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THE EFFECTS OF MUTUAL GUARANTEE CONSORTIA ON THE QUALITY OF BANK LENDING

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Abstract

In this paper we investigate whether or not mutual guarantee consortia (MGC), a financial institution well developed in Italy, alleviate the difficulties that Small and Medium Enterprises (SMEs) face when they ask for a bank loan. We find that the probability of a small firm affiliated to a MGC of going into default is lower than that of firms not affiliated to such a consortium. These results indicate that MGCs improve the ability of banks to screen and monitor small firms.

JEL classification: D82, G21, G30, O16.

Keywords: bank credit, financial intermediaries, small and medium enterprises, bad debt.

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1. Introduction[1]

Small and Medium Enterprises (SMEs) encounter often problems in financing their investment projects because, due to their opaqueness and short credit history, banks' have a scarce ability in assessing their merit of credit. Informational asymmetries in the selection and monitoring process of SMEs traditionally hampers the overall amount of credit granted by banks to small firms and increase the amount of collateral (Petersen and Rajan, 1994, Berger and Udell, 2006). In response to such problems, in the early 50s in North-Eastern Italy emerged a peculiar financial intermediary, the Mutual Guarantee Consortium (MGC), specifically targeted to lever on the pooled financial and productive resources of a group of small firms to gain collectively better credit conditions and greater resources from the banking system.

A contractual scheme emerged to address the asymmetric information problem afflicting lending contracts with the SMEs under which banks lend individually to each firm of a group of borrowers linked by a joint responsibility for the loan.[2] This contract design is very helpful in mitigating asymmetric information because every firm of the group is better informed than banks about other members' characteristics and behavior. Thus, the members accepting a joint responsibility for a loan convey a good signal to banks about their creditworthiness. Moreover, under this kind of lending technology, group members agree to share the loss in the case of default by an affiliated firm being therefore motivated to monitor each other.[3]

Another reason for this contractual scheme to be successful in improving credit market access for SMEs is that, notwithstanding each firm suffers individually of a lack of collateral, by pooling their resources the firms can provide the lender, on top

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[2] For a review of group lending and microfinance, see among others, Armendáriz and Morduch (2005).

[3] This mechanism is similar to a collective credit agreement. Differently from the standard bilateral creditor–borrower debt contract, such agreement involves, on a collective basis, a group of borrowers without collateral who are linked by a ''joint-responsibility'' default clause: if any member of the group defaults, other members have to repay to the bank her share of the debt, or else the entire group loses access to future refinancing (Armendáriz, 1999).

of the standard collateral which may be used on a rotating basis, with the social capital embedded in the group.

The aim of this paper is to analyze whether Italian MGCs improve the quality of bank lending. In Italy each member of the consortium contributes to a guarantee fund from which is drawn collateral posted to loans granted by banks to MGC members. This consortium is therefore an institutional device that puts under the same responsibility a group of small firms that need bank lending but individually have a limited collateral capacity. Since members are mostly part of the same local community, *peer-monitoring* is in place and our hypothesis is that it significantly reduces moral hazard.

SMEs are quite widespread in the old continent. The 2005 European Commission data state that there are more than 20 millions firms in Europe providing employment for more than 140 million people and that over two thirds of all jobs are provided by SMEs. Italy according to the last national census of 2001 had four millions firms with less than 50 employees representing therefore a case in favor of the relevance of the MGCs for the economy given the weight of the SMEs on the overall number of firms.

According to the 2005 data by the *European Mutual Guarantee Association*, in the European Union there are more than 1.4 million of SMEs affiliated to a MGC. The diffusion of MGCs is particularly relevant in Germany, France, Spain and Italy. Italian MGCs represent, however, the largest component of the European mutual guarantee sector accounting for almost 40 per cent of the total outstanding volume of guarantees to SMEs.

