Social capital and earnings management in small and medium firms

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Conflicts of Interest: The authors declare that they have no conflict of interest.

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In this study we examine the association between social capital and earnings management in small and medium firms (SMEs). Social capital, i.e. the community's norms and networks, may play a role as an informal and external disciplining mechanism of managers and, therefore, affect earnings management practices in small and medium firms, less subject to formal internal and external monitoring than larger firms. We implement a cross-region analysis by using a sample of Spanish SMEs and employ three measures that consider sociological and economic dimensions of social capital: an index of social capital based on economic relationships and proxies for trust and civic engagement. We find a negative association between the proxies for social capital and earnings management. Hence, our findings suggest that managers of small and medium firms headquartered in regions of higher social capital are less likely to manage reported earnings. However, our findings also reveal that the relationship between social capital and earnings management practices in private SMEs depends on firm size.

1. Introduction

In recent years, cultural and social dimensions have started to be considered as influential and determinant concepts in different streams of economics, finance, and accounting research. Focusing specifically on earnings management literature, a relatively large number of cross-country studies have analysed the effect of national culture on both earnings management (e.g. Callen et al., 2011; Desender et al., 2011; Doupnik, 2008; Han et al., 2010) and the perceptions of earnings management (e.g. Geiger et al., 2006; Geiger and van der Laan, 2010). Other studies have examined the impact of religiosity on corporate financial reporting (e.g. Dyreng et al., 2012; Boahen and Mamatzakis, 2020; Ma et al., 2020). However, extant research regarding how social capital may affect financial reporting quality, in general, and earnings management, in particular, is still scarce (e.g. Jha and Chen, 2015; Jin et al. 2017; Jha, 2019).

Social capital can be defined, in a broad sense, as the norms and the networks that facilitate collective action which, in turn, favours a better and more efficient performance of a society or an economy (Woolcok, 2001). In this sense, social capital may act as an informal monitoring mechanism and discourage managers from adopting opportunistic/self-serving actions and thus induce them to behave more honestly (Jha and Chen, 2015; Jin et al. 2017). The few previous studies which have examined the impact of social capital on financial reporting quality have mainly focused on listed public corporations and have employed social capital measures based on social trust (Nanda and Wisocki, 2011), or social networks, measured by the number of civil or social organizations (Jha, 2019). Only Cho et al. (2020) employ a sample of private firms in London to analyse the association between the borough-level crime rates, as proxy for social capital, and corporate misreporting practices. Thus, the debate on the role of social capital in determining financial reporting behaviour of SMEs is still open. Based on this, in this paper

2

we examine whether social capital is associated with earnings management in SMEs, and, in that case, whether this effect is differentially relevant across firm size.

We argue that a private SME setting allows us to shed more light on the association between social capital and earnings management. SMEs have different structural, social and functional characteristics than large firms, which lead academics to acknowledge that SMEs are not little big firms (e.g. Lepoutre and Heene, 2006; Russo and Perrini, 2010). SMEs tend to be actively managed by their owners, who are usually independent and multi-tasking, so there is barely a distinction between ownership and management in the smallest SMEs. They build personal and informal relationships with their stakeholders and are largely local in their areas of operations, show a high dependence on internal financing sources and are not subject to stock market pressure (e.g. Spence, 1999; Lepoutre and Heene, 2006). These factors can be described as less formal than those of large firms. Consequently, in principle, SMEs may be more influenced by social norms, trust, and ties with their social environment than large public companies, which usually operate across multiple regions and countries (e.g. Spence et al., 2003; Jin et al., 2017). In addition, since SMEs are subject to less formal internal and external monitoring, the different dimensions of social capital could substitute formal institutions in these firms and play an important role in disciplining managers of SMEs, with the consequence of limiting potential earnings management practices.

Nevertheless, although social capital should affect SMEs, differences between firms may influence their ability to create and exploit social capital, and this may lead to social capital affecting firms' outcomes differently. Larger firms are more likely to engage in networking than smaller ones, which would lead to a differential advantage in the use of social capital in relation to smaller firms (Wincent, 2005; Partanen et al., 2008). Some studies have also suggested a lower social and civic engagement of smaller firms (Curran and Blackburn, 1994;

Spence, 1999; Curran et al., 2000). SMEs are a group of entities with a very heterogeneous size and working structures with different levels of firm development, which may condition to what extent they are embedded in their economic and social environment. SMEs range from the smallest firms in which we can expect to find owner-managers with a limited scope of operations to medium firms with a more professionalised management and greater networking. Therefore, SMEs constitute an appropriate setting to examine whether the influence of social capital on earnings management practices may be different depending on firm size. Finally, we also consider that it is interesting to extend the research on large firms to SMEs because they are the economic backbone of most economies around the world and key engines for job creation and growth for any economy.[1]

We examine the association between social capital and earnings management by using a sample of Spanish SMEs for the period 2005-2012. Spain is a good context for this kind of analysis as it is a country characterised by a broad social and cultural diversity and that, according to some studies (e.g. Alm and Torgler, 2006), is a country that shows a higher "social norm" compliance than the US, the setting examined by most previous studies. From a political point of view, Spain is one of the most decentralised countries in Europe, where the different regions (17 *Comunidades Autónomas*) enjoy significant autonomy in legislation and political decisions under the idea of federalism (Colomer, 1998). For instance, the responsibility in services such as health or education, with the relevance of the latter in the construction of social networks and values across the State, is transferred to the regional governments. Some of these regions have their own regional co-official languages and a highly developed concept of national and cultural self-identity within the Spanish State (e.g. García Albacete, 2010). All these issues can

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[1] According to the European Commission (2015), SMEs account for 99.8% of all non-financial enterprises in the EU28 and 67% of total employment. Very similar figures are observed in Spain, where SMEs represent 99.9% of firms and provide 66% of employment (Spanish Department of Industry, 2015).

lead to a centrifugal vision of the State where citizens may feel a closer identity with regional values than with those common to the whole State. From an economic point of view, there is a large diversity between Spanish regions in terms of both GDP per capita and employment rates. For instance, in 2010, three Spanish regions (Basque Country, Madrid, and Navarra) exceeded the 125% level of the average of GDP per capita for the European regions, whereas two regions (Andalusia and Estremadura) showed a level equal to or lower than 75% (Eurostast, 2013). This political, social and economic diversity may reflect the variation in social capital levels across Spanish regions.

The multidimensional and intangible nature of social capital implies that its measurement is not straightforward (Lins et al., 2017), and hence a range of "indirect" proxies for this concept have been used in the extant research (Sabatini, 2007)[2]. Different variables or indexes of trust, civic engagement, and associational activity, obtained from sources such as the World Values Survey (WVS), the European Values Studies (EVS), or statistics on organizations membership, electoral participation, blood donation, number of associations, crime rates, etc., extracted from diverse databases, have been extensively used in the social capital literature (e.g. Rupasingha et al., 2006). Because of the shortcomings of the standard proxies for social capital (e.g. being focused on a particular construct of social capital, lack of continuous data series), another strand of studies has focused on modelling both economic and sociological factors that contribute to social capital formation in a community with the objective of estimating more multidimensional measures of social capital (Glaeser, 2001; Glaeser et al., 2002; Charles and Kline, 2006; Pérez et al., 2006; Rupasingha et al., 2006)[3].

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[2] Sabatini (2007) critically reviews the empirical measures of social capital employed in the extant research.
[3] This approach highlights the role played by the economic aspects in the generation of social capital, given that economic relationships are a fundamental source of interaction and trust creation among individuals and, therefore, social capital creation cannot be only restricted to non-economic relationships (Pérez et al., 2006).

In this study, we use three different proxies for social capital that consider both the economic and the sociological dimensions of social capital. The first one is an index of social capital developed by Pérez et al. (2006), whose data for Spanish regions are provided by Fernández et al. (2015). This index stresses the economic aspect of social capital and is obtained by using a similar methodology to those employed in measuring other types of capital assets. The other two proxies are indexes of civic norms and trust constructed by using data from the World Values Survey (WVS). We consider discretionary accruals, estimated following the Jones (1991) model, modified by Dechow et al. (1995), as our main proxy for earnings management. We then conduct several regression analyses that examine the association between earnings management and the level of social capital where the SME is headquartered.

Our main analysis results show a negative association between all social capital proxies and earnings management for the whole sample. Our findings are consistent with those from prior research in public companies, suggesting that social capital may be considered as an informal monitoring mechanism that constrains earnings management practices. However, when we examine the association by SME size groups, we find that this negative relationship seems to be weaker for the smallest SMEs. We find a significant relation between the multidimensional proxy for social capital and earnings management in all the size quintiles, but we do not find a significant association between earnings management and the proxies for civism and trust in the lowest quintiles. Thus, our findings suggest that the heterogeneous size and working structure that characterize SMEs may affect the degree of influence of social capital on management decisions such as earnings management.

We also perform additional analyses and sensitivity tests. First, we examine the association between social capital and earnings management both before and during the 2008 financial crisis, and find that the negative association observed for the whole sample is stronger during

the crisis period. Second, we check the robustness of our main results by using different measures of accrual-based earnings management and accruals quality and third, we also perform our analyses for the subsample of audited firms, whose accounting quality is expected to be higher than that of non-audited firms. We find more robust results for the multidimensional proxy of social capital and for civism.

Our study contributes to the literature in several ways. First, we extend the recent and scant literature on the association between social capital and financial reporting quality by investigating within an SME context and considering in our analyses a multidimensional and interdisciplinary measure of social capital (the index developed by Pérez et al., 2006). This provides consistent results with those measures commonly considered in related studies based on social trust or networks (e.g. Jin et al., 2017; Jha, 2019; Cho et al., 2020). Second, we contribute to the debate on the role played by firm size in the effectiveness of social capital. Third, since previous research has shown that values, social norms, and attitudes differ across countries (e.g. Knack and Keefer, 1997), analysing how social capital may influence earnings management in contexts different to those of Anglo-Saxon countries (i.e. a Continental European country), we contribute to the limited literature on social capital and financial reporting quality. Finally, the evidence found in this paper can also add to the growing stream in the literature regarding the influence of informal norms and values on managerial actions (e.g. Stevenson and Radin, 2009).

