

All in the family: Earnings Management through non-listed subsidiaries

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Abstract

We find evidence consistent with the hypothesis that non-listed subsidiaries engage in accrual and real earnings management when their listed parent is reporting small annual profits. Our evidence is important, because it shows that business groups manage earnings differently from single firms. In particular, to avoid reporting annual losses, the parent company drives earnings management of the subsidiary. Cross-sectional analysis reveals that Big4 auditors mitigate accrual earnings management at the subsidiary level, and that family-owned firms are more likely to use earnings management through non-listed subsidiaries to avoid losses.

Keywords: Earnings management; Private subsidiaries; Consolidation process; Accounting Accruals; Real activities.

Preliminary and *Incomplete*: Comments Welcome. Please *do not cite* or circulate.

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1. Introduction

We examine earnings management practices in business groups to shed light on the link between the parent public company consolidated financial statements and the private subsidiaries' financial statements. We hypothesize and show that when *parents* report small profits (defined as parent-consolidated earnings before extraordinary items, scaled by total assets, in the range 0, 0.01), their *subsidiaries* have abnormally high discretionary accruals AND/OR unusually low cash flow from operations. This is consistent with parents using their subsidiaries to manage their own (i.e., parents') earnings to beat the zero profit benchmark. Previous research has documented that executives engage in earnings management.¹ In addition, there is evidence that private companies' financial reporting is of lower quality than listed companies' (Ball and Shivakumar 2005; Burgstahler et al. 2006). However, most of the literature on earnings management looks at the final output of the consolidation process (i.e. the consolidated financial statements). There is a no evidence about earnings management using *Private companies Owned by Listed companies* (POL) which could take place far from headquarters and perhaps the scrutiny of the auditors.

Most listed companies are parent companies with a collection of subsidiaries. In order to evaluate the financial and operating conditions of the business group, capital market participants require a consolidated financial statement (i.e. the sum of the accounting data of the companies that are part of the conglomerate). Studies that analyze earnings management do not consider at what level earnings management takes place. In this study, we look at the two pieces of financial

¹ Earnings management can be defined as the alteration of a firms' reported economic performance by insiders either to mislead some stakeholders or to influence contractual outcomes (Healy et al. 1999; Leuz et al. 2003). For a review see, among others, Dechow et al. (2010), Healy and Wahlen (1999).

information needed to prepare a consolidated financial statement and examine if earnings have been managed at the subsidiary financial statement level. The primary focus of our analysis is to understand whether a subsidiary owned by a listed parent company, *ceteris paribus*, manages earnings more than a comparable private company.² In other words, we examine to what extent the parent company drives the earnings management of the subsidiary, in effect managing its own parent consolidated earnings thru the subsidiary.

We examine a sample of Italian listed companies and their directly controlled subsidiaries (non-listed). In particular, our study focuses on domestic subsidiaries directly owned at a percentage higher than 51%. This requirement allows us to focus on those subsidiary firms for which consolidation is required. The advantage of using Italian companies is in the availability of three sets of financial statements: Parent Consolidated, Parent Unconsolidated and Subsidiaries. Each Parent company has its own financial statements (consolidated and unconsolidated) and also its subsidiaries' statements are publicly available. By contrast, in the U.S., only the parent's consolidated data is publicly available, so we can't examine the links between a parent and its subsidiaries, and in particular, whether the parent uses the subsidiaries for earnings management. The Italian case is particularly interesting also, because the country combines lower investor protection, code of law legal system, concentrated ownership, less developed stock market and a corporate governance system under reform. As prior work shows, countries with these characteristics exhibit more pronounced earnings management (Burgstahler et al. 2006; Leuz et al. 2003).

² In theory POL should have higher quality earnings than the average private company, since capital market rules apply also to the subsidiaries, i.e. the same auditor who audits the parent has to verify the subsidiaries' financial statements in order to audit the consolidated financial statement. For more information on this see: research document n. 51 by Association of Italian Auditors (1996); International Standard on Auditing 600.

We contribute to the literature by showing that parent companies drive subsidiaries in accrual and real earnings management to avoid reporting their own (i.e., parents') losses. Cross-sectional analysis reveals that Big4 auditors mitigate accrual earnings management at the subsidiary level, and that family-owned firms are more likely to use earnings management through non-listed subsidiaries to avoid losses. We conduct a number of additional tests to examine the robustness of the results, including controlling for endogeneity and self-selection, and performing a placebo test to show what happens to the left and to the right of the small profit interval. Across these tests, the results are consistent and in line with our main findings.

Our evidence is important precisely because it shows that in order to evaluate the reporting quality of a business group, it is not sufficient to look at the parent consolidated financial statement. While we address this issue in the Italian context, the type of earnings management we document is not restricted to Italy. It is also likely to occur in many other jurisdictions such as the United States where examining private subsidiaries' data is not feasible. Moreover, since our analysis is single country based, where all institutional features are common to all firms by construction, we do not have to worry that correlated omitted factors might be driving our results.

Even though earnings management in a subsidiary "flows thru" to the parent (minus eliminations), we focus on the subsidiary for two reasons. First, there are only a relatively small number of listed companies in Italy, so finding a control sample to estimate discretionary accruals or abnormal CFO is not feasible (for example, for a given industry-year, there may be

only 2 or 3 firms).³ Second and more important, while there is a large literature examining firms' own earnings management, ours is the first paper to undo the consolidation process and to look at private companies owned by listed companies. The main idea is to examine how one firm (parent) influences earnings management in another firm (subsidiary), so the former firm effectively manages its earnings by its control over the latter.

The rest of the paper is organized as follows. Section 2 provides a background on the consolidation process and the Italian context, and reviews prior literature; Section 3 states our hypothesis; Section 4 discusses our empirical methodology, including our sample construction, earnings management proxies, estimation models, and descriptive statistics; Section 5 discusses our empirical evidence. Section 6 provides concluding remarks.

2. Background and Prior Literature

2.1. Consolidation Process

An entity (parent company) which owns more than one-half of the voting rights of another entity (subsidiary) is normally required for the presentation of a consolidated financial statement (IAS 27).⁴ Consolidated financial statements present the financial position and results

³ The small number of listed companies is one of the reasons why the Jones Model or its modified version are likely to give a type II error (i.e., a failure to detect earnings management) used on non-US data, Peek et al. (2013).

⁴ Control also exists when the parent company owns one half or less of the voting rights, but it has dominant influence, such as the right to appoint or remove a majority of voting rights; however, we do not have enough information in order to be able to consider these cases. The only thing we can observe in our database is the actual stake of the parent in the subsidiaries (i.e. we consider the companies that are consolidated because the parent has a majority holdings in the subsidiaries). For the sake of completeness is worthwhile to mention that The International Accounting Standards Board (IASB) recently issued a new standard: IFRS 10 Consolidated Financial Statements effective for annual periods beginning on or after 1 January 2013. IFRS 10 does not change consolidation procedures i.e., how to consolidate an entity. Rather, IFRS 10 changes whether an entity is consolidated, by revising

of operations of two (parent and subsidiary) or more (parent and subsidiaries) separate legal entities as if they were a single company. From a consolidated viewpoint, only transactions with parties outside the economic entity are included in the financial statements. Thus, the arrows crossing the perimeter of the consolidated entity in Figure 1 represent transactions that are included in the operating results of the consolidated entity for the period. Transfers between the affiliated companies, shown in Figure 1 as those dotted arrows not crossing the boundary of the consolidated entity, are equivalent to transfers between operating divisions of a single company and are not reported in the consolidated statements (Baker et al. 2012). As a consequence, the financial statement effect of inter-group transactions within a business group and the associated effect of a firm's affiliation with a business group on earnings management are, in most cases, not reflected in information contained in consolidated financial statements. In other words, the consolidation process removes the effect of most inter-group transactions on an individual firm's accounting accruals (Kim and Yi 2006).

==== Figure 1 ====

From a financial reporting perspective, Italian parent companies are required to prepare and publish consolidated or group financial statements (PC) and unconsolidated financial statement (PU) in their annual report, while every individual subsidiary belonging to a parent has to prepare individual financial statements (SUB). A parent company may hold all or less than all

the definition of control. What remains in IAS 27 is limited to accounting for subsidiaries, jointly controlled entities, and associates in separate financial statements.

of a corporate subsidiary's common stock. However, in order to be required to present consolidated financial statements, in general, a majority of voting rights must be owned.

