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This is the author's manuscript

Original Citation:

Availability:
This version is available http://hdl.handle.net/2318/1665758 since 2018-04-04T20:53:48Z

Published version:
DOI:10.1504/IJBGE.2017.086480

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(Article begins on next page)
The influence of profitability on related party revenues

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Abstract: In recent decades, related party transactions (RPTs) have played a prime role in major corporate scandals, obliging regulators to strengthen the rules with new bans and costly requirements on companies. The aim of the regulatory process is to guarantee the proper use of RPTs, avoiding their incorrect use and abuse. This study contributes to the literature on RPTs, refining previous studies on this topic and providing evidence to justify the attention of lawmakers, leading to increasingly costly and mandatory regulation. Focusing on the revenues made with RPs, we investigate the relationship between variations in profitability and the intensity variations of RPRs in income statements. Results show that the intensity of RPRs increases with a decrease in company profitability. This inverse relation underlines the potential risk of these transactions.

Keywords: related party transactions; RPTs; profitability; revenues.


Biographical notes: Fabrizio Bava is an Associate Professor in Business Administration at the University of Turin, Italy. He currently lectures in Auditing and Financial Statement at the same university. His main research interests and publications are in auditing and corporate governance.

Melchior Gromis di Trana is a PhD in Business and Management at the University of Turin, Italy. His main research interests and publications are in accounting and corporate governance. He is also an Auditor and a Charted Accountant.

1 Introduction

Related party transactions (RPTs) are transactions carried out between a firm and its own managers, directors, shareholders, affiliated firms and subsidiaries. This is a relevant topic for corporate governance (CG) because the relation between the parties involved may influence why and how the transactions are carried out. The peculiarity of this relationship may lead to abuses. Many corporate scandals (Enron, Wordcom, Parmalat) have shown that RPTs were used for financial fraud and minority shareholder expropriation. This forced regulators and standard setters to strengthen the rules, introducing new bans and imposing new requirements aimed at guaranteeing the substantive and economic fairness of RPTs. The reforms have focused on two main areas: approval processes and increased disclosure. In view of the relevance of this topic in the discussion of CG, our study investigates the relationship, if any, between corporate profitability and related party revenues (RPRs).

We posit a negative correlation between the variables, i.e., a company whose profitability is decreasing may seek to conceal this negative trend with an increase in RPRs. Excluding banks, subject in Italy to specific rules, we examine the 100 highest capitalised Italian companies listed in 2011. Italy is ideally suited for this study because of the strong relationships between Italian listed companies and intra-group and extra-group entities. In particular, the Italian listed corporate sector is characterised by
concentrated control (Bianchi and Bianco, 2006) via opaque structures, such as pyramids, dominated by a small number of interlinked but competing entrepreneurs (Assonime, 2011). Italian companies generally have a controlling ownership (Bianchi et al., 2001), therefore in the Italian context less protection is provided to minority shareholders by civil law (Nenova, 2003; Dyck and Zingales, 2004). As Holderness (2009) says, minority control is a widespread and constant issue the world over, in different forms and modes. For the above reasons, the Italian corporate system is conducive to a proliferation of RPTs.

Our study contributes to the literature on the effect of RPTs on company performance. Some studies indicate a positive relation between RPTs and corporate performance, through increasing sales or lower transaction costs (Khanna and Palepu, 1997; Chen et al., 2012), whilst others show a negative relation between RPTs and performance, Tobin’s q ratio and ROA (Munir and Gul, 2010), or ROE (Cheung et al., 2009). Results show that the intensity of RPs is higher when a company has suffered a reduction in profitability and revenues, whereas, there is no evidence of an inverse relationship between RPs and the financial position of the company. We show that the reduction in profitability is an important parameter to be considered by regulators when defining RPT disclosure. The paragraph below sets out a review of the literature. We then describe the Italian environment and subsequently our assumptions and hypothesis, the sample and variables used. Section 5 presents the main results of the paper. Finally, we conclude and indicate opportunities for future research.

2 Literature review of RPTs

RPT is a topic that involves more than one discipline (CG, accounting, law, etc.). The present literature review is structured starting from the definitions of RPTs provided by national and international legislators and standard setters. In the following paragraph, RPTs are analysed under the perspective of CG, essential for the introduction of the main theories (conflict of interests vs. efficient transaction theory) concerning this topic (3rd paragraph).

