior literature (Florio et al., 2018). Concerning M&A-specific factors, we control for the materiality of the M&A for the acquirer (*M&AMat*), as it was proved to positively impact disclosure. We account for the goodwill recorded in the PPA, as it was found to exert a negative impact on disclosure. We adopt two alternative variables: *GdwRec* is a dummy variable equal to 1 if goodwill has been recorded in the PPA, 0 otherwise; *GdwMat* is computed as the ratio of goodwill recognised in the PPA over the total consideration paid, thus being a measure of goodwill materiality. We also include a control variable for the position of each M&A on the sequence of transactions developed by the same acquirer over the year (*M&APos*) and for the cultural distance (*Culture*) between the acquirer and the acquiree. Although extant empirical evidence remains inconclusive on the effects of both such variables on disclosure, contrasting arguments have been raised that suggest their consideration when modelling for disclosure quality (Martynova and Renneboog, 2008; Moschieri and Campa, 2009; Florio et al., 2018; Renneboog and Vansteenkiste, 2019).

Regarding acquirer-specific controls, we incorporate the following variables into the regression model: the acquirer's size (*Size*), net profitability (*Roe*), corporate governance quality (*CGov*), and the appointment of a Big 4 audit firm (*Big4*). All the variables in equation (1) are computed for the deal year, denoted as *t*.

5 Empirical results

5.1 Descriptive statistics and univariate analyses

Table 3 displays the variables' distribution across all observations (Panel A), as well as for the subsamples of M&A completed in the post-GFC period (Panel B) and in the pre-GFC period (Panel C). *DQuality* exhibits a similar distribution in the post- and pre-GFC subsamples. However, both the mean and median values are slightly higher after the GFC than before (69.3% vs. 65.8%), indicating an improvement in M&A disclosure quality after the GFC. As expected, individual acquirers conduct fewer M&As (*M&APos*) immediately following the GFC. While pre-GFC goodwill was recognised (*GdwRec*) in 86.7% of the M&As, post-GFC is recognised less frequently (75.5%). Nonetheless,

post-GFC goodwill (*GdwMat*) represents on average 46.7% of the consideration paid (Panel B), a 10-percentage point increase compared to the pre-crisis period (Panel C).

Table 3 also presents the variable distribution in the subsamples of M&As conducted by family acquirers and non-family acquirers in Panel D and E, respectively. The dependent variable, *DQuality*, is notably higher among family acquirers than in non-family ones (69.3% vs. 66.4%), suggesting superior M&A disclosure quality from the former. Non-family acquirers tend to perform more M&As than their family counterparts (*M&APos*), while the average consideration paid for the acquisition (*M&AMat*) amounts to 3.9% and 3.3% of the total assets of the family and the non-family acquirers, respectively. Non-family firms record goodwill (*GdwRec*) with greater frequency than family acquirers (76.1% vs. 84.5%). However, the average goodwill materiality (*GdwMat*) is equally observable in family and non-family acquirers, amounting to 40% of the consideration paid.

Table 4 presents the Pearson correlation coefficients for the variables included in the analysis. Given that some independent variables show statistically significant correlations, we computed the variance inflation factor (VIF) for each regression model. The presence of multicollinearity in the regression analysis can be reasonably excluded since the VIF ranges between 1.5 and 2.5 (Stock and Watson, 2020).

Table 3 Descriptive statistics

Panel A – *All the M&A completed in the pre-GFC and post-GFC periods*

	<i>count</i>	<i>mean</i>	<i>sd</i>	<i>min</i>	<i>median</i>	<i>max</i>
<i>DQuality</i>	490	0.673	0.136	0.308	0.667	1
<i>PostGFC</i>	490	0.433	0.496	0	0	1
<i>Family</i>	490	0.316	0.466	0	0	1
<i>M&APos</i>	490	1.900	1.229	1	1	8
<i>M&AMat</i>	490	0.035	0.076	0	0.009	1.067
<i>GdwRec</i>	490	0.818	0.386	0	1	1
<i>GdwMat</i>	490	0.402	0.355	0	0.376	1
<i>Culture</i>	490	1.130	1.810	0	0	9.321
<i>Size</i>	490	6.456	1.942	2.289	6.162	11.530
<i>Roe</i>	490	0.093	0.135	-1.383	0.092	0.508
<i>CGov</i>	490	0.063	0.101	0	0.029	0.823
<i>Big4</i>	490	0.941	0.236	0	1	1
<i>Industry</i>	490	5.549	2.933	1	5	9
<i>N</i>	490					