Apart from some particular accounting adjustments (e.g., alignment of accounting policies, elimination of intercompany balances, and accounting for consolidation-only balances), consolidation basically implies adding on a 'line-by-line' basis, where the assets and liabilities of the various companies collectively form a consolidated balance sheet. Similarly, the revenues and expenses of each subsidiary are summed to give a consolidated income statement (IAS 27). In light of this, the results of the individual subsidiaries influence directly the consolidated earnings figure of the PC and could indirectly influence the results of the PU using transaction with affiliates. In particular (Figure 2):

- The Earnings of the Subsidiary, net of intercompany transactions, affects the parent-consolidated earnings.
- Transaction between parent company and subsidiaries can be structured in a way that allows profit to be shifted from the subsidiary to the parent (or vice versa) and among subsidiaries. In this case, the parent reports higher profit (unconsolidated income statement) and the subsidiary lower profit (or vice versa), or profit is shifted among subsidiaries. This type of earnings management is not detected at the parent-consolidated level since the consolidation process adjusts for the intercompany transaction.

==== Figure 2 ====

Given the above, the complex structure of business groups makes it difficult for outside investors to monitor these transactions. As a result, parent companies have more opportunities and means than do stand-alone companies to divert firm resources through related party transactions. This behavior could be exacerbated in an environment, as the Italian, of weak disclosure requirements, poor corporate governance, lax law enforcement, and an inefficient market for corporate control (Bianchi and Bianco 2006; Enriques 2009; Volpin 2002; Dyck and Zingales 2004).

In this paper we are interested in detecting any anomalies in the accrual and/or cash flow at the subsidiary level, since we view these as proxies for a parent's intervention in order to alter its own reported economic performance with accrual and/or real earnings management.

2.2. Italian context

The fundamentals of Italian accounting and disclosure requirements are grounded in the regulations of the Italian civil code and are equally binding for all limited share companies (in Italian: *Societa' per Azioni*, aka S.p.A) and limited liability companies (in Italian: *Societa' a Responsabilita' Limitata* aka S.r.l.). Recognition and measurement of all elements of financial statements (assets, liabilities, revenues and expenses) have to be in accordance with the civil law. Legal rules also prescribe very detailed and uniform formal requirements (layouts) for the presentation of the balance sheet and the profit and loss account (art. 2424, 2425 Civil Code). Although civil law is the primary source, whenever needed, it can be interpreted and integrated with Italian and International GAAP.

In addition to the annual report for individual accounts, a corporation that controls a subsidiary has to draw up consolidated accounts and to provide a consolidated annual report. The consolidated annual report comprises the consolidated balance sheet, the consolidated profit and loss account, as well as accompanying notes.

Until 2004 both private and public companies shared the same accounting rules. Since January 1, 2005 public companies are now required to use IAS/IFRS, while private subsidiaries included in the consolidated area are allowed to use IAS/IFRS. The remaining private companies will continue to follow the Italian civil code.

To summarize in the Italian setting, it is possible to observe the tree pieces of the consolidated financial statement, namely:

- a. Parent consolidated financial statement
- b. Parent unconsolidated financial statement
- c. Subsidiaries' financial statements.

For our purpose, the most important pieces of information are the financial statements of the private subsidiaries. These financial statements filed by Italian private companies must be audited by a Board of Statutory Auditors (required by law, there is an exemption for very small companies), and private companies are subject to the same tax laws than those for public companies.

The Italian case is particularly interesting for a number of reasons: the high concentration of family owned listed companies, weak legal enforcement, and poor corporate governance.

Family-controlled firms are interesting to analyze since most of the earning management literature focuses on widely held ownership. There is a dearth of evidence of earnings

management in family-owned companies despite the fact that most firms around the globe are controlled by their founders, or by the founders' families and heirs (La Porta et al. 1999). Family firms are prevalent not only in Western Europe (Faccio and Lang 2002), South and East Asia (Claessens et al. 2000), the Middle East, Latin America, and Africa, but even in the United States (Wang 2006; Villalonga and Amit 2009).⁵

Among the other reasons that makes Italy an interesting setting is the fact that Italian corporate governance regime exhibits low legal protection for investors and poor legal enforcement, code of law legal system, concentrated ownership and a less developed stock market (La Porta et al. 1998; La Porta et al. 1999; Bianchi and Bianco 2008; Faccio and Lang 2002; Enriques and Volpin 2007; Enriques 2009; Volpin 2002; La Porta et al. 2000; Shleifer and Vishny 1997), which likely increase the prevalence of earnings management

2.3. Prior Literature

The literature on earnings management examines either the consolidated financial statements of listed companies or private companies that are not subsidiaries of a listed company, but excludes subsidiary measures of earning quality, i.e. does not attempt to link parents and their subsidiaries. To our knowledge, there is a no evidence about earnings management by *Private companies Owned by Listed companies* (POL) which could take place far from headquarters and perhaps the scrutiny of the auditors. For our research, two strands of literature

⁵ For more extensive data on the diffusion of family firms around the world see: <http://www.ffi.org/?page=GlobalDataPoints>

are interesting: earnings management in private versus public companies, and earnings management in business groups.

The first strand claims that capital market pressures and institutional factors affect the level of earnings management in listed companies (Bushman and Piotroski 2006; Leuz et al. 2003; Ball et al. 2000). Interestingly enough, despite the capital market pressure to manage earnings for listed firm, Ball and Shivakumar (2005) and Burgstahler et al. (2006) document that private firms exhibit lower quality earnings compared to public firms. Both researchers exclude POL from their analysis. Ball and Shivakumar (2005) exclude subsidiaries from their analysis and argue instead that these reports are both internal and have different reporting roles. Burgstahler et al. (2006) also exclude privately held subsidiaries of listed companies without providing an explicit explanation. Hence, our focus is whether these subsidiaries, excluded in previous analysis, behave differently than their peers because of the influence of the Parent company. In other words, we examine to what degree the parent impacts the subsidiary's earnings quality.

The second strand of literature attempts to find “where” companies manage earnings. Among this literature, two papers look at multinational companies (Beuselinck et al. 2013; Dyreng et al. 2012) and two more at the relation between Consolidated earnings and Parent only earning in the Japanese context (Thomas et al. 2004; Shuto 2009).

Beuselinck et al. (2013) show that the corporate governance characteristics of the Parent company (ownership structure and analyst coverage) affect the reporting quality of the subsidiary. However, they do not examine whether subsidiaries are managed to optimize reporting outcomes of parent consolidated financial statement. Dyreng et al. (2012) examine the

location of the earnings management across domestic and foreign income in US multinational companies. They suggest that domestic income is on average, managed more than foreign income. However, since non listed companies' financial statements are unavailable in the United States, Dyreng et al. are not able to examine the earnings management of domestic subsidiaries. Focusing on foreign subsidiaries does not allow them to clarify the reason behind a subsidiary's engagement in earning management. For example, it could be the case that the foreign subsidiary's earnings management is due to motives related to its different institutional setting from the parent (e.g., fiscal rules, common law versus code law countries, investor protection, country legal/judicial system, etc.).

What both analyses fail to examine, however, is whether the subsidiary has been used by the Parent company to manage its own (i.e., Parent's) earnings, as suggested by Prencipe (2012). That is why a single country analysis is more suited to separate the effect of the institutional factors from the use of subsidiaries as a mean for pursuing earnings management. In other words, in terms of domestic subsidiaries, an interesting unanswered question is whether a conglomerate manager manages earnings differently than a single company manager (i.e., using subsidiary). In order to examine this, one must look at the relation between, on the one hand, the consolidated financial statements and, on the other, the parent only and its subsidiaries. By looking at this relation, we can show to what extent the Parent company drives earnings management (if any) in the subsidiary.

Some steps in this direction have been taken by two papers (Shuto 2009; Thomas et al. 2004) which look at a sample of Japanese companies. Both papers look at parent consolidated and un-consolidated earnings. Neither, however, looks directly at the financial statements of the

subsidiaries. In particular, Thomas et al. (2004) point out that parent-firm managers are able to manage their parent unconsolidated earnings through affiliated transactions since the parent company has significant control over the related subsidiaries. This result, however, cannot be extended to the consolidated earnings. As a result, the study predictably suggests that the consolidation process is washing out the earnings management at the subsidiary and parent only financial statements. That is to say, the type of earnings management was pursued using intercompany transactions whose effects on earnings are eliminated during the consolidation process (Figure 1).

Shuto (2009) demonstrates that, to avoid an earning decrease, earnings management was more pronounced in parent only earnings for the period 1980-1999 and was then less pervasive following the introduction of a new consolidated reporting system. Both papers were not interested in the financial reporting quality of the subsidiaries, but were concerned with the relation between PC and PU earnings.

In light of this literature, we believe that in order to appreciate the quality of the consolidated earnings, it remains important to undo the consolidation process and to determine the extent to which managers are able to manage their subsidiaries earnings through accrual and/or real activities. The reason why we seek to monitor the effect of subsidiary earnings management in the consolidation process is linked to the fact that we identify it as a proxy for the quality of parent-consolidated earnings and the overall transparency of management.

3. Hypotheses development

Earnings management can occur at the Parent level (unconsolidated financial statement) or at a subsidiary level. For example, if managers at the consolidated level decide to engage in earnings management, they must decide whether to manage parent unconsolidated earnings, subsidiary earnings, or both.