The most common definition of RPTs is provided by International Accounting Standards (IAS), according to which RPTs are a “transfer of resources, services or obligations between a reporting entity and a related party, regardless of whether a price is charged” (IAS 24) and where “a related party is a person or entity that is related to the entity that is preparing its financial statements” (IAS 24). Two or more parties, whether companies or individuals, are considered to be related where one has the ability to influence the other in taking operational or financial decisions. Furthermore, IAS specify that related entities are members of the same group (i.e., parent companies, subsidiaries and associated companies are all inter-related), including where the entity or any member of a group, provides key management personnel services to the reporting entity or to the parent of the reporting entity. The latter provision was added by annual improvements to the IFRSs 2010–2012 cycle, taking effect for annual periods from 1 July 2014. This version does not deem two entities related simply because they have a director or key manager in common.

In the literature, two main definitions are used (Chen and Wu, 2010). RPTs can be defined as transactions between a company and related entities (e.g., subsidiaries, affiliates, principal owners, officers and directors) (FASB, 1982). Young (2005) suggests a different definition that sees them as ‘transactions between a company and an insider’, i.e., a person considered to be part of the company (Pan and Hsiu-Cheng, 2007). The common element is the relationship between the parties which may (implicitly or explicitly) influence the binding conditions of the contract, which differ from other contracts because the parties are not independent.

2.1 RPTs and CG

The succession of corporate scandals (Enron, Arthur Andersen, WorldCom, Adelphia, Tyco International and Parmalat) that shook financial markets at the beginning of the new
millennium has fuelled a debate on CG and the role played by RPTs. CG is the system by which a company is directed and controlled (OECD, 2004) and aims to align as nearly as possible the interests of individuals, corporations and society (Cadbury, 2004). As noted in the above scandals, RPTs have been used to make some interests prevail over others. RPTs can help companies reach their shareholder targets and so should not be altogether prohibited (Goshen, 2003). RPTs can reduce the problem of asymmetric information between outside stakeholders (including investors) and corporate management (Gordon et al., 2004), partly because of the conflict of interest that may arise among shareholders. For this reason, CG is expected to reduce the opportunistic behaviour of management, to improve the quality of corporate reporting and corporate performance (Chen et al., 2009a; Bhagat and Bolton, 2008; Denis and McConnell, 2003). At the same time, it restrains (diminishes) opportunistic uses of discretionary accruals in financial statements (Chung et al., 2002; Park and Shin, 2004), inter-group borrowings (Berkman et al., 2009) and puts a check on corporate fraud (Chen et al., 2009b). CG rules must improve the mechanisms guaranteeing the compliance of these transactions with stakeholder’s interests. As Stout (2013a, 2013b) and many other authors (Clarke, 2013; Stevelman, 2013; Weinstein, 2013) argue, the corporate form meets the needs of many different groups of entities. One of the most widespread theories is the maximisation of shareholder value based on the difficult issue of resolving conflicts between the ownership and other stakeholders. In this sense, CG rules put shareholder interests before those of directors (agency theory) and other stakeholders. In the shareholder value myth, Stout (2013a) shows how the traditional managerial focus on shareholder interest can be harmful to the corporation. He suggests a more long-term perspective that does not reward a small subset of shareholders, which is short-sighted, opportunistic, undiversified and indifferent to ethics and the welfare of others. Due to this, CG rules must regulate the assessment process and approval of RPTs and improve the efficiency and quality of financial reporting (Rezaee, 2004). This would limit the improper use of RPTs and foster the disclosure of the information required to assess these transactions (Fooladi and Shukor, 2011). As with CG, RPTs are strongly influenced by the type of culture to which they are applied. Hofstede (1980) points to the large cultural differences between countries to explain the very varied approaches adopted and the many different types of CG models and rules. Their most significant differences are generally the result of variations in culture, although there are other elements that influence CG variables. Despite the globalisation process, which is fostering unification of the models in many countries, significant differences remain regarding ownership structures and corporate control. In particular, many studies focus on the relationship between ownership structure (Zengquan et al., 2004; Kun, 2005; Jian and Wong, 2010; Munir and Gul, 2010), the role played by the stock market (Gordon et al., 2004; Lo et al., 2010, Yeh et al., 2012) and the quality and relevance of RPTs in corporate life. Cernat (2004) argues that CG constitutes not only a crucial difference between varieties of capitalism but is also a major factor in determining their economic performance. Chen (2014) found that the financial crisis has triggered a need for companies to adopt a new governance structure in order to better cope with the challenges of the environment. However, as yet, the literature on RPTs has not paid enough attention to the relationship between CG and RPT disclosure, although the knowledge of these transactions can affect the way in which analysts of financial statements assess the performance, financial position and risk and opportunities of an entity (Corlacio and Tudor, 2011). Current rules on RPTs must be revised and improved because of a lack of efficiency (Gromis di Trana, 2014; Bava and Gromis di Trana, 2015a).