The rest of the paper proceeds as follows. Section 2 reviews the related research and develops our testable hypothesis. Section 3 describes the research design, sample, and data. Section 4 presents the empirical results and the final section concludes the paper. The Online Appendix provides additional and robustness analyses.

2. Related research and hypothesis development

2.1. Social capital in economics and finance literature

Social capital is a complex, intangible, and multidimensional concept that has been defined in different ways in the literature. We can distinguish two different approaches to defining it. One focuses on the set of informal values, beliefs, attitudes, norms, and social trust that facilitate cooperation (Fukuyama,1995; Guiso et al., 2004), whereas the other approach models social capital as a set of cooperative networks between agents and the expectation of benefits derived from behaviour between individuals or groups (Bourdie, 1985; Coleman, 1988; Payne et al., 2011). However, the two approaches are not incompatible as any network implicitly incorporates norms (Jha and Chen, 2015).

A large body of empirical studies has examined the link between social capital and a range of political, social, and economic outcomes. For example, the performance or quality of the government of countries and regions (e.g. Putnam, 1993; La Porta et al., 1997; Knack and Keefer, 1997; Knack , 2002), the economic growth and financial development at the country or regional levels (e.g. Putnam, 1993; Fukuyama, 1995; Knack and Keefer, 1997; Zak and Knack, 2001; Guiso et al., 2004; Algan and Cahuc, 2010), and business performance and managerial decisions at the firm level (e.g. Pastor and Tortosa-Ausina, 2008; Javakhadze et al., 2016; Hasan et al., 2017).

The effects of social capital on economic performance emerge from the reduction of information, transaction, and monitoring costs. As Knack and Keefer (1997) point out, in higher-trust societies there is less likely to be exploitation in economic transactions and, consequently, written contracts are needed less, litigation is less frequent, there is a lower dependency on formal institutions to enforce agreements, and governments are perceived as

more trustworthy. Likewise, civic norms restrict self-interest and opportunistic behaviours, which results in lower costs of monitoring and enforcing contracts. At the same time, social networks constitute a channel of information flow that facilitates the sharing of valuable information and reduces adverse selection risk (Javakhadze et al., 2016).

2.2. Social capital, financial reporting quality, and earnings management

To the extent that financial reporting quality can be considered as a means of reducing information asymmetry and agency conflicts, high quality accounting information is a pre-requisite for the correct-functioning of the economy. The literature has shown that financial reporting quality and earnings management are influenced by formal institutions such as the legal and the financial system (e.g. Leuz et al, 2003). But also, as with any human activity, financial reporting decisions may be influenced by informal institutions, such as social capital. The set of social trust, norms, and networks that form social capital can affect managers' incentives to distort financial reporting or manipulate earnings with the intent of obtaining some private gain.

Trust, one of the most frequently used variables to proxy for social capital, can be defined as the subjective probability that individuals assign to the possibility of being cheated (Guiso et al., 2008). Based on this definition, it might be expected that social trust influences the level of earnings management of a firm. In high-trust societies the economic agents could assign a lower probability to the opportunistic behaviour of managers to manipulate financial results (Pevzner et al., 2015). In this context, on the one hand, a positive association between social trust and earnings quality could be expected if managers follow the values of these societies and disclose high-quality earnings. On the other hand, the opposite effect could occur if the societal trust lowers the demand of stakeholders for disclosure requirements (Nanda and Wysocki, 2011) or the users of financial information are less concerned about expropriation

(Pevzner et al., 2015). A lax monitoring might enhance managerial incentives to distort financial reporting and lower earnings quality (Jha, 2019).[4]

Social norms can be defined as the beliefs held by a group, community or network about how members should behave in a given context (Hilary and Huang, 2014). They can have a powerful influence on human behaviour because they are self-enforcing, socially enforced, and are internalized because the members want to conform to the group's expectations, since deviations are costly (e.g. Merton, 1957; Coleman, 1990; Akerlof, 2007). As Jin et al. (2017) point out, society punishes violations of these norms, a punishment which is materialized in shame, ostracism or exclusion. Consequently, social norms and networks can dampen opportunistic behaviours by making them costlier due to sanctions imposed on the violation of social norms, such as reputational effects (Gulati et al., 2000; Wu, 2008). Therefore, if earnings management is perceived as a violation of generally accepted social norms, managers of firms headquartered in high social capital regions would be less likely to mask the real results of the firm to obtain self-profits and obstruct outsiders' monitoring activities.

Few previous studies have analysed whether social capital affects the quality of the financial reports disclosed by firms (Nanda and Wysocki, 2011; Jha and Chen, 2015; Pevzner et al., 2015; Jin et al., 2017) and, particularly earnings management (Jha, 2019; Cho et al., 2020). These studies have focused on different dimensions of social capital and various attributes of financial reporting quality. Hence, Nanda and Wysocki (2011), using a sample of 43 countries, find a positive association between social trust and earnings transparency, timely accounting recognition of bad news, and annual report disclosures. Jin et al. (2017), implementing a cross-county analysis and using a sample of US public and private banks, also find that social capital

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[4] However, this situation is unlikely to happen in equilibrium. Managers that misbehave once will not have the choice to do it later because they will not enjoy high trust (Jha, 2019).

is positively associated with accounting transparency. Jha and Chen (2015) show that the firm's auditor charges higher audit fees to firms headquartered in US counties with lower social capital because these firms are likely to disclose less trustworthy financial reports[5]. In addition, supporting the hypothesis that financial reports disclosed by firms in more trusting countries are perceived by investors as more credible, Pevzner et al. (2015) find that the stock market reaction is stronger to annual earnings announcements in more trusting countries.

As regards earnings management, there are two previous studies, one focused on the US and the other on the UK, which have examined different dimensions of social capital related to networks and social trust. Jha (2019), using a sample of US public firms and proxies for networks based on the number of social-civic associations and non-government organizations, shows that those firms headquartered in regions with higher levels of social capital have lower level of discretionary accruals and higher quality financial reports. Cho et al. (2020), using crime rates as an inverse proxy of social capital, find that private firms headquartered in London boroughs with higher crime rates are more likely to engage in earnings management.

In this paper we delve into the role played by social capital on earnings management in SMEs. Due to the particular characteristics of SME in comparison to large firms, we consider two competing views on the influence of social capital on SMEs' earnings management. On the one hand, the role of social capital as an external and informal monitoring mechanism can be relevant in SMEs because these are community-based firms with a dependency on the network of interpersonal relationship, and they are also aware of their stakeholders' expectations regarding social behaviour and its consequences in terms of reputation, professional image,

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[5] From a different perspective, Bianchi et al. (2020) find that auditor compensation is positively associated with the auditor social and human capital, measured by their professional connections and their industry expertise, respectively. This evidence suggests that clients of small audit firms are willing to pay a premium to those auditors with higher social and human capital.

confidence and loyalty (Spence et al., 2003; Russo and Perrini, 2010). In addition, the SME lack of formal monitoring mechanisms, either internal (board of directors) or external (auditing in many cases, supervision of capital markets) could be substituted by the informal norms and networks of social capital, limiting potential opportunistic behaviour in these firms. On the other hand, if managers of these firms are barely involved with their communities and find difficulties in engaging in networks (Curran and Blackburn, 1994; Curran et al., 2000), social capital might not have a relevant effect on SMEs. Therefore, we pose the hypothesis on the main research question of this paper in its null form:

H$_1$: *social capital is not related to earnings management in SMEs*

The effectiveness of social capital requires the existence of high-density and well-connected networks, understanding networks as being the trust relationships and ties between members of a society. Previous research has shown that firm size is a determinant of networking behaviour and that larger firms are more likely than smaller ones to engage in civic engagement and networking, that is, in actions to access information, assistance, and guidance in business development issues (Wincent, 2005). Several studies consider that, especially in small firms, the autonomy or independence that characterize owner managers leads these firms to a lack of connectedness with their community and social environment (Curran and Blackburn, 1994; Spence, 1999). In this sense, previous evidence has shown that SMEs are less implicated in the economic initiatives of their localities (Curran at el., 2000) and that the engagement of the firm with the demands of society depends on firm size (López-Pérez et al., 2017), with the effect being greater the larger the SMEs are. Therefore, regarding the consequences of social capital on SME financial reporting decisions, if owner-managers of the smaller SMEs are less engaged than those of larger SMEs in the social norms and civic behaviour of their societies, then we would expect to find differential effects of social capital on earnings management depending

on the size of the SME. Therefore, we pose a second hypothesis to analyse the whether the association between social capital and earnings management depends on firm size, which formulated in its null form is the following:

H₂: *the association between social capital and earnings management in SMEs does not depend on firm size*

3. Research design and sample

3.1. Sample and data

We construct our sample of SMEs following the criteria of the European Commission (Regulation nº 651/2014 of 17 June 2014 and Recommendation 2003/361 of 6 May 2003): SMEs have fewer than 250 employees, an annual turnover of up to 50 million euros, or a balance sheet total of no more than 43 million euros. Since we do not consider micro enterprises, we also adopt the criteria of having a minimum of 10 employees. We obtain our financial data from the SABI database, published by Bureau Van Dijk, starting in 2004. We applied the usual filters to eliminate observations with lost values or without enough information to calculate accruals, and winsorised financial variables at percentiles 0.5% and 99.5%. We omit the data for 2004 due to the calculation of accruals being deflated by lagged assets and growth.

Data to estimate the three social capital measures come from different sources: Annual regional data on the social capital index proposed by Pérez et al. (2006) are obtained from Fernández et al. (2015), and since the series of social capital calculated by these authors finishes in 2012, we restrict our initial sample from 2005 to 2012. Raw data on the proxies for social norms or civism and trust in institutions are obtained from the WVS, waves of 2000, 2007 and 2011, at the Spanish regional level. Since our period of analysis is from 2005 to 2012, and the data of

the WVS correspond to 2000, 2007 and 2011, following previous studies, such as Hilary and Hui (2009) and Jha and Chen (2015), we linearly interpolate the data to fill in the years 2005 to 2006, and 2008 to 2010. Regional data on GDP are obtained from the Spanish Institute of Statistics (INE). Thus, our final sample consists of 59,068 firm-year observations for the period 2005-2012.