The main focus of this paper is the earnings management at the subsidiary level. Given the above, we hypothesize and test whether private subsidiaries controlled by a listed company exhibit, during suspect years, unusually high discretionary accruals AND/OR unusually low cash flow from operations. Parents companies are considered suspect in years when they report small profits (defined as parent-consolidated earnings before extraordinary items, scaled by total assets, in the range 0, 0.01). Thus, we state the following (alternative) hypothesis:

H1: In years when a parent firm is suspect, its subsidiaries have abnormally high discretionary accruals AND/OR unusually low cash flow from operations.

We are also interested in analyzing the factors that affect the parent's ability and willingness to manage earnings, and to this end we examine two sources of cross-sectional variation: a) the parent firm's choice of a Big 4 versus non-Big 4 auditors; b) family ownership of the parent

Big 4 auditors: Prior studies demonstrate that Big auditors are effective in constraining controlling shareholders' ability to manage reported earnings through accruals choices (Becker et

al. 1998; Francis et al. 1999; Kim et al. 2003). Following previous literature, we assume that scrutiny on the subsidiary financial statements increases with the presence of a Big 4 auditor. Regarding real earnings manipulation, we assume that audit scrutiny should have no effect on uncovering real manipulation, which typically falls outside of the auditor's responsibility (Cohen and Zarowin 2010). Therefore, we expect lower discretionary accruals in suspect parent firms-years audited by Big 4 auditors.

H2: Ceteris paribus, suspect firms-years with Big 4 auditors at parent level report relatively lower discretionary accruals compared to suspect firms-years with no Big 4 auditors.

Family ownership: Prior literature (Prencipe and Bar-Yosef 2011; Villalonga and Amit 2006; Ali et al. 2007). supports the idea that in a family-owned corporation the classic owner-manager conflict (Type I agency problem) is less severe because of the owner's ability to directly monitor managers. However, a second type of conflict appears (Type II): the large shareholder may use its controlling position in the firm to extract private benefits at the expense of the small shareholders, referred to as entrenchment (Ali et al. 2007). The entrenchment effect predicts that family firms report earnings of lower quality because family members may have greater incentives to manage earnings for their private benefits.

Given the fact that the two effects move in opposite directions, the ultimate effect, in terms of earnings management, is an empirical issue. In our setting, we hypothesize that the entrenchment effect will prevail since the controlling position of the family (family members usually hold important positions on both the management team and the board of directors) leaves

it with substantial power to engage in accrual or real earnings management. Thus, these firms may have inferior corporate governance because of ineffective monitoring by the board. This conjecture is consistent with the evidence in Prencipe and Bar-Yosef (2011) who find that in family-controlled companies, *ceteris paribus*, the board is less effective in limiting earnings management.⁶

H3: Subsidiaries owned by family-controlled parent, have abnormally high discretionary accruals AND/OR unusually low cash flow from operations, compared with subsidiaries owned by non-family-controlled parent.

4. Empirical Methodology

4.1. Data and sample description

Data are obtained from the AIDA database supplied by Bureau Van Dijk. AIDA covers one million companies in Italy and provides detailed financial statement data and governance information (subsidiaries, ownership, management information, auditor information...).

Our sample includes parent consolidated and unconsolidated financial statements, and subsidiaries financial statements.⁷ We begin with all Italian listed companies during the period

⁶In the literature, the extent of earnings management remains an open issue for family-controlled companies. On one hand, Wang (2006) finds that family firms have, on average, higher earnings quality; on the other hand Prencipe, Markarian, and Pozza (2008) show that family-controlled firms do engage in earnings management to secure the family's controlling interests and long-term benefits.

⁷ Although we use only the consolidated earnings to determine whether the parent is a suspect firm-year, requiring the parent unconsolidated data does not place an extra restriction on the sample.

2003-2010,⁸ excluding firms which do not provide consolidated financial statement, small firms (assets less than €1 million or lagged assets less than € 1 million and Sales less than €1 million) and firms in regulated industries (SIC codes 4900–4999 and 6000–6699).⁹ We also excluded from the sample three companies owing soccer club due to special accounting regulation. Table 1 (panel A) presents the frequency of PU, PC and SUB by year and industry.

==== Table 1 ====

Then we looked at the subsidiaries directly controlled (with more than 51% of the votes) by the parent companies selected as described above. We exclude foreign subsidiaries, listed companies, subsidiaries which themselves have subsidiaries that they consolidate, firms in regulated industries, small firms (assets less than €1 million or lagged assets less than € 1 million and Sales less than €1 million) and those with missing values to compute Jones Model Accruals (including lagged assets for the scalar, and 10 industry-year observations to estimate the equation).

The models for normal accruals and normal cash flow from operations are estimated using a control sample made of AIDA private companies matched by year and two-digit SIC

⁸ The time period is determined by the availability of the data. AIDA provides the last 10 years of financial statement data and 2002 and 2011 have been used respectively to compute the changes and the dummies for the robustness checks.

⁹ We did not exclude parent companies in SIC 6712 because in the Italian sample it contains operating holding companies whose principal activity is owning the group and managing the group, e.g. Ansaldo, Finmeccanica, Fiat, Pirelli...

code with the sample subsidiary companies.¹⁰ Table 1 (panel B) reports the frequency by industry of AIDA companies. The sample of subsidiaries is well spread over industries, with no industry accounting for more than 23 % of the firms. Most industries account for 1–5 % of the firms. The industry representation in our sample is similar to the composition of the control sample extract from AIDA.

4.2. Earnings management proxies

Previous literature has identified two main ways of managing earnings: accrual and real earnings management. We rely on prior studies to develop our proxies for accrual and real earnings management. In particular, we are interested in benchmarking the sample subsidiaries with the other private companies in the same two-digit industry. We estimate abnormal accruals using the cross sectional Jones model (Jones 1991; Subramanyam 1996) and the abnormal level of cash flow from operations (CFO) using the model developed by Dechow et al. (1998) and implemented in Roychowdhury (2006) and Cohen and Zarowin (2010).¹¹

¹⁰ In order to make the companies comparable, we choose only those private companies that are required to have their financial statements audited. They must be audited if annual sales exceed 8.800.000 euro and 4.400.000 euro of assets. As Table 1 Panel B shows, there are over 158,000 subsidiaries in the sample, so this requirement is not restrictive.

¹¹ Regarding the other two proxies for real earnings management (abnormal level of discretionary expenses and production cost), we were unable to look at the pattern in discretionary expenses and production costs, due to the fact that Italian companies don't disclose this information. In particular, Italian companies are required to present an income statement where expenses are classified by their nature (such as cost of materials used, services, employee cost, depreciation and amortization). This format does not allow allocation of costs to functions such as Marketing, R&D, Production and consequently, income statement line items such as Advertising expense, R&D expenses, Selling, general and administrative expense, and – most importantly – COGS, are unavailable.

4.2.1. Accrual based earnings management proxy

We use a cross sectional model to calculate discretionary accruals, where for each year we estimate the model for every industry classified by its two-digit SIC code. Thus, our approach controls for industry-wide changes in economic conditions that affect total accruals while allowing the coefficients to vary across time (Kasznik 1999; DeFond and Jiambalvo 1994; Cohen and Zarowin 2010; Subramanyam 1996).

$$TA_{it}/Assets_{i,t-1} = \alpha_0 + \alpha_1 (1/Assets_{i,t-1}) + \beta_1(\Delta S_{it}/Assets_{i,t-1}) + \beta_2(PPE_{i,t}/Assets_{i,t-1}) + \varepsilon_{i,t} \quad (1)$$

where, for fiscal year t and firm i , TA represents the total accruals defined as follows (Dechow and Sloan 1995):¹²

$$TA_{i,t} = (\Delta CA_{i,t} - \Delta Cash_{i,t}) - (\Delta L_{i,t} - \Delta D_{i,t}) - Dep_{i,t} \quad (2)$$

where $\Delta CA_{i,t}$ =change in total current assets, $\Delta Cash_{i,t}$ =change in cash/cash equivalents, $\Delta L_{i,t}$ =change in total liabilities, $\Delta D_{i,t}$ =change in financial debt included in liabilities, and $Dep_{i,t}$ =depreciation and amortization expense for firm i in year t . Changes in financial debt are excluded from accruals because they relate to financing transactions as opposed to operating activities.

¹² We are not able to estimate accruals from Earnings and CFO, since the private subsidiaries do not provide cash flow statements, i.e. CFO is estimated from successive balance sheets.

ΔS_{it} is the change in revenues over the previous year, PPE in the net value of total tangible and intangible assets,¹³ $Assets_{i,t-1}$ represents total assets at the beginning of the year.