2.2 RPT theories and perspectives

In the literature, RPTs are seen from two main perspectives, one that puts the risks before the advantages produced by these transactions and the other which highlights their natural tendency to reduce monitoring costs and the asymmetry of information. From a theoretical perspective, RPTs are studied in light of:

a conflicts of interest
Lemmon and Lins (2003) suggest that corporation ownership structure is what principally determines the extent of agency problems between controlling insiders and outside investors. The insiders able to control corporate assets can potentially expropriate outside investors by diverting resources for their personal use (tunneling process) or by committing funds to unprofitable projects that provide private benefits. Further, Grossman and Hart (1980) showed that if a corporation has a broad shareholder base, no single shareholder has adequate incentives to monitor management closely. In this context, transfer pricing can favour the controlling or related party at the expense of minority shareholders (Johnson et al., 2000). This underlines the need to guarantee proper legal process to protect minorities and small investors. La Porta et al. (1998) argue that the absence of strong legal protection and other external governance mechanisms further increases the severity of agency problems between controlling insiders and outside investors. Based on these assumptions, the first theory supports the idea that these transactions reveal a conflict of interest. The reasons for these transactions are in contrast with company interests regardless of investor protection (Emshwiller, 2003). The theory claims that RPTs may in general generate abuse due to the opposing interests of ownership and control (executive directors and management), or of majority and minority shareholders. The first of these conflicts is examined by agency theory (Jensen and Meckling, 1976; Fama, 1980; Eisenhardt, 1989), which also deals with the effectiveness of monitoring management [Fama and Jensen (1983a, 1983b), pp.1–2]. The second conflict is analysed in the literature as an investor protection tool (La Porta et al., 2000). In particular, transactions are subject to moral hazard, i.e., a situation where a party tends to take risks because it is not liable for any costs incurred. Thus, RPTs can produce benefits for the strong party (insiders) at the expense of the weak (outsider). The reasons for this discrepancy are the lack of tools to protect the minority’s rights and the presence of asymmetric information (Beak et al., 2006). Some examples of this abuse could lead to a reduction in shareholder wealth (tunneling transactions). Whenever a corporation makes a transaction with a shareholder on unfavourable terms, this constitutes a de facto distribution to that shareholder (Conac et al., 2007). Again, RPTs could yield a virtual increase in the resources of the corporation and to misleading statements (earnings management). Some studies (Gordon et al., 2004; Kohlbeck and Mayhew, 2005) conclude that weak CG leads to a larger number of RPTs. Several studies have confirmed the use of earnings management by large numbers of listed companies in order to achieve particular levels of ROE (Chen and Yuan, 2004; Liu and Lu, 2007). The manipulation of the process of financial reporting to obtain private gain is relatively easy via RPTs.

In contrast, the efficient transaction hypothesis assumes that RPTs represent sound business exchanges, efficiently fulfilling the underlying economic needs of the corporation (Pizzo, 2011). The basis of this theory is the reduction of transaction costs as well as the reduction of the risk associated with these transactions (Gordon et al., 2004). According to this theory, this kind of transaction takes advantage of lower information asymmetry (Coase, 1937; Williamson, 1985; Fan and Goyal, 2006). Networking activity represents an opportunity for the firm to obtain economic benefits (Morgan and Cooke, 1998). In Italy, Moscariello (2012) provided a very limited indication of potentially opportunistic behaviour. Conflict of interest and efficient transaction theory do not necessarily clash, because these transactions can produce benefits as well as disadvantages. For this reason, as stated by Goshen (2003), a total ban on self-dealing would be irreconcilable with the goal of preserving transaction efficiency. Furthermore, a non-interventionist approach would leave the investor vulnerable to the problem of the conflict of interests.

Finally, a contingency perspective has been suggested, encompassing both theories. This underlines how the effectiveness and efficiency of the proposed solutions are strictly correlated to organisational contexts, institutional environments and governance practices (Pizzo, 2011). Kohlbeck and Mayhew (2005) suggest that potential benefit or damage depends on the parties involved in the transaction or the type of RPTs carried out. Some studies suggest that, on average, RPTs are not harmful to outside shareholders (Ryngaert and Thomas, 2012). This observation can be extended to other classes of stakeholders
However, a high inherent risk exists due to the increased likelihood of RPTs being used in fraudulent behaviour. In particular, this type of transaction tends to increase the discrepancy in treatment between those who hold the power and those who are subject to it (minority shareholders or shareholdings in general). It should also be noted that most of these transactions are a normal feature of business, entities frequently carry out activities through subsidiaries, joint control or significant influence and the fact that a corporation conducts a high volume of such transactions should not automatically lead to the conclusion that something fishy is going on (Gordon et al., 2007). Many studies provide evidence of the role of RPTs in financial crises (Swartz and Watkins, 2003; Tague, 2004) and to achieve specific aims (Erickson et al., 2000); others do the opposite, demonstrating how RPTs played no strategic role in corporate scandals (Bell and Carcello, 2000). While the presence of RPTs does not mean fraudulent financial reporting, failure to recognise or disclose RPTs was found to be one of the top 10 audit deficiencies in the US by Beasley et al. (2001).

