Does institutional quality matter for lending relationships? Evidence from Italy

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ABSTRACT

Why the number of banking relationships per firm varies so much across space? Is it simply due to microeconomic features of firms localized in different regions or is there instead something connected to microeconomics and macroeconomic factors? Can the institutional endowment of a region affect the number of bank-firm relationships? We seek to answer these questions with reference to the Italian case, one particularly interesting because of the substantial institutional gap between Center-North and South and the high average number of banking relationships per firm. We investigate the role of institutional quality in determining firms' choices and, consistent with previous studies, find that institutions are a basic determinant of the observed differentials in the number of firms' banking relationships among different Italian provinces.

Keywords: Firm-Bank relationship, Institutional quality, Italian manufacturing, SMEs.

JEL:G20; G21; L60; O43; R11

1. INTRODUCTION

During the last two decades, the literature has paid great attention to the widespread use of multiple relationship banking. In almost all countries, even relatively small firms borrow from several banks at the same time. Thus, even if the distribution of the number of banking relationships per firm substantially varies across countries, the lending relationship often consists of many banks. Ongena and Smith (2000), using a dataset of 1079 large firms from 20 European countries, document that single-bank relationships are relatively rare and Italy – with an average number of 15 banking relationships per firm - is the country where the phenomenon of multiple borrowing is most common. This is confirmed by Detragiache et al. (2000) who, dealing with a sample of small firms in the United Stated and Italy, show that single banking is relatively prevalent in the United States, even if the median number of relationships is 2, and 55,5% of firms deal with more than one bank. The case of Italy is more remarkable: 89 percent of firms rely on multiple banking, the median number of relationships is 5, and the 75^{th} percentile is 8 (against only 2 in the United States).

To better understand the reasons behind this wide heterogeneity in firms' preferences on the number of banking relationships, many economic motivations have been set forth. A number of contributions have focused on the microeconomic aspects of individual choice, the role of firms' features such as size, age, propensity to innovate, the endowment of human capital, the amount of R&D investment, and so forth. Theory predict that larger and older, more innovative and financially distressed firms (Horoff and Korting, 1998b) are more likely to resort to multiple bank relationships. On the empirical ground, some evidence shows that multiple relationships are associated with higher borrower riskiness (Foglia et al., 1998), while other authors point out that relationship oriented lenders have a ratio of bad loans lower than the average (Horoff and Korting, 1998a; Ferri and Messori, 2000; Farinha and Santos, 2002). Other authors trace back the firms' decision to a cost-benefit assessment: firms prefer to borrow from more than one bank to increase total leverage (Cosci e Meliciani, 2000) and credit availability (Petersen and Rajan, 1994, 1995; Bianco, 1997; Sapienza, 1997; Cole, 1998; Haroff and Korting, 1998a), to reduce the cost of debt (Rajan, 1992), and avoid liquidity problems due to banks' behavior (Detragiache et al., 2000).On the other hand, it has been also recognized that often macroeconomic structural factors matter as well: for example, regional productive specialization, technology diffusion, degree of markets' competition and institutional factor shave been deemed to be relevant in driving firms' preferences, to the extent that they affect the financial market structure and shape differences in firms' choices relative expected profitability.

This paper adopts an approach emphasizing in particular the link among institutional quality and preferences about the number of firm-bank relationships. The role of institutions in influencing

firms' financial behaviouris largely acknowledged by the economic literature. In most cases, investigations deal with cross-country analysis, to explain differences in financial systems in the light of national institutional endowments (Chinn and Ito, 2006; Claessens and Leaven, 2003; Garretsen et al., 2004; Andrianova and Demetriades, 2004).

However, in recent years, eminent contributions have focused on differences in institutional setting at *local* level recognising that even within a single country differences in institutional quality may be relevant, and play a crucial role in determining different firms' choices. Thus it comes as no surprise, and there is extensive evidence thereof, that although the institutional framework mostly applies all over a country, its effectiveness is not the same in different areas (Guiso et al., 2004) because different quality of local institutions entails disparities in the rule of law, the provision of local public goods, the security of local property rights (Aron and Dell, 2010) and so on. Hence, a large strand of the literature has recognized an influence of institutionson small and medium sized enterprises (La Porta et al., 2010), i.e. those firms more conditioned by the different challenges, opportunities and constraints connected to the geographical context in which they are located (Pollard, 2003). In this vein, Demirguk-Kunt and Maksimovich (1998, 1999) arguethat financial policies of large and small firms are likely to be affected by institutional quality at a different layer: the former mainly influenced by national institutional assets, the latter by local institutional factors (la Rocca et. al, 2010).

Evaluating the impact of institutional quality differences on firms' choices is important for at least two reasons. First, it allows to single out the national or regional sources of firm behavior, so documenting patterns that comprehensive explanations of growth and development should strive to match. Second, it may signal the possible presence of inter-linkages between national and local determinants of firms' financial decisions, which would necessitate of a more unified policy drawing.In this occurrence, the macro factors at local level such as the enforcement system, corruption, excessive bureaucratisation, poor or inefficient organisation of public services, lower endowment of infrastructures, lack of security, and an unsatisfactory social and cultural environment, are expected to be especially significant to explain the observed diversity in firm behaviour (Cheng and Shiu, 2007) over and above any relevant microeconomic factor.

Addressingthe issue of the choice of number of banking relationship per firm in Italy hasa strong motivationin the evidence ofa long-lasting economic gap along with the deep divide in institutional endowment between Mezzogiorno and the rest of the country[1]. These relatively large differences match up with the evidence of large disparities occurring in a number of economic and

1 The term *Mezzogiorno* corresponds to the Southern regions plus the islands, namely Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, Sicily and Sardinia.

social indicators across different regions of the country (Malanima and Zamagni, 2010; Giannola*et al.*, 2016), which testify the multifaceted nature of the Southern lag and argue that even at the subnational level, differences in firms' performance might be explained on the basis of differences in institutional quality endowment (Del Monte and Giannola, 1997; Scalera and Zazzaro, 2010; Erbetta and Petraglia, 2011; Nifo, 2011; Aiello et al., 2014). In particular, despite the increasing integration of the Italian financial system, its efficiency at local level is very different among regions (Guiso et al., 2004; Giordano, Imbriani and Lopes, 2013) and, although the same laws and regulations apply throughout the country, the enforcement system does differ at local level (Bianco et al., 2005).

However, while in recent years a growing literature is focusing on the relationship between institutional quality and various indicators of firms' performance(Agostino et al., 2016; Aiello and Ricotta, 2016; Ganau and Rodriguez-Pose, 2016; Mannarino et al., 2016; Di Liberto and Sideri, 2015; Lasagni et al, 2015; Nerozzi et al., 2015; Raspe and Van Oort, 2011; Fazio and Piacentino, 2010), the role of sub-national institutional quality on firms' financial choices and, more specifically, on the number of bank relationshipsin Italian manufacturing industries,remains little explored. Among relevant exceptions, Sarno (2009) analyzes the relationship between the degree of enforcement at provincial level and the functioning of the financial system, confirming the role of local institutions in determining firms' choices and local development. In the same vein, La Rocca et al. (2010) explain how local financial development and the connected institutional differences affect the financing decisions of Italian SMEs. Consistent with these findings, Agostino et al. (2010) show how better local institutions create a favorable business environment and a legal structure favouring a more effective credit protection,which in turn facilitate both firms to gain a better access to financial debt, and intermediaries to be more inclined to provide funds.Similarly, Ferri and Messori (2000), show that geographical differences in productive and socio-economic structures among Italian regions are paralleled by differences in the relationship banking patterns. Correlating the number of relationship banking with the socio-economic structure at local level, they find closer and longer-lasting customer relationships in Southern regions, where smaller banks and firms prevail. Even Cosci and Meliciani (2002) and Elsas (2002) investigating the determinants of the number of bank-lending per firm, find that the riskier business environment, the more firms engage in multiple banking relationships. Both the latter papers point out that contexts characterized by informational asymmetries, lack of transparency, higher uncertainty, corruption, excessive bureaucratization, lack of security and weak law enforcement – typically connected to poor institutional quality – give rise to incomplete contracts that encourage opportunistic behaviors and enhance the degree of contractual riskiness thus increasing the number of firm-bank relationships.