Table 3 Descriptive statistics (continued)

Panel B – *M&A completed post-GFC (2015–2017)*

	<i>count</i>	<i>mean</i>	<i>sd</i>	<i>min</i>	<i>median</i>	<i>max</i>
<i>DQuality</i>	212	0.693	0.122	0.423	0.667	1
<i>PostGFC</i>	212	1	0	1	1	1
<i>Family</i>	212	0.410	0.493	0	0	1
<i>M&APos</i>	212	1.840	1.244	1	1	8
<i>M&AMat</i>	212	0.039	0.097	0	0.010	1.067
<i>GdwRec</i>	212	0.755	0.431	0	1	1
<i>GdwMat</i>	212	0.467	0.366	0	0.526	1
<i>Culture</i>	212	1.126	1.880	0	0	9.321
<i>Size</i>	212	6.666	2.114	2.312	7.031	10.860
<i>Roe</i>	212	0.087	0.137	−1.383	0.082	0.372
<i>CGov</i>	212	0.067	0.105	0.001	0.028	0.823
<i>Big4</i>	212	0.939	0.240	0	1	1
<i>Industry</i>	212	5.547	2.957	1	4	9
<i>N</i>	212					

Panel C – *M&A completed pre-GFC (2006–2008)*

	<i>count</i>	<i>mean</i>	<i>Sd</i>	<i>min</i>	<i>median</i>	<i>max</i>
<i>DQuality</i>	278	0.658	0.145	0.308	0.660	0.955
<i>PostGFC</i>	278	0	0	0	0	0
<i>Family</i>	278	0.245	0.431	0	0	1
<i>M&APos</i>	278	1.946	1.217	1	2	7
<i>M&AMat</i>	278	0.031	0.054	0	0.009	0.301
<i>GdwRec</i>	278	0.867	0.340	0	1	1
<i>GdwMat</i>	278	0.353	0.338	0	0.309	1
<i>Culture</i>	278	1.133	1.757	0	0	8.542
<i>Size</i>	278	6.296	1.787	2.289	5.974	11.530
<i>Roe</i>	278	0.098	0.133	−0.538	0.101	0.508
<i>CGov</i>	278	0.060	0.097	0	0.035	0.615
<i>Big4</i>	278	0.942	0.233	0	1	1
<i>Industry</i>	278	5.550	2.919	1	6	9
<i>N</i>	278					

Table 3 Descriptive statistics (continued)Panel D – *M&A completed by family acquirers*

	<i>count</i>	<i>mean</i>	<i>Sd</i>	<i>min</i>	<i>median</i>	<i>max</i>
<i>DQuality</i>	155	0.693	0.138	0.346	0.676	1
<i>PostGFC</i>	155	0.561	0.498	0	1	1
<i>Family</i>	155	1	0	1	1	1
<i>M&APos</i>	155	1.632	0.919	1	1	5
<i>M&AMat</i>	155	0.038	0.101	0	0.009	1.067
<i>GdwRec</i>	155	0.761	0.428	0	1	1
<i>GdwMat</i>	155	0.409	0.352	0	0.394	1
<i>Culture</i>	155	1.365	2.046	0	0.630	9.321
<i>Size</i>	155	6.717	1.496	2.695	6.677	10.280
<i>Roe</i>	155	0.115	0.110	−0.340	0.108	0.372
<i>CGov</i>	155	0.055	0.094	0	0.023	0.615
<i>Big4</i>	155	0.968	0.177	0	1	1
<i>Industry</i>	155	4.219	2.574	1	4	9
<i>N</i>	155					