MGCs mitigate problems of access to bank lending, for those SMEs which are not sufficiently endowed with collateral or lack of a sufficient track record or credit history, in different ways. First, they supply personal and real guarantees to the bank allowing for a partial coverage of potential losses of SME lending. In the new financial set-up designed by Basel II the relevance of these guarantee schemes is growing since they may also offer the possibility, under certain conditions, of a

mitigation of the risk associated with banks' SME portfolio and a reduction in regulatory capital requirements for financial intermediaries.[4] Second, MGCs provide *screening* and *monitoring* activity of affiliated firms together with *peer-monitoring* activity. Third, MGCs negotiate collectively interest rates and other conditions with banks.

Usually these consortia are founded by firms and are located in the headquarters of the business associations that promote them, or hosted by chambers of commerce. This helps information sharing among firms within the business association and the MGC association. Italian MGCs are typically affiliated to business associations by means of federations that provide organizational assistance, including staff support, technical equipment and premises. They also lobby local and national government and chambers of commerce to provide the MGC association with funds.

Italy represents a good laboratory to assess the role of MGCs in enhancing SMEs credit conditions also because of the richness of data. In particular, we have access to a unique dataset obtained from the Italian Credit Register on loans to firms with less than 20 employees. Using this dataset we are able to verify if the probability of a small firm affiliated to a consortium to go into default is lower than that for firms not affiliated to a MGC.[5]

The rest of the paper is organized as follows. Section 2 describes the activity and the institutional characteristics of MGCs. Section 3 presents our results on the quality of the loans assisted by a MGC guarantee and robustness checks, while the final section concludes.

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[4] The new Basel II accord qualifies most MGCs as guarantors, if their guarantee product is in line with the regulatory requirement. This will allow banks, other things being equal, to reduce regulatory capital on their SME loan portfolio.

[5] In a companion paper (Columba, Gambacorta and Mistrulli, 2008) we find that MGC affiliation reduces, other things being equal, the cost of lending for affiliated SMEs. We also detect the existence of an optimal scale for MGCs and of a negative impact of public contributions to the overall performance of a consortium.

2. Facts and institutional aspects of mutual guarantee consortia

Italian MGCs have to be entered in a special register (ex art. 107 of the Italian Banking Law) and are subject to prudential regulation only when they reach a specific threshold of activity. Italian MGCs are typically constituted under the form of guarantee cooperatives, which are non-profit companies for the support of the members, and with the creation of a syndicated fund.[6]

The primary activity of these consortia is to provide members with guarantees to be posted as collateral to bank loans. For this purpose, a guarantee fund (generally monetary) is established and deposited at a bank, being funded by members through fixed membership fees and commissions proportional to the loans granted (0.2 to 1.0 per cent of the financing for the period in which the guarantee is used).[7] The bank with which the MGC has an agreement is willing to grant credit to member enterprises for a "multiple" of the guarantee fund.[8] Personal guarantees may also be used directly by the affiliated firms and included in a personal guarantee fund managed by the consortium. In case of insolvency the bank notifies the MGC of an action to recover the loan and requests the guarantee fund to take action. The MGC checks the request and if it is justified, authorizes the bank to draw the amount corresponding to the risk assumed by the consortium (typically 50 per cent of the loss). The bank proceeds with the action to recover the loan, on the conclusion of which, it informs the MGC of the degree of success achieved. If the action is successful the bank reimburses the amount

[6] The capital endowment of a MGC (legal capital and risk funds) has to be greater than 250.000 euro. Capital and risk funds may also be subscribed by third parties (local and central government, chambers of commerce, international organizations, business associations). However, at least one fifth of the capital endowment has to be paid out by affiliated firms. On the base of information released by two of the MGCs associations, Fedart and Federconfidi, around one third of MGCs capital endowment is paid by SMEs.

[7] Some MGIs with a low amount of funding or guarantees may ask for a deposit of around 5 per cent of the amount of the loan that is returned when the loan is repaid.