Fitting in this strand of the literature, we aim to evaluate the role of local institutional quality in determining the number of firms' banking relationships. In doing this, weadopt an approach emphasizing in particular the link among the number of banking relationships and the localinstitutional quality as measured by the Institutional Quality Index (IQI) constructed by Nifo and Vecchione (2014, 2015). This index evaluates institutional quality in Italian provinces and regions as a composite indicator derived by 24 elementary indexes grouped into five institutional dimensions (corruption, government effectiveness, regulatory quality, rule of law, voice and accountability).

To carry out the econometric analysis we build an unbalanced panel of 5,137 firms for the period 2003-2006, for a total of 16,460 observations, by matching qualitative and balance sheet datafrom the 9th and the 10thUniCredit-Capitalia surveys known as "*IndaginisulleImpreseManifatturiere"* and other data drawn fromBank of Italy andthe Italian national statistics institute ISTAT. Estimations are carried out by applying several different estimators: Probit, Poisson, Arellano and Bover (1995), Blundell and Bond (1998) GMM (*System GMM*), to address concerns of unobserved heterogeneity and potential endogeneity.

In different specifications, controlling for individual firm-levelcharacteristics and contextual variables conditioning firms' performance, our robust results confirm that institutions matter as they prove to be one of the main drivers of firms' choices about the number of bank relationships: we show that firms have more bank relationships in Southern Italian provinces, as these are characterized by lower level of institutional quality.

The rest of the paper is organized as follows. Section 2deals with the methodology used for the empirical investigation. In particular, section 2.1 presents the model; section 2.2 focuses on our explanatory variables,i.e. controls (2.2.1) andthe IQI index (2.2.2). Section 2.3 illustrates the dataset and some descriptive statistics. Section 3provides the main empirical findings and the robustness analysis (section 3.1). The main conclusions are discussed in section 4.

2. METHODOLOGY

This section is devoted to provide evidence about the factors driving the firm's number of banking decisions in Italy, and in particular to single out the role of provincial institutional quality in determining this choice. To perform this task, we carry out an econometric analysis, where the number of bank relationships is the dependent variable and regressors represent individual firm's features, bank-firm characteristics, local economic variables and institutional quality. Our investigation finds that an institutional improvement leads to lower shares of multiple borrowing firms, showing institutional quality negatively affects the number of banking relationship per firm.

To properly address concerns of unobserved heterogeneity and potential endogeneity of some regressors, we alternatively adopt several estimation methods.

2.1 ESTIMATION STRATEGY AND METHODS

The firm's choice to be multiple banked can be investigated by using various estimation models. First of all, it may be seen as a dichotomous choice (whether or not to be multiple banked), appropriately modeled through a binary response model. Alternatively, the number of bank relationships held by a firm can be considered as a count variable, hence another suitable model may be a count data model such as the Poisson model. Moreover, since the dependent variable tends to be persistent over time (the past number of banking relationships is likely to influence the present number), the SYS-GMM seems to be an appropriate model as well, since it also allows to control for unobserved heterogeneity and the presence of endogenous (or predetermined) explanatory variables. In the present paper we employ all the three mentioned models by estimating the following equations:

$$P(y_{ijt} = 1|X) = \Phi(\alpha + \beta_1 IQI_{jt} + \gamma X'_{it} + \varphi T'_t + \varepsilon_{ijt}) \quad (1)$$

$$NBANK_{ijt} = \alpha + \beta_1 IQI_{jt} + \gamma X'_{it} + \varphi T'_t + v_{ijt} \quad (2)$$

$$NBANK_{ijt} = \alpha + \beta_0 NBANK_{i,(t-1)} + \beta_1 IQI_{jt} + \gamma X'_{it} + \varphi T'_t + v_{ijt} \quad (3)$$

where indices *i*, *j* and *t* refer to firms, provinces and time, respectively.

In model (1), we adopt a Probit model: the dependent variable is a dummy y_{ijt} assuming value 1 if a firm *i* located in province *j* at time *t* holds a number of bank relationships strictly greater than one (and zero otherwise), and Φ is the cumulative density function of the normal distribution[2].

In models (2) and (3), the dependent variable NBANK is the number of per firm bank relationships. To estimate equations (2) and (3), we adopt the Poisson model and the Arellano and Bover (1995) and Blundell and Bond (1998) GMM (SYS-GMM) estimators, respectively.

On the right hand side of the models, we use first provincial IQI as our main explanatory variable, and then provincial IQI sub-indexes in place of the overall index. The vector X contains the potential determinants and control variables we introduce in the following sub-sections.

[2] We consider as multiple banked all firms maintaining a number of bank relationships greater than 1, roughly corresponding to the seventh percentile of the distribution of the number of bank relationships in our sample. By contrast, Cosci e Meliciani (2002,2005) consider as multiple banked a firm maintaining a number of bank relationships greater than three and seven, respectively.

In all equations, T is a set of time fixed effects while, for equations (2) and (3) $v_{ijt} = \eta_i + w_j + e_{it}$ is a composite error, where $\eta_i$and $w_j$summarize time-invariant unobserved firms' characteristics and provincial fixed effects, and e_{it} captures idiosyncratic shocks to firms' number of bank relationships.

The results of estimations of equations (1), (2) and (3) are shown in the following Section 3. As we will see, they are remarkably robust to the choice of estimation method.

2.2 THE EXPLANATORY VARIABLES

Explanatory variables convey information on i) firms' individual and bank-firm characteristics, such as size, age, indebtedness, credit rationing, duration of the relationship and share of debt held by the main bank; ii) macroeconomic conditions, i.e. the development of the local banking market and provincial GDP and the number of bank branches over total population; iii) provincial institutional quality considered both in terms of the overall value of IQI and the value of its single specific dimensions.

2.2.1 CONTROLS

The vector *X* of equations (1), (2) and (3) includes a number of different regressors concerning firms' features, according to the various model specifications. To account for firm's size,we consider the number of firm's employees (EMP). Size is considered relevant to firms' choice by a wide literature, arguing in favour of a positive impact on the number of bank relationships. That because, on one side, banks prefer to diversify credit risk by inducing large borrowers to engage in multiple relationships (Detragiache et al. 2000; Pelliccioni and Torluccio,2007), and on the other side, small firms avoid multiple relationships due to the existence of fixed costs of borrowing (Guiso and Minetti 2007).

Besides, we comprise the firm's age (AGE) among regressors as proxy of firms' transparency, to acknowledge the greater possibility for lenders to access information relevant to gauge firm riskiness and reliability. More generally, the impact of firm's age on multiple banking is controversial. A few studies argue that mature firms surviving the critical start-up phase and having a known history about past performance are less opaque and therefore may enjoy more and cheaper credit by a larger number of banks (Diamond,1991). On the contrary, other scholars state that being less subject to adverse selection, mature firms with a "track record" may prefer to maintain a smaller number of bank relationships (Detragiache et al. 2000).

We also consider indicators of product/process and organizational innovation (INPP, INORG respectively), a dummy (HT) to take into account whether the firm belongs to a HiTech industry,

and the ratio of intangible to total assets (INTAS). According to Elsas (2004), the firm's attitude to innovate is a proxy of informational transparency. More innovative firms tend to prefer close banking relationships to avoid the diffusion of information to direct competitors (Yosha, 1995). On the other hand, they may prefer multiple relationships to prevent the *hold up* problem [3]. Moreover, firms operating in high-tech sectors and with a higher ratio of intangible to total assets may be subjected to multiple-banking due to the propensity of banks to carry out a higher differentiation of credit to opaque firms (Pelliccioni and Torluccio, 2007).