Regulators reacted by strengthening the existing rules, introducing new bans and imposing additional statutory requirements, to guarantee stakeholders’ rights. This fails to address the fact that fraud of this kind can be carried out with parties not generally considered related parties. RPTs attract attention due to their inherent risk. Hence, regulation cannot exclude a risk approach to evaluating the transactions to be disclosed in order to identify the proper trade-off between costs and positive effects. Other studies evaluate the effect produced by RPTs on firm value. For instance, Kohlbeck and Mayhew (2010) found that the market assigns lower values and subsequent returns to corporations that engage in certain types of RPTs. Dahya et al. (2008), in a cross-country analysis, find that value is lower for firms reporting RPTs. In the literature, the improper use of RPTs has been found to affect future performance as well as firm valuation in China (Chen et al., 2011; Zhu and Zhu, 2012), Hong Kong (Cheung et al., 2006), the USA (Ryngaert and Thomas, 2012; Kohlbeck and Mayhew, 2010); Bulgaria (Atanasov et al., 2010) and in France (Nekhili and Cherif, 2011). Business literature has provided ample evidence of the consequences of RPTs for a firm’s performance, but the different and sometimes contradictory results make interpretation arduous. Wen-Yi et al. (2010) claim that it is difficult, if not impossible, to determine whether such transactions are beneficial or detrimental to organisational performance and the evaluation should be made on a case by case basis. Liu and Liu (2007) state that RP sales and purchases are used to encourage cooperation among entities and maximise the operational efficiency and competitiveness of group companies. As a result, RP sales and purchases in China improve corporate performance and increase abnormal stock returns. Chang and Hong (2000) found that firms perform better when the transfers of products and managerial expertise within the group increase. Empirical evidence shows that Chinese firms with high levels of RP loans and guarantees perform poorly, sometimes with sharp declines in profitability (Jiang et al., 2010). The higher the level of related party purchase transactions engaged in by Chinese listed companies, the better their financial and market performance (Chen et al., 2009b), but there is also a significant negative relationship between related party sales, loans, guarantees, mortgages and leases and market performance. Some studies indicate a positive relationship between RPTs and corporate performance, through increasing sales or reduced transaction costs (Khanna and Palepu, 1997), whereas other studies support the negative association between RPTs and performance, Tobin’s q ratio and ROA (Munir and Gul, 2010), or ROE (Cheung et al., 2009). This type of evaluation is made harder by the difficulties in the various activities caused by routine versus anomalous transactions (Wong and Ming, 2003). For this reason, Chen et al. (2012) divided RPTs into normal and abnormal. The results show that normal RPTs are positively correlated with performance (ROA, ROE or ROS) and abnormal RPTs negatively correlated. Moscariello (2012) as well as Pozzoli and Venuti (2014) conclude that in Italy RPTs and ROA are not correlated and there is no evidence of cause and effect.

In this study, in line with conflict of interest theory, our hypothesis is that the poor performance of a company can induce it to increase sales with RPs, to mitigate the reduction in profitability. Related party sales might be an important part of a firm’s normal business activities and contribute as importantly to the firm’s performance and return as non-related party sales. However, if related party sales are misused by the
controlling owner for opportunistic earnings management purposes, the credibility and durability of these sales numbers are lower than that of non-related party sales, which are more difficult to manipulate.

Our study contributes to the literature on RPTs by verifying the relationship between variations in profitability and related revenues. A positive association between these two variables, if confirmed, may represent further evidence of the inherent risk of RPTs.

3 Institutional background of the research

It is well-known that Italy is a country of civil, not common, law. In the literature, many studies stress that in common law countries investor protection is stronger and financial reporting is generally deemed of higher quality (La Porta et al., 1997, 1998, 2000; Ball, 2000). Hence, the central role of Italian lawmakers, who have established the approval process and disclosure of RPTs. However, companies can adopt stronger measures. The legislative process developed over different phases, starting with EU directives. Several Consob communiqués (No. 93002422 in 1993, no. 97001574 in 1997 and no. 98015554 in 1998) focused on the transparency of RPTs in financial statements. In 1999, the Borsa Italiana published the Italian CG Code (revised in 2002, 2006, 2010, 2011, 2015) aiming to enhance the competitiveness of the Italian financial market and to improve the quality of CG in Italian listed companies. In 2002, RPT regulation was implemented with the introduction (Resolution no. 13616) of a mandatory communication of material RPTs, via a specific document or press release. In 2005, the Cirio and Parmalat scandals led the government to introduce new general provisions on RPTs carried out by Italian listed companies requiring them to adopt internal codes on RPTs in line with forthcoming rules issued by Consob (Section 2391-II, Civil Code) (Bianchi et al., 2014). In the same year, listed Italian companies were obliged to adopt IAS for the drafting of consolidated financial statements (Legislative Decree 38/2005) and, as a consequence, IAS 24-Related Party Disclosures, requiring specific disclosures of RPTs in the notes. In 2006, Consob (Resolution no. 15519), strengthened RPT disclosure in financial statements, obliging companies to itemise, line by line in the income statement and balance sheet, the amount of revenues and costs as well as receivables and liabilities realised with RPs.