3.2. Earnings management measure

Our proxy for earnings management is the absolute value of the residuals of the Jones (1991) model, modified by Dechow et al. (1995).

$$\frac{TA_t}{Assets_{t-1}} = \beta_0 \left(\frac{1}{Assets_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}} \right) + \beta_2 \left(\frac{PPE_t}{Assets_{t-1}} \right) + \varepsilon_t, \qquad (1)$$

where *TA* is total accruals, calculated as the change in non-liquid current assets minus the change in current liabilities, plus the change in the short-term bank debt, minus depreciation and amortization. $\Delta Sales$ is the change in sales, ΔREC is the change in account receivables, and *PPE* is property, plant and equipment. All variables, including the intercept, are scaled by lagged total assets (*Assets*).

We estimate model (1) cross-sectionally for each year and industry group at 1 digit of the Spanish Classification of Economic Activities. We require a minimum of 15 observations per regression. For every firm-year, the residuals of the regressions represent discretionary accruals (*DISCACC*), and the unsigned value of the residuals (|*DISCACC*|) is our proxy for earnings management.

3.3. Social capital measures

We use three measures of social capital that take into account both economic aspects as well as social and cultural characteristics. First, we use the natural logarithm of the index of social capital developed by Pérez et al. (2006), *LnSK*. This index focuses on economic aspects for two reasons: Firstly, because it is based on a model of social capital generation, similar to models of physical capital accumulation.[6] According to this model's assumptions, social capital formation depends on an optimal individual decision to invest in social capital and the aggregated effect of cooperation, using the conceptual framework developed by the OECD (2001) for measuring physical capital services. Secondly, because it highlights that economic relationships are fundamental determinants of the social capital formation process. For instance, the formation of social capital increases with income *per capita*, life expectancy, and the reduction of the marginal cost of cooperation; whereas social capital decreases with an increase in inequality, the average age of the population, and the reserve wage. These determinants of social capital are estimated by economic statistics. Thus, by way of examples: (a) the marginal cost of investing in social capital is proxied for the percentage of working-age population with at least secondary education, assuming that a certain level of education guarantees the transmission of common values. (b) The rate of unemployment is used as a proxy for the rate of depreciation of social capital, because losing one's job, besides entailing the loss of an income, implies exclusion from one of the basic social networks, work. (c) To estimate income inequality the *Gini* Index is used; and (d) the ratio between the volume of

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[6] This measure of social capital, which is based on the consideration that social capital is a kind of investment, would be closely linked to the definition of social capital given by some researchers as an "investment in social relations with expected returns" (Lin, 2001, p. 6).

loans within the economy and its GDP is considered as a proxy for the degree of trust and connection which exists between economic agents (Pérez et al., 2006).[7]

Unlike those social capital measures generally employed in the literature, which are obtained from indicators contained in the WVS, and which we also include in this study, the use of the index of social capital developed by Pérez et al. (2006) has the advantage of the availability of annual series. This social capital index was employed by Pastor and Tortosa-Ausina (2008) in their international study about social capital and bank performance.

Our second measure of social capital is an indicator for social norms or civism, *CIV*. This index is calculated as the mean of the responses of the WVS (waves of 2000, 2007, and 2011) concerning the justification of the following behaviours: 1) Claiming government benefits to which you are not entitled; 2) Avoiding paying a fare on public transport; 3) Cheating on taxes if you have the chance; and 4) Someone accepting a bribe in the course of their duties. In the original surveys, these items are ranked from 1 (never justifiable) to 10 (always justifiable), but we have recoded the original data of the WVS from 1 (always justifiable) to 10 (never justifiable), so that higher values of *CIV* represent higher civism. This variable has previously been used by Knack and Keefer (1997) in their study about social capital and economic performance.

Thirdly, since social capital is usually defined as generalized trust, such as people's trust in institutions and the system, we use a measure of trust in institutions, *TRUST*, which is calculated as the mean of the responses to the following items of the WVS: How much confidence do you have in 1) the courts; 2) the government in your nation; 3) political parties; 4) the Parliament? All these variables are ranked from 1 (None at all) to 4 (A great deal).

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[7] See Pérez et al. (2006) for a complete explanation of the methodology used to obtain this measure of social capital.

Previous studies on social capital have already focused on trust in people obtaining their data from the item of the WVS "Would you say that most people can be trusted?", but in this paper we want to focus on how the perception of institutional behaviour influences personal behaviour. We hypothesize that the lower the confidence in institutions is, confidence which could be affected by the financial crisis, the higher the probability of developing selfish actions will be, such as the manipulation of earnings, to take advantage of private benefits.

3.4. Regression model

We use the following model to test the association between social capital measures and earnings management:

$$\left|DISCACC\right|_i = \beta_0 + \beta_1 SC_j + \beta_2 SIZE_i + \beta_3 ROA_i + \beta_4 LEV_i + \beta_5 GROWTH_i + \beta_6 LOSS_i + \beta_7 LnGDP_j + \sum_t \beta_t Year_t + \sum_k \beta_k Ind_k + \varepsilon \qquad (2)$$

where $|DISCACC|$ represents the unsigned value of discretionary accruals estimated in model (1). *SC* represents social capital proxies, and can be measured in three ways: *LnSK*, *CIV*, and *TRUST*, calculated as defined above. We first run the model separately for each social capital proxy, and then we include them all together in the same model. Based on our first hypothesis, we predict β_1 to be negative. We also control for several variables that, according to previous literature, can influence earnings management. *SIZE* is the natural logarithm of a firm's total assets; *ROA* is return on assets, calculated as operating income over total assets; *LEV* is leverage, calculated as total debt over total assets; *GROWTH* represents a firm's growth and is calculated as sales in *t* divided by sales in *t*-1. *LOSS* is a dummy variable that takes the value of 1 if the firm reports a loss in net income in any of the last three years, and zero otherwise. *LnGDP* is the natural logarithm of the gross domestic product *per capita* at the regional level.

We also include vectors of dummy variables to control for time effects (*Year*) and industry effects (*Ind*). Subscripts i, j, t, and k refer, respectively, to firm, region, year, and industry.

Although our sample consists of SMEs, the larger firms in our sample are likely to face more scrutiny from suppliers and banks, so we expect a negative relationship of *SIZE* with discretionary accruals. Discretionary accruals can also be influenced by firm performance (Dechow et al., 1995), and more leveraged firms and firms with financial constraints have more incentives to engage in earnings management (DeFond and Jiambalvo, 1994; Becker et al., 1998). Growth opportunities can also influence the manipulation of earnings (Warfield et al., 1995; Carey and Simnett, 2006), since firms with higher growth opportunities may engage in earnings management in order to obtain financial funds to finance their projects. We control for reporting losses because firms in this situation may manage earnings to avoid or reduce the loss. We also include as a control variable the GDP *per capita* in each region in order to avoid the economic differences between regions affecting the associations between social capital and earnings management. Finally, we control for industry and temporal effects by including industry and year dummy variables. To control for the possibility that the error terms might be correlated, we estimate model (2) with standard errors clustered at the regional level.

4. Results

4.1. Descriptive statistics

Table 1 reports descriptive statistics for signed and unsigned discretionary accruals (Panel A), social capital measures (Panel B), and control variables (Panel C). The mean, median, standard deviation, 10th percentile and 90th percentile are reported for each. The mean (median) of *DISCACC* is very close to zero, whereas the mean (median) of |*DISCACC*| is 0.09 (0.07) and the standard deviation is 0.09. With regard to social capital measures, *SK* has a mean (median)

18

of 701.8 (622.8), *CIV* has a mean (median) of 9.03 (9.1), which illustrates that the perception of civic behaviour is high in our sample, whereas the mean and median of *TRUST* are around 2.2, which confirms that the level of trust in institutions is not high in Spain. With regard to control variables, the average (median) size in total assets of our sample firms is 7,529 (5,290) thousand euros. Firms in our sample show a mean and median of return of assets of around 0.02, and a mean (median) leverage of 0.57. (0.58). Only 3% of our firm-year observations present losses in the last three years and the mean (median) GDP *per capita* is around 23 (24) thousand euros.

[INSERT TABLE 1]

Table 2 shows the mean values of social capital variables by region (Panel A) and year (Panel B). We also map the mean values of the three social capital variables in Figure 1. There are relevant variations in *SK* by regions, from 1,113 in Navarre to 335,5 in Galicia. In *CIV*, the values go from 7.12 in Cantabria to 9.63 in the Canary Islands, and in *TRUST*, from 1.88 in the Basque Country to 3.01 in La Rioja. With regard to the period analysed, *SK* and *TRUST* reached their highest values before 2008, and from this year on they began a decrease that can be attributed to the financial crisis of 2008, which had an effect in reducing social capital (decrease in income per capita, increase in inequality, exclusion from labour social networks,…) and, as a consequence, the trust of people in the institutions. However, the level of *CIV* has experienced an opposite evolution, which suggests that in difficult situations such as the financial crisis the sense of behaving well within a community and the respect for and collaboration with the rest of people of the community increase.

[INSERT TABLE 2]

Table 3 presents the correlation matrix between independent variables for the whole period. With regard to social capital variables, as previously mentioned, these do not move in the same direction: The correlations between the social capital index and institutional trust, on one hand, and between institutional trust and civic behaviour, on the other, are positive and statistically significant. However, the correlation between the social capital index and civic behaviour is negative and significant. This is due to our sample period, which mostly comprises years affected by the financial crisis which has also influenced social capital variables. In relation to financial variables, larger firms in our sample are more profitable, grow more, and are less leveraged. Finally, the GDP of the region where the firms are headquartered is positively correlated with firm size, profitability and growth, whereas it is negatively correlated with the levels of leverage and losses experienced by firms. Since correlations between independent variables are not very high, we discard problems of multicollinearity in the regressions.