Concerning financial variables, we consider as additional regressor the ratio of financial liabilities to equity (LEVER), in accordance with the hypothesis that more leveraged firms establish a higher number of bank relationships (Carletti et al. 2004), also considering that the problem of adverse selection might be more severe for them than other firms (Detragiache et al. 2000). Variables accounting for credit rationing (CRED), duration of the relationship with the main bank (DURAT) and share of debt held by the main bank (MAIN) are also included. In order to minimize the risk of being credit rationed, firms may be more willing to establish and maintain multiple relationships (Detragiache et al. 2000); time duration and the relative weight of the main bank may be relevant too, considering that on one side asymmetric information problems are mitigated in the case of a single relationship (Sharpe 1990; Rajan,1992), and on the other side, a strong bargaining power of the main bank may push it to apply worse conditions to borrowers.

Finally, local macroeconomic conditions are accounted for by including the variables RGDPC, the provincial indexes of per-capita real GDP, and BRANCH, i.e. the number of bank branches over total population. Through the first variable, we try to account for the fact that firms located in highly developed areas on one hand may need to establish more banking relationship to satisfy their needs of multiple financial services, and on the other hand may more easily finance their investment projects through internal financial resources, and not need to resort to many lenders. Even the impact of BRANCH is a priori ambiguous: indeed, if the presence of new banks in provincial credit markets induces better monitoring and screening processes, thus increasing soft information collected by intermediaries (Benfratello et al.,2008) multiple banking relationships may arise, but it is also true that a closer proximity can induce higher market power allowing banks to charge higher interest rates causing the *hold up* problem.

Moreover, we include some other control variables to account for observable firm-specific characteristics. First, we control for firm belonging to a group (GROUP) or taking part in a consortium (CONS) which may involve less need to hold multiple relationships, thanks to the chance

[3]The *hold up* problem may arise in close banking relationships, as the main bank may take advantage from exclusive information and the consequent bargaining power, by practicing interest rates higher than the ones consistent with the real credit worthiness of the firm (Sharpe 1990, Rajan,1992).

of receiving credit from other members, or benefitting from a main bank financing all firms of the group/consortium (Detragiache et al., 2000). Second, we include the dummy variable COOP to ascertain if co-operative firms may hold a lower number of bank relationships given that they are generally financed by cooperative and popular banks with which they engage close banking relationships (Ferri and Messori, 2000; Cosci and Meliciani, 2005). Third, internationalized firms may need a higher number of bank relationships to manage their foreign transitions. Thus, we include the variable EXP coded one if a firm exports its products to foreign countries (and zero otherwise). Also, to check whether firms having more liquidity keep a lower number of bank relationships, we include the variable QUICK defined as the ratio of current asset and inventories to current liabilities. Finally, all estimations include industry dummies to control for heterogeneity at industry level (2-digit Ateco classification).

The explanatory variables we employ in the econometric investigation are listed in the following Table 1, reporting also some main summary statistics.

[Table 1]

2.2.2 THE INSTITUTIONAL QUALITY INDEX (IQI)

The last variables we employ are indicators of institutional quality, the focus of our analysis, proxied by the IQI index built by Nifo and Vecchione (2014, 2015) on a yearly basis, at the provincial (NUTS3) level. Inspired by the WGI framework (Kaufmann et al., 2011), IQI evaluates institutional quality in Italian provinces as a composite indicator derived by 24 elementary indexes grouped into five institutional dimensions (corruption, government effectiveness, regulatory quality, rule of law, voice and accountability). Appendix A reports the list of all elementary indexes employed and sources. Aggregate indicators for each of the five dimensions are derived from elementary indexes, and then from the latter the overall IQI index is similarly built up. The method used to obtain each upper-layer indicator from the lower layer ones develops in three phases: normalization, attribution of weights to each index and aggregation. Normalization consists in reformulating the original measure of indexes so as to have variation ranges included in the [0,1] interval. Weights are then assigned by applying a method known as Analytic Hierarchy Process (Saaty, 1980): starting from pairwise comparisons between indexes of the same layer, this technique turns verbal judgments on the relative importance of each index into a matrix of numerical values of importance. Then weights are assigned as the solution of a system generated by the eigenvector associated to the maximum eigenvalue of the matrix. Finally, upper layer aggregate indexes are computed as weighted averages of the lower layer

ones. The analysis of the geographical pattern of IQI in Italy shows that, like for a broad range of socio-economic conditions, even for institutional quality a clear North-South divide emerges, since all regions of the South are characterised by lower levels of institutional quality than the rest of Italy[4].

2.3 DATA AND DESCRIPTIVESTATISTICS

The empirical investigation is based on data coming from several sources. Firm-level information on Italian manufacturing small and medium enterprises (SMEs) is drawn from the 9th and the 10th issues of UniCredit-Capitalia survey "*Indagine sulle Imprese Manifatturiere*". Each issue refers to three years: the 9th supplies data for 4289 firms for the period 2001-2003; the 10th reports data for a panel of 4126 firms for the period 2004-2006. Information collected is both qualitative and quantitative: the year of establishment, group membership, size, industry, firm's legal form. Information on the firm's financial structure (such as the number and length of bank relationships) and balance sheet data are also provided [5]. By matching survey and balance sheet data retrieved from both issues, we obtain an unbalanced panel of 5,137 firms and 16,460 observations[6]. We focus on Italian manufacturing SMEs, for which bank lending constitutes the major source of financing (Bank of Italy, 2007; European Commission, 2010), and thus we drop from our sample 240 firms, i.e. those with more than 250 workers and the ones listed on the Stock Exchange.

To supplement this dataset, we also use data on the territorial distribution of branches for each Italian bank (Bank of Italy, 2010 and 2011) and provincial data for per capita GDP and industrial specialization (ISTAT, 2010 and 2011). Finally, we exploit the information on local institutional quality in Italian regions contained in the Institutional Quality Index (IQI) by Nifo and Vecchione (2014, 2015), described in the section above.

Tables 2 and 3 show the number of bank relationships (mean, standard deviation, median, min and max values, and the distribution of firms for 1, 2, between 3 and 7 or more than 7 relations) respectively by regions and class of employees.

[Table 2 here]

[Table 3 here]

As we can see, Table 2 indicates that at the national level sampled firms on average hold almost five bank relationships (4.96). About 20% of them have one or two bank relationships, 62.5%

[4] For details on IQI, see Nifo and Vecchione (2014) and https://sites.google.com/site/institutionalqualityindex/home to download the dataset.

[5] As information about the number of lending banks (NBANK), the length of the relationship with the main bank (DURAT), and the share of the firm's total bank debt held by the main bank (MAIN) is available only for the last year of each survey, we assign the same figure to the previous two years. In the presence of missing or inconsistent values, followingGambini and Zazzaro (2010) and Agostino et al. (2012), we impute suitable values for DURAT by taking the value reported for the last year of the first survey (2000) and adding the number 1 for 2001, the number 2 for 2002 and so on.

[6] To meet econometrics requirements, we consider only a sample over four years.

between three and seven and 17.5% more than seven. A striking evidence is that Northern (except Liguria) and Southern (except Abruzzo) regions show values lower than the national average. Conversely, for all the regions of Central Italy (except Lazio) the average number of bank relationships is well above the national average. Second, the regions with the highest share of firms with seven or more bank relationships are Umbria (34.69%)in the Centre, Abruzzo (20.87%) in the South and Friuli Venezia Giulia (20.19%) in the North. Third, as we can see in Figure 1, in most cases (Campania, Puglia, Lombardy, Sicily and Piedmont) the variability within each region is high, since some provinces show on average 7 or more firm-bank relationships, while others have less than 3-4.

Table 3 shows that the number of bank relationship increase with firm's size: firms with 1-9 employees have 3 bank relationship, firms with 10-49 around 4.4 and firms with 50-250 around 6.3. A similar pattern emerges when looking at the distribution within each size class: firms choosing to have only 1 or 2 banks are 63%in the class 1-9 employees, 28% in the class 10-49 and only 12% in the size 50-250. Inversely, while 36% of firms belonging to the class 50-250 employees prefer to have more than 7 banks, only 13% in the size 10-49 and 6% in the size 1-9 share the same choice.