Through an analysis of the 2007 Annual Reports on CG of Italian corporations listed on the MTA, Bianchi et al. (2011) stated that the adoption of best practices for dealing with potential conflicts of interests in RPTs was markedly weaker than what had formally been declared in the reports. In particular, they found that whereas 85.9% of companies were formally compliant with code recommendations regarding RPTs, only 32.6% had implemented those recommendations satisfactorily. Since 2008 (Legislative Decree 173/2008), Financial Statements drafted under the provisions of the civil code, must disclose in the notes information regarding material RPTs that ‘were not carried out at normal market conditions’. The civil code refers to IFRS with respect to the definition of the term ‘related party’ (Conac et al., 2007). Finally, another step was taken at the end of 2010. The rules on RPTs were overhauled from top to bottom by the Italian regulatory body for the Italian stock exchange (CONSOB Regulation no. 17221). The full introduction of new regulations at the beginning of 2011 was the final step in the process of improving minority shareholder protection, which began with the Draghi reforms of 1998 and accelerated following the Cirio and Parmalat scandals.

Consob Regulation no. 17221 fixed two main targets to promote and defend shareholder rights: improve the transparency of RPTs and guarantee their substantial correctness. A preliminary analysis carried out by Consob to justify regulatory changes (Consob consultation paper on the regulation of related party transactions, 2008), showed that the magnitude of RPTs differed considerably between companies, leading Consob to add to the qualitative definition of RPTs to be disclosed by introducing quantitative criteria: material transactions are now identified as a result of a significance test. Quantitatively, a transaction is considered material if it exceeds one of three thresholds (transaction value/equity or market capitalisation, assets of the transactions/tot. assets and liabilities of transactions/total assets). The threshold is 5%, but companies can set lower levels in their internal codes. In addition, in order to increase the number of operations
disclosed, an anti-avoidance provision requires the disclosure of homogeneous transactions with a single related party which are below the threshold when taken individually but above it when considered cumulatively. However, such essentially arbitrary criteria carry the risk of manipulation by companies so that underpinning is necessary such as requiring the reporting of transactions below the limit to the regulator. There is also an opt-out provision regarding transaction switch are not disclosed to the markets but, if material, are notified to Consob, which makes sure no abuse has taken place. The new regulations came into effect at the end of 2010.

4 Research question and sample

4.1 Research question

As observed above, according to the conflict of interest theory, RPTs can generate abuse. Business literature has provided ample evidence of the consequences of RPTs on company performance (Khanna and Palepu, 1997; Chen et al., 2009b; Cheung et al., 2009; Munir and Gul, 2011; Moscariello, 2012; Pozzoli and Venuti, 2014), but the results are sometimes contradictory. To understand the conflicting evidence, the influence on these results of other elements needs to be considered, such as the economic environment, cultural context and different legal system.

In Italy, Moscariello (2012) also analysed the association between return on investment (ROI) and the total amount of transactions carried out by the firm with related parties. The sample comprises 60 companies and the data refer to 2007. The regression model does not show a significant correlation between the two variables. Using the Pearson correlation, Pozzoli and Venuti (2014) conclude that in Italy RPTs and ROI are not correlated and there is no evidence of cause and effect. Their study is based on a sample of 185 listed Italian companies observed from 2008 to 2011. They verify the relationship between RPT profit (or loss) and ROI. RPT profits (or losses) are calculated as the difference between the total revenue from RPTs and the total cost arising from RPTs and ROI. Bava and Gromis di Trana (2015b) expanded this analysis, verifying through an OLS model the relationship between the intensity of RPTs (related revenues against total revenues) and the variation in profitability (ROI 2011 minus ROI 2010). The sample consists of the 100 highest capitalised Italian companies in 2010 and 2011. The study identifies a statistically negative association between the two variables. This paper refines that study, by verifying the relationship between a variation in profitability from 2010 to 2011 and a variation of related revenues in the same period. We anticipate a positive relationship between the two variables, indicative of the high inherent risk of RPTs.

The following question was addressed:

RQ Is there a correlation between revenues with related parties and variation in revenues?