Panel E – *M&A completed by non-family acquirers*

	<i>count</i>	<i>mean</i>	<i>Sd</i>	<i>min</i>	<i>median</i>	<i>max</i>
<i>DQuality</i>	335	0.664	0.135	0.308	0.654	0.975
<i>PostGFC</i>	335	0.373	0.484	0	0	1
<i>Family</i>	335	0	0	0	0	0
<i>M&APos</i>	335	2.024	1.331	1	2	8
<i>M&AMat</i>	335	0.033	0.062	0	0.009	0.425
<i>GdwRec</i>	335	0.845	0.363	0	1	1
<i>GdwMat</i>	335	0.399	0.357	0	0.375	1
<i>Culture</i>	335	1.021	1.681	0	0	8.224
<i>Size</i>	335	6.335	2.108	2.289	5.846	11.530
<i>Roe</i>	335	0.082	0.144	−1.383	0.084	0.508
<i>CGov</i>	335	0.067	0.103	0	0.034	0.823
<i>Big4</i>	335	0.928	0.258	0	1	1
<i>Industry</i>	335	6.164	2.887	1	7	9
<i>N</i>	335					

Variable definitions are shown in Table 2.

Table 4 Correlation matrix

	<i>Dquality</i>	<i>PostGFC</i>	<i>Family</i>	<i>M&Apos</i>	<i>M&AMat</i>	<i>GdwRec</i>	<i>GdwMat</i>	<i>Culture</i>	<i>Size</i>	<i>Roe</i>	<i>CGov</i>	<i>Big4</i>
<i>Dquality</i>	1											
<i>PostGFC</i>	0.1273*	1										
<i>Family</i>	0.0048	0.1766*	1									
<i>M&Apos</i>	0.0265	0.0001	-0.1484*	1								
<i>M&AMat</i>	0.3768	0.3426	0.0010		1							
<i>GdwRec</i>	0.2403*	0.0561	0.0327	-0.0904*		1						
<i>GdwMat</i>	0.0000	0.2149	0.4702	0.0455			1					
<i>Culture</i>	-0.0839	-0.1442*	-0.1007*	-0.0686	0.0894*			1				
<i>Size</i>	0.0634	0.0014	0.0258	0.1295	0.0479				1			
<i>Roe</i>	-0.1059*	0.1587*	0.0130	-0.0075	0.0196	0.5348*				1		
<i>CGov</i>	0.0191	0.0004	0.7733	0.8686	0.6657	0.0000					1	
<i>Big4</i>	-0.0823	-0.0019	0.0883	0.0310	-0.0321	-0.0262	0.0253					1
	0.0687	0.9664	0.0507	0.4942	0.4778	0.5627	0.5760					
	-0.0340	0.0945*	0.0915*	0.1455*	-0.2167*	-0.1461*	-0.0464	0.1174*				
	0.4531	0.0365	0.0430	0.0012	0.0000	0.0012	0.3050	0.0093				
	0.0249	-0.0415	0.1099*	0.0302	-0.0866	-0.0262	0.0641	0.0774	0.3731*	1		
	0.5829	0.3589	0.0149	0.5051	0.0555	0.5627	0.1567	0.0869	0.0000			
	-0.0380	0.0349	-0.0553	-0.1093*	0.0702	-0.0733	-0.0209	-0.1090	-0.0638	-0.2013*	1	
	0.4008	0.4408	0.2214	0.0155	0.1209	0.1053	0.6446	0.0158	0.1586	0.0000		
	0.1703*	-0.0079	0.0776	0.0994*	-0.0519	-0.0957*	-0.1316*	-0.0205	0.2945*	0.0569	-0.0152	1
	0.0002	0.8614	0.0861	0.0279	0.2514	0.0341	0.0035	0.6503	0.0000	0.2086	0.7373	

*indicates statistical significance at the 5% level. p-values are reported in italics.

Table 5 displays the univariate analyses testing for differences in *DQuality* across the two periods of analysis (pre-GFC and post-GFC) and between the two subsamples (family and non-family acquirers). We utilised two-sample t-tests to verify the differences in means. The univariate analysis shows that post-GFC, *DQuality* is significantly higher in family acquirers than in non-family ones, while there is no significant difference in *DQuality* between family and non-family acquirers before the GFC. Overall, this evidence supports Hp2, indicating that family acquirers exhibit higher *DQuality* than non-family acquirers after the GFC.