[8] In Italy the ratio reaches typically a maximum value that goes from 10 to 20. However on the basis of the data available for a sub-sample of MGIs the effective ratio between guarantees and loans is around 3 (see Table 1) and it is linked to the pattern of past losses incurred with respect to the mutual guarantee fund. In other countries the limit of the "multiplier" may be fixed by national law. For example, in Germany and Switzerland the amount of credit granted may not exceed 10 times the guarantee fund.

successful the bank reimburses the amount advanced by the guarantee fund. If it is not successful, the loss to the MGC is final.[9]

At the end of 2004, more than one half of Italian MGCs was affiliated to one of the five main federations: Fedart-Fidi (crafts), Federconfidi and Fincredit (manufacturing), Federascomfidi and Federfidi (commerce, service and tourism), for a total of almost one million of affiliated firms (Table 1). MGCs in Italy are organized by homogenous activity and this, potentially, may increase the overall risk. However, a high degree of positive correlation in business activity amplifies peer monitoring and thereby reduces the incidence of strategic default; moreover, keeping operations within a limited geographical area allows for a thorough knowledge of the local firms.[10]

One feature of the Italian MGC system is that it is heterogeneously developed among geographical areas. MGC activity is concentrated in the North where the presence of small and medium sized firms is more widespread. MGC are less developed in the South and the Islands (Mezzogiorno) both in terms of number of affiliated firms, average capital of consortia and value of guarantees (Figure 1). This may depend not only on the small number of firms that have the necessary characteristics to join a MGC in this part of Italy but also on other three facts: i) greater availability of public funds for firms located in the Mezzogiorno, ii) the relatively recent development of MGC system in the South, iii) the high degree of opacity of SME in these regions. At the end of 2004, credit guaranteed by MGC represented around 8 per cent of total lending to SMEs in the Mezzogiorno against 13 per cent in the Centre and in the North.

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[9] At the second level of the guarantee system, there are sometimes second-tier mutual consortia that are set up by groups of MGI. Their function is to reinsure, or in other words to counter-guarantee, MGI in order to reach a broader sharing of the financial risk involved. At the same level reinsurance entities funded by regional governments may operate.

[10] The average number of affiliated firms per MGC varies between a minimum of 634 in the manufacturing sector to a maximum of 2.598 in the commerce sector. The total value of loans backed by mutual guarantees exceeds 20 billions euro; around one third is under the form of short-term lending. Total guarantees amounted to 7.8 billions, with an average value of the loan-to-guarantee ratio of more than 3. Guarantees are mainly composed by monetary funds that represent between 73 and 90 per cent of the total. Personal guarantees are more developed in the manufacturing sector where the average size of firms is higher.

According to information obtained by the Italian Credit Register (CR), at the end of June 2005 around 55 per cent of Italian banks (excluding branches of foreign banks) lent to SME affiliated with a consortium (Table 2). Around one third of firms affiliated to a MGC had lending relationship with large banks (those with total assets of more than 20 billions euro); the percentage was equal to 22 per cent for medium banks (with total asset between 7 and 20 billions) and to 46 per cent for small banks (those with total assets less than 7 billions).

3. Are SMEs affiliated to a MGC less risky ?

In this section we study whether MGCs help to mitigate the asymmetric information problems that typically characterize the credit relationships between small firms and banks. In particular, our aim is to verify if the probability for a small firm affiliated to a MGC to go into default is lower than that for firms not affiliated to a MGC.

The sample is made of around 385,000 small firms, of which more than 50,000 had a guarantee given by MGCs at June 2005. Table 3 highlights a remarkable difference in the ratio between bad loans and lending among firms in the two Italian areas; in June 2005 the ratio was equal to 7 per cent in Central and Northern Italy and 23 per cent for the southern firms.[11] However, the difference in the quality of bank lending between the two Italian areas drops drastically when we limit our observation only to firms which are affiliated to a MGC; in this case the ratio is equal to 4 per cent in the Centre and in the North, to 6 per cent in the South.

The analysis of the ratio between bad loans and lending is not sufficient however to establish if firms which are affiliated to a MGC are on average less risky. The low ratio is very likely influenced also by the fact that banks obtain directly from the MGC a substantial coverage of losses in the case of defaults and this mechanically reduces the amount of their credit portfolio that is considered “bad”. In other words, bad loans may be lower in the case of a firm affiliated to a MGC just because of the

[11] These ratios are very similar to those calculated for all small firms in the two areas (6 and 19 per cent, respectively) confirming the reliability of the sample used in our econometric analysis.

because of the direct use of the guarantee fund. On the base of the data provided by Fedart-Fidi, in the occurrence of a firm's default in more than 50 per cent of the cases banks proceed with an immediate action to obtain the guarantee funds: this determines a fast reduction in the volume of bad loans. In one quarter of the cases the bank may set aside on their pledge account the guaranteed share; in the remaining cases the acquisition of the guarantee occurs at the end of the legal procedure. In all cases, the time to recovery of credit positions is greatly reduced and this determines a low ratio between bad debt and total lending.