To identify this correlation we considered the effect produced by a variation of ROI (the ratio between EBIT and total assets) between 2010 and 2011. This measures core business profitability, whereas other indicators such as ROE (net income/equity) and ROA (EBIT + financial revenues / total assets) are affected by non-operative profit and loss. A correlation suggests that RPTs are efficient and can help companies improve their fundamentals, whereas a negative correlation is a warning sign indicating that the inherent risk of the transactions. In the last few years the recession has caused a decrease in sales in many sectors, one of the main reasons companies have stopped generating and started to consume value. We investigate whether there is a direct correlation between an increase/decrease in revenues and those with related parties. A statistical relation between the intensity of RPR and an increase in revenues may be physiological, while a relation between the intensity of RPTs and a decrease in revenues might conceal a reduction in revenues.
### 4.2 Sample

The sample comprises the 100 highest capitalised Italian listed companies in 2011. Banks were excluded for two reasons:

1. the structure of their income statements differs from other corporations
2. in Italy banks are subject to specific rules on RPTs.

Data was collected partially from the AIDA database (Bureau van Dijk S.p.a) and partially from financial statements. Pursuant to Consob Resolution no. 15519/2006, companies must declare revenues and costs from RPTs in income statements, as well as related receivables and liabilities in financial statements. Data was checked against the Supplementary notes to the financial statements, which disclose details regarding related parties as per IAS 24.

### 4.3 Model design

The models we suggest are innovative and aim to establish the correlation between RPR variation and some variables from the literature.

The model is:

\[
Y_i = \beta_1 Roi_i + \beta_2 Group_{ii} + \beta_3 Rev_{iv} + \beta_4 Manag_{yv} + \epsilon
\]

We test the model considering three main dependent variables.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dependent variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RPR (2011)</td>
<td>The Amount of RPR in Euros in 2011. Data were collected analyzing the 2011 income statements.</td>
</tr>
<tr>
<td>2</td>
<td>RPR diff.</td>
<td>The difference between RP revenues in 2011 and 2010. The formula is: ( \text{Diff. RPR} = \frac{\text{RPR}<em>{2011} - \text{RPR}</em>{2010}}{} )</td>
</tr>
<tr>
<td>3</td>
<td>RPR</td>
<td>The variation in intensity of RP revenues between 2010 and 2011. The formula is: ( \frac{\text{RPR}<em>{2011}}{\text{Tot. Ass.}</em>{2011}} - \frac{\text{RPR}<em>{2010}}{\text{Tot. Ass.}</em>{2010}} ) Total assets is preferred to revenues because it gives a more solid picture of company size. Furthermore, in order to verify the relation between RPR and variables such as profitability or revenues, it is preferable to take into account total assets.</td>
</tr>
</tbody>
</table>

With regard to the independent variables, ROI is the most common indicator used in previous studies (Moscariello, 2012; Pozzoli and Venuti, 2014; Bava and Gromis di Trana, 2015b) concerning profitability.

\( \Delta \text{ROI} \) is the difference between 2011 and 2010 operating profitability. ROI is a performance measure used to evaluate operating profitability. ROI is the ratio between EBIT and total assets and reflects the core business of the company. It is not affected by other variables such as financial and/or extraordinary components.

The formula is:

\[
\frac{\text{ROI}_{2011} - \text{ROI}_{2010}}{\text{ROI}_{2010}}
\]
ΔREV is the relative increase or decrease in revenues between 2011 and 2010. It is selected in order to reduce the effect of size difference. Hence, variables such as EBIT and EBITDA are excluded.

Cooper et al. (2008) found that high growth firms tend to be more profitable (ROI) than low growth firms.

The ratio is:

$$\frac{\text{Operating revenues 2011}}{\text{Operating revenues 2010}} - \frac{\text{Operating revenues 2010}}{\text{Operating revenues 2010}}$$

(3)

GROUP is the number of companies in a group. The number of RPs increases with an increase in group size. This is because an increase in the number of RPs could influence the amount of RP revenues. Company size could be relevant in influencing the likelihood of carrying out RP transactions and group size is also taken into account.

MANAG is the number of directors and managers in the group. IAS 24 defines related entities headed by related directors. Therefore, it is assumed that an increase in management heads can impact on the intensity of RP revenues. This is an alternative to a commonly used variable, i.e., the number of directors (Moscariello, 2012).

OWN is the percentage owned by the main shareholder. It is an important variable in order to verify whether a correlation between the ownership structure and the influence of RPTs exists. The importance of this variable is highlighted by many authors (Zengquan et al., 2004; Kun, 2005; Jian and Wong, 2010, Munir and Gul, 2010).