Table 4 reports the average values of the IQI index (IQI_REG) and the number of banking per firm (NBANK) by regions in the 2006. Table 4 contrasts the number of bank relationships and the IQI overall indicator and sub-indexes; Table 5 shows the correlation matrix among variables considered in Table 4: number of banks (NBANK), IQI at regional level (IQI_REG) and its dimensions (CORR, GOVERN, REGUL, RULAW, VOICE).

[Table 4 here]

[Table 5 here]

Regions are sorted in Table 4, whence the institutional quality divide between the country's North and South clearly emerges. Indeed, while the lowest 8 IQI scores are always associated with Southern regions, the highest 12 ones completely refer to regions located in Center-Northern regions. Both these results seem mainly driven by the values of rule of law (RULAW), government effectiveness (GOVERN) and the voice and accountability (VOICE), particularly weak in the Southern regions compared to the regions of Center-North. Conversely, the sub-index Corruption (CORR) seems to be characterized by values largely homogeneous in all regions of the country.

To further explore the relationship between the variables of interest, Figures 1 and 2 report the mean values of bank relationships and IQI index, both computed at the province level.

[Figure 1 here]

[Figure 2 here]

3. RESULTS

Table 6 reports the results obtained by estimating model (1), (2) and (3) with Probit, Poisson and SYS-GMM estimators, respectively. We report the estimations Probit and Poisson in pooled and panel form with relative marginal effects, needed for a more immediate interpretation of estimated coefficients[7]. For the SYS-GMM regressions, the estimated coefficients are reported[8]. All regressions are performed including provincial, year and sector fixed effects. The standard errors are clustered at province level (NUTS3) and consistent in the presence of any pattern of heteroskedasticity.

Focusing on the results of the regression models obtained without considering the variable RGDPC (column 1), our variable of interest IQI (at the provincial level) is negative and statistically significant in most models. In particular, the results show that a better institutional quality decreases both the propensity to be multiple banked and the number of bank relationships for firms.

[Table 6 here]

Looking at the variables concerning firm-specific characteristics, we found that the variables EMP, AGE, LEVER, QUICK, HT, INPP and EXP, tend to be statistically significant at 1% level. In particular, it seems that larger, older, more leveraged, belonging to high-tech sectors, adopting product/process innovation, internationalized firms tend to be multiple banked[9]. On the opposite, firms characterized with a greater liquidity seem to be less prone to maintain multiple relationships. Looking then at the results concerning the characteristics of bank-firm relationship, the variables MAIN and CRED are statistically significant only for the Poisson regressions, indicating that an increase in the share of the debt granted by the main bank decreases the firm's number of bank while rationed firms tend to maintain a greater number of bank relationships. Moreover, the positive coefficient of BRANCH - being positive and statistically significant for the Probit (panel) and SYS-GMM regressions - indicates that a more developed local banking market might induce firms to

[7]To formally compare the pooled estimator with the panel estimator, we perform a likelihood-ratio test, showing that the panel (Probit and Poisson) estimators are appropriate.

[8]According to Roodman (2009) the GMM estimator is appropriate when N is larger than the number of moment conditions. To meet this requirement, we consider a sample over four years imputing the year 2004 figures of the variables IQI to year 2003. This imputation may be acceptable as "*it is reasonable to assume that the processes of institutional change occur slowly, and that appreciable changes in institutional quality occur only in the medium to long-term*" (Nifo and Vecchione, 2014, pp. 6). For consistency, we use the same sample even for Probit and Poisson regressions.

[9]In particular, to give a numerical interpretation of some variables, from the Poisson (pooled) estimates, the AGE marginal effect indicates that for each additional year of firm's age, the number of bank relationships increases by 25%, when the other explicative variables are set at their mean value. Moreover, from the SYS-GMM estimates, the HT coefficient seems that firms belonging to Hi-Tech sectors increases their number of bank relationships by 38.2 %.

establish multiple banking relationships. The other control variables are not statistically significant[10]. The results above discussed are substantially confirmed when employing the IQI at the regional level (IQI_REG). Therefore, for the sake of conciseness, these results are omitted and available on request.

We run separate diagnostics test for Probit, Poisson and GMM model. For the Probit model we look for mis-specified functional form. As a whole, it seems the functional form of Φ is appropriate[11]. To test for the Poisson equidispersion assumption, we perform a likelihood ratio test of over-dispersion, showing no evidence of it. Regarding GMM estimations, the Hansen test accepts the null hypothesis of validity of the over-identifying restrictions, while the difference-in-Hansen test turns out to be not significant, thus supporting the validity of extra instruments used by the SYS-GMM estimator. Besides, the values of the Arellano-Bond tests for autocorrelation in first and second differences (AB test AR1 and AB test AR2) tend to support the assumption of lack of autocorrelation in the errors in levels.

An interesting question is whether the negative relationship between institutional quality and multiple banking could be specifically attributed to one or more of the dimensions included in the synthetic index. To study the possible different effects of each dimension composing IQI, we estimate five supplementary sets of regressions by using in turn one of the IQI dimensions as regressors instead of the overall index. Table 7 reports the results obtained by estimating model (1), (2) and (3) with the Probit, Poisson and SYS-GMM estimators, respectively[12]. Column 1 shows the output for each sub-index obtained when not including RGDPC.

[Table 7 here]

Focusing on the impact of the efficiency of the legal system on the probability to be multiple banked, we notice that the marginal effect of RULAW (Rule of Law) is negative and statistically significant (column 1, Probit pooled regression)[13].

To focus on the potential impact of government action on multiple banking, we replace IQI with its components GOVERN (Government Effectiveness) and REGUL (Regulatory Quality). Table 7 shows that the variable GOVERN is negative and statistically significant in most models while REGUL is negative and statistically significant only in the case of the SYS-GMM estimator[14].

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[10]However, some variables do not always maintain their significance. In particular, for the SYS-GMM estimation, variables AGE, QUICK, INPP and EXP are not statistically significant. Besides, the variable INORG is statistically significant only for the Poisson (pooled) regression while the variable INTAS is statistically significant only for the Poisson regressions. Furthermore, the variable COOP is negative and statistically significant (Probit panel regression), indicating that co-operative firms seem to be less prone to maintain multiple relationships.

[11] We assess the Probit functional form using parametric and semiparametric methods.

[12] To economize on space in Table 7 we present all regressions of the above models showing only the marginal effects and the coefficients for the IQI subcomponents.

[13]In particular, the probability of multiple banking decreases by about 11,5% as the rule of law indicator increases.

[14] The variable GOVERN is not statistically significant only for the Probit (pooled) regression.

Considering the presence of possible informal channels shaping bank-firm relationships, it is crucial to understand the effect of these latter on the firm's choice of the number of bank relationships. To this aim, the IQI also represents aspects of informal institutions, i.e. VOICE (Voice and Accountability) and CORR (Corruption). Since only the regressor VOICE comes out to be negative and statistically significant (Probit panel) the probability of multiple banking seems to decrease for higher values of social capital.

The evidence we present on the Italian case seems to confirm the validity of our working hypothesis. As a matter of fact, our econometric investigation, controlling for firms' individual characteristics (size, age, leverage, export, hi-tech, etc.) , bank-firm characteristics (credit rationing, duration of the relationship and share of debt held by the main bank) and geographical variables (regional per capita GDP and the number of bank branches over total population), recognizes a significant role to institutional quality in the number of banking relationships.

Our results show that institutional quality negatively influence multiple banking relationships. This is probably because good institutions may foster environments where banks and firms favourably interact to exchange information and promote close banking relationships. In other words, institutions may create good conditions in mitigating asymmetric information allowing firms and banks to catch all benefits deriving from close banking relationships. More in details, the institutional quality dimensions that appears significant are RULAW, GOVERN and VOICE.

Regarding the relevance of Rule of Law (RULAW), the interpretation of this evidence hinges on the fact that "*Transaction costs are far higher when property rights or the rule of law are not reliable. In such situations private firms typically operate on a small scale, perhaps illegally in an underground economy, and may rely on bribery and corruption to facilitate operations*" (Aron, 2000). This view is in line with the main theoretical and empirical literature that widely acknowledges the role of "Rule of Law" in fostering economic development and firms' choices (Ayres, 1998; Buvinic and Morrison, 2000; Islam, 2003; Dam, 2006; World Bank, 2006; Lorentzen et. al, 2008; Nifo et al., 2016) meaning that institutional contexts characterized by a relatively high incidence of crime, tax evasion, shadow economy, poor law enforcement and higher judicial costs, negatively influence the firms' propensity to maintain multiple bank relationships.