[INSERT TABLE 3]

4.2. Regression results

Table 4 reports regression results of the absolute value of discretionary accruals, |*DISCACC*|, on each measure of social capital. In Columns (1) to (3) we do not include control variables in regression models, and in Columns (4) to (6) we report the results of the regression of model (2) for each variable of social capital plus control variables. As expected from the correlation matrix, the variance inflation factors (VIF) of the independent variables (below 3) also indicate that multicollinearity is not a problem in our estimates[8]. As seen, *LnSK* is negatively associated with absolute discretionary accruals at the 1% level in Columns (1) and (4), *CIV* at the 5% level in Columns (2) and (5), and *TRUST* at the 5% level in Columns (3) and (6). Therefore, we find

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[8] These values of VIF below 3 are also obtained in the estimates of the following regressions, considering all the social capital variables in the same regression.

that the higher the level of the social capital index, the civic cooperation and the trust in institutions, the lower the absolute value of discretionary accruals. With regard to control variables, their signs and significance are consistent with previous literature. *SIZE* is negatively associated with earnings management whereas *ROA*, *LEV*, *GROWTH* and *LOSS* are positively associated with earnings management.

[INSERT TABLE 4]

Table 5 provides the regression results for model (2) including together the three social capital measures and control variables. The results in Column (1) confirm the negative and significant association of *LnSK* and *CIV* (at the 1% level) and *TRUST* (at the 5% level) with unsigned discretionary accruals. Control variables show a similar sign and significance as in the models in Table 4. We also examine the relationship between social capital and earnings management in two different scenarios, depending on the sign of discretionary accruals: income-increasing earnings management and income-decreasing earnings management. Columns (2) and (3) provide the results for regression models using the absolute values of discretionary accruals for the income-increasing and income-decreasing groups, respectively. The results in Column (2) show that the coefficients on the three social capital variables are negative and significant at the 5% level for the income-increasing earnings discretion partition. The results in Column (3) indicate that the coefficients on *LnSK* (significant at the 1% level), and *CIV* (significant at the 5% level) remain negative for the income-decreasing earnings discretion group. In other words, these results suggest that social capital constrains both upward and downward earnings management practices. Overall, our findings show that social capital is negatively related to earnings management, which confirms the alternative version of H_1.

[INSERT TABLE 5]

So far, our results, using both traditional proxies of social capital and the multidimensional measure developed by Pérez et al. (2006), confirm those of prior literature which has examined social capital and earnings management in large firms. However, previous literature has shown that firm size affects networking behaviour, which can determine the engagement of firms with the social capital of their regions (Wincent, 2005). Since in an SME sample there is a great variety of firms in relation to size (from 300,000 € to almost 43 million € of total assets in our sample), we investigate whether firm size affects the association between social capital variables and earnings management. In doing so, we provide new evidence to enhance our understanding of the mechanisms through which social capital influences financial reporting.

Table 6 displays the results of the main analyses of the association between social capital and earnings management across size quintiles. We find that *LnSK* shows a negative and significant association with earnings management across all size quintiles, confirming the previous findings for this variable. However, *CIV* has a negative and significant association with earnings management in quintiles 3 to 5, and *TRUST* in quintiles 4 and 5. This suggests that size is a relevant factor to foster the effectiveness of social capital in constraining earnings management when the more sociological approach to measure social capital is adopted. Hence, whereas *CIV* does not significantly affect earnings management in firms whose assets are below 6.7 million €, the threshold in *TRUST* to affect earnings management is around 11.6 million €. Therefore, we find that the relationship between social capital and earnings management depends on SME size, confirming the alternative version of H$_2$: the larger the SME, the stronger the relationship is between social capital and earning management.

[INSERT TABLE 6]

We have also carried out several additional and robustness analyses, which are fully reported in the Online Appendix. We examine the association between social capital and earnings

22

management before and during the 2008 financial crisis. We perform a *t*-test of difference of means for absolute values of discretionary accruals and social capital measures and we regress earnings management on the social capital measures for both the pre-crisis and crisis periods, finding similar results, mainly in the crisis period, to those of Table 5.

We have also repeated the main analyses for several other measures of discretionary accruals and accruals quality and our findings are, in general, consistent with a negative relationship between earnings management and social capital measured by the index based on economic relationships, mainly, and our proxy for civic engagement, to a lesser extent. Finally, we repeat the analyses with the subsample of firm-years whose financial statements have been audited and using all the proxies for earnings management and, in general, our findings seem to indicate a negative association between social capital and earnings management.

5. Conclusions

In this paper we have analysed how social capital affects earnings management in a sample of Spanish SMEs. We use discretionary accruals as a proxy for earnings management and three measures of social capital which involve both the economic and the social dimensions of social capital: the index of social capital developed by Pérez et al. (2006), and two variables obtained from the WVS, one which represents civic engagement, and another one which represents trust in institutions.

Consistent with our expectations, our results show that social capital variables are significant and negatively related to the extent of discretionary accruals, which suggests that social capital can constrain opportunistic earnings management practices among SMEs. We have also investigated whether firm size affects the association between social capital and earnings management in SMEs, and we have found a stronger association for larger SMEs. Whereas the

multidimensional proxy for social capital is negatively related to earnings management across all the sample, the sociological proxies based on the WVS, i.e. civic engagement and trust in institutions, are not significantly related to earnings management in the lower firm size quintiles.

In additional analyses (see online appendix), we have examined the relationship between social capital and earnings management before and during the 2008 financial crisis, and, in line with those observed for the full sample, our results suggest that the level of social capital of the region where the SME is headquartered is negatively associated to the absolute value of discretionary accruals, especially during the crisis period. In other additional tests using diverse measures of earnings management and accruals quality, and examining a subsample of audited firms, our findings are particularly robust when using both the index of social capital that involves sociological and economic dimensions of social capital and the proxy for civic engagement. We provide evidence consistent with social capital being an effective external mechanism in curbing the SME managers' incentives to engage in earnings management.

Our study contributes to the recent literature that analyses the influence of informal institutions on management behaviour. Considering traditional sociological measures of social capital from the WVS as well as a multidimensional one within an economic approach to social capital that encompasses both individual decisions of trust with the aggregated of cooperation, our results in private SMEs confirm those found in large public firms which suggest that social capital may constrain earnings management practices. Further, this study extends the literature linking social capital and SMEs, which are a type of firm usually neglected in social capital studies, in spite of the importance of the social environment for small business development. Finally, our results contribute to the debate on the role played by firm size in the influence of social capital on the functioning of SMEs. Consequently, our findings are relevant and informative to

regulators, policymakers, managers, creditors, external monitors, and, in general, any SME financial statements user. A better understanding of the role played by social capital in constraining opportunistic SME behaviours may help regulators in shaping appropriate financial reporting standards and implementing efficient measures to avoid fraudulent financial statement manipulation. For financial statement users, including investors, creditors, financial institutions, and consumers, our findings may be useful to help them to better assess accounting information prepared by SMEs headquartered in regions with different level of social capital and, consequently, to take more efficient decisions in relation to SMEs.

This research leaves open some questions about the influence of social capital on SMEs, which could be explored in future research. For instance, since our results have shown that social capital may be associated with financial reporting quality, it would be interesting to study if other SMEs' outcomes more closely related to social behaviour, such as corporate social responsibility, are influenced by social capital. As regards the financial decisions, it would also be interesting to examine whether social capital may improve the access to finance for SMEs and thus reduce the financial restrictions facing these firms, since moral hazard problems are likely to be lower in those settings with higher levels of social capital.

References

Akerlof, G. A. (2007). The missing motivation in macroeconomics. *The American Economic Review*, *97*(1), 5-36.

Algan, Y., & Cahuc, P. (2010). Inherited trust and growth. *The American Economic Review*, *100*(5), 2060-2092.

Alm, J., & Torgler, B. (2006). Culture differences and tax morale in the United States and Europe. *Journal of Economy Psychology*, *27*(2), 224-246.

Becker, C. L., DeFond, M. L., Jiambalvo J., & Subramanyam K. R. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research*, *15*(1), 1-24.

Bianchi, P.A., Carrera, N., & Trombetta, M. (2020). The effects of auditor social and human capital on auditor compensation: Evidence from the Italian small audit firm market. *European Accounting Review*, *24*(4), 693-721.

Boahen, E.O., & Mamatzakis, E.C. (2020). The impact of religion on classification shifting in the presence of corporate governance and BIG 4 audit. *Accounting Forum*, *44*(2), 103-131.

Bornemann, S., Kick, T., Memmel, C., & Pfingsten, A. (2012). Are banks using hidden reserves to beat earnings benchmarks? Evidence from Germany. *Journal of Banking & Finance*, *36*(8), 2403-2415.

Bourdieu, P. (1985). The forms of capital. In *Handbook of theory and research for he sociology of education*, ed. JG Richardson, 241-258. New York: Greenwood.

Callen, J. L., Morel, M., & Richardson, G. (2011). Do culture and religion mitigate earnings management? Evidence from a cross-country analysis. *International Journal of Disclosure and Governance*, *8*(2), 103-121.

Carey, P., & Simnett, R. (2006). Audit partner tenure and audit quality. *The Accounting Review*, *81*(3), 653-676.

Charles, K. K., & Kline, P. (2006). Relational costs and the production of social capital: evidence from carpooling. *The Economic Journal*, *116*(511), 581-604.

Cho, H., Choi, S., Lee, W-J., & Yang, S. (2020). Regional crime rates and corporate misreporting, *Spanish Journal of Finance and Accounting*, *49*(1), 94-123.

Cimini, R. (2015). How has the financial crisis affected earnings management? A European study. *Applied Economics*, *47*(3), 302-317.

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology*, *94*, S95-S120.

Coleman, J. S. (1990). *Foundations of social theory.* Belknap Press of Harvard University Press (Cambridge Mass).

Colomer, J.M. (1998). The Spanish 'state of autonomies': Non-institutional federalism. *West European Politics*, *21*(4), 40-52.

Curran, J., & Blackburn, R. (1994). Small firms and local economic networks: the death of the local economy? Paul Chapman, London.

Curran, J., Rutherfoord, R., & Blackburn, R. (2000). Is there a local business community? Explaining the non-participation of small business in local economic development. *Local Economy*, 15, 2 128-143.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review*, 77, 35-59.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review*, *70*(2), 193-225.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, *17*(1-2), 145-176.

Desender, K. A., Castro, C. E., & Escamilla de León, S. A. (2011). Earnings management and cultural values. *The American Journal of Economics and Sociology*, *70*(3), 639-670.

Doupnik, T. S. (2008). Influence of culture on earnings management: a note. *Abacus*, *44*(3), 317-340.

Dyreng, S. D., Mayew, W. J., & Williams, C. D. (2012). Religious social norms and corporate financial reporting. *Journal of Business Finance & Accounting*, *39*(7), 845-875.

