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5 October 2010

Online at <https://mpa.ub.uni-muenchen.de/26476/>
MPRA Paper No. 26476, posted 07 Nov 2010 22:45 UTC

Bridging the gap between migrants and the banking system

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This draft: October 5, 2010

Abstract

In this paper, we address two related issues. First, we test whether micro firms run by migrants pay more for credit than firms run by native entrepreneurs. Second, we verify whether the differences in the cost of credit between these two groups of entrepreneurs decrease as long as the informational and cultural gap narrow. To this aim we employ a large and unique data set providing us with detailed information about each overdraft loan granted by banks to sole proprietorships based in Italy. We find that firms run by migrants pay, on average, almost 70 basis points more for credit than those run by entrepreneurs born in Italy. The interest rate differential is lower for entrepreneurs born in Italy whose parents were natives of other countries ("second generation" migrants) and, among those born abroad, for migrants whose parents were natives of Italy ("Italian migrants"). These results suggest that cultural differences may matter for the functioning of the credit market. A lengthening in credit history may help migrants to "bridge the gap". We find that, on average, interest rates lower with the length of the credit history. Furthermore, and more importantly from the paper perspective, firms run by migrants benefit more from a repeated interaction with the banking system. Finally, we find that the size of the migrant community and the improvements in bank ability to deal with cultural diversity both contribute to narrow the interest rate differential between migrant and Italian entrepreneurs.

1. Introduction¹

The recent strong growth of migrant entrepreneurship provides banking systems with new lending opportunities. However, lending to firms run by migrants may require specific skills and investments. Besides those related to small firm lending in general, stemming from informational opaqueness, lending to foreign firms may require some further effort to 'bridge the gap' between the lender and the borrower due to cultural and institutional differences between the home and the host country. Everything being equal, migrant creditworthiness might be more difficult to assess compared to other borrowers. Furthermore, apart from informational gaps, cultural and institutional differences between countries may also fuel skepticism or mistrust towards migrants. All these factors are likely to adversely affect the access by migrants to the credit market.

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¹ We wish to thank Giorgio Gobbi and Enrico Sette for helpful comments on a preceding version of the paper and Cristiana Rampazzi for excellent research assistance.

In this paper, we address two related issues. First, we test whether micro firms run by migrants pay more for credit than firms run by native entrepreneurs. Second, we verify whether the differences in the cost of credit between these two groups of entrepreneurs lower as long as the informational and cultural gap narrow. To this aim we employ a large and unique data set containing detailed information on loan contracts obtained from the Italian Credit Register (CR) and the Bank of Italy Survey on Loan Interest Rates.² This is the first paper which addresses these issues for Italy. To our best knowledge, this paper is also the first to investigate different channels by which the gap between migrants and banks may be bridged.

Italy is a suitable country for investigating these issues because migrant entrepreneurship is a growing and recent phenomenon. As of December 2009 the number of sole proprietorships run by migrants were over 250,000, more than twice than in 2003, when they were around 100,000. Migration and foreign entrepreneurship, in particular, are relatively new phenomena for Italy. This may exacerbate the difficulties migrants may encounter in accessing the credit market in Italy compared to other countries which are more accustomed to lend to minorities.

The literature on the access to credit markets by minorities focuses mostly on the United States. Cavalluzzo and Cavalluzzo (1998) and, more recently, Cavalluzzo, Cavalluzzo and Wolken (2002), Blanchflower, Levine and Zimmerman (2003) provide evidence that banks discriminate against firms owned by African-Americans; the analysis by Fraser (2009) concerns the small business credit in the UK. Other papers have investigated the credit market for households (e.g., Browne, McEneane, Munnell and Tootell, 1996; Tootell, 1996; Ross and Yinger, 2002; Edelberg, 2007) showing that discrimination in the market for mortgages is less important than in business lending. Giannetti and Yafeh (2008), studying the market for syndicated loans, show that the greater is the cultural distance between the lender and the borrower the less favorable are the credit conditions charged. Bottazzi, Da Rin and Hellmann (2007) provide similar evidence concerning venture capital market. More in general, Guiso, Sapienza and Zingales (2006) and Alesina and La Ferrara (2005) suggest that cultural factors affect economic outcomes. Other studies indicate that the different level of creditor protection in the native countries affects migrant access to financial services in the host one (Osili and Paulson, 2005 and 2006).