The coefficient estimates from model (1) are used to estimate the firm-specific normal accruals (NA_{it}) for our sample of POL.

$$NA_{it}/Assets_{i,t-1} = \hat{\alpha}_0 + \hat{\alpha}_1 (1/Assets_{i,t-1}) + \hat{\beta}_1 (\Delta S_{it}/Assets_{i,t-1}) + \hat{\beta}_2 (PPE_{i,t}/Assets_{i,t-1}) \quad (3)$$

where our measure of discretionary accruals is the difference between total accruals and the fitted normal accruals, defined as $DA_{it} = (TA_{it}/Assets_{i,t-1}) - (NA_{it}/Assets_{i,t-1})$.

4.2.2. *Real earnings management proxy*

Following extant literature (Dechow et al. 1998; Roychowdhury 2006; Cohen and Zarowin 2010) we express normal cash flows from operation as a linear function of sales and change in sales in the current period. To estimate this model, we run the following cross-sectional regression for each industry and year:

$$CFO_{i,t}/Assets_{i,t-1} = \alpha_0 + \alpha_1 (1/Assets_{i,t-1}) + \beta_1 (S_{i,t}/Assets_{i,t-1}) + \beta_2 (\Delta S_{i,t}/Assets_{i,t-1}) + \varepsilon_{i,t} \quad (4)$$

Cash flow from operations is computed indirectly by subtracting the accrual component from earnings before extraordinary items (EBXI) because direct information on firms' cash

¹³ We include intangible assets since for private companies they are a potential source of earnings management (Ball and Shivakumar 2008). We use net instead of gross PPE because the database does not allow us to retrieve the gross value of long-term assets.

flows is unavailable for non-listed companies (see footnote 11). Abnormal CFO is actual CFO minus the normal level of CFO calculated using the estimated coefficients from model (4).

4.3. Selection of suspect firm-years

Parent consolidated firm-years are grouped into intervals based EBXI scaled by Total Asset. The histogram in Figure 3 is similar to that documented by previous literature (Burgstahler and Dichev 1997) with a prominent upward shift in the frequency of firm-years going from the left of zero to the right. The similarity of the distribution of Italian firms' income to that of U.S. firms suggests that our results may be generalized beyond the Italian context.

As in prior literature (Lang et al. 2003; Leuz et al. 2003; Marra et al. 2011; Burgstahler et al. 2006), to detect accrual and real activity manipulation, we concentrate on the subsidiaries when the relative parent consolidated EBXI/Assets is in the interval to the immediate right in the range [0.00, 0.01) (small profit) of the zero (interval 0 in Figure 3).

==== Figure 3 ====

4.4. Descriptive statistics

Table 2 reports the descriptive statistics comparing the suspect firm-years to the rest of the sample for each category PC, PU and Subsidiaries. Suspect PC years have a mean market capitalization at around 360 million euros – almost one-fifth of the mean for the non-suspect PC years (Table 2, Panel A). Interestingly, the mean total asset (1.6 billion) of suspect PC years is about 40% of non-suspect PC. As a result, suspect PC have significantly higher mean Book to

market ratio (1.26) than non-suspect year (0.85). Unsurprisingly, EBXI scaled by total assets of suspect PC years is lower (0.60) than non-suspect PC (1.56).

==== Table 2 ====

In order to analyze the impact of subsidiaries data on consolidated financial statement data, in Table 2 Panel A we present the ratio of parent-only accounting data to consolidated accounting data (PU/PC ratio). The PU/PC ratio is calculated based on three financial variables for each year: sales, total assets, and net income (Shuto 2009). The lower the PU/PC ratio is, the greater the importance of subsidiaries in the consolidated results. Looking at our data, all three ratios demonstrate the importance of subsidiaries in the economy of these companies. Moreover, the ratios do not statistically significantly differ from one another between the suspect and non-suspect firm-years.¹⁴ Also the other PC characteristic (i.e. Number of Subsidiaries, Number of analysts, Ownership, Institutional Investor, percentage of independent director in the board, Big 4 auditors, Family firm, forecast error of one cent or less) in general do not differ between suspect and non-suspect firm years. This evidence suggests that the suspect firms differ from non-suspect firms only in their earnings management in the suspect year, but are otherwise similar.¹⁵

¹⁴ It should be mentioned that the Net Income PU/Net Income PC is calculated only for those companies where Net Income is higher than 20,000 Euro.

¹⁵ One exception is number of analysts which is significantly lower for suspect firm-years.

Table 2 panel C reports the descriptive statistics of the SUBs. Consistent with our first hypothesis, during PC suspect years SUBs have on average higher total accruals (difference in median 1.44%) and lower CFO (difference in median -2.79%).

4.5. Estimation Models

We focus on discretionary accruals and abnormal CFO as proxies of earning management. Table 3 reports the regression coefficients used to estimate the normal level. We estimate these models cross-sectionally for every industry year. To estimate the models, we assign to each sample firm-year an estimation portfolio that consist of non-listed Italian firms matched on fiscal year and two-digit SIC code. Industry years with fewer than 10 firms are eliminated from the matching sample. The matching scheme results in 534 different industry-year estimation portfolios over 2003–2010. Table 3 reports the mean coefficient across all industry-years and t-statistics calculated using the standard error of the mean across industry-years.

==== Table 3 =====

The signs and magnitudes of the coefficients in Table 3 are similar to those obtained by Jones (1991) and Roychowdhury (2006). For example, in our accrual model, our mean $\hat{\beta}_1$ is 0.0355, and Jones is 0.035. Our mean $\hat{\beta}_2$ of -0.1119 is higher (in absolute value) than her -0.033, but she uses gross PPE, while we have only net tangible assets and consider also intangible assets. Likewise, in our CFO model, our mean β_1 is .0087 and Roychowdhury's is 0.05, and our

mean β_2 is 0.0154 and his is 0.017. This gives us confidence that Italian firms may be similar to U.S. firms, so that our results might be generalized.

4.6 Univariate Correlations

Table 4 presents correlations between various variables. Consistent with previous studies, accrual and CFO as percentage of total assets at the beginning of the year exhibit a strong negative correlation (-82% Pearson, -71% Spearman). Earnings before extraordinary items is correlated positively with both CFO (35% Pearson, 40% Spearman) and Accruals (22% Pearson, 21% Spearman). The correlation between discretionary accruals and abnormal cash flow is negative (-69% Pearson, -40% Spearman). This correlation can be explained by firms engaging in accrual-based earnings management and real earnings manipulation at the same time.

==== Table 4 =====

5. Results

If parent companies, in firms-years when reported earnings are around the zero threshold, undertake earnings management using subsidiaries, then abnormal accrual (cash flow) of the subsidiary should be positive (negative). To test this we estimate the following regression:

$$Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 Susp_EBXI_PC_{i,t} + \varepsilon_{i,t} \quad (5)$$

The dependent variable, $Y_{i,t}$, is discretionary accrual (abnormal cash flow) for firm i in period t . $Suspect_EBXI_PC$ is an indicator variable that is set equal to 1 for each firm-year observation when the parent consolidated EBXI (scaled by total assets) are in the range $[0, 0.01)$. To calibrate the model, we first estimate the regressions according to Roychowdhury (2006) (Table 5, column 1). To control for systematic variation in abnormal accruals (cash flows) due to growth opportunities and profitability, the regression includes two control variables, change in Sales (ΔS) scaled by lagged assets, and return on assets ($EBXI/Assets_{t-1}$).

In order to control for size, we scale all the variables by subsidiaries' lag total assets (subsidiary size). In addition, to control for the parent's size, we include consolidated parent assets ($Size_PC$) an additional independent variable. It is interesting to note that the variable $Size_PC$, scaled by lag asset of the SUB, is the ratio $Asset_PC/Asset_SUB_{t-1}$, which measures the size of SUB relative to the size of the parent.

Table 5 reports the results over a period of nine years from 2003 to 2010. The total sample includes 2,111 subsidiaries observations (suspect firm-year 221). The results provide sufficient evidence for non-listed subsidiaries engaging in accrual and real earnings management when the listed parent companies are reporting small annual profit (suspect firm-years). Because the residuals can be correlated across firms and/or over time, for all multivariate analyses, we report test statistics and significance levels based on the standard errors adjusted by a two-dimensional cluster at the firm and year levels (Petersen 2009; Gow et al. 2010).

==== Table 5 ====

When the dependent variable in regression (5) column 1 is abnormal accruals, the coefficient `Suspect_EBXI` is positive (0.0225) and significant at the 1% level ($z = 3.47$). Subsidiaries, in firm-years when the parent is suspect, have abnormal accrual that is higher on average by 2.3% of subsidiary assets at the beginning of the year compared to the non-suspect firm-years. This difference is economically significant, given that the median accruals across all non-suspect subsidiary firm-years is -2.18% of total asset at the beginning of the year (see Table 2 Panel C). When $Y_{i,t}$ is set as equal to abnormal cash flow in regression (5), the coefficient on `Suspect_EBXI` is negative (-0.0177) and significant at the 1% level ($z = -2.85$). Subsidiaries, in firm-years when the parent is suspect, have abnormal cash flow that is lower on average by 1.8% of subsidiary assets compared to the non-suspect firm-years. This also seems economically significant given that, median cash flow across the rest of the subsidiaries' firm-years is 4.19% of total assets measured at the beginning of the year (see Table 2 Panel C).¹⁶ Results do not change when we control for the size of the parent (Table 5, column 2).