Table 2 shows the descriptive statistics of the variables taken into account.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Descriptive statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>Dependent var.</td>
<td></td>
</tr>
<tr>
<td>RPR2011</td>
<td>0</td>
</tr>
<tr>
<td>RPR diff.</td>
<td>–133,129</td>
</tr>
<tr>
<td>RPR</td>
<td>–0.103</td>
</tr>
<tr>
<td>Independent var.</td>
<td></td>
</tr>
<tr>
<td>ROI diff.</td>
<td>–106.63</td>
</tr>
<tr>
<td>Manag</td>
<td>14</td>
</tr>
<tr>
<td>Own</td>
<td>9.99</td>
</tr>
<tr>
<td>ΔRev</td>
<td>–0.7</td>
</tr>
<tr>
<td>Group</td>
<td>0</td>
</tr>
</tbody>
</table>

5 Results

OLS linear models are used to develop the study. All analyses were performed by IBM SPSS (22).

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Model summary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model</td>
</tr>
<tr>
<td>1</td>
<td>0.737a</td>
</tr>
<tr>
<td>2</td>
<td>0.632</td>
</tr>
<tr>
<td>3</td>
<td>0.389</td>
</tr>
</tbody>
</table>

An R² is high when varying the total amount of RPR. On the contrary, R² is lower when varying the difference in RP revenues (model 2) and the difference in variation (model 3).
Table 4  ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
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<td>5</td>
<td>9,701E+12</td>
<td>22.088</td>
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<td>Residual</td>
<td>4.084E+13</td>
<td>93</td>
<td>4,392E+11</td>
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<tr>
<td></td>
<td>Total</td>
<td>8.934E+13</td>
<td>98</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Regression</td>
<td>3.600E+11</td>
<td>5</td>
<td>7.200E+10</td>
<td>12.340</td>
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<td>Residual</td>
<td>5.426E+11</td>
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<td>5.834E+9</td>
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<tr>
<td></td>
<td>Total</td>
<td>9.026E+11</td>
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<td>3</td>
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<td>0.001</td>
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<tr>
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<td>93</td>
<td>0.000</td>
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<td>Total</td>
<td>0.035</td>
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Table 5  Coefficients

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<th>Sig.</th>
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<td>B</td>
<td>Std. error</td>
<td>Beta</td>
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<tr>
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<td>ΔRoi</td>
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<td>6,011.131</td>
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<td></td>
<td>Manag</td>
<td>1,846.995</td>
<td>395.222</td>
<td>0.348</td>
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<tr>
<td></td>
<td>Group</td>
<td>3,444.256</td>
<td>477.159</td>
<td>0.547</td>
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<tr>
<td></td>
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<td>167,281.372</td>
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<tr>
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<td>3,933.561</td>
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</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>–11,044.661</td>
<td>23,184.088</td>
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<td></td>
<td>ΔRoi</td>
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<td>Manag</td>
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<td>–0.060</td>
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<tr>
<td></td>
<td>ΔRev</td>
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<td>19,281.159</td>
<td>0.027</td>
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<tr>
<td></td>
<td>Own</td>
<td>–102.751</td>
<td>453.390</td>
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<tr>
<td>3</td>
<td>(Constant)</td>
<td>–0.005</td>
<td>0.005</td>
<td>–.897</td>
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<tr>
<td></td>
<td>ΔRoi</td>
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<td>0.000</td>
<td>–0.380</td>
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<td>Manag</td>
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<td>0.030</td>
</tr>
<tr>
<td></td>
<td>Group</td>
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<td>0.020</td>
</tr>
<tr>
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<td>ΔRev</td>
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<td>0.005</td>
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<td></td>
<td>Own</td>
<td>1.338E–5</td>
<td>0.000</td>
<td>0.012</td>
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</table>

Empirical evidence (Table 4) shows that in the first model there is a strong and positive correlation between the amount of RP revenues and the number of companies, as well as the number of managers (their p-value is less than 0.01). The size of the group, as well as the number of managers, have a direct effect on the number of RPs. This can influence the amount of RPRs. The association is negative with revenue variation (p-value less than 0.1). This suggests that growth is negatively correlated with the amount of RPRs and a reduction in operating revenues is followed by a reduction in the amount of RPRs. In this case, the p-value is too high to make other evaluations. There is also a negative
correlation with the percentage of ownership of the main shareholder (p-value less than 0.02). In the first model, an association with profitability variation is not shown. This result is in line with some of the literature (Moscariello, 2012; Pozzoli and Venuti, 2014).

In the second model, a negative correlation can be identified between the variation in RP Revenues and variations in profitability (p-value less than 0.001). In other words, a reduction in profitability produces an increase in RPRs. At the same time, a positive association with the number of managers is confirmed (p-value less than 0.001). These p-values show that the correlations are statistically strong. The model does not show the correlation concerning with growth, which is not statistically significant. This may suggest that an increase in company size does not directly impact on a variation in RPRs or on ownership structure.