When considering the IQI dimension of Government Effectiveness (GOVERN), our results point out that the administrative capacity of local governments in terms of quality of policies and public services, decreases the number of bank relationships and the firm's propensity to be multiple banked. This highlight the impact of the intermediate government bodies (primarily local political and administrative institutions) play a more active and positive role, influencing also firms' financial decisions. More effective public policies in health, waste management and environment,

transport and education, are found to affect the business environment, reduce transaction costs and informational asymmetry (Kneller and Misch, 2010; Datta, 2008; Shirley and Winston, 2004), making easier close banking relationships.

Finally, the results of regressions obtained with the significant IQI sub-index Voice and Accountability (VOICE) confirm the crucial role of social participation on the business environment and than on firms' behaviour (Powell and Owen-Smith 2004; Sorenson 2003; Tallman et al. 2004). Particularly when the asymmetric information problem is severe, favourable social interactions might represent an indirect form of control to avoid opportunistic and anti-social behaviors leading banks and firms to establish close lending relationships being easier for banks to gain firm's qualitative information and benefit from its use.

When the IQI is respectively replaced by the sub-indexe Control and Corruption (CORR) we do not find significant effects on multiple banking relationships. The CORR sub-index has the expected sign across all models (negative), but the coefficients are never statistically significant. According to other scholars, a possible explanation is that the level of corruption is quite similar across Italian regions (De Rosa et al., 2010; Lasagni et al., 2015; Nifo et al., 2016), and small differences are unlikely to be associated with differentials at firm level.

3.1 ROBUSTNESS

For robustness purposes, we carry out several sensitive checks of our findings. First, estimation is also made considering regional GDP per capita (RGDPC). Our findings (Table 6, column 2) are definitely robust and basically confirm the hypothesis that local institutional quality plays a significant role in determining firms' choice of number of banking relationship[15]. As a matter of fact, once controlled for firms' individual characteristics (size, age, leverage, export, hi-tech, etc.), bank-firm characteristics (credit rationing, duration of the relationship with the main bank and share of debt held by it) and the economic condition offirm' province of origin (regional per-capita GDP and the number of bank branches over total population), we find that institutional quality is relevant to the choice of the number of banking, with relatively high marginal effects.

As a second robustness check,we re-run all the models considering only the firms located in the Centre and North of Italyand including the variable RGDPC, where observations are more homogeneous in term of GDP and, hence, where the variation of GDP may be smaller. Again, as shown in Table 6, column 3, results are substantially unchanged[16]for the IQI at the regional level

[15] For the first robustness check, the variable IQI is not statistically significant for the Probit and Poisson (panel) regressions. Besides, in all models, the control variables confirm their sign and significance while the variable COOP is not longer statistically significant.

[16]For the second robustness check, the variable IQI is not statistically significant for the Probit and Poisson (panel) regressions. Besides, in all models, the control variables confirm their sign and significance.

(IQI_REG) and for all the control variables[17].

We carry out the robustness checks above, even considering each sub-index composing the IQI. Table 7, column 2 reports the results obtained including the variable RGDPC. They appear not systematically different from the above results[18]. As concerns the estimations considering the Centre and North of Italy including RGDPC (Table 7, column 3), the dimension RULAW gains significance even in the SYS-GMM regression, the variable GOVERN maintains its sign and significance for the Poisson (pooled) and SYS-GMM regressions; the dimensions VOICE and REGUL lose significance, while the dimension CORR becomes significant in the SYS-GMM regression showing a negative sign.

Moreover, the results above discussed remain substantially unchanged when we substitute some control variables with alternative proxies (in detail, INTAS is replaced with TGAS; LEVER is substituted by BANKD; the control variable LIQUI is replaced by QUICK and FIND)[19].

4. CONCLUDING REMARKS

In this paper we investigate on the effect of provincial institutional quality trying to ascertain their magnitude and role on the number of banking relationships in Italian manufacturing firms for the period 2003-2006.In doing this, we measure the regional institutional quality by the IQI index, a composite indicator of provincial institutional quality derived by 24 elementary indexes grouped into five institutional dimensions (Corruption, Government Effectiveness, Regulatory Quality, Rule of Law, Voice and Accountability).

The robust result, in line with our hypotheses, is consistent with most of the existing literature that ascribes a key role to the business environment and institutional context in determining firms' behaviours. In our estimations, institutional quality turn out to explain a proportion of the variation left unexplained by firm and industry variables: we show that firms have more bank relationships in Southern Italian regions, as these are characterized by lower level of institutional quality. The results seem to suggest that the typical close banking relationship problems, such as the hold-up, the soft budget constraint and the liquidity problem may be mitigated in environments characterized by high institutional quality settings. Indeed, to avoid the hold up problem, a firm may put pressure to its opportunistic main bank by threatening it to interrupt the relationship moving to another bank. This could be a credible threatin high social capital context and efficient legal-financial and government systems, where moving to another bankis easier since information asymmetries are less and

[17] For the sake of conciseness, the results about the first and the second robustness checks considering the IQI_REG variable are omitted and available on request.

[18] With respect to the regressions not including the variable RGDPC, the variable GOVERN loses significance for the Probit and Poisson (panel) regressions, the variable VOICE lose significance in the Probit (panel) regressions and the variable REGUL in the SYS-GMM regression.

[19]This output is available upon request.

exchangeability of information is promoted. The same may happen for the soft budget constraint problem: good institutions make it unprofitable for firms to behave in an antisocial way (e.g. practicing strategic default) since they may lost benefits deriving from networking. Similarly, the liquidity problem may be overcome as other banks could have easily access to firms' information.

More specifically we find that: 1)better local institutions are drivers of firms' choices increasing their propensity to maintain single bank relationships; 2) considering the IQI sub-indexes, the dimension RULAW, specifically accounting for aspects related to legal certainty, exerts a significant impact on firms banking decisions; the dimension GOVERN, summarizing the administrative capacity of local governments in terms of quality of policies and public services, decreases the number of bank relationships and the firm's propensity to be multiple banked ; the sub-index VOICE, accounting for the social capital endowment at the local level, reduces the number of firm-banking relationships; 3) interestingly and - in some way - surprisingly, but in line with previous scholars, Corruption (CORR) did not emerge as having a robust impact on firms' decisions.

Firms' decision of number of banking turns out to be affected by institutional features, suggesting that future research should carefully consider the possible consequences of alternative institutional settings on a variety of economic variables. The presence of invaluable spillovers connected to good quality institutions and the incentive mechanisms activated by them, is one of the main channels through which macroeconomic factors positively impact on the business environment, investment climate and competitiveness, suggesting to the policy makers a strategic tool (i.e. institutional and regulatory reform, especially in Rule of Law, Government Effectiveness" and "Voice and Accountability) to enhance the ability of lagging regions to capture development opportunities.