European Commission (2015). *Annual Report on European SMEs 2014/2015 – SMEs start hiring again*, Brussels.

European Commission Recommendation 2003/361 of 6 May 2003.

European Commission Regulation nº 651/2014 of 17 June 2014.

Eurostast (2013). Regional GDP per capita in the EU in 2010: eight capital regions in the ten first places. *Eurostat newsrelease*, 46/2013.

Fernández, J., Pérez, F., & Serrano, L. (2015). *Crisis económica, confianza y capital social.* Fundación BBVA, Bilbao.

Filip, A., & Raffournier, B. (2014). Financial crisis and earnings management: the European evidence. *The International Journal of Accounting*, *49*(4), 455-478.

Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity.* New York: Free Press.

García Albacete, G. M. (2010). The saliency of political cleavages and the "dark sides" of social capital: Evidence from Spain. *American Behavioral Scientistc*, *53*(5), 691-716.

Geiger, M. A., O'Connell, B. T., Clikeman, P. M., Ochoa, E., Witkowski, K., & Basioudis, I. (2006). Perceptions of earnings management: the effects of national culture. *Advances in International Accounting*, *19*, 175-199.

Geiger, M., & van der Laan Smith, J. (2010). The effect of institutional and cultural factors on the perceptions of earnings management. *Journal of International Accounting Research*, *9*(2), 21-43.

Glaeser, E. L. (2001). The formation of social capital. *Canadian Journal of Policy Research*, *2*(1), 34-40.

Glaeser, E. L., Laibson, D., & Sacerdote, B. (2002) An economic approach to social capital. *The Economic Journal*, *12*, 437-458.

Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial development. *The American Economic Review*, *94*(3), 526-556.

Guiso, L., Sapienza, P., & Zingales, L. (2008). Trusting the stock market. *The Journal of Finance*, *53*(6), 2557-2600.

Gulati, R., Norhria, N., & Zaheer, A. (2000). Strategic networks. *Strategic Management Journal*, *21*(3), 203-215.

Han, S., Kang, T, Salter, S., & Yoo, Y. K. (2010). A cross-country study on the effects of national culture on earnings management. *Journal of International Business Studies*, *41*(1), 123-141.

Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017). Social capital and debt contracting: evidence from bank loans and public bonds. *Journal of Financial and Quantitative Analysis*, *52*(3), 1017-1047.

Hilary, G., & Huang, S. (2014). Regulation through social norms. *Working paper*, INSEAD. Electronic copy available at:

http://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=2296&context=soa_research

Hilary, G., & Hui, K. W. (2009). Does religion matter in corporate decision making in America? *Journal of Financial Economics*, *93*(3), 455-473.

Iatridis, G., & Dimitras, A. I. (2013). Financial crisis and accounting quality: evidence from five European countries. *Advances in Accounting*, *29*(1), 154-160.

Javakhadze, D., Ferris, S. P., & French, D. W. (2016). Social capital, investments, and external financing. *Journal of Corporate Finance*, *37*, 38-55.

Jha, A. (2019). Financial reports and social capital. *Journal of Business Ethics*, *155*(2), 567-596.

Jha, A., & Chen, Y. (2015). Audit fees and social capital. *The Accounting Review*, *90*(2), 611-639.

Jin, J., Kanagaretman, K., Lobo, G. J., & Mathieu, R. (2017). Social capital and bank stability. *Journal of Financial Stability*, *32*, 99-114.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, *29*(2), 193-228.

Kasznik, R. (1999). On the association between voluntary disclosure and earnings management. *Journal of Accounting Research*, 37, 57-81.

Knack, S. (2002). Social capital and the quality of government: evidence from the States. *American Journal of Political Sciences*, *46*(4), 772-785.

Knack, S., & Keefer, P. (1997). Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics*, *112*(4), 1251-1288.

Kothari, S. P., Leone A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, *39*(1),163-197.

Kousenidis, D. V., Ladas, A. C., & Negakis, C. I. (2013). The effects of the European debt crisis on earnings quality. *International Review of Financial Analysis*, *30* (December). 351-362.

Kurt, A.C. (2018): How do financial constraints relate to financial reporting quality? Evidence from seasoned equity offerings. *European Accounting Review*, 27, 3, 527-557.

La Porta, R., Lopez de Silanes, F, Shleifer, A., & Vishny, R. (1997). Trust in large organizations. *The American Economic Review*, *87*(2), 333-338.

Lepoutre, J., & Heene, A. (2006). Investigating the impact of firm size on small business social responsibility: a critical review. *Journal of Business Ethics*, *67*(3), 257-273.

Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, *69*(3), 505-527.

Lin, N. (2001). *Social capital: A theory of social structure and action.* Cambridge, MA: Cambridge University Press.

Lins, K.V., Servaes, H., & Tamayo, A. (2017). Social capital, trust, and firm performance: the value of corporate social responsibility during the financial crisis. *The Journal of Finance*, *72*(4), 1785-1824.

López-Pérez. M.E., Melero, I., & Sese, F.J. (2017). Management for sustainable development and its impact on firm value in the SME context: does size matter? *Business Strategy and the Environment*, 26, 985-999.

Ma, L., Zhang, M., Gao, J., & Ye, T. (2020). The effect of religion on accounting conservatism. *European Accounting Review*, *29*(2), 383-407.

Merton, R. (1957). *Social theory and social structure.* Free Press (Glencoe, IL).

Nanda, D., & Wysocki, P. (2011). The relation between trust and accounting quality. W*orking paper*, Boston University.

OECD (2001). *Measuring capital. A manual on the measurement of capital stocks, consumption of fixed capital and capital services.* Paris, OECD.

Partanen, J., Möller, K., Westerlund, M., Rajala, R., & Rajala, A. (2008). Social capital in the growth of science-and-technology-based SMEs. *Industrial Marketing Management*, 37, 513-522.

Pastor, J. M., & Tortosa-Ausina, E. (2008). Social capital and bank performance: an international comparison for OECD countries. *The Manchester School*, *76*(2), 223-265.

Payne, G. T., Moore, C. B., Griffis, S. E., & Autry, C. W. (2011). Multilevel challenges and opportunities in social capital research. *Journal of Management*, *37*(2), 491-520.

Pérez, F., Serrano, L., Montesinos, V., & Fernández, J. (2006). Measurement of social capital and growth. An Economic methodology. *BBVA Foundation Working paper.* Available at: http://www.fbbva.es/TLFU/dat/DT_2006_04.pdf

Pevzner, M., Xie, F., & Xin, S. (2015). When firms talk, do investor listen? The role of trust in stock market reactions to corporate earnings management. *Journal of Financial Economics*, *117*(1), 190-223.

Putnam, R. D. (1993). *Making democracy work: Civic traditions in modern Italy.* Princeton, NJ: Princeton University Press.

Rupasingha, A., Goetz, S. J., & Freshwater, D. (2006). The production of social capital in US counties. *The Journal of Socio-Economics*, 35, 83-101.

Russo, A., & Perrini, F. (2010). Investigating stakeholder theory and social capital: CSR in large firms and SMEs. *Journal of Business Ethics*, *91*, 207-221.

Sabatini, F. (2007). *The empiricals of social capital and economic development: a critical perspective*. In Osborne, M., Sankey, K. & Wilson, B. (eds.). Social capital, lifelong learning regions and the management of place: an international perspective. Routledge.

Spanish Department of Industry - *Dirección General de Industria y de la Pequeña y Mediana Empresa* (2015). *Retrato de las pyme 2015*. Ministerio de Industria, Energía y Turismo. Available at: www.ipyme.org

Spence, L. J. (1999). Does size matter? The state of the art in small business ethics. *Business Ethics: A European Review*, *8*(3), 163-174.

Spence, L. J., Schmidpeter, R., & Habisch, A. (2003). Small and medium sized entrerprises in Germany and the U.K. *Journal of Business Ethics*, *47*(1), 17-29.

Stevenson, W. B., & Radin, R. F. (2009). Social capital and social influence on the board of directors. *Journal of Management Studies*, *46*(1), 16-44.

Warfield, T. D., Wild, J. J., & Wild, K. L. (1995). Managerial ownership, accounting choices and informativeness of earnings. *Journal of Accounting and Economics*, *20*(1), 61-91.

Wincent, J. (2005). Does size matter? A study of firm behaviour and outcomes in strategic SME networks, *Journal of Small Business and Enterprise Development*, *12*(3), 437-453.

Woolcok, M. (2001). The place of social capital in understanding social and economic outcomes. *Canadian Journal of Policy Research*, *2*(1), 11-17.

World Values Survey wave 5 2005-2008 (Spain 2007). World Values Survey Association. Available at: www.worldvaluessurvey.org.

World Values Survey wave 6 2010-2014 (Spain 2011). World Values Survey Association. Available at: www.worldvaluessurvey.org.

Wu, W. (2008). Dimensions of social capital and firm competitiveness improvement: The mediating role of information sharing. *Journal of Management Studies*, *45*(1), 122-146.

Zak, P. J., & Knack, S. (2001). Trust and growth. *The Economic Journal*, *111*(April). 295-321.