According to the results of our empirical analysis, firms run by migrants pay, on average, almost 70 basis points more for credit than those run by entrepreneurs born in Italy. We then investigate different channels by which the interest rate differential between migrants and Italians may narrow. First, we verify whether the cost of credit for migrants converge to the one charged to natives as long as the relationship with the banking system goes on. In particular, we find that the interest rate spread lowers as the credit history lengthens. We interpret the fact that firms run by migrants, due to their higher ex-ante “opaqueness”, benefit more from a repeated interaction with the banking system as a prove that it conveys relatively more information to banks about migrant entrepreneurs compared to other firms. Besides that, lengthening of credit history helps migrants better participate in the financial sector (“financial integration”). Notwithstanding these effects, the interest rate differential does not disappear.

² For a detailed description of the data used in the paper see par. 2 below.

This might be due to a persisting cultural gap between banks and migrants. This interpretation is consistent with the evidence concerning the cost of credit for some entrepreneurs which are presumably quite cultural affine to natives: a) the interest rate differential is lower for entrepreneurs born in Italy whose parents are from abroad (*second generation migrants*) and b) among those born abroad, for migrants whose family was originally Italian (*Italian migrants*). Secondly, we show that a wide migrant social networking also reduces the interest rate gap. This result suggests that banks may obtain relevant information not only through a repeated interaction with the same borrower but also by interacting with different borrowers of the same type. Finally, the interest rate spread between migrants and natives lowers as long as banks ability to deal with cultural diversities improves.

The remainder of the paper is as follows. The next section describes the data. The third section presents the results of our econometric analysis concerning the existence of an interest rate differential between migrant and Italian entrepreneurs. In the fourth one we investigate the ways by which the interest rate differential may be narrowed. The fifth one concludes.

2. Data

The data come from two sources: the Credit Register (CR) run by the Bank of Italy, containing detailed information on all loan contracts granted to each borrower whose total debt from a bank is above 75,000 euros (30,000 euros since January 2009; no threshold is required for bad loans), and the Bank of Italy Loan Interest Rate Survey, including information on interest rates charged on each loan granted by a sample of about 200 Italian banks. This sample is highly representative of the Italian market for loans to small firms: these banks account for over 80 per cent of the total loans granted to micro firms. Furthermore, the sample is representative of the universe of Italian banks in terms of bank size, category and location.

Data refers to overdraft loans granted to micro firms. We focus on micro firms (sole proprietorships) for two main reasons. First, by looking at their fiscal code, obtained from the CR, it's straightforward to identify migrants' countries of origin. Second, sole proprietorships are widely spread in Italy and they also prevail among *de-novo* firms.

We investigate overdraft facilities (i.e. credit lines) for the following reasons. First, this kind of lending represents the main liquidity management tool for very small firms which cannot afford more sophisticated instruments. Second, since these loans are highly standardized among banks, the comparison between the cost of credit among firms is not affected by unobservable (to econometrician) loan-contract specific covenants. Third, overdraft facilities are loans granted neither for some specific purpose, as is the case for mortgages, nor on the basis of a specific trade transaction, as is the case for advances against trade credit receivables. As a consequence, according to Berger and Udell (1995) the pricing of these loans is highly associated with the borrower-lender relationship, thus providing us with a better tool for testing the existence of discrimination against migrant entrepreneurs.