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Tab. 1. Summary statistics

	Variables	Description	Years	Obs	Mean	Std.	Min	Max
Firm's characteristics	NBANK	Number of bank relationships per firm	2003,	1443	4.7	2.9	0	15
	EMP	Number of firm's employees	2003-	1486	45.	45.	0	250
	AGE	Current year – year of foundation(in years)	2003-	1498	25.	19.	0	110
	INPP	Dummy =1 if firm innovations in product/ process, 0	2003-	1525	.58	.49	0	1
	INORG	Dummy =1 if firm organizational innovations in	2003-	1525	.17	.37	0	1
	HT	Dummy =1if firm belongs HiTech sector, 0	2003-	1525	.04	.20	0	1
	INTAS	Intangible Fixed Assets/ tot.assets (in %)	2003-	1499	2.3	4.3	0	25.4
	TGAS (r	Tangible Fixed Assets/ tot.assets (in %)	2003-	1477	20.	15.	.579	67.3
	LEVER	Financial liabilities/(Financial liabilities+equity)(in	2003-	1499	27.	32.	0	96.3
	BANKD (r	Bank debt/total debt (in %)	2003-	1477	20.	24.	0	77.1
	QUICK	Current asset - inventories/ current liabilities	2003-	1499	1.0	.93	.233	21.5
	LIQUI (r	Current asset/ current liability	2003-	1477	1.4	1.1	.506	26.5
	FIND (r	Equity/ total liabilities (in %)	2003-	1477	25.	18.	1.07	78.2
	GROUP	Dummy =1if the firm belongs to a group, 0	2003-	1525	.17	.37	0	1
	CONS	Dummy =1if firm belongs to a consortium, 0	2003-	1513	.03	.19	0	1
	COOP	Dummy =1if the firm is co-operative, 0 otherwise	2003-	1510	.01	.11	0	1
	EXP	Dummy =1if the firm has exported in whole or in part its products to foreign countries, 0 otherwise	2003-2006	15245	.620	.485	0	1
Bank-	CRED	Dummy =1 if the firm whished more credit at the same interest rate agreed with the bank, 0 otherwise	2003-2006	12755	.059	.237	0	1
	DURAT	Duration of the relationship with the main bank(in	2003,	1205	15.	11.	0	53
	MAIN	Share of the debt hold by the main bank (in %)	2003,	9649	24.	24.	0	100
Context characteristics	BRANCH	Number of branches for province/ provincial	2003-	1525	6.4	1.4	2.19	10.4
	RGDPC	Provincial real GDP (per capita)(in thousands of €)	2003-	1525	20	40	9086	274
	IQI	Institutional quality index at the provincial level	2004-	1436	.71	.14	0	1
	IQI_REG	Institutional quality index at the regional level	2004-	1436	.70	.13	.097	.932
	RULAW	IQI Dimension, Rule of Law at the provincial level	2004-	1436	.59	.16	0	1
	GOVERN	IQI Dimension, Government at the provincial level	2004-	1436	.42	.13	0	1
	REGUL	IQI Dimension, Regulatory Quality at the provincial	2004-	1436	.62	.17	0	1
	VOICE	IQI Dimension, Voice & Accountability at the	2004-	1436	.50	.21	0	1
	CORR	IQI Dimension, Corruption at the provincial level	2004-	1436	.84	.14	0	1

Tab. 2. Number of bank relationships by region

Region	Mean	Sd	Median	min	max	1	2	3-7	> 7	total
Piedmont	4.562	3.046	4	1	15	8.27%	20.21%	58.36%	13.16%	100.00%
Valle D'Aosta	3.625	2.163	4.5	1	6	37.50%	0.00%	62.50%	0.00%	100.00%
Lombardy	4.947	3.040	4	1	15	6.26%	14.16%	62.36%	17.22%	100.00%
Trentino A.A.	4.262	3.159	3	1	15	9.45%	22.44%	59.06%	9.06%	100.00%
Veneto	4.870	2.681	4	1	15	4.93%	11.57%	66.37%	17.13%	100.00%
Friuli V.G.	5.406	2.894	5	1	15	4.00%	9.71%	66.10%	20.19%	100.00%
Liguria	4.914	3.196	4	1	15	10.40%	12.14%	61.85%	15.61%	100.00%
Emilia Romagna	5.489	3.242	5	0	15	5.81%	9.92%	61.33%	22.95%	100.00%
Tuscany	5.212	2.804	5	1	15	5.98%	9.25%	66.07%	18.70%	100.00%
Umbria	6.501	3.628	6	1	15	2.04%	5.10%	58.16%	34.69%	100.00%
Marche	5.297	2.845	5	1	15	6.95%	7.44%	65.38%	20.22%	100.00%
Lazio	4.349	3.136	4	1	15	8.76%	24.09%	54.01%	13.14%	100.00%
Abruzzo	5.197	3.108	5	1	15	7.28%	10.92%	60.92%	20.87%	100.00%
Molise	4.375	3.252	3	1	12	6.25%	25.00%	50.00%	18.75%	100.00%
Campania	4.379	2.705	4	1	15	9.09%	16.26%	63.11%	11.54%	100.00%
Puglia	4.668	3.111	4	1	15	12.13%	12.13%	58.20%	17.53%	100.00%
Basilicata	3.465	1.084	4	1	5	7.50%	7.50%	85.00%	0.00%	100.00%
Calabria	3.047	1.690	3	1	7	11.54%	34.62%	53.85%	0.00%	100.00%
Sicily	4.674	3.679	4	1	15	13.18%	13.18%	55.74%	17.91%	100.00%
Sardinia	3.847	2.424	3	1	15	11.11%	16.67%	66.67%	5.56%	100.00%
Italy	4.963	3.024	4	0	15	6.76%	13.30%	62.40%	17.54%	100.00%

Tab. 3. Number of bank relationships by class of employees

Employees	Mean	sd	median	min	max	1	2	3-7	> 7	Total
1-9	3.038	2.160	2	1	13	30.87%	32.10%	30.76%	6.26%	100.00%
10-49	4.395	2.471	4	0	15	8.25%	19.13%	59.36%	13.27%	100.00%
50-250	6.341	3.472	6	1	15	3.85%	8.44%	51.43%	36.29%	100.00%

Tab. 4. Bank relationships and regional IQI: overall indicator and sub-indexes

Region	NBANK	IQI_Reg	CORR	GOVERN	REGUL	RULAW	VOICE
Piedmont	4.567	0.720	0.911	0.431	0.589	0.636	0.444
Valle D'Aosta	3.625	0.770	0.852	0.311	0.785	0.748	0.594
Lombardy	4.950	0.788	0.810	0.510	0.637	0.567	0.635
Trentino A.A.	4.264	0.840	0.929	0.446	0.854	0.766	0.455
Veneto	4.870	0.700	0.927	0.452	0.712	0.559	0.408
Friuli V.G.	5.417	0.715	0.771	0.516	0.562	0.500	0.375
Liguria	4.931	0.519	0.760	0.394	0.410	0.313	0.571
Emilia Romagna	5.489	0.718	0.963	0.429	0.759	0.474	0.589
Tuscany	5.213	0.880	0.913	0.451	0.722	0.854	0.518
Umbria	6.493	0.672	0.959	0.331	0.577	0.672	0.425
Marche	5.284	0.661	0.895	0.299	0.675	0.635	0.432
Lazio	4.360	0.638	0.825	0.239	0.367	0.691	0.546
Abruzzo	5.216	0.620	0.845	0.172	0.578	0.822	0.383
Molise	4.375	0.337	0.645	0.068	0.385	0.506	0.316
Campania	4.399	0.328	0.412	0.199	0.231	0.546	0.200
Puglia	4.670	0.463	0.763	0.244	0.287	0.598	0.274
Basilicata	3.450	0.477	0.698	0.182	0.353	0.659	0.304
Calabria	3.154	0.125	0.511	0.156	0.156	0.147	0.170
Sicily	4.723	0.278	0.639	0.166	0.262	0.383	0.225
Sardinia	3.847	0.404	0.782	0.171	0.454	0.428	0.443
Italy	4.969	0.709	0.850	0.423	0.620	0.590	0.506

Tab. 5.Correlation Matrix

	NBANK	IQI_REG	IQI	CORR	GOVERN	REGUL	RULAW	VOICE
NBANK	1							
IQI_REG	0.046	1						
IQI	0.041	0.926	1					
CORR	0.053	0.475	0.435	1				
GOVERN	0.026	0.617	0.699	0.153	1			
REGUL	0.050	0.637	0.627	0.510	0.333	1		
RULAW	0.011	0.353	0.349	0.325	-0.158	0.047	1	
VOICE	0.010	0.404	0.486	-0.094	0.405	0.372	-0.405	1