5.1. Placebo test

As a “placebo”, we examine what happens when we define `Suspect` as the interval to the left and to the right of the small profit interval. The placebo test is important, because it gives us a check on our results. If parents are using their subs to manage earnings to beat the zero earnings benchmark as we hypothesize, then we should not find significant results with the placebo; for our placebo, we use following dummies:

¹⁶ The signs and magnitudes of the coefficients for Abnormal CFO are similar to those obtained by Roychowdhury (2006). This gives us confidence that Italian firms may be similar to U.S. firms, so that our results might be generalized.

- *Loss_EBXI_PC*: a dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range $[-\infty, -1)$ and zero otherwise
- *Small_Loss_EBXI_PC*: a dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range $[-1, 0)$ and zero otherwise
- *Profit_EBXI_PC*: a dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range $[0, +\infty)$ and zero otherwise

Table 6 presents the results of equation 5 with the placebo. The coefficients on the three dummies are not significant, indicating that companies that show discretionary accruals and abnormal CFO are concentrated in the small profit interval. This result increases confidence in our interpretation of our previous results: that non-listed subsidiaries engage in accrual and real earnings management when the listed parent companies are reporting small annual profit (suspect firm-years).

5.2. *Big4 versus non-Big4 auditors of suspect firm*

We examine whether earnings management activity of suspect parents audited by the large audit firms was different from the rest of the sample firms by estimating the following regression:

$$Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 Susp_EBXI_PC_{i,t} + \beta_4 Size_PC_{i,t} + \beta_5 Big4_i + \beta_6 Big4_i * Susp_EBXI_PC_{i,t} + \varepsilon_{i,t} \quad (6)$$

Big4 is a dummy variable that is equal to 1 when the parent company auditor is one of the following accounting firms: Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers.

Auditors name has been collected from AIDA, which provides only the current auditor information. In others words, we impose the constraint that sample firms audited by Big4 in 2011 choose among Big4 auditors also in the previous years.

Table 5 (column 3) present the results. H2 predict that the coefficient on Big4 * Suspect_EBXI_PC should be negative. Consistent with this β_6 is -0.0457 ($z = -2.26$) when discretionary accrual is the dependent variable. It is interesting to note that the sum of the tested variable ($Susp_EBXI_PC = 0.0597$) and the interaction term ($Big4 * Susp_EBXI_PC = -0.0457$) is small (0.0150) and not significant.¹⁷ In other words, firms with Big4 auditors have essentially no accrual earnings management. Finally, as expected, the coefficient on $Big4 * Susp_EXBI_PC$ when abnormal cash flow is the dependent variable is not significant. Since we control for the size of the parent, the Big4 dummy is unlikely to be proxying for a bigger company which could have better governance.

5.3. Family versus non-family suspect firm

We examine whether earnings management activity of suspect parents owned by a family was different from the rest of the sample firms by estimating the following regression:

$$Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 Susp_EBXI_PC_{i,t} + \beta_4 Size_PC_{i,t} + \beta_5 Family_i + \beta_6 Family_i * Susp_EBXI_PC_{i,t} + \varepsilon_{i,t} \quad (7)$$

¹⁷ A Wald test reveals that the sum of to the coefficients is not significantly different from zero ($z = 1.93$).

We define family controlled parent companies according to Villalonga and Amit (2006) as a firm whose founder or a member of the family by either blood or marriage is an officer, a director, or the owner of at least 5% of the firm's equity, individually or as a group. Our data show that 62% of the listed parent companies in our sample are family owned.¹⁸

Table 5 (column 4) presents the results. H3 predicts that the coefficient on Family*Suspect_EBXI_PC should be positive with discretionary accruals as the dependent variable and negative with abnormal CFO. Consistent with this, β_6 is 0.0318 ($z = 3.04$) when the dependent variable is discretionary accruals and -0.0267 ($z = -2.33$) when the dependent variable is abnormal CFO. The empirical results show that family firms are more inclined to beat the zero earning benchmark using real and accrual earnings management at subsidiaries level.

5.4. Controlling for Endogeneity

In this study we find that private subsidiaries controlled by a listed company exhibit, during suspect years, unusually high discretionary accruals and/or low abnormal cash flow. However, since the subs are selected by their parents, their occurrence is endogenous, and our results might be subject to a self-selection bias. In this case, our measured discretionary accruals and abnormal CFO in the suspect year might be normal for these firms (i.e., the suspect year is not different from other years).¹⁹ If our analysis is correct, and is not driven by a selection bias,

¹⁸ This is consistent with previous literature such as Prencipe and Bar-Yosef (2011) who classified 171 observation out of 249 (about 68 percent) of the Italian listed firms as family-controlled companies.

¹⁹ This is the point made by Ball and Shivakumar (2008), that the measured abnormal accruals for IPO firms are really normal, since the choice to go IPO is endogenous.

we should observe an abnormal level of accruals (cash flow) for the suspect firm-year only, and not as a characteristic of the subsidiary firm itself.

For this reason, we perform the following additional analysis to ensure that our main results do not suffer from a selection bias, and we include two dummy variables to Equation 5:

- T-1_Suspect_EBXI_PC is a dummy variable equal to one in the year before the parent is suspect and zero otherwise. This dummy indicates whether the abnormal accruals (cash flow) characterize the sub before the suspect firm-year.
- T+1_Suspect_EBXI_PC is a dummy variable equal to one in the year after the parent is suspect and zero otherwise. This dummy indicates whether the abnormal accruals (cash flow) continue after the suspect firm-year.

If the sub's measured "abnormal" accruals and CFO in the suspect year are really normal, we should get significant coefficients on the dummy variables, since the accruals and CFO are characteristics of the sub, and not of the specific year. If the sub's abnormal accruals and CFO are really abnormal in the suspect year, however, then the coefficients on the dummy variables should be insignificant.

Table 7 presents the results of equation 5 with the additional controls. The coefficients on both dummies are not significant, indicating that the discretionary accruals and abnormal CFO are really abnormal. This finding is consistent with our hypothesis that non-listed subsidiaries engage in accrual and real earnings management when the listed parent companies are reporting small annual profit (suspect firm-years).

6. Conclusion

We examined earnings management in business groups by focusing on private subsidiaries of a listed parent company around the zero profit threshold. Although previous research addressed the question of earnings management in foreign subsidiaries and in public versus private companies, our research is the first to undo the consolidation process and to look at private companies owned by listed companies. To capture accrual based earning management, we used the cross-sectional Jones (1991) model (e.g., DeFond and Jiambalvo 1994; Subramanyam 1996). To account for real earnings management activities, we followed Roychowdhury (2006) and estimated abnormal level of cash flow from operations.

This paper complements the existing literature on earnings management in several ways. First we showed how parent companies tend to use their subsidiaries when they seek to beat the zero earnings threshold. Second this paper provides insight into the firm characteristics that affect the nature and extent of earning management using POL. For example we find evidence that, in suspect firm-years, clients of big audit firms show significantly less discretionary accruals. We also find evidence that family-owned firm are more likely to use earning management through non-listed subsidiaries to avoid losses.

We believe these results provide initial evidence for how and where parents companies manage earnings. Overall, our findings show the importance of looking at all the pieces of the consolidation process in order to evaluate the financial reporting quality of a firm. Combined with the empirical evidence documented in Dyreng et al. (2012) and Beuselinck et al. (2008), our results suggest that future research on earnings management should focus on the use of private owned subsidiaries to manage public listed parents firms. Moreover, our conclusions may lead

regulators and academics to reevaluate the earnings management practices in business groups. In particular, our results suggest that special attention may be required for non listed subsidiaries when the parent is not audited by a Big4 auditor or it is a family-owned company. Our results are also useful to users of financial statements, suggesting that a group structure should be taken into account in order to better evaluate earnings management practices.