After a cleaning procedure, we end up with a sample of over 2.4 million observations related to 18 quarters from March 2004 to June 2008.³ The number of migrant firms is much lower (about 5,000) than that of native firms (almost 225,000). Apart from that, our sample is highly unbalanced. In particular, migrants tend to be concentrated in few towns and sectors. They show a quite shorter credit history and they tend to borrow from a lower number of banks compared to natives. Non-Italian entrepreneurs are relatively younger than Italian ones (table 1). Those with less than 40 years account for 50 per cent of migrant entrepreneurs, compared to only 30 per cent for Italians. They are also relatively more likely to run firms in the construction sector. The average size is similar to that of the Italian ones, even if artisans are more widespread among migrants. The share of migrants' micro firms run by women (26 per cent) is higher than that for Italians (19 per cent). Credit history of Italian entrepreneurs is twice the one of migrant ones. Most of the migrant firms are located in Northern Italy (over 65 per cent); 24 per cent of them are located in Central Italy, while only 11 per cent are in Southern Italy.

Due to these strong distributional differences, in the next section we also show the results of the econometric analysis based on a smaller but highly balanced sample.

3. Do migrants pay more for credit ?

In this section we test whether micro firms run by migrants pay more for credit than those run by natives. The basic regression equation is the following:

$$(i) \quad r_{i,j,t} = \alpha + \delta immi_j + \beta firm_{j,t} + \gamma credit_{i,j,t} + \delta public\ aid_{j,t} + \mu credit\ history_{j,t} + \rho time_t + \varepsilon_{i,j,t}$$

where r is the interest rate charged to the overdraft loan granted by bank i to firm j at the quarter t , $immi$ is a dummy which equals 1 for micro firms run by migrants, 0 otherwise (see table 2 for a detailed description of the variables used in our estimates).

Firm represents a set of control variables concerning firm characteristics including economic sector (around 200 economic sectors) and firm location (103 provinces) dummies, and age of the entrepreneur.

Credit is a set of controls for bank lending characteristics: loan size, presence of real guarantees specifically posted to overdraft loans, number of banks financing the firm, and a dummy taking the value of 1 if other banks different from bank i classify some loan granted to firm j as a bad loan.

Public aid is a dummy variable which is equal to 1 if the firm has benefited from public subsidies, 0 otherwise; migrant firms may be less able to receive public subsidies, which may affect credit conditions.

We control for the number of quarters elapsed since the first time the firm has been recorded in the CR (*credit history*) to be sure that the interest rate

³ To exclude outliers data have been trimmed to the 1-99 percentile of the interest rate distribution.

differential between migrant firms and the others is not due to a shorter length of their credit history.

Finally, to control for changes in macroeconomic conditions during the sample period, we include quarter fixed effects (*time*).

Table 3 reports our estimation results. According to equation in column 1, migrants pay 68 basis points more for credit compared to other firms. In the following equations, we restrict our sample in order to improve the balancing between migrant and non migrant firms. As shown by descriptive statistics, migrants tend to be concentrated in specific economic sectors, towns, firm size classes and gender. They also borrow from a lower number of banks and they may differ significantly in terms of credit history length. Thus, to improve the accuracy of our estimates, for each combination of “lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR” observed among migrants (7040 different combinations) we look for the same combination among natives, excluding the other ones left. We end up with a highly balanced sample of more than 74,000 observations, referring in 48 per cent of cases to migrant firms.

Regression run on this smaller sample confirms the previous result, indicating that interest rates charged to migrants are higher (by 62 basis points) than those charged to the other firms (column 2). We also check if bank characteristics affect the cost of credit for migrant entrepreneurs introducing the dummy variable *largebank* and its interaction with *immi*. The results of the estimate show that large banks charge higher interest rates to all entrepreneurs, and that the interest rate differential between the two types of entrepreneurs is lower with respect to other banks (column 3).

Equation in column 4 adds “pair” fixed effects, i.e. we add dummies for each observed combination we used to balance the sample. In this way we jointly control for lender, firm sector, firm size, firm town, entrepreneur gender, firm first year of reporting to the CR. Again, we find that migrants pay almost 70 basis points more for credit than natives.