Table 6: Effect of IQI on Multiple Banking Relationships

	COLUMN 1 (NO RGDPC)					COLUMN 2 (WITH RGDPC)					COLUMN 3 (CENTRE-NORTH WITH RGDPC)				
	PROBIT[a]		POISSON[b]		SYS-GMM[b]	PROBIT [a]		POISSON[b]		SYS-GMM[b]	PROBIT[a]		POISSON[b]		SYS-GMM[b]
	pooled	panel	pooled	panel		pooled	panel	pooled	panel		pooled	panel	pooled	panel	
Institutions															
IQI	-0.106**	-0.062***	-1.220*	-0.183	-1.710***	-0.097*	-0.022	-1.225*	-0.183	-1.525**	-0.096*	-0.002	-1.197*	-0.179	-1.608*
	0.045	*0.006*	*0.061*	*0.429*	*0.001*	*0.080*	*0.478*	*0.061*	*0.429*	*0.032*	*0.095*	*0.906*	*0.078*	*0.458*	*0.056*
Firm's characteristics															
EMP	0.048***	0.036***	0.704***	0.137***	0.243***	0.048***	0.028***	0.704***	0.137***	0.250***	0.045***	0.012***	0.720***	0.139***	0.267***
	0.000	*0.000*	*0.000*	*0.000*	*0.002*	*0.000*	*0.004*	*0.000*	*0.000*	*0.002*	*0.000*	*0.002*	*0.000*	*0.000*	*0.0008*
AGE	0.039***	0.028***	0.253***	0.051***	-0.0360	0.039***	0.027***	0.253***	0.051***	-0.0335	0.027***	0.009***	0.195***	0.038***	-0.0526
	0.000	*0.000*	*0.000*	*0.000*	*0.551*	*0.000*	*0.000*	*0.000*	*0.000*	*0.583*	*0.007*	*0.016*	*0.005*	*0.006*	*0.384*
LEVER	0.002***	0.0009***	0.026***	0.005***	0.00779***	0.002***	0.0007***	0.026***	0.005***	0.00792***	0.002***	0.0005***	0.027***	0.005***	0.005*
	0.000	*0.000*	*0.000*	*0.000*	*0.009*	*0.000*	*0.007*	*0.000*	*0.000*	*0.007*	*0.000*	*0.000*	*0.000*	*0.000*	*0.064*
INTAS	0.002	0.0004	0.018*	0.004*	-0.0047	0.002	0.001	0.018*	0.004*	-0.00225	0.002	0.0003	0.019*	0.004*	-0.00513
	0.168	*0.419*	*0.062*	*0.058*	*0.634*	*0.171*	*0.277*	*0.062*	*0.058*	*0.815*	*0.259*	*0.426*	*0.076*	*0.061*	*0.615*
QUICK	-0.024***	-0.008***	-0.235**	-0.039***	-0.0311	-0.024***	-0.006***	-0.235**	-0.039***	-0.0381	-0.026***	-0.004***	-0.255**	-0.041***	-0.038
	0.001	*0.000*	*0.013*	*0.000*	*0.633*	*0.001*	*0.000*	*0.013*	*0.000*	*0.559*	*0.002*	*0.017*	*0.023*	*0.000*	*0.508*
GROUP	-0.012	-0.009	-0.091	-0.021	0.0310	-0.012	-0.006	-0.091	-0.021	0.0599	-0.021	-0.006	-0.125	-0.028	0.0179
	0.499	*0.267*	*0.536*	*0.364*	*0.881*	*0.497*	*0.480*	*0.536*	*0.364*	*0.766*	*0.246*	*0.193*	*0.417*	*0.265*	*0.930*
CONS	-0.003	-0.009	0.146	0.019	0.0641	-0.003	-0.009	0.146	0.019	0.0617	0.017	0.010	-0.032	-0.023	-0.0351
	0.930	*0.433*	*0.600*	*0.687*	*0.700*	*0.930*	*0.434*	*0.600*	*0.688*	*0.707*	*0.624*	*0.365*	*0.914*	*0.666*	*0.813*
HT	0.102***	0.060***	1.048***	0.151**	0.382***	0.102***	0.054**	1.048***	0.151**	0.353**	0.107***	0.049**	1.190***	0.180***	0.318**
	0.006	*0.007*	*0.000*	*0.019*	*0.007*	*0.006*	*0.024*	*0.000*	*0.019*	*0.013*	*0.004*	*0.017*	*0.000*	*0.007*	*0.026*
INORG	0.023	0.010	0.197**	0.026	0.101	0.023	0.004	0.197**	0.026	0.0998	0.019	0.001	0.187*	0.024	0.0607
	0.247	*0.310*	*0.048*	*0.185*	*0.452*	*0.248*	*0.590*	*0.048*	*0.185*	*0.449*	*0.340*	*0.695*	*0.081*	*0.248*	*0.642*
INPP	0.028**	0.017***	0.266***	0.045***	0.194	0.028**	0.013**	0.266***	0.045***	0.191	0.030**	0.007*	0.239**	0.042**	0.229*
	0.024	*0.002*	*0.005*	*0.008*	*0.132*	*0.024*	*0.020*	*0.005*	*0.008*	*0.134*	*0.029*	*0.089*	*0.022*	*0.020*	*0.086*
EXP	0.034**	0.030***	0.461***	0.087***	0.237	0.033**	0.027***	0.461***	0.087***	0.197	0.031*	0.012**	0.477***	0.090***	0.200
	0.049	*0.000*	*0.000*	*0.000*	*0.272*	*0.049*	*0.004*	*0.000*	*0.000*	*0.362*	*0.088*	*0.031*	*0.000*	*0.000*	*0.343*
COOP	-0.040	-0.031	0.051	-0.010	-0.0784	-0.040	-0.044	0.051	-0.010	-0.0346	-0.092	-0.027	-0.010	-0.010	-0.00813
	0.584	*0.142*	*0.929*	*0.910*	*0.701*	*0.583*	*0.177*	*0.929*	*0.910*	*0.863*	*0.288*	*0.238*	*0.989*	*0.919*	*0.973*
NBANK_1					0.732***					0.735***					0.762***
					0.000					*0.000*					*0.000*
Bank-firm relationships characteristics															
CRED	-0.001	-0.0003	0.644***	0.097***	0.162	-0.001	0.0008	0.644***	0.097***	0.155	-0.004	-0.002	0.595***	0.087***	0.315
	0.979	*0.978*	*0.000*	*0.001*	*0.365*	*0.981*	*0.949*	*0.000*	*0.001*	*0.383*	*0.917*	*0.707*	*0.003*	*0.005*	*0.104*

DURAT	0.000	0.000	0.002	0.0001	0.00273	0.000	-0.0001	0.002	0.000	0.00215	0.000	0.00003	0.003	0.001	0.000552
	0.867	*0.985*	*0.756*	*0.640*	*0.668*	*0.869*	*0.873*	*0.756*	*0.639*	*0.737*	*0.674*	*0.886*	*0.503*	*0.383*	*0.925*
MAIN	-0.000	-0.00003	-0.006***	-0.001**	-0.00370	-0.000	-0.00007	-0.006***	-0.001**	-0.00323	-0.000	-0.0001	-0.008***	-0.001***	-0.002
	0.418	*0.642*	*0.001*	*0.016*	*0.298*	*0.418*	*0.610*	*0.001*	*0.016*	*0.359*	*0.288*	*0.182*	*0.000*	*0.004*	*0.544*
Context characteristics															
BRANCH	-0.034	0.012***	-0.426	-0.039	0.0546*	-0.036	0.011*	-0.424	-0.039	0.0338	-0.035	0.006**	-0.407	-0.034	-0.0483
	0.576	*0.000*	*0.194*	*0.714*	*0.079*	*0.565*	*0.073*	*0.197*	*0.717*	*0.323*	*0.592*	*0.022*	*0.255*	*0.756*	*0.272*
RGDPC						-0.140	-0.070**	0.078	0.012	0.355	-0.208*	-0.050**	-0.194	-0.018	0.491
						0.225	*0.036*	*0.898*	*0.967*	*0.472*	*0.066*	*0.013*	*0.798*	*0.956*	*0.302*
Constant					0.814**					-2.673					-3.230
					0.029					*0.545*					*0.438*
PROVINCIAL FE	YES	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES	YES
N	5687	5687	5687	5687	6,381	5687	5687	5687	5687	6,381	5011	5011	5011	5011	5,611
Number of id					2,812					2,812					2,476
Log pseudolikelihood	*-2105.878*	*-1180.414*	*-12256.36*	*-11780.62*		*-2105.656*	*-1183.236*	*-12256.36*	*-11780.63*		*-1855.853*	*-1038.690*	*-10820.73*	*-10403.44*	
Likelihood-ratio test of alpha=0			*1.11*					*1.11*					*0.53*		
			0.146					*0.146*					*0.232*		
AB test for AR(1)					-8.547					-8.640					-8.623
					0.000					*0.000*					*0.000*
AB test for AR(2)					-0.967					-1.008					-0.416
					0.333					*0.313*					*0.677*
Hansen test					295.2					300.4					291.6
					0.160					*0.418*					*0.561*
Difference-in-Hansen tests					30.00					26.63					29.09
					0.224					*0.374*					*0.260*