In order to evaluate if firms associated with a MGC are, other things being equal, less risky with respect to other small firms, we estimate the probability that a unit of lending is classified as bad loans taking into account firm-specific characteristics: affiliation to a MGC, geographic location, application to the register for artisan companies, firm's size, sector of economic activity.

In particular, the econometric analysis has been carried out using the following probit model that estimates the probability that the *i*-th firm is classified as a bad debt from at least one of the banks that grant it credit ($\Pr_i(baddebt = 1)$).

$$(1)\quad \Pr_i(baddebt = 1) = \Phi(\delta_0 + \delta_1 MLGC_i + \delta_2 South_i + \delta_3 Art_i + \delta_4 Size_i + \delta_5 Mono_i + \sum_{j=1}^{Nj} \eta_j Sector_{ji})$$

The meaning of all the variables is reported in Table 4.

Results reported in Table 4 show that, *coeteris paribus*, the probability to go into default for small firms affiliated to a MGC is 5 per cent less with respect to other companies with similar characteristics.

All other explanatory variables have the predicted signs. For firms borrowing from only one bank the default probability drops of 11 percentage points; this evidence is coherent with the hypothesis of a higher quality of *screening* and *monitoring* activity by intermediaries that are engaged in close lending relationships (Petersen and Rajan, 1994) and their greater propensity to debt restructuring (Berglof and Von Thadden, 1994; Bolton and Scharfstein, 1996). The probability that a unit of loan of a Southern firm is classified as a bad debt is 13 percentage points higher than for other companies in the sample; it is significantly lower for big firms.

The second column of Table 4 reports a different specification that considers as additional explanatory variable the interaction term (δ_6*MGC**South*). Results show that affiliation to a MGC for a Southern firm can be associated to a probability to be classified as bad debt that is lower of around 11 percentage points ($\delta_1+\delta_6 = -0.111$). This probability is higher of one percentage points for small Southern firms that have business relationship with only one bank, while it is lower of 5 percentage points if these firms are affiliated to a MGC (third column of Table 4).

These results may depend upon the fact that banks that operate with MGCs have specific characteristics. For example, such banks may have a greater attitude toward renegotiation of debt with respect to other intermediaries determining a lower number of bad loans. To verify the reliability of previous results we have integrated our probit specification with bank fixed effects (fourth column of Table 4). Results confirm that the affiliation to MGCs improves credit quality even though the coefficient is slightly reduced.

In order to corroborate these results the estimation model used above has been adopted to explain the probability that a firm is declared in default over the period June 2004 - June 2005 (Table 5). This test is particularly interesting because the affiliation to a MGC may reduce statistically the volume of bad loans simply because a significant part of the credit position is repaid. Although, considering the fact that the acquisition of the guarantee is generally equal to 50 per cent of the value of the loan, it is unlikely that the total position is taken away from the credit register in a year. In this way it is possible to overcome the problems that we have in estimating the probability that a unit of loan is into default. The analysis confirms our previous results. In particular, the probability that a small firm goes into default is reduced by around one percentage point in case of affiliation to MGCs. The reduction increases to 3 per cent if the firm is headquartered in the South. Even in this case the introduction of bank fixed effects, that capture different attitudes among intermediaries towards debt restructuring, does not modify the results of the analysis.

4. Conclusions

In this paper, we have investigated whether or not mutual guarantee

consortium (MGC), a financial institution well developed in Italy, mitigates asymmetric information problems in the market for credit to Small and Medium Enterprises (SMEs).