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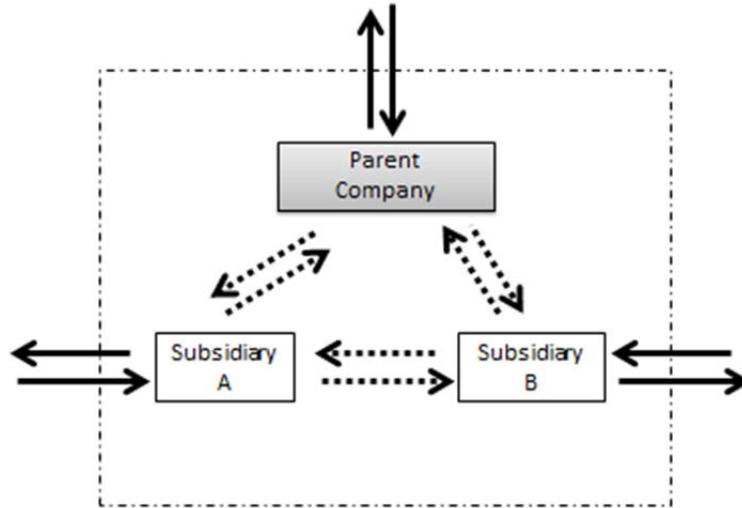
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Figure 1:

Intercompany Transactions and the consolidation perimeter



Adapted from Baker et al. (2012)

Figure 2:

Consolidation process

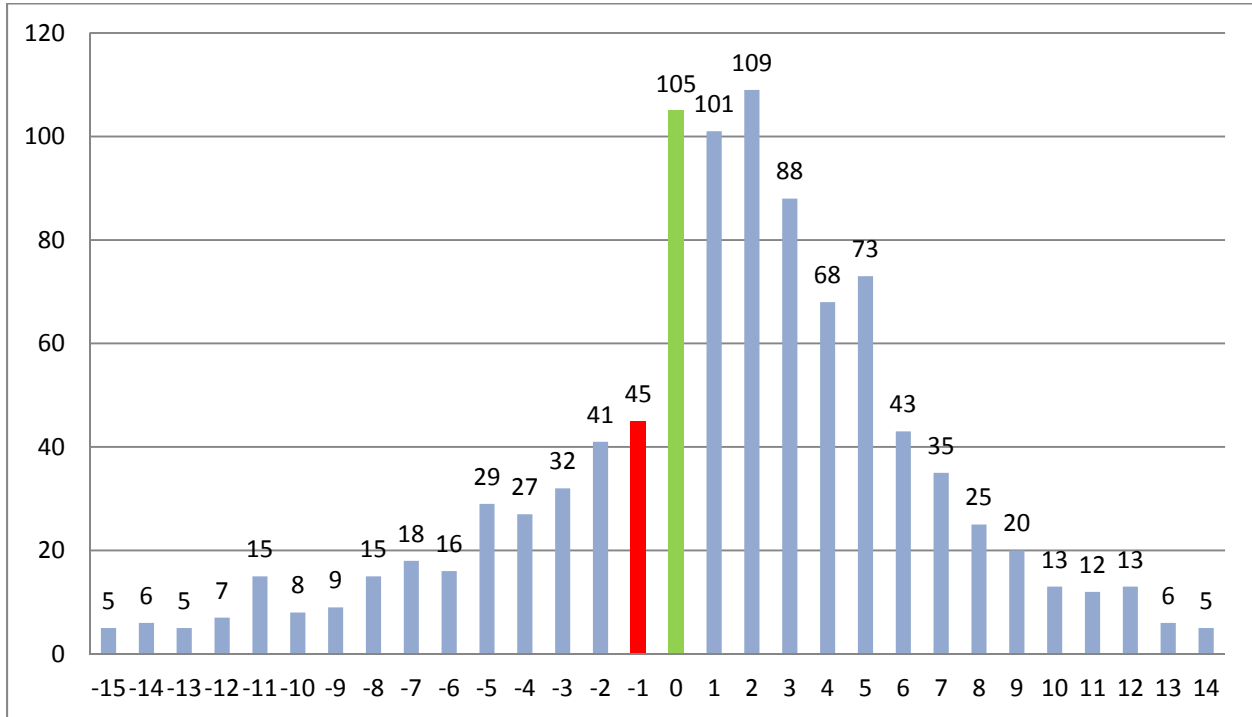
$$\text{Parent Consolidated} = \text{Parent Un-Consolidated} + \sum \text{Subsidiaries} + \text{Elimination of Intercompany Transactions}$$

Intercompany transactions

The diagram shows the equation: Parent Consolidated = Parent Un-Consolidated + Σ Subsidiaries + Elimination of Intercompany Transactions. A blue bracket is drawn under the terms "Parent Un-Consolidated" and "Σ Subsidiaries". An arrow points from the center of this bracket down to the text "Elimination of Intercompany Transactions", which is positioned to the right of the plus sign following "Σ Subsidiaries".

Figure 3:

The distribution of EBXI scaled by Asset for the Parent Consolidated



Distribution of EBXI scaled by end of the year total assets. The distribution interval widths are 0.01, the zero bin contains all observations in the interval $[0, 0.01)$, the minus one contains $[-0.01, 0)$ and so on. The vertical axis represents the number of observations in each earnings interval (frequency for each bin). Parent Consolidated firm-years: 1,052 over the period 2003-2010, the figure is truncated at the two end and contained 994 Parent Consolidated firm-year.

Table 1:

Sample frequency by fiscal year and industry

Panel A: Time distribution

Year	PC	PU	TOT
2003	107	92	176
2004	99	87	175
2005	105	90	207
2006	115	93	236
2007	138	116	296
2008	156	138	329
2009	166	150	351
2010	166	150	350
Total	1,052	916	2,120

Table 1 (continued)

Panel B: Industry distribution

Industry	Two-digit SIC codes	Frequency in the sample				AIDA	%
		PC	PU	SUB	%		
Oil and Gas	13, 29	18	16	25	1.2%	575	0.4%
Heavy Construction and Building	15, 16, 17	63	60	201	9.5%	12,139	7.7%
Food product	20	24	24	41	1.9%	9,482	6.0%
Apparel and Other Textile Products	22, 23	37	38	37	1.7%	7,314	4.6%
Furniture and Fixtures	25	13	13	32	1.5%	2,791	1.8%
Printing and Publishing	27	61	61	196	9.2%	2,311	1.5%
Chemicals and Allied Products	28	27	27	43	2.0%	6,199	3.9%
Manufacturing	30-34	80	77	92	4.3%	16,936	10.7%
Industrial Machinery and Computer Equipment	35	74	74	199	9.4%	11,996	7.6%
Electronic and Other Electric Equipment	36	90	86	55	2.6%	5,326	3.4%
Instruments and Related Products	38	16	16	32	1.5%	1,516	1.0%
Miscellaneous Manufacturing	39	12	11	12	0.6%	1,343	0.8%
Transportation	37, 40-45	71	68	127	6.0%	3,726	2.3%
Communication	48	19	10	84	4.0%	690	0.4%
Wholesale—Durable Goods	50	42	42	99	4.7%	29,920	18.9%
Wholesale—Non-Durable Goods	51	12	12	50	2.4%	14,085	8.9%
Retail	53,54,56,57,59	45	45	55	2.6%	7,680	4.8%

Operating Holding	67	203	113	0	0.0%	843	0.5%
Business Services	73	66	65	485	22.9%	6,679	4.2%
Entertainment services	70, 78, 79	18	16	10	0.5%	1,216	0.8%
Engineering and Management Services	87	32	13	133	6.3%	2,771	1.7%
Other		29	29	112	5.3%	13,023	8.2%
TOTAL		1,052	916	2,120	100%	158,561	100.0%

Table 2:

Descriptive statistics

	Suspect firm-years [0, 0.01)			Non-suspect firm-years			Difference	
	# Firm-years	Mean	Median	# Firm-years	Mean	Median	Means	Medians
Panel A: Public listed (consolidated)								
MVE(€ mil.)	103	361.13	121.71	867	1,837.83	190.84	-1,476.69 (***)	-69.14 (**)
Book to Market	95	1.29	1.05	815	0.85	0.65	0.43 (***)	0.39 (***)
Assets (€ mil.)	114	1,587.53	287.80	938	3,949.41	349.52	-2,361.88 (***)	-61.72
Sales (€ mil.)	114	820.17	183.10	938	2,296.32	233.39	-1,476.15 (***)	-50.29
Sales Growth (%)	114	5.24	3.43	938	13.99	5.83	-8.75 (**)	-2.40
EBXI/Assets (t-1) (%)	114	0.60	0.57	938	1.56	2.61	-0.96 (***)	-2.04 (***)
TA /Assets (t-1) (%)	114	-14.97	-3.48	938	-4.68	-4.35	-10.28	0.87
CFO/Asset (t-1) (%)	114	15.56	3.81	938	6.24	6.21	9.32	-2.41 (**)
Leverage/Assets (%)	114	62.62	64.55	938	62.36	64.16	0.26	0.39
Sales PU/Sales PC (%)	114	49.76	50.64	938	52.96	56.18	-3.20	-5.53
Assets PU/Assets PC (%)	114	70.47	73.95	938	73.62	77.94	-3.15	-3.99
NI_PU/NI_PC (%)	107	379.97	84.65	643	87.13	74.00	292.83	10.65
#_ Subsidiaries	114	3.18	2.00	938	3.06	2.00	0.13	0.00