Table 5 Univariate analysis of differences in M&A disclosure quality

	<i>Pre-GFC</i>	<i>Post-GFC</i>	<i>Differences in the means</i>	
	<i>2006–2008</i>	<i>2015–2017</i>		
<i>DQuality</i>				<i>t-test</i>
Family	0.659	0.714	0.055**	0.03
Non-Family	0.676	0.672	–0.004	0.83
Difference	–0.018	0.042**		
<i>t-test</i>	0.449	0.039		

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

5.2 Multivariate analyses

Tables 6 and 7 present our estimation results for testing Hp1 and Hp2, differing in the controlled measure of goodwill: Table 6 features control for recorded goodwill in the PPA (*GdwRec*), while Table 7 accounts for goodwill materiality (*GdwMat*). Consistency in the results across both estimations is observed; consequently, we explain them concurrently in the following.

The regression shown in column (1) is conducted to determine whether in the post-GFC period *DQuality* is significantly different from that in the pre-GFC period, with a positive sign expected for the coefficient of the variable *PostGFC*. The estimation result confirms this expectation, with a positive and highly significant coefficient for *PostGFC* observed both in Table 6 (*PostGFC*: 0.080; *p-value*: 0.001) and Table 7 (*PostGFC*: 0.108; *p-value*: 0.000). This result validates Hp1.

Upon formulating two separate regression models for family (column 2) and non-family (column 3) acquirers, this result is only confirmed for family acquirers in both Table 6 (*PostGFC*: 0.197; *p-value*: 0.000) and Table 7 (*PostGFC*: 0.213; *p-value*: 0.000). However, this confirmation does not apply to non-family acquirers. This suggests that, although *DQuality* is improving after the GFC, such an effect is not homogeneous across firms, with significant cross-sectional differences detected depending on family ownership. Specifically, *DQuality* is likely to see a more substantial increase after the GFC among family acquirers, whereas this improvement lacks significance among non-family acquirers.

Table 6 M&A disclosure quality variations pre- and post-crisis in family and non-family firms (controlling for the extent a goodwill has been recorded in the PPA)

<i>Variables</i>	(1)	(2)	(3)	(4)	(5)
	<i>Pooled</i>	<i>Family</i>	<i>Non-Family</i>	<i>Pooled</i>	<i>Pooled</i>
	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>
<i>PostGFC</i>	0.080*** (0.001)	0.197*** (0.000)	0.006 (0.899)	0.074** (0.011)	0.009 (0.821)
<i>Family</i>				0.043 (0.511)	-0.055 (0.499)
<i>PostGFC*Family</i>					0.203** (0.021)
<i>M&APos</i>	-0.004 (0.842)	-0.008 (0.835)	0.007 (0.703)	-0.002 (0.933)	0.000 (0.981)
<i>M&AMat</i>	1.561*** (0.000)	1.306*** (0.004)	1.709*** (0.000)	1.555*** (0.000)	1.542*** (0.000)
<i>GdwRec</i>	-0.106* (0.080)	-0.149 (0.148)	-0.058 (0.477)	-0.098 (0.144)	-0.101 (0.138)
<i>Culture</i>	-0.015 (0.141)	0.005 (0.795)	-0.032*** (0.007)	-0.016 (0.138)	-0.015 (0.170)
<i>Size</i>	-0.007 (0.799)	0.003 (0.944)	-0.018 (0.505)	-0.008 (0.758)	-0.011 (0.673)
<i>Roe</i>	0.150 (0.145)	-0.356* (0.098)	0.323** (0.018)	0.145 (0.164)	0.140 (0.220)
<i>CGov</i>	-0.196 (0.439)	-0.383 (0.308)	-0.012 (0.957)	-0.191 (0.444)	-0.208 (0.395)
<i>Big4</i>	0.329*** (0.000)	0.271*** (0.005)	0.330*** (0.000)	0.323*** (0.000)	0.317*** (0.000)
<i>Constant</i>	0.167*** (0.004)	0.330* (0.083)	0.022 (0.655)	0.153** (0.030)	0.194** (0.012)
Industry fixed effect	YES	YES	YES	YES	YES
Observations	490	155	335	490	490
Wald Chi ²	102.315	102.315	102.315	102.315	102.315
p-value	0.000	0.000	0.000	0.000	0.000
Adj R ²	0.012	0.012	0.012	0.012	0.012

*, ** and *** denote two-tailed statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are in parentheses. All variables are defined in Table 2.