On the base of a unique dataset obtained from the Italian Credit Register, we find that the probability of a small firm affiliated to a MGC of going into default is lower than that of firms not affiliated to such a consortium. This result indicates that MGCs improve the ability of banks to screen and monitor small firms.

This result also indicates that the role of MGC in easing credit conditions of SMEs and their nature of consortia (based on the joint liability of borrowers) do increase private incentives to preserve the quality of credit aligned to the ones of lenders. The MGCs seems therefore good candidates to fill the existing gap between the two extremes, on the one hand, of credit guarantee schemes exclusively funded by government and, on the other hand, of private guarantees of individual borrowers. The MGC middle position between these two extremes could be beneficial to SMEs not only in terms in terms of a better quality of credit, as we have hopefully proved, but also of lower interest rates (Columba, Gambacorta and Mistrulli, 2008), thanks to the exploitation of the private incentives based on the soft information available to the MGC members.

Table 1

MUTUAL GUARANTEE CONSORTIA IN ITALY IN 2004 (1)

Federations	Sector	Number of affiliated MLGCs (a)	Number of affiliated SMEs (b)	Number of SMEs for MLGC (b)/(a)
Fedart-Fidi	Crafts	314	667,482	2,126
Federconfidi	Industry	74	46,901	634
Fincredit	Industrial SMEs	25	34,561	1,382
Federascomfidi	Commerce, Service and Tourism	67	174,052	2,598
Federfidi	Commerce, Service and Tourism	34	70,000	2,059
Total of the 5 Federations		514	992,996	1,932
Total Italy (2)		1,073		

(1) Data are supplied by each Federation. - (2) Data have been provided by Italian Foreign Exchange Office.

Table 2

BANKS WITH AGREEMENTS IN PLACE WITH MUTUAL GUARANTEE CONSORTIA (MGCs)[1]

(June 2005)

	Big banks (2)	Medium banks (2)	Small banks (2)	Cooperative banks	Total
Number of banks with agreements in place with MLGCs: (a)	17	24	355	260	396
Number of active banks (foreign branches excluded): (b)	22	33	665	440	720
*- as % of size category: (a)/(b)*100*	*77.3*	*72.7*	*53.4*	*59.1*	*55.0*
*- as % of total (a)/396*100*	*4.3*	*6.1*	*89.6*	*65.7*	*100.0*
Number of MLGCs in Credit Registry	365	281	512	278	600
- as % of total MLGCs in credit Registry	*60.8*	*46.8*	*85.3*	*46.3*	*100.0*
Number of firms assisted and with loans guaranteed by MLGCs: (c)	18,857	12,776	27,198	9,446	58,831
Total number of firms with granted loans: (d)	180,528	94,310	205,644	78,043	480,482
*- as % of firms assisted and with granted loans by MLGCs: (c)/(d)*100*	*10.4*	*13.5*	*13.2*	*12.1*	*12.2*
- as % of total: (c)/58.831	*32.1*	*21.7*	*46.2*	*16.1*	*100.0*
Percentage of the overall credit to SMEs guaranteed by MLGCs	*8.3*	*13.5*	*13.2*	*12.1*	*9.3*

Sources: Credit Registry and Italian Foreign Exchange Office.

(1) Guarantees granted to craftsman firms and to other firms with less than 20 employees.

(2) Banks are classified by size of total assets: of more than 20 billions euro for large banks, between 20 and 7 billions for medium banks, of less than 7 billions for small banks.

BAD LOANS AS PERCENTAGE OF TOTAL OUTSTANDING LOANS

(June 2005)

	Agriculture	Manufacturing	Building	Retail	Services	Totale	Number of Firms	%
Small firms in sample								
Centre-North	4,5	7,6	8,0	8,4	4,1	6,6	308.732	80,2
South	23,9	23,3	33,2	27,3	16,3	22,9	76.401	19,8
Italy	8,1	10,2	13,0	13,4	6,3	9,8	385.133	100,0
Small firms in sample guaranteed by MGC								
Centre-North	1,7	4,4	4,4	4,3	2,9	3,5	46.450	12,1
South	3,0	4,6	14,7	4,4	4,3	6,2	3.963	1,0
Italy	2,3	4,5	9,6	4,3	3,6	4,9	50.413	13,1
For comparison:								
Small firms total								
Centre-North	*5,0*	*7,4*	*6,8*	*7,1*	*4,5*	*6,1*	*2.957.451*	*72,8*
South	*18,1*	*21,3*	*26,6*	*18,6*	*12,5*	*19,0*	*1.102.654*	*27,2*
Italy	*8,0*	*11,1*	*11,0*	*9,1*	*5,8*	*8,7*	*4.060.105*	*100,0*