#_ Analysts	78	3.63	1.00	647	6.11	3.00	-2.48 (***)	-2.00 (***)
Ownership (%)	114	91.04	100.00	938	90.66	100.00	0.38	0.00
INST (%)	114	34.63	31.27	938	30.92	20.21	3.71	11.06
Board_IND (%)	113	34.60	33.33	913	36.46	35.29	-1.87	-1.96
BIG4 (%)	114	78.07		933	81.78		-3.71	
Family (%)	111	63.96		919	61.81		2.16	
Forecast Error (%)	66	6.06		584	4.62		1.44	

Panel B: Public listed (un-consolidated)

Total Assets (€ mil.)	91	636.67	184.46	825	2,324.18	261.92	-1,687.51 (***)	-77.46
Sales (€ mil.)	91	171.38	61.66	825	706.27	98.04	-534.89 (***)	-36.38 (**)
Sales Growth (%)	91	3.12	0.05	825	53.79	1.96	-50.67 (**)	-1.91
EBXI/Assets (t-1) (%)	91	1.01	0.73	825	1.60	2.44	-0.59	-1.71 (***)
TA/Assets(t-1) (%)	91	-0.24	-0.60	825	-2.64	-3.04	2.40 (*)	2.44 (**)
CFO/Asset (t-1) (%)	91	1.25	2.08	825	4.24	5.16	-2.99 (**)	-3.09 (**)
Leverage/Assets (%)	91	52.25	54.46	825	53.22	54.37	-0.97	0.09

Panel C: Private subsidiaries

Total Assets (€ mil.)	221	133.25	14.32	1899	198.34	17.16	-65.09	-2.83
Sales (€ mil.)	221	42.11	14.85	1899	225.13	16.15	-183.02 (***)	-1.30 (**)
Sales Growth (%)	221	15.31	-0.26	1899	41.19	3.48	-25.88	-3.74 (**)
EBXI/Assets (t-1) (%)	221	0.63	0.58	1899	3.32	1.15	-2.70 (**)	-0.57 (**)
TA/Assets(t-1) (%)	221	-0.91	-0.75	1899	-2.50	-2.18	1.59	1.44 (*)
CFO/Asset (t-1) (%)	221	1.54	1.40	1899	5.82	4.19	-4.28	-2.79 (**)
Leverage/Assets (%)	219	74.66	78.55	1890	73.68	77.54	0.98	1.01

***Significant at the 1% level, **Significant at the 5% level, * Significant at the 10% level. Significances of means and median are evaluated based on t-test and Wilcoxon test, respectively (p-values for the t-statistics and z-statistics are two tailed).

Table 2 (continued)

The table reports the summary statistics for firm-years with data available.

The sample period span 2003-2010. Suspect firm-years are firm-years in which the Parent Consolidated reported income before extraordinary items between 0 and +1% of total asset. Variable definitions:

MVE	=	Market value of equity at the end of the year and is calculated as the closing price at fiscal year-end times the number of shares outstanding at fiscal year-end
BVE	=	Book value of equity
Book to Market	=	Book to Market Value of Equity; BVE / MVE where the book value of common equity is divided by market value of equity (calculated as the closing price at fiscal year-end times the number of shares outstanding at fiscal year-end)
Assets	=	Total assets
Sales	=	Revenues from product and services
Sales Growth	=	Arithmetic mean over the 9 years period of the growth rate calculated as percentage change in sales over the prior year
EBXI	=	Earnings before extraordinary items
TA	=	Total accruals defined as change in: (current assets - cash/cash equivalents) – (liabilities - financial debt included in liabilities) - depreciation and amortization expense
CFO	=	Cash Flow from operation computed as $EBXI - \text{Accruals}$
Leverage	=	Total liabilities divided by total assets at end of year
Sales PU/Sales PC	=	Ratio of unconsolidated sales to consolidated sales
Assets PU/Assets PC	=	Ratio of unconsolidated assets to consolidated assets
NI_PU/NI_PC	=	Ratio of unconsolidated net income to consolidated net income. The ratio is calculated only for those companies where Net Income is higher than 20,000 Euro.
#_Subsidiaries	=	Is the number of Italian subsidiaries directly owned at a percentage higher than 51%.
#_Analysts	=	Is the number of financial analysts following the parent companies
Ownership	=	Is the percentage of common shares of the subsidiary owned by the Parent company.
INST	=	Percentage of outstanding shares owned by institutional owners
Board_IND	=	Ratio of independent directors out of the total number of board members.
Big4	=	Dummy variable that is set equal one when the parent company auditor is one of the following accounting firms: Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers.
Family_Firm	=	Dummy variable that is set equal one if the founder or a member of the family by either blood or marriage is an officer, a director, or the owner of at least 5% of the firm's equity, individually or as a group.
Forecast Error	=	Dummy variable that is set equal to one if the difference between actual earnings per share (EPS) as reported by I/B/E/S less final consensus forecast of earnings per share is one cent per share or less.

Table 3

Model parameters

	Accruals _t /A _{t-1}	CFO _t /A _{t-1}
Intercept	-0.0085*** (-3.92)	0.0387*** (16.19)
1/A _{t-1}	0.1041*** (4.47)	-0.1080 *** (-3.66)
S _t /A _{t-1}		0.0087*** (4.12)
ΔS _t /A _{t-1}	0.0355*** (7.80)	0.0154*** (2.77)
PPE _{t-1} /A _{t-1}	-0.1119*** (-22.84)	
Adjusted R ²	5.57%	2.70%
# of industry-year portfolio	534	534

***Significant at the 1% level, **Significant at the 5% level, * Significant at the 10% level

This table reports the estimated parameters in the following regressions:

a. $TA_{it}/Assets_{i,t-1} = \alpha_0 + \alpha_1 (1/Assets_{i,t-1}) + \beta_1 (\Delta S_{it}/Assets_{i,t-1}) + \beta_2 (PPE_{i,t}/Assets_{i,t-1}) + \varepsilon_t$

b. $CFO_{i,t}/Assets_{i,t-1} = \alpha_0 + \alpha_1 /Assets_{i,t-1} + \beta_1 (S_{it}/Assets_{i,t-1}) + \beta_2 (\Delta S_{it}/A_{t-1}) + \varepsilon_t$

The regressions are estimated for every industry every year. Two-digit SIC codes are used to define industries. Industry-years with fewer than 10 firms are eliminated from the sample. There are 534 separate industry-years over 2003–2010. The table reports the mean coefficient across all industry-years and t-statistics calculated using the standard error of the mean across industry-years. The table also reports the mean R²s (across industry-years) for each of these regressions.

Variable definition:

S = Sales

ΔS = Change in Sales over the prior year

PPE = Net value of total tangible and intangible assets

Table 4

Correlation matrix

	1	2	3	4	5	6	7
1 Sales/Assets (t-1)	-	0.04	0.12	0.06	0.00	-0.02	-0.05
2 ΔS_t /Assets (t-1)	0.00	-	0.15	0.05	0.03	-0.01	0.00
3 EBXI/Assets (t-1)	0.16	0.30	-	0.35	0.22	0.00	0.05
4 CFO/Asset (t-1)	0.08	0.12	0.40	-	-0.82	-0.12	0.15
5 TA/Assets(t-1)	0.03	0.09	0.21	-0.71	-	0.12	-0.13
6 DA	-0.11	0.00	0.12	-0.53	0.70	-	-0.69
7 AB_CFO	-0.09	0.05	0.33	0.77	-0.56	-0.40	-

This table reports Pearson (above diagonal) and Spearman (below diagonal) correlation for the sample subsidiaries over 2003-2010.

Assets	=	Total Assets
S	=	Sales
ΔS	=	Change in Sales over the prior year
EBXI	=	Earnings before extraordinary items
CFO	=	Cash Flow from operation computed as EBXI-Accruals
TA	=	Total accruals defined as change in: (current assets - cash/cash equivalents) – (liabilities - financial debt included in liabilities) - depreciation and amortization expense;
DA	=	Discretionary accruals measured as deviations from the predicted values from the corresponding industry-year regression computed using the Jones Model
AB_CFO	=	Abnormal CFO Measured as deviations from the predicted values from the corresponding industry-year regression $CFO_{i,t}/Assets_{i,t-1} = \alpha_0 + \alpha_1/Assets_{i,t-1} + \beta_1(S_{it}/Assets_{i,t-1}) + \beta_2(\Delta S_{it}/A_{t-1}) + \epsilon_t$