Table 7 M&A disclosure quality variations pre- and post-crisis in family and non-family firms (controlling for the magnitude of the goodwill recorded in the PPA)

<i>Variables</i>	(1)	(2)	(3)	(4)	(5)
	<i>Pooled</i>	<i>Family</i>	<i>Non-Family</i>	<i>Pooled</i>	<i>Pooled</i>
	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>
<i>PostGFC</i>	0.108*** (0.000)	0.213*** (0.000)	0.025 (0.557)	0.100*** (0.003)	0.038 (0.335)
<i>Family</i>				0.051 (0.378)	-0.039 (0.550)
<i>PostGFC*Family</i>					0.189** (0.022)
<i>M&APos</i>	-0.003 (0.883)	-0.003 (0.927)	0.008 (0.681)	-0.000 (0.988)	0.002 (0.926)
<i>M&AMat</i>	1.501*** (0.000)	1.234*** (0.002)	1.687*** (0.000)	1.497*** (0.000)	1.487*** (0.000)
<i>GdwMat</i>	-0.132* (0.067)	-0.163 (0.172)	-0.086* (0.086)	-0.130* (0.082)	-0.122* (0.084)
<i>Culture</i>	-0.014 (0.179)	0.010 (0.628)	-0.032*** (0.005)	-0.015 (0.168)	-0.014 (0.198)
<i>Size</i>	-0.006 (0.823)	0.008 (0.843)	-0.017 (0.506)	-0.007 (0.773)	-0.010 (0.687)
<i>Roe</i>	0.167 (0.128)	-0.367 (0.113)	0.335** (0.018)	0.162 (0.144)	0.155 (0.194)
<i>CGov</i>	-0.170 (0.497)	-0.284 (0.515)	-0.007 (0.974)	-0.165 (0.502)	-0.181 (0.449)
<i>Big4</i>	0.314*** (0.000)	0.275** (0.022)	0.318*** (0.000)	0.307*** (0.000)	0.304*** (0.000)
<i>Constant</i>	0.115** (0.046)	0.199 (0.290)	0.005 (0.952)	0.106* (0.083)	0.139** (0.026)
Industry fixed effect	YES	YES	YES	YES	YES
Observations	490	155	335	490	490
Wald Chi ²	91.253	91.253	91.253	91.253	91.253
p-value	0.000	0.000	0.000	0.000	0.000
Adj R ²	0.013	0.013	0.013	0.013	0.013

*, ** and *** denote two-tailed statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are in parentheses. All variables are defined in Table 2.

In column (5), the test compares the difference in *DQuality* between family and non-family acquirers after the GFC with the difference before the GFC. The coefficient on *Family*, representing the pre-GFC difference between family and non-family acquirers, lacks statistical significance. This result indicates that in the pre-GFC period, no difference is detectable in the *DQuality* depending on whether the acquirer is a family firm (or not). The coefficient on *PostGFC*, which captures the time-series change in the *DQuality* for non-family firms from the pre- to the post-GFC period, is not significant, suggesting that non-family acquirers are unlikely to show any significant change in the *DQuality* after the GFC. Conversely, the significant positive coefficient on *PostGFC*Family* supports Hp2 in both Table 6 (*PostGFC*Family*: 0.203; *p-value*: 0.021) and Table 7 (*PostGFC*Family*: 0.189; *p-value*: 0.022). These results show that the GFC disclosure on M&As in financial reports is likely to be higher than before the GFC, to a greater extent for family firms than for non-family acquirers.

The coefficients on the control variables, where significant, exhibit the expected signs consistent with prior evidence (Glaum et al., 2013; Florio et al., 2018). Interestingly, *DQuality* increases for larger M&As (*M&AMat*) in all models, regardless of family or non-family ownership. Conversely, as shown in Table 7 (column 1), it tends to decrease for higher portions of the PPA allocated to goodwill (*GdwMat*); however, when running separate regression models for family and non-family acquirers, this result is only confirmed for the latter (column 3).