Sources: Credit Register (for small firms; not available data on loans for an amount smaller than 75,000 euro and in good standing); Italian National Institute of Statistics, Eighth general census of manufacturing and services; Supervisory statistics (for the small firms total).

Table 4

PROBABILITY OF DEFAULT: OUTSTANDING BAD LOANS

The dependent variable is the probability that a firm has a bad debt with at least one of the lending banks. Probit estimates with fixed effects for economic activity sector. Marginal effects computed for a discrete variation of the dummy variables form 0 to 1. Fixed effects are not reported. Standard errors with white correction are in italics. *** 1 per cent significance. ** 5 per cent. * 10 per cent.

Variabili esplicative	(1) Benchmark equation	(2) Differential effects of MGC in Southern Italy	(3) Differential effects of MGC in Southern Italy for a firm borrowing only form one bank	(4) Bank fixed effects
firm guaranteed from a MGC (*MGC*)	-0,056 ***	-0,052 ***	-0,053 ***	-0,038 ***
	0,001	*0,001*	*0,001*	*0,001*
Southern Italy firm (*South*)	0,135 ***	0,138 ***	0,126 ***	0,046 ***
	0,002	*0,002*	*0,003*	*0,003*
artisan firm (*Art*)	-0,020 ***	-0,020 ***	-0,020 ***	-0,016 ***
	0,001	*0,001*	*0,001*	*0,001*
log of loan used (*Size*)	-0,017 ***	-0,017 ***	-0,017 ***	-0,019 ***
	0,001	*0,001*	*0,001*	*0,001*
firm borrowing from only one bank (*Mono*)	-0,107 ***	-0,107 ***	-0,111 ***	-0,059 ***
	0,001	*0,001*	*0,002*	*0,001*
South firm guaranteed from a MLGC (*MGC*South*)		-0,058 ***	-0,047 ***	-0,037 ***
		0,002	*0,004*	*0,005*
South firm borrowing from only one bank (*Mono*South*)			0,011 ***	0,032 ***
			0,002	*0,003*
South firm guaranteed from a MGC borrowing from only one bank (*Mono*South*MGC*)			-0,053 ***	-0,041 ***
			0,006	*0,007*
Pseudo R^2	0,127	0,128	0,128	0,347
Log-likelihood	-109.453	-109.342	-109.341	-81.771
Number of observations	385.008	385.008	385.008	384.424