Table 5

Comparison of suspect firm-years with the rest of the sample

	Discretionary Accruals				Abnormal CFO			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Intercept	-0.0008 (-0.11)	-0.0002 (-0.02)	0.0218 (0.92)	-0.0101 (-1.06)	-0.0196*** (2.57)	-0.0199** (2.51)	-0.0461** (-2.09)	-0.0048 (0.55)
ΔS_t	-0.0301*** (-2.76)	-0.0305** (-2.70)	-0.0300** (-2.50)	-0.0296*** (-2.59)	-0.0055 (-0.57)	-0.0055 (-0.55)	-0.0065 (-0.66)	-0.0062 (-0.60)
EBXI/Assets (t-1)	0.3373*** (7.25)	0.3370*** (7.40)	0.3339*** (7.35)	0.3381*** (7.74)	0.6118*** (13.22)	0.6120*** (13.44)	0.6131*** (13.48)	0.6135*** (12.80)
Susp_EBXI_PC	0.0225*** (3.47)	0.0221*** (3.40)	0.0597*** (4.06)	0.0016 (0.14)	-0.0177*** (-2.85)	-0.0176*** (-2.86)	-0.0507** (-2.05)	0.0003 (0.03)
Size_PC		-0.0000 (-0.75)	-0.0000 (-0.77)	-0.0000 (-0.93)		0.0000 (0.25)	0.0000 (0.19)	0.0000 (0.04)
Big4			-0.0331* (-1.93)				0.0335 (1.60)	
Big4 * Susp_EBXI_PC			-0.0457** (-2.26)				0.0424 (1.51)	
Family				0.0154 (1.00)				-0.0246 (-1.68)
Family* Susp_EBXI_PC				0.0318*** (3.04)				-0.0267** (-2.33)
# obs	2,111	2,111	2,111	2,071	2,111	2,111	2,111	2,071
# Susp_obs.	221	221	221	214	221	221	211	214
# Susp_obs._&_Big4			165				165	
# Susp_obs._&_Family				144				144
Adj R ²	2.11%	2.14%	2.12%	2.15%	8.87%	8.80%	8.94%	8.60%

***Significant at the 1% level, **Significant at the 5% level, * Significant at the 10% level.

Table 5 (continued)

This table reports the results over a period of nine years from 2003 to 2010. The total sample includes 2,111 (2,071 in model 4) subsidiaries observations, suspect firm-year 221 (214 in model 4). The numbers in parentheses are z-statistics.

The regressions being estimated are of the form:

1. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 \text{Susp}_{EBXI_{PC}_{i,t}} + \varepsilon_{i,t}$
2. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 \text{Susp}_{EBXI_{PC}_{i,t}} + \beta_4 \text{Size}_{PC}_{i,t} + \varepsilon_{i,t}$
3. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 \text{Susp}_{EBXI_{PC}_{i,t}} + \beta_4 \text{Size}_{PC}_{i,t} + \beta_5 \text{Big4}_i + \beta_6 \text{Big4}_i * \text{Susp}_{EBXI_{PC}_{i,t}} + \varepsilon_{i,t}$
4. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 \text{Susp}_{EBXI_{PC}_{i,t}} + \beta_4 \text{Size}_{PC}_{i,t} + \beta_5 \text{Family}_i + \beta_6 \text{Family}_i * \text{Susp}_{EBXI_{PC}_{i,t}} + \varepsilon_{i,t}$

For the two dependent variable, whose name appears at the top of the respective column, each column presents the results of a different model specification. All continuous variables, except for the dummies variables, are scaled by Total Assets at the beginning of the year. The standard errors are allowed to cluster company and fiscal year. All variables, except dummies, are winsorized at 1 percent and 99 percent. Variable definition:

ΔS	=	Change in Sales over the prior year
EBXI	=	Earnings before extraordinary items
Suspect_EBXI_PC	=	Dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range [0, 0.01) and zero otherwise
Size_PC	=	Consolidated total assets of the parent
Big4	=	Dummy variable that is set equal to one when the parent company's auditor is one of the following accounting firms: Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers.
Family	=	Dummy variable that is set equals one if the founder or a member of the family by either blood or marriage is an officer, a director, or the owner of at least 5% of the firm's equity, individually or as a group

Table 6

Comparison of Loss/Small Loss/Profitable firm-years with the rest of the sample

	Discretionary Accruals			Abnormal CFO		
	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	-0.0143 (-0.02)	-0.0056 (-0.90)	-0.0108** (-2.18)	0.0007 (0.17)	0.0004 (0.07)	-0.0015 (-0.32)
ΔS_t	-0.0306*** (-2.70)	-0.0314*** (-2.73)	-0.0308*** (-2.65)	0.0045 (0.51)	0.0043 (0.51)	0.0042 (0.47)
EBXI/Assets (t-1)	0.3290*** (6.73)	0.3355*** (7.24)	0.3448*** (6.77)	0.3472*** (7.62)	0.3437*** (7.95)	0.3398*** (7.26)
Size_PC	-0.0000 (-0.93)	-0.0000 (-0.88)	-0.0000 (-0.72)	-0.0000 (-0.09)	-0.0000 (-0.12)	-0.0000 (-0.18)
Loss_EBXI_PC	-0.0043 (-0.67)			0.0040 (0.49)		
Small_Loss_EBXI_PC		0.0107 (1.19)			0.0021 (0.24)	
Profit_EBXI_PC			-0.0082 (-1.54)			0.0027 (0.42)
# obs	2,111	2,111	2,111	2,111	2,111	2,111
#Loss/Small_Loss/Profit_obs.	377	87	1,422	377	87	1,422
Adj R ²	1.19%	1.20%	2.00%	3.65%	3.58%	3.59%

***Significant at the 1% level, **Significant at the 5% level, * Significant at the 10% level.

Table 6 (continued)

This table reports the results over a period of nine years from 2003 to 2010. The total sample includes 2062 subsidiaries observations, suspect firm-year 219. The numbers in parentheses are z-statistics.

The regressions being estimated are of the form:

1. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 Loss_EBXI_PC_{i,t} + \varepsilon_{i,t}$
2. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 Small_Loss_EBXI_PC_{i,t} + \varepsilon_{i,t}$
3. $Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 Profit_EBXI_PC_{i,t} + \varepsilon_{i,t}$

For the two dependent variable, whose name appears at the top of the respective column, each column presents the results of a different model specification. All continuous variables, except for the dummies variables, are scaled by Total Assets at the beginning of the year. The standard errors are allowed to cluster company and fiscal year. All variables, except dummies, are winsorized at 1 percent and 99 percent. Variable definition:

ΔS	= Change in Sales over the prior year
EBXI	= Earnings before extraordinary items
Size_PC	= Consolidated total assets of the parent
Loss_EBXI_PC	= Dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range $[-\infty, -1)$ and zero otherwise
Small_Loss_EBXI_PC	= Dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range $[-1, 0)$ and zero otherwise
Profit_EBXI_PC	= Dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range $[0, +\infty)$ and zero otherwise

Table 7

Comparison of suspect firm-years with the rest of the sample

	Discretionary Accruals (1)	Abnormal CFO (1)
Intercept	-0.0024 (-0.17)	-0.0187 (-1.34)
ΔS_t	-0.0360** (-2.62)	-0.0055 (-0.52)
EBXI/Assets (t-1)	0.3350*** (7.21)	0.6113*** (13.25)
Susp_EBXI_PC	0.0227*** (3.77)	-0.0178*** (-3.28)
Size_PC	-0.0000 (-0.79)	0.0000 (0.26)
T-1_Susp_EBXI_PC	-0.0013 (-0.41)	0.0017 (0.23)
T+1_Susp_EBXI_PC	-0.0013 (-0.08)	0.0008 (0.05)
# obs	2,111	2,111
# Susp_obs.	221	221
Adj R ²	2.05%	8.71%

***Significant at the 1% level, **Significant at the 5% level, * Significant at the 10% level.

Table 7 (continued)

This table reports the results over a period of nine years from 2003 to 2010. The total sample includes 2,111 subsidiaries observations, suspect firm-year 221. The numbers in parentheses are z-statistics.

The regressions being estimated are of the form:

$$1. \quad Y_{i,t} = \alpha_0 + \beta_1 \Delta S_{i,t} + \beta_2 EBXI_{i,t} + \beta_3 \text{Susp_EBXI_PC}_{i,t} + \beta_4 \text{Size_PC}_{i,t} + \beta_5 T - 1_Suspect_EBXI_PC_{i,t} + \beta_6 T + 1_Suspect_EBXI_PC_{i,t} + \varepsilon_{i,t}$$

For the two dependent variable, whose name appears at the top of the respective column, each column presents the results of a different model specification. All continuous variables, except for the dummies variables, are scaled by Total Assets at the beginning of the year. The standard errors are allowed to cluster company and fiscal year. All variables, except dummies, are winsorized at 1 percent and 99 percent. Variable definition:

ΔS	=	Change in Sales over the prior year
EBXI	=	Earnings before extraordinary items
Suspect_EBXI_PC	=	Dummy variable that is set equal to one if parent consolidated EBXI scaled by total assets is in the range [0, 0.01) and zero otherwise
Size_PC	=	Consolidated total assets of the parent
T-1_Suspect_EBXI_PC	=	Dummy variable that is set equal to one the year before the parent is suspect and zero otherwise
T+1_Suspect_EBXI_PC	=	Dummy variable that is set equal to one the year after the parent is suspect and zero otherwise