5.3 Propensity-score matching between family and non-family acquirers

Recognising that M&As carried out by family and non-family acquirers lack random assignment and could differ in underlying characteristics (Caprio et al., 2011), we mitigate this endogeneity concern by balancing the observable covariates between family and non-family observations through propensity-score matching. The covariates that we focus on are the acquirer-specific control variables in equation (1), in addition to industry fixed effects. Consequently, we estimate the propensity score for each observation, indicating belonging to either the treated or control subgroup, employing a logit model as formulated in equation (3):

$$Family_{it} = \alpha + \beta_1 Size_{it} + \beta_2 Roe_{it} + \beta_3 Big4_{it} + \beta_4 CGov_{it} + \delta_i Industry\ fixed\ effect + \varepsilon \quad (3)$$

Based on the fitted probabilities obtained from the logit model (propensity scores), each M&A conducted by a family acquirer is matched to its nearest counterpart completed by a non-family acquirer, employing a caliper of 0.05 and without replacement. This matching procedure yields 459 pairs of treatment and matched control observations. In Table 8, we identify significantly positive coefficients on *PostGFC* and *PostGFC*Family* within the matched sample, while also controlling for *GdwMat*. Similarly, non-tabulated results for the estimation controlling for *GdwRec* show significantly positive coefficients on *PostGFC* and *PostGFC*Family* in the matched sample as well. This robustness analysis reaffirms our primary finding, supporting Hp1 and Hp2, thereby reinforcing the credibility of our conclusions.

Table 8 Propensity-score-matched sample

<i>Variables</i>	(1)	(2)	(3)	(4)
	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>	<i>DQuality</i>
<i>PostGFC</i>	0.107*** (0.000)		0.097** (0.011)	0.028 (0.524)
<i>Family</i>		0.080 (0.153)	0.062 (0.302)	-0.034 (0.668)
<i>PostGFC*Family</i>				0.199** (0.048)
<i>M&APos</i>	-0.001 (0.971)	0.002 (0.920)	0.002 (0.911)	0.005 (0.815)
<i>M&AMat</i>	1.368*** (0.000)	1.429*** (0.000)	1.377*** (0.000)	1.380*** (0.000)
<i>GdwMat</i>	-0.139* (0.054)	-0.109 (0.104)	-0.136* (0.069)	-0.130* (0.062)
<i>Culture</i>	-0.012 (0.184)	-0.015 (0.153)	-0.014 (0.185)	-0.013 (0.218)
<i>Constant</i>	0.396*** (0.001)	0.388*** (0.003)	0.364*** (0.002)	0.376*** (0.002)
Observations	459	459	459	459
Wald Chi ²	31.845	31.845	31.845	31.845
p-value	0.000	0.000	0.000	0.000
Adj R ²	0.008	0.008	0.008	0.008

*, ** and *** denote two-tailed statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are in parentheses. All variables are defined in Table 2.

6 Conclusions

Despite the existing body of accounting literature underscores the significance of M&A disclosure for investors and stakeholders, acquirers often fall short in providing optimal disclosure. Relying on agency theory, we contend that the persistent constraints generated by the GFC, particularly regarding the access to both risk and debt capital, have pushed acquirers to improve the quality of the disclosure offered on M&As realised in the aftermath of the GFC as compared to the pre-crisis period. Moreover, we contend that family acquirers displayed heightened attentiveness in this regard compared to their non-family counterparts.

Based on a proprietary, manually collected database of M&As accomplished by Italian acquirers, our empirical results demonstrate that M&A disclosure quality is higher after the GFC than before. This is in line with the expectation that, while recovering from the GFC through M&As, acquirers leverage financial reporting to reduce the information asymmetry with capital providers to obtain equity and debt capital at acceptable conditions (Myers and Majluf, 1984; Morris et al., 2011). Moreover, post-crisis family

firms are found to provide higher disclosure quality compared to non-family firms, indicating a more responsible approach to M&A disclosure. This result is consistent with the arguments contending that *Type II agency conflict* is less pronounced in difficult times and that family owners are concerned about the long-term viability of the firm and its reputation (Anderson et al., 2003; Chen et al., 2008; Cascino et al., 2010; Macciocchi and Tiscini, 2016).