Appendix. Definition of Variables

Earnings management variables	
|DISCACC|	Unsigned value of discretionary accruals estimated following the Jones (1991) model modified by Dechow et al. (1995): $$\frac{TA_t}{Assets_{t-1}} = \beta_0 \left(\frac{1}{Assets_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}} \right) + \beta_2 \left(\frac{PPE_t}{Assets_{t-1}} \right) + \varepsilon_t$$ where TA is total accruals, calculated as the change in non-liquid current assets minus the change in current liabilities, plus the change in the short-term bank debt, minus depreciation and amortization. $\Delta Sales$ is the change in sales, ΔREC is the change in account receivables, PPE is property, plant and equipment, and $Assets$ is total assets.
|DISCACC_roa|	Unsigned value of discretionary accruals estimated in the following model: $$\frac{TA_t}{Assets_{t-1}} = \beta_0 \left(\frac{1}{Assets_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}} \right) + \beta_2 \left(\frac{PPE_t}{Assets_{t-1}} \right) + \beta_3 \left(\frac{ROA_t}{Assets_{t-1}} \right) + \varepsilon_t$$ where ROA is return on assets, and the rest of variables are defined as above.
|DISCWCA|	Unsigned discretionary working capital accruals estimated in the following model: $$\frac{TA_t}{Assets_{t-1}} = \beta_0 \left(\frac{1}{Assets_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}} \right) + \varepsilon_t$$
|DISCACC_kasz|	Unsigned discretionary accruals following the Kasznik (1999) model: $$\frac{TA_t}{Assets_{t-1}} = \beta_0 \left(\frac{1}{Assets_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}} \right) + \beta_2 \left(\frac{PPE_t}{Assets_{t-1}} \right) + \beta_3 \left(\frac{\Delta CFO_t}{Assets_{t-1}} \right) + \varepsilon_t$$ where ΔCFO is the change in cash flow from operations, and the rest of variables are defined as above.
|DISCACC_kot|	Unsigned discretionary accruals following the performance-matched model of Kothari et al. (2005). To calculate discretionary accruals each firm in our sample is matched with another firm of the same industry and year with the closest ROA in that particular year. Discretionary accruals for firm i in year t are estimated as the difference between the value of discretionary accruals for this firm calculated according to model (1) and the discretionary accruals of the matched firm calculated in the same way.
|AQ_DD|	Unsigned value of the residuals of the model of accruals quality by Dechow and Dichev (2002): $$WCA_{i,t-1} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \varepsilon_{i,t}$$ where WCA represents working capital accruals and CFO cash flow from operations. All variables are deflated by average total assets.
Social capital variables	
LnSK	Natural logarithm of the index of social capital developed by Pérez et al. (2006), whose data for Spanish regions are provided by Fernández et al. (2015).
CIV	Civism, calculated as the mean of the responses of the WVS concerning the justification of the following behaviours: 1) Claiming government benefits to which you are not entitled; 2) Avoiding paying a fare on public transport; 3) Cheating on taxes if you have the chance; and 4) Someone accepting a bribe in the course of their duties. In the original surveys, these items are ranked from 1 (never justifiable) to 10 (always justifiable). We have recoded the original data of the WVS from 1 (always justifiable) to 10 (never justifiable), so that higher values of CIV represent higher civism.

TRUST	Trust in institutions, which is calculated as the mean of the responses to the following items of the WVS: How much confidence do you have in 1) the courts; 2) the government in your nation; 3) political parties; 4) the Parliament? All these variables are ranked from 1 (None at all) to 4 (A great deal). Data to construct *CIV* and *TRUST* variables are obtained at the Spanish regional level from the original SPSS database for Spain available at the webpage of the WVS (www.worldvaluessurvey.org), waves of 2000, 2007 and 2011. Since our period of analysis is from 2005 to 2012, we linearly interpolate the data to fill in the years 2005 to 2006, and 2008 to 2010.
Control variables	
SIZE	The natural logarithm of firm's total assets.
ROA	Return on assets, calculated as operating income over total assets.
LEV	Leverage, calculated as total debt over total assets.
GROWTH	Firm's growth, calculated as sales in t divided by sales in t-1.
LOSS	A dummy variable that takes the value of 1 if the firm reports a loss in net income in any of the last three years, and zero otherwise.
LnGDP	The natural logarithm of the gross domestic product per capita at the regional level. Regional data on GDP are obtained from the Spanish Institute of Statistics (INE).

Figure 1. Social capital by regions

SK	CIV	TRUST
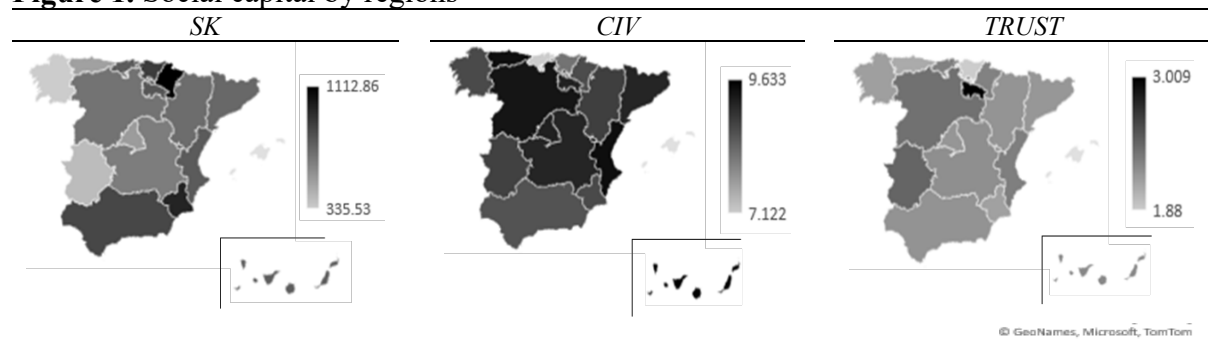
Notes: The maps show the distributions of the mean values of the social capital variables by regions. See Appendix for definition of variables.

Table 1. Descriptive statistics

Panel A: Earnings management measures						
	#obs.	Mean	SD	10th perc.	Median	90th perc.
DISCACC	59,068	-0.004	0.127	-0.155	-0.003	0.144
|DISCACC|	59,068	0.093	0.086	0.012	0.068	0.212
Panel B: Social capital measures						
SK	59,068	701.77	316.79	383.47	622.81	1178.23
LnSK	59,068	6.458	0.437	5.949	6.434	7.072
CIV	59,068	9.051	0.456	8.482	9.162	9.483
TRUST	59,068	2.204	0.208	2.018	2.189	2.428
Panel C: Control variables						
ASSETS	59,068	7,529.04	6,739.91	1,612.74	5,289.98	16,754.82
SIZE	59,068	8.567	0.863	7.386	8.574	9.726
ROA	59,068	0.023	0.0541	-0.028	0.016	0.084
LEV	59,068	0.565	0.206	0.273	0.581	0.829
GROWTH	59,068	0.994	0.201	0.758	0.991	1.215
LOSS	59,068	0.031	0.173	0.000	0.000	0.000
GDP	59,068	23,917	4,437	18,200	24,279	30,128
LnGDP	59,068	10.065	0.189	9.809	10.097	10.313

Notes: This table reports descriptive statistics of the variables employed in the present study for the whole period of analysis (2005-2012) and the whole sample. See Appendix for definition of variables.

Table 2. Social capital by regions and years

Panel A: Social capital measures by Spanish Regions

	SK	CIV	TRUST
Andalusia	843.94	8.607	2.195
Aragon	698.15	8.854	2.191
Asturias	499.39	9.449	2.063
Balearics Islands	656.52	9.001	2.153
Basque Country	884.60	8.221	1.880
Canary Islands	749.98	9.633	2.253
Cantabria	757.59	7.122	2.302
Castile- La Mancha	635.42	9.176	2.220
Castile and Leon	672.83	9.373	2.386
Catalonia	717.23	9.177	2.176
Estremadura	395.87	8.827	2.452
Galicia	335.53	8.719	2.129
La Rioja	783.40	9.210	3.009
Madrid	516.87	9.228	2.178
Navarre	1,112.86	8.701	2.288
Region of Murcia	975.09	8.721	2.120
Valencian Comunnity	767.98	9.461	2.304

Panel B: Social capital measures by years

	SK	CIV	TRUST
2005	894.52	8.923	2.369
2006	1106.81	8.918	2.374
2007	1255.51	8.909	2.378
2008	1038.95	8.957	2.304
2009	664.01	9.020	2.233
2010	602.21	9.085	2.161
2011	526.82	9.150	2.089
2012	403.52	9.150	2.089

Notes: This table reports mean values of social capital variables by region (Panel A) and by years (Panel B). See Appendix for definition of variables.

Table 3. Correlation matrix

	LnSK	CIV	TRUST	SIZE	ROA	LEV	GROWTH	LOSS	LnGDP
LnSK	1								
CIV	-0.185***	1							
TRUST	0.383***	0.075***	1						
SIZE	0.263***	-0.073***	0.148***	1					
ROA	0.156***	-0.045***	0.010***	0.123***	1				
LEV	0.060***	-0.058***	0.034***	-0.039***	-0.203***	1			
GROWTH	0.103***	-0.019***	0.048***	0.121***	0.264***	0.126***	1		
LOSS	-0.096***	0.017***	-0.067***	-0.011***	-0.262***	0.012***	-0.061***		
LnGDP	0.100***	0.0054	-0.172***	0.065***	0.030***	-0.034***	0.013***	-0.009**	1

Notes: This table reports the pairwise correlation coefficients between the measures used in the study for the whole period of analysis (2005-2012) and the whole sample. See Appendix for definition of variables. *** and** represent significance levels at two-tail tests of 1% and 5%, respectively.

Table 4. Regression of earnings management on social capital variables (I)

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Dependent variable: |DISCACC|			
LnSK	-0.008***			-0.007***		
	(-4.36)			(-4.09)		
CIV		-0.004**			-0.004**	
		(-2.26)			(-2.66)	
TRUST			-0.006**			-0.005**
			(-2.55)			(-2.12)
SIZE				-0.006***	-0.006***	-0.006***
				(-13.72)	(-14.43)	(-14.04)
ROA				0.087***	0.087***	0.087***
				(10.06)	(10.25)	(10.19)
LEV				0.010***	0.010***	0.010***
				(3.37)	(3.35)	(3.29)
GROWTH				0.011***	0.011***	0.011***
				(6.27)	(6.29)	(6.17)
LOSS				0.004*	0.004*	0.004*
				(1.90)	(1.75)	(1.83)
LnGDP				0.005	0.005	0.004
				(1.21)	(1.18)	(0.81)
Intercept	0.147***	0.128***	0.108***	0.126***	0.111**	0.102*
	(13.17)	(8.94)	(15.99)	(2.95)	(2.28)	(1.96)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R²	0.015	0.015	0.014	0.022	0.022	0.021
#obs.	59,068	59,068	59,068	59,068	59,068	59,068

Notes: This table reports OLS coefficients of our proxy for earnings management, the absolute value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995), on social capital and control variables for the whole period of analysis (2005-2012). See Appendix for definition of variables. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the regional level in parentheses.
***, **, and * represent significance levels at two-tail tests of 1%, 5%, and 10%, respectively.