In the model 3, the only significant association is between the variation of intensity of RP revenues and the variation in profitability, a negative and strong correlation (p-value less than 0.001). In other words, a decrease in profitability seems to drive companies to generate more revenues with RPs and an increase in profitability may lead companies to curb these revenues. This evidence supports the attention paid by the regulator to this specific topic and justifies Consob requesting specific disclosure in financial statements.

To carry out statistical analysis, the assumptions of normality, multicollinearity, heteroscedasticity and endogeneity must be met. The normality assumption requires that observations be normally distributed in the population, but the assumption is relatively insignificant where large samples are involved (Pallant, 2007). The residual test/histogram-normality test of the regression equation was ‘bell-shaped’, confirming the normality of the data. Multicollinearity refers to high correlations among the independent (or explanatory) variables or when the explanatory variables are significantly correlated with one another. When a high degree of correlation is found among explanatory variables, these variables must be removed or changed. However, the variance inflation factor (VIF) of each explanatory variable does not exceed 2.0. A VIF value exceeding ten shows multicollinearity is present (Gujarati, 2003).

Tables 6 and 7 evaluate the multicollinearity problem.

VIF values in Table 6 are low and suggest that there are no correlations between independent variables. Furthermore, the multicollinearity index also confirms the effectiveness of the model. Homoscedasticity occurs when the error term is constant across all values of the independent variables. Standard estimation methods become inefficient when the error term varies. Examining the scatter plot (Table 7) of the residuals (ZRESID) against the predicted value (ZPRED) of the model shows that our models are not affected by heteroscedasticity.

Table 6  Multicollinearity index

<table>
<thead>
<tr>
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<th>Tolerance</th>
<th>VIF</th>
<th>Eigenvalue</th>
<th>Condition index</th>
</tr>
</thead>
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<td>(Constant)</td>
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</tr>
<tr>
<td>ΔRoi</td>
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<td>1.012</td>
<td>0.985</td>
<td>1.676</td>
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<tr>
<td>Manag</td>
<td>0.887</td>
<td>1.127</td>
<td>0.92</td>
<td>1.734</td>
</tr>
<tr>
<td>Group</td>
<td>0.856</td>
<td>1.168</td>
<td>0.794</td>
<td>1.866</td>
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<tr>
<td>ΔRev</td>
<td>0.931</td>
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<td>2.406</td>
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<tr>
<td>Own</td>
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<td>1.067</td>
<td>0.058</td>
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<tr>
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<td>Plot</td>
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<tr>
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<td>3</td>
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</table>
6 Conclusions

As suggested by the literature, RPTs could produce abuse through conflicts of interest between ownership and control or between majority and minority shareholders. These transactions are subject to moral hazard and hence are characterised by a greater inherent risk than other transactions. For this reason, regulators have recently strengthened existing rules, introducing new bans and requirements, aimed at guaranteeing the substantive and economic fairness of these transactions. The aim of the regulatory process is to guarantee the proper use of RPTs.

In the literature, many studies have investigated the inherent risk of RPTs, examining the correlation between RPTs and profitability. This paper takes off from previous studies to provide further evidence of the potential risk of these operations. Focusing on the revenues from RPs, we investigated the relation between the variations in profitability and RPR intensity in income statements. The main variable considered is the variation in profitability between 2011 and 2010. Specifically, we investigated the relationship between the variation of ROI (EBIT / tot. assets) and the intensity variation of RPRs. The analysis responds to the RQ with positive evidence. There is a statistically negative association between ROI variations and the intensity variation of RPRs. This is evidence of potential risk because companies losing profitability are more likely to turn to RPs for revenues. This result contributes to the literature by refining previous studies (Moscariello, 2012, Pozzoli and Venuti, 2014) focused on stock value and not flow (variations between different years).

Another variable analysed is the variation in revenues between 2010 and 2011. A fall in revenues is clearly a major concern for a corporation; it may be caused by a problem in the effectiveness of outputs, or by adverse environmental and economic conditions. In light of the importance of fixed costs in Italian income statements, a decrease in revenues can threaten the business. This suggest how the health of the company can play a major role in a strategy based on RPs. As observed, the growth of a company may influence its attitude to RPTs. This influenced the value in 2011. In accordance with a contingency perspective (Pizzo, 2011), our results are strongly influenced by contextual factors, such as culture and regulations. This explains the different evidence from other countries (Khanna and Palepu, 1997, Cheung et al., 2009; Munir and Gul, 2011).

The study provides a starting point for future research. For instance, it deals with economic effects only and further research could include financial effects and other elements influenced by RPR intensity or verify the effect of growth on a variation in RPRs.

References


FASB Accounting Standards Codification Topic 850, Related Party Disclosures.