With these results, this study offers several contributions to the accounting literature and has practical implications for investors, regulators, and standard setters. It responds to the calls for research on the trends and economic determinants of financial disclosures post-crisis (Arthur et al., 2015; Dyer et al., 2017; Louie et al., 2019) by showing that companies have responded to the difficulties generated by such exogenous shock by improving the quality of mandatory disclosure offered on strategic transactions like M&As. This is a positive signal for all market players, especially investors, as increased disclosure quality reduces information asymmetries and enables better allocation of financial resources. Regulators and standard setters shall also be interested in this evidence, as it indicates that companies are more inclined to align with disclosure requirements during critical times. However, a deeper analysis necessitates a more cautious interpretation of this evidence. First, opportunistic behaviour toward disclosure quality emerges post-crisis as it emerged pre-crisis in relation to M&A and goodwill materiality as acquirers offer less disclosure for smaller M&As and for increasing portions of the PPA to goodwill. This latter finding signals that acquirers aim to retain a certain degree of flexibility to justify any goodwill impairment loss in the future which, in turn, is a signal of M&A's failure to achieve its strategic goals. While regulators may use this evidence to strengthen enforcement rules, capital market players are advised regarding such opportunist behaviour and should pay attention to the portions of the purchase price that are allocated to goodwill (or, conversely, not allocated to the acquiree's identifiable assets and liabilities). This finding particularly contributes to those streams of accounting literature aiming to understand the drivers of M&A disclosure beyond country- and firm-specific characteristics (Shalev, 2009; Glaum et al., 2013; Mazzi et al., 2016; Florio et al., 2018). Second, the post-crisis approach to M&A disclosure depends on the acquirers' ownership. Indeed, our findings contribute to prior literature contending that family and non-family firms assume different behaviours toward disclosure and respond to calls for investigating specific types of disclosure (Salvato and Moores, 2010; Prencipe et al., 2014), which, in our case, is M&A disclosure. Moreover, while anecdotal evidence collected post-crisis indicates that family firms are more trusted and resilient than non-family firms (PwC, 2021), this study offers scientific evidence that family firms, in the wake of the GFC crisis, have assumed a more responsible approach to M&A disclosure than non-family firms by improving M&A disclosure quality and avoiding less disclosure upon higher goodwill recognition in the PPA. This is also a relevant insight for informing investors' decisions.

We acknowledge that this study is not free from limitations. While there are arguments supporting the notion that the persistent financial constraints resulting from the GFC influenced companies' disclosure choices, it is not possible to attribute these changes exclusively to the GFC. Moreover, our findings may be influenced by the specific context we examined, and there might be endogenous factors, such as national culture, at play. However, generalisation is still possible with reference to countries that share similar institutional and business features with Italy. For instance, in countries like France, where firm ownership is often concentrated within family hands, and where the

interests of minority shareholders do not receive strong protection (Lakhal, 2015), and in countries such as Greece and Portugal, which are considered insider economies with weaker legal enforcement systems similar to Italy (Leuz, 2010). Future research could address the limitations mentioned by exploring a broader range of countries with diverse institutional settings, thus providing a more comprehensive understanding of the impact of financial constraints generated by economic, financial, social, environmental, or health driven crises on disclosure choices.

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Notes

¹Goodwill acquired in an M&A transaction is indeed a residual value, as IFRS 3 – *Business combinations* provides for its initial measurement as the (positive) difference between the consideration paid by the acquirer and the acquirer's interest in the fair value of the acquirer's identifiable net assets at the acquisition date. Subsequently, it is subject to annual impairment testing, and impairment losses are recognised whenever there are indicators of impairment, as outlined in IAS 36 – *Impairment of assets*.

²Despite the commonly accepted date for the beginning of the GFC being 2007, Iatridis and Dimitras (2013, p.156) emphasise that in Italy, "there is a doubt on whether 2008 or 2009 can be considered as the first year of the crisis". When modelling the disclosure quality in a sample of M&As conducted in Italy between 2006 and 2008, Florio et al. (2018) did not detect any financial crisis-related structural breaks in regression coefficients during the last year of analysis. As a result, we consider 2008 as a pre-crisis year.

³The reference to IFRS 3 – *Business combinations*, version 2004, allows for meaningful comparisons of mandatory disclosure pre- and post-crisis.

⁴Should further details be necessary, please refer to Appendix A of the study by Florio et al. (2018).

⁵We acknowledge that manual content analysis is subjective, and data collection was performed at different points within the time span. We tested inter-rater and test-retest reliability to reduce subjectivity and time effects before conducting the empirical analysis. All reliability coefficients were above the conventional level of acceptance (Krippendorff, 2004; Stock and Watson, 2020).