Table 5. Regression of earnings management on social capital variables (II)

	Full sample	Income-increasing subsample	Income-decreasing subsample
	Dependent variable: |DISCACC|		
	(1)	*(2)*	*(3)*
LnSK	-0.008***	-0.007**	-0.008***
	(-5.16)	(-2.44)	(-6.54)
CIV	-0.004***	-0.003**	-0.004**
	(-3.36)	(-2.69)	(-2.86)
TRUST	-0.003**	-0.004**	-0.001
	(-2.12)	(-2.29)	(-0.98)
SIZE	-0.006***	-0.006***	-0.007***
	(-14.29)	(-13.20)	(-11.22)
ROA	0.086***	0.150***	0.057***
	(9.97)	(11.41)	(4.85)
LEV	0.009***	0.012***	0.009**
	(3.36)	(5.22)	(2.59)
GROWTH	0.011***	0.039***	-0.018***
	(6.38)	(11.61)	(-4.71)
LOSS	0.004*	-0.003	0.006*
	(1.84)	(-0.71)	(1.95)
LnGDP	0.005	-0.003	0.011***
	(1.47)	(-0.60)	(3.55)
Intercept	0.173***	0.210***	0.151***
	(5.32)	(4.22)	(5.32)
Year	Yes	Yes	Yes
Ind	Yes	Yes	Yes
Adj. R^2	0.022	0.038	0.026
#obs.	59,068	28,868	30,200

Notes: This table reports OLS coefficients of our proxy for earnings management, the absolute value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995), on social capital and control variables for the whole period of analysis (2005-2012) and for subsamples of income-increasing and income-decreasing scenarios. See Appendix for definition of variables. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the regional level in parentheses. ***, **, and * represent significance levels at two-tail tests of 1%, 5%, and 10%, respectively.

Table 6. Regression of earnings management on social capital variables by size quintiles

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	Dependent variable: |DISCACC|				
LnSK	-0.005*	-0.007**	-0.008*	-0.006***	-0.009***
	(-1.86)	(-2.68)	(-1.85)	(-2.75)	(-3.14)
CIV	-0.003	0.4e-03	-0.003*	-0.005**	-0.004*
	(-1.64)	(-2.26)	(-2.02)	(-2.82)	(-2.09)
TRUST	-0.005	-0.004	0.005	-0.012**	-0.006*
	(-1.30)	(-0.07)	(1.57)	(-2.51)	(-1.80)
SIZE	-0.017***	-0.005	-0.005	-0.012**	-0.004*
	(-7.30)	(-0.64)	(-0.94)	(-2.46)	(-2.01)
ROA	0.048*	0.056***	0.119***	0.080***	0.156***
	(1.84)	(3.37)	(5.58)	(5.54)	(9.62)
LEV	-0.3e-03	-0.006	0.010**	0.007	0.035***
	(-0.06)	(-1.41)	(2.83)	(1.34)	(7.03)
GROWTH	0.005	-0.004	0.013**	0.020***	0.014**
	(1.21)	(-0.65)	(2.21)	(4.72)	(2.39)
LOSS	0.005	-0.002	0.007	0.008**	0.004
	(1.63)	(-0.84)	(1.13)	(2.12)	(1.05)
LnGDP	0.006	0.005	0.006	0.002	0.004
	(1.42)	(1.20)	(0.71)	(0.49)	(0.68)
Intercept	0.272***	0.144*	0.126	0.275***	0.167***
	(7.02)	(1.93)	(1.24)	(4.47)	(3.64)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R²	0.016	0.019	0.021	0.028	0.048
#obs.	11,813	11,814	11,814	11,814	11,813

Notes: This table reports OLS coefficients of our proxy for earnings management, the absolute value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995), on social capital and control variables for the whole period of analysis (2005-2012) by quintiles of size. See Appendix for definition of variables. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the regional level in parentheses.
***, **, and * represent significance levels at two-tail tests of 1%, 5%, and 10%, respectively.

Online Appendix

Social capital and earnings management in small and medium firms

Additional and robustness analyses

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A.1 Social capital, earnings management, and crisis

We first examine the association between social capital and earnings management before and during the 2008 financial crisis, since both variables may be altered after the onset of the crisis. On the one hand, several studies have investigated the effect of the 2008 financial crisis on earnings management for cross-country samples of European listed firms. The findings are mixed depending on the type of firms, financial vs. non-financial firms. In the case of financial entities, it is generally assumed that there was an increase in earnings management during the crisis period in the European Union. (e.g. Bornemann et al., 2012). However, those studies that use samples of European non-financial firms suggest that earnings management generally decreased in the crisis years, but this trend is not observed in certain countries or type of firms (e.g. Iatridis and Dimitras, 2013; Kousenidis et al., 2013; Filip and Raffournier, 2014; Cimini, 2015). In the case of Spain, Filip and Raffournier (2014) show a decrease in discretionary reporting, measured with income smoothing, discretionary accruals and accruals quality. Prior evidence has also shown that the global financial crisis has had significant and contradictory impacts on several dimensions of social capital, highlighting lower trust in the public institutions together with an increase in people's willingness to cooperate in social networks, such as voluntary associations (e.g. Fernández et al., 2015).

We consider two periods, one before the crisis, from 2005 to 2007, and another one of clear crisis, from 2009 to 2012. We discard the year 2008 because, although the crisis in Spain begins in this year, this is also the year where the highest GDP of the period is achieved. Panel A of Table A.1 reports the descriptive statistics for both periods and a *t*-test of difference of means for absolute values of discretionary accruals and social capital measures. All variables show significant changes in the period. In particular, we find a reduction in earnings management, but also in *LnSK* and *TRUST*. However, there is a significant increase in *CIV*. This suggests

45

that the crisis has provoked a decrease in expectations in the economy, that is, how citizens perceive the future, and together with this, a decrease in the trust in institutions. The positive part of the crisis is an increase in civic behaviour.[9] Panel B of Table A.1 presents the correlations between social capital variables before and during the crisis and reveals how the crisis has affected the associations between our variables of study. Before the crisis, the correlations between *LnSK* and *CIV*, and between *TRUST* and *CIV*, were positive and significant at the 1% level. However, the correlation between *LnSK* and *TRUST* was not significant. During the crisis, in contrast, the changes in the perception of citizens with regard to these variables have caused the previously positive association between *LnSK* and *CIV* to become negative, whereas the correlation between *LnSK* and *TRUST* becomes positive and statistically significant.

[INSERT TABLE A.1]

Table A.2 reports the results of the regression of model (2), incorporating together our three social capital measures, for the pre-crisis period (Column 1) and the crisis period (Column 2). We also report a *t*-test to assess the change in the coefficients on social capital variables (Column 3)[10]. We find similar results, mainly in the crisis period, to those of Table 5. *LnSK* is the only social capital measure that is significantly and negatively associated with earnings management in the pre-crisis period. In contrast, the three proxies for social capital are negatively and significantly associated with the absolute value of discretionary accruals during the crisis. Therefore, our results suggest that the restraining effects of the different dimensions

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[9] These findings are consistent with the evidence provided by Fernández et al. (2015) in their study on the impact of the 2008 economic crisis on social capital in developed countries and, particularly, in Spain. They find that Spain is the country with the highest drop in the index of social capital used in our study, *SK*, between 2007 and 2011. For Spain, by using data from the European Social Survey, Fernández et al. (2015) also find a significant loss of trust in public institutions and a higher participation in voluntary associations during the crisis.
[10]The t tests have been calculated using a difference-in-difference analysis interacting a dummy variable for crisis and the social capital variables in just one regression.

of social capital on unsigned earnings management, in particular civic behaviour, are more relevant during the crisis.

[INSERT TABLE A.2]

A.2. Other discretionary accruals measures

We have also repeated the main analyses for several other measures of discretionary accruals. First, we controlled for *ROA* deflated by lagged total assets as an explanatory variable in model (1) to estimate discretionary accruals, *DISCACC_roa* (Kothari et al., 2005; Kurt, 2018). Second, we used the discretionary working capital accruals model instead of the total accruals model, *DISCWCA*, i.e., in model 1 our dependent variable is working capital accruals deflated by lagged total assets, and on the right hand side of the equation we consider just the intercept plus the determinant of working capital accruals, $\beta_0 \left(\dfrac{1}{Assets_{t-1}} \right) + \beta_1 \left(\dfrac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}} \right)$, both deflated by lagged total assets. Third, we use the model of discretionary accruals suggested by Kasznik (1999), *DISCACC_kasz*, which, based on the original Jones (1991) model, also controls for the change in cash flow from operations *($\Delta CFO_{i,t}$)*.

Fourth, we employ the performance-matched model of Kothari et al. (2005), which is another approach to control for the effect of performance on discretionary accruals, *DISCACC_kot*. Thus, to calculate discretionary accruals we matched each firm in our sample with another firm of the same industry and year with the closest *ROA* in that particular year. We estimate discretionary accruals for firm *i* in year *t* as the difference between the value of discretionary accruals for this firm calculated according to the Jones model (1991) modified by Dechow et al. (1995) and the discretionary accruals of the matched firm calculated in the same way. Fifth, we extend our analysis to the association between social capital and accruals quality using the

model developed by Dechow and Dichev (2002), estimated by industry and year as well. In this model, current working capital accruals are regressed on cash flow from operations of the previous year, the current year and the subsequent year.

$$WCA_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \varepsilon_{i,t},$$ (3)

where $WCA_{i,t}$ represents working capital accruals, and $CFO_{i,t-1}$, $CFO_{i,t}$ and $CFO_{i,t+1}$ are the cash flow from operations. All variables are deflated by average total assets. The residuals from equation (3) reflect the variation in working capital accruals unexplained by cash flow of the current year and adjacent periods, *AQ_DD*. Therefore, the higher the absolute value of the residuals, the lower the quality of the accruals in relation to cash flows.

Table A.3 provides the regression estimations of the absolute values of each proxy for accrual-based earnings management and the accrual quality measure, described above, on the three social capital measures and control variables included in model (2). We see that for the modified Jones model controlling for *ROA*, and the working capital model of discretionary accruals, the results are similar to those previously reported, the three social capital variables have coefficients that are significantly negative. For the Kasznik model, the coefficients on *LnSK* and *CIV* are also significantly negative. However, when using the Kothari et al. (2005) model, and the model of accruals quality by Dechow and Dichev (2002), the negative association of earnings management and poor accruals quality with social capital is significant for *LnSK* but not for *CIV* and *TRUST*. Therefore, with this exception, our findings are, in general, consistent with a negative relationship between earnings management and social capital measured by the index based on economic relationships, mainly, and our proxy for civic engagement, to a lesser extent.