***, **, * indicates statistical significance at the 1%, 5%, and 10% level respectively.For the description of the variables see Table 1. In italics are reported the p-values of the tests. [a] The dependent variable is a dummy coded 1 if firms maintain a number of banking relationships greater or equal two, zero otherwise. [b]The dependent is the number of banking relationships for a firm. For the Probit and Poisson regressions the marginal effects are reported. The standard errors (not reported) are clustered at province (NUTS3) level and consistent in the presence of any pattern of heteroskedasticity.To avoid the influence of potential outliers, we winsorize some variables at 1% level. In performing the Probit and Poisson regressions, all potential endogenous and predetermined variables are lagged one year. EMPLOY, AGE, and RGDPC are in logarithms. All estimations include ATECO, sector dummies and year fixed effects. We report the AB test for AR(1) and AB test for AR(2) stand for Arellano-Bond test for AR(1) in first differences and Arellano-Bond test for AR(2) in first differences, respectively. The null hypothesis of the Hansen test is that the over-identifying restrictions are valid. The null hypothesis of the difference in Hansen test is that the additional instruments used by the SYS-GMM estimator are valid.

TABLE 7 : Effect of IQI Sub-indexes on Multiple Banking Relationships:

	COLUMN 1 (NO RGDPC)					COLUMN 2 (WITH RGDPC)					COLUMN 3 (CENTRE-NORTH WITH RGDPC)				
	PROBIT[a]		POISSON[b]		SYS-GMM[b]	PROBIT [a]		POISSON[b]		SYS-GMM[b]	PROBIT[a]		POISSON[b]		SYS-GMM[b]
	pooled	panel	pooled	panel		pooled	panel	pooled	panel		pooled	panel	pooled	panel	
RULAW	-0.115***	0.027	-0.358	-0.011	-0.114	-0.100***	-0.026	-0.370	-0.018	-0.870	-0.080**	-0.001	-0.511	-0.008	-1.295*
	0.002	*0.104*	*0.328*	*0.945*	*0.601*	*0.007*	*0.176*	*0.335*	*0.913*	*0.150*	*0.028*	*0.895*	*0.256*	*0.964*	*0.074*
GOVERN	-0.031	-0.059**	-1.360**	-0.152*	-1.420***	-0.038	-0.025	-1.367**	-0.163	-1.850***	-0.085	-0.011	-1.376**	-0.201	-2.663***
	0.576	*0.025*	*0.012*	*0.054*	*0.0002*	*0.509*	*0.422*	*0.011*	*0.499*	*0.0003*	*0.151*	*0.617*	*0.030*	*0.453*	*1.31e-05*
VOICE	0.007	-0.080***	0.349	0.054	0.382	0.027	-0.041*	0.357	0.050	0.325	0.063	-0.005	0.149	0.112	-0.493
	0.912	*0.000*	*0.356*	*0.821*	*0.322*	*0.680*	*0.065*	*0.356*	*0.837*	*0.199*	*0.344*	*0.666*	*0.743*	*0.115*	*0.530*
REGUL	0.049	-0.019	0.364	-0.047	-2.187**	0.064	0.038	0.364	-0.002	-0.0386	0.106	0.014	0.189	-0.012	-0.005
	0.523	*0.392*	*0.641*	*0.883*	*0.014*	*0.409*	*0.174*	*0.641*	*0.981*	*0.929*	*0.245*	*0.463*	*0.814*	*0.881*	*0.989*
CORR	-0.055	-0.003	0.477	-0.012	-0.667	-0.060	-0.007	0.477	-0.011	-0.813	-0.088	-0.010	1.019	0.029	-1.826**
	0.366	*0.853*	*0.211*	*0.954*	*0.271*	*0.332*	*0.751*	*0.211*	*0.961*	*0.200*	*0.387*	*0.620*	*0.158*	*0.933*	*0.034*
PROVINCIAL FE	YES	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES	YES

***, **, * indicates statistical significance at the 1%, 5%, and 10% level respectively.For the description of the variables see Table 1. In italics are reported the p-values of the tests. Table 7 reports only IQI sub-indexes and not full results (available upon request). [a] The dependent variable is a dummy coded 1 if firms maintain a number of banking relationships greater or equal two, zero otherwise. [b]The dependent is the number of banking relationships for a firm. For the Probit and Poisson regressions the marginal effects are reported. The standard errors (not reported) are clustered at province (NUTS3) level and consistent in the presence of any pattern of heteroskedasticity.To avoid the influence of potential outliers, we winsorize some variables at 1% level. In performing the Probit and Poisson regressions, all potential endogenous and predetermined variables are lagged one year. EMPLOY, AGE, and RGDPC are in logarithms. All estimations include ATECO, sector dummies and year fixed effects. We report the AB test for AR(1) and AB test for AR(2) stand for Arellano-Bond test for AR(1) in first differences and Arellano-Bond test for AR(2) in first differences, respectively. The null hypothesis of the Hansen test is that the over-identifying restrictions are valid. The null hypothesis of the difference in Hansen test is that the additional instruments used by the SYS-GMM estimator are valid.

Fig. 1 Average number of bank relationships in the Italian provinces.

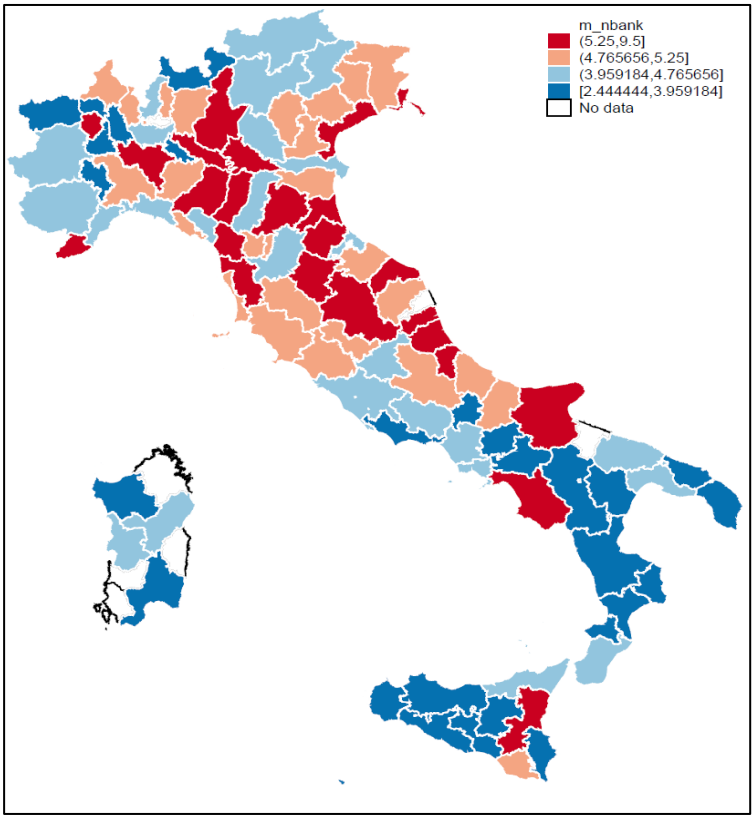

Fig.2 Average Institutional Quality Index (IQI) in the Italian provinces