Table 5

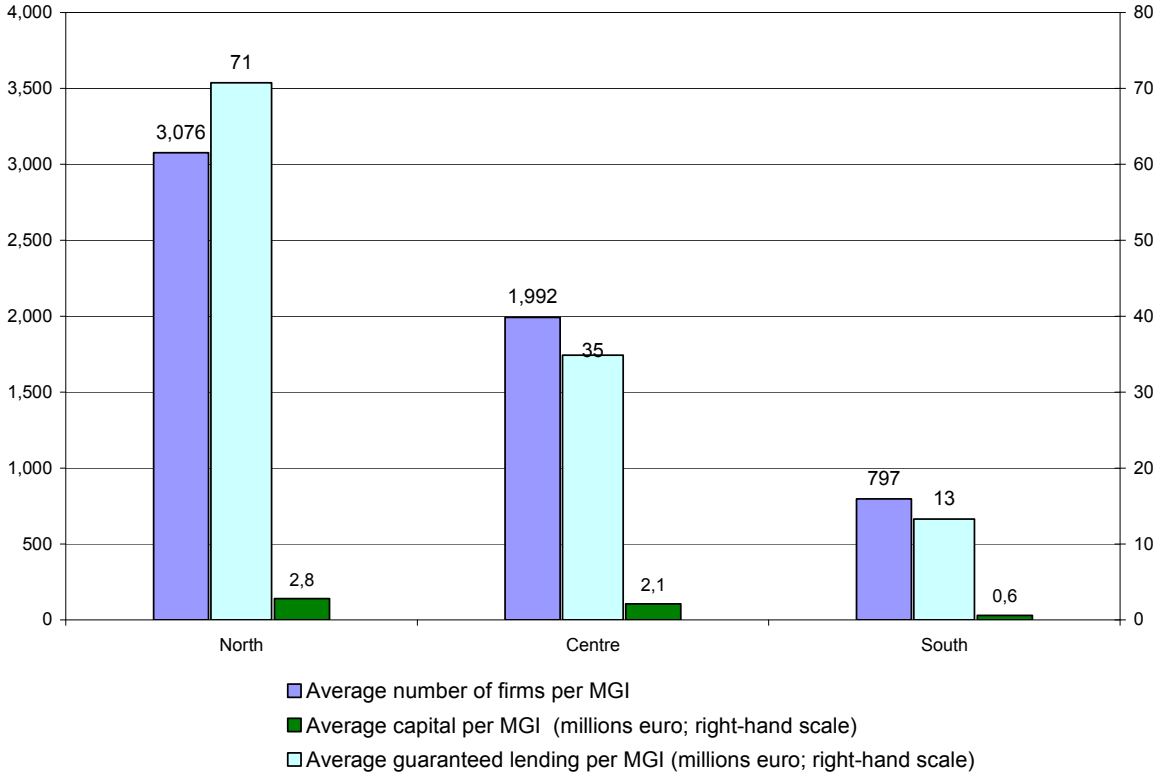
PROBABILITY OF DEFAULT: NEW BAD LOANS

The dependent variable is the probability that a firm was classified between June 2004 and June 2005 as having a bad debt with at least one of the lending banks. Probit estimates with fixed effects for economic activity sector. Marginal effects computed for a discrete variation of the dummy variables form 0 to 1. Fixed effects are not reported. Standard errors with white correction are in italics. *** 1 per cent significance. ** 5 per cent. * 10 per cent.

Variabili esplicative	(1) Benchmark equation	(2) Differential effects of MGC in Southern Italy	(3) Differential effects of MGC in Southern Italy for a firm borrowing only form one bank	(4) Bank fixed effects
firm guaranteed from a MGC (*MGC*)	-0,016 ***	-0,014 ***	-0,015 ***	-0,008 ***
	0,001	*0,001*	*0,001*	*0,001*
Southern Italy firm (*South*)	0,035 ***	0,036 ***	0,026 ***	0,001
	0,002	*-0,032*	*0,003*	*0,001*
artisan firm (*Art*)	-0,032 ***	-0,033 ***	-0,032 ***	-0,021 ***
	0,001	*0,001*	*0,001*	*0,001*
log of loan used (*Size*)	-0,011 ***	-0,011 ***	-0,011 ***	-0,012 ***
	0,001	*0,001*	*0,001*	*0,001*
firm borrowing from only one bank (*Mono*)	-0,046 ***	-0,046 ***	-0,051 ***	-0,029 ***
	0,001	*0,001*	*0,002*	*0,001*
South firm guaranteed from a MGC (*MGC*South*)		-0,021 ***	-0,016 ***	-0,008 ***
		0,002	*0,002*	*0,003*
South firm borrowing from only one bank (*Mono*South*)			0,011 ***	0,027 ***
			0,002	*0,002*
South firm guaranteed from a MGC borrowing from only one bank (*Mono*South*MGC*)			-0,019 ***	-0,019 ***
			0,003	*0,003*
Pseudo R^2	0,113	0,114	0,115	0,174
Log-likelihood	-60.024	-59.980	-59.935	-55.886
Number of observations	385.008	385.008	385.008	383.764

Figure 1

MUTUAL GUARANTEE CONSORTIA (MGC) ACTIVITY BY GEOGRAPHICAL AREAS



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