[INSERT TABLE A.3]

A.3. Audited firms

Our sample comprises both small and medium firms and, therefore, the financial statements of an important number of firms are not audited, which could cast doubt about their financial reporting quality. Consequently, we repeat the analyses with the subsample of firm-years whose financial statements have been audited. Table A.4 reports the regression results using as dependent variables the absolute values of all the discretionary accruals and accrual quality measures considered in the previous analyses, and the three measures of social capital and control variables included in model (2) as independent variables. As seen, all model estimations confirm the negative association of earnings management and accruals quality with *LnSK*. The coefficient on *CIV* is significantly negative in all cases with the exception of the accruals quality model, whereas *TRUST* is not significant in any model. In general, even for the audited SME subsample, our findings seem to indicate a negative association between social capital and earnings management.

[INSERT TABLE A.4]

Table A1. Comparison between before crisis and during crisis

Panel A: Earnings management and social capital measures

	Before crisis			Crisis			Difference	
	#obs.	Mean	SD	#obs.	Mean	SD	Mean	t-stat
|DISCACC|	12,166	0.101	0.091	42,033	0.090	0.084	0.011	13.087***
LnSK	12,166	6.943	0.346	42,033	6.265	0.311	0.679	206.65***
CIV	12,166	8.916	0.632	42,033	9.101	0.362	-0.185	-41.05***
TRUST	12,166	2.374	0.131	42,033	2.143	0.203	0.231	118.43***

Panel B: Correlation between social capital variables

	Before crisis				Crisis		
	LnSK	*CIV*	*TRUST*		*LnSK*	*CIV*	*TRUST*
LnSK	1			*LnSK*	1		
CIV	0.054***	1		*CIV*	-0.184***	1	
TRUST	-0.005	0.196***	1	*TRUST*	0.126***	0.182***	1

Notes: Panel A reports summary statistics of earnings management and social capital variables before and during the crisis. The value of the difference before (2005-2007) and during the crisis (2009-2012) is also reported. The *t-test* is used to test the null hypothesis of no significant differences in each measure between the two periods. Panel B reports the pairwise correlation coefficients between the proxies for social capital used in the study before (2005-2007) and during the crisis (2009-2012). See Appendix for definition of variables.

*** represents significance levels at two-tail tests of 1%.

Table A.2. Regression of earnings management on social capital before and during 2008 crisis

	Before crisis	Crisis	t- test
Dependent variable: |DISCACC|			
	(1)	(2)	(3)
LnSK	-0.008***	-0.007***	0.58
	(-3.18)	(-5.43)	
CIV	-0.002	-0.005***	-2.64**
	(-1.21)	(-3.35)	
TRUST	-0.010	-0.002**	0.63
	(-1.24)	(-2.42)	
SIZE	-0.002**	-0.007***	
	(-2.40)	(-14.26)	
ROA	0.185***	0.063***	
	(12.90)	(5.59)	
LEV	0.022***	0.007**	
	(6.31)	(2.18)	
GROWTH	0.035***	0.007**	
	(5.41)	(2.88)	
LOSS	0.028***	0.002	
	(3.71)	(0.74)	
LnGDP	0.001	0.006*	
	(0.20)	(2.01)	
Intercept	0.141*	0.163***	
	(2.01)	(5.87)	
Year	Yes	Yes	
Ind	Yes	Yes	
Adj. R^2	0.024	0.020	
#obs.	12,166	42,033	

Notes: This table reports OLS coefficients of our proxy for earnings management, the absolute value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995), on social capital and control variables before (2005-2007) and during the crisis (2009-2012). See Appendix for definition of variables. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the regional level in parentheses. The *t*-test statistic is reported and used to test the null hypothesis of no significant differences in coefficients on social capital variables between two periods. ***, **, and * represent significance levels at two-tail tests of 1%, 5%, and 10%, respectively.

Table A.3. Regression of different earnings management and accruals quality measures on social capital variables

	|DISCACC_roa|	|DISCWCA|	|DISCACC_kasz|	|DISCACC_kot|	|AQ_DD|
LnSK	-0.008***	-0.008***	-0.005**	-0.003*	-0.003***
	(-5.13)	(-4.39)	(-2.67)	(-1.91)	(-4.10)
CIV	-0.004***	-0.004***	-0.002*	-0.002	0.000
	(-3.27)	(-3.23)	(-1.98)	(-1.53)	(0.00)
TRUST	-0.003*	-0.003**	-0.001	0.002	0.000
	(-1.93)	(-2.12)	(-0.53)	(0.84)	(-0.44)
SIZE	-0.006***	-0.006***	-0.005***	-0.001	-0.002***
	(-14.14)	(-12.61)	(-14.51)	(-1.35)	(-7.83)
ROA	0.111***	0.095***	0.018**	0.064***	0.040***
	(15.12)	(14.15)	(2.40)	(10.06)	(3.96)
LEV	0.009***	0.010***	0.005**	-0.012***	-0.006***
	(3.49)	(3.77)	(2.57)	(-12.13)	(-4.66)
GROWTH	0.011***	0.012***	0.003	0.003	-0.003***
	(6.11)	(5.83)	(1.67)	(1.47)	(-2.95)
LOSS	0.001	0.001	0.004**	0.008***	0.022***
	(0.48)	(0.67)	(2.56)	(3.39)	(10.81)
LnGDP	0.005	0.003	0.004	0.004*	0.005***
	(1.54)	(0.81)	(0.99)	(1.85)	(4.23)
Intercept	0.167***	0.190***	0.106**	0.090***	0.036***
	(5.01)	(4.89)	(2.62)	(3.52)	(4.22)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.024	0.024	0.015	0.015	0.022
#obs.	59,068	59,068	44,863	59,068	41,370

Notes: This table reports OLS coefficients of unsigned discretionary accruals measures and unsigned accruals quality on social capital and control variables for the whole period of analysis (2005-2012). *\|DISCACC_roa\|* is the absolute value of the residuals calculated using the Jones (1991) model modified by Dechow et al. (1995) and including *ROA* as an independent variable in the estimates of discretionary accruals. *\|DISCWCA\|* is the absolute value of the residuals calculated using the working capital accrual version of the Jones (1991) model modified by Dechow et al. (1995). *\|DISCACC_kasz\|* is the absolute value of the residuals calculated using the Kasznik (1999) model. *\|DISCACC_kot\|* is the absolute value of the residuals calculated using the Kothari et al. (2005) model. *\|AQ_DD\|* is the absolute value of the residuals of the Dechow and Dichev (2002) model of accruals quality. See Appendix for definition of the rest of variables. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the regional level in parentheses.
***, **, and * represent significance levels at two-tail tests of 1%, 5%, and 10%, respectively.

Table A.4. Regression of different earnings management and accruals quality measures on social capital variables (audited firms)

	|DISCACC|	|DISCACC_roa|	|DISCWCA|	|DISCACC_kasz|	|DISCACC_kot|	|AQ_DD|
LnSK	-0.008***	-0.008***	-0.009***	-0.005**	-0.003**	-0.003***
	(-3.94)	(-4.05)	(-3.69)	(-2.28)	(-2.16)	(-3.10)
CIV	-0.004***	-0.005***	-0.005***	-0.002**	-0.002*	0.000
	(-4.65)	(-4.76)	(-4.95)	(-2.21)	(-1.76)	(0.21)
TRUST	-0.002	-0.001	-0.002	-0.001	0.002	0.001
	(-0.38)	(-0.25)	(-0.51)	(-0.34)	(0.99)	(0.39)
SIZE	-0.008***	-0.008***	-0.008***	-0.005***	0.000	-0.003***
	(-9.84)	(-9.63)	(-9.84)	(-7.05)	(-0.54)	(-5.97)
ROA	0.097***	0.118***	0.102***	0.022*	0.076***	0.068***
	(9.49)	(12.48)	(9.62)	(1.92)	(7.64)	(4.41)
LEV	0.014***	0.015***	0.014***	0.006**	-0.012***	-0.004***
	(3.99)	(4.27)	(4.39)	(2.79)	(-4.39)	(-3.01)
GROWTH	0.011***	0.010***	0.013***	0.001	0.004	-0.004**
	(7.30)	(6.85)	(7.55)	(0.19)	(1.45)	(-2.70)
LOSS	0.006**	0.004	0.002	0.005***	0.008***	0.023***
	(2.28)	(1.27)	(0.77)	(3.01)	(3.13)	(9.07)
LnGDP	0.002	0.003	0.001	0.001	0.007**	0.004**
	(0.49)	(0.61)	(0.24)	(0.18)	(2.70)	(2.86)
Intercept	0.223***	0.217***	0.228***	0.159***	0.064**	0.056***
	(4.51)	(4.32)	(4.08)	(3.44)	(2.45)	(4.69)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R²	0.025	0.026	0.027	0.016	0.016	0.026
#obs.	32,594	32,594	32,594	26,357	32,594	24,756

Notes: This table reports OLS coefficients of unsigned discretionary accruals measures and accruals quality on social capital and control variables for the whole period of analysis (2005-2012) and for the subsample of firms that have been audited. \|DISCACC_roa\| is the absolute value of the residuals calculated using the Jones (1991) model modified by Dechow et al. (1995) and including *ROA* as independent variable in the estimates of discretionary accruals. \|DISCWCA\| is the absolute value of the residuals calculated using the working capital accrual version of the Jones (1991) model modified by Dechow et al. (1995). \|DISCACC_kasz\| is the absolute value of the residuals calculated using the Kasznik (1999) model. \|DISCACC_kot\| is the absolute value of the residuals calculated using the Kothari et al. (2005) model. \|AQ_DD\| is the absolute value of the residuals of the Dechow and Dichev (2002) model of accruals quality. See Appendix for definition of the rest of variables. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the regional level in parentheses. ***, **, and * represent significance levels at two-tail tests of 1%, 5%, and 10%, respectively.