Finally, results in column 5 suggest that migrants are not all the same. We proxy differences among foreign entrepreneurs with their continent of origin. The results indicate that entrepreneurs from Eastern Europe pay interest rates 1.3 percentage points higher than those charged to Italian entrepreneurs; those from Asia and Africa almost 40 and 85 basis points more respectively. Entrepreneurs from Central and Latin America pay interest rates over 20 basis points higher than those paid by Italian ones. Interest rates charged on entrepreneurs from North America and Oceania are not statistically different from those charged to Italian ones.

A possible objection to the previous results is that the CR threshold affects migrants and natives in a different way thus biasing our results. In particular, in case migrant entrepreneurs were less rationed than natives our result would over-estimate the interest rate differential. In other words, it might be the case that the CR threshold is such that, even if migrants and natives are of the same type, i.e. the distribution of default risk is exactly the same, banks may be, for some reasons, relatively more likely to lend to riskier migrant firms compared to native ones. As a consequence, due to some unobserved variable which

correlates with risk, the estimated higher cost of credit observed for migrants is only due to such a bias.

To deal with this issue we exploit a sort of natural experiment. As of January 2009 the CR census threshold was lowered from 75.000 to 30.000 euro. We exploit this regulatory change to assess whether migrant firms are more often rationed than native firms. In particular, we estimate a probit model for the probability a firm is between the 75.000 and 30.000 euro threshold: those firms which present a higher probability would suffer more from quantity rationing. In practice, we look for those firms which are reported to the Credit Register in January 2009, just after the threshold has been lowered to 30.000 euro, and would not be reported in case the threshold was still equal to 75.000 euro. Then we check if this probability is lower for migrants, compared to observationally equivalent natives, by estimating the following probit equation:

$$(ii) \text{Prob}(\text{"rationing"}_j) = \alpha + \xi \text{imm}_j + \beta \text{other firm characteristics}_j + \varepsilon_j$$

where firm characteristics include firms' size, economic sector and province of location.

We find that for migrants, everything being equal, the probability of being "rationed" is 1.2 per cent higher than for natives. This implies that, if any, our previous results about the interest rate differential are downward biased, i.e. the CR census threshold is more binding for migrants than for natives and, as a consequence, natives reported to the CR tend to be on average riskier than migrants.

This result is also consistent with the higher cost for credit paid by migrants, supporting the view that migrants not only pay more for credit but they also tend to obtain less credit than other similar firms.

4. Bridging the gap between migrants and the banking system

In the previous section we showed that migrants pay more for credit than natives. This interest rate differential may be attributed to different reasons: differences in the default risk of the two types of entrepreneurs, the fact that banks can associate to single migrant entrepreneurs the characteristics of their countries of origin ("statistical discrimination"), "taste-based discrimination". We don't have the information necessary to assess the relative importance of these explanations. From now on we investigate the ways by which interest rate differential may be narrowed.

In section 4.1 we test whether migrants benefit more from a lengthening in their credit history than natives. Cultural and institutional differences between the home and the host country may imply that migrants are ex-ante more opaque than natives. As a consequence, banks may learn more about foreign borrowers than natives by a repeated interaction. Furthermore, since cultural and institutional differences may fuel some skepticism and mistrust against migrants, they benefit more from reputational effects when well-behaving over their credit history. Finally, lengthening of credit history helps migrants better participate in the financial sector ("financial integration").

Section 4.2 shows that cultural integration also helps migrant narrow the interest rate differential. We test this by indentifying “second generation” migrants among entrepreneurs born in Italy whose parents were from abroad and “Italian migrants” among entrepreneurs born abroad whose parents were originally Italian. Indeed, these two groups of entrepreneurs might be more cultural affine to natives compared to “pure” migrants (i.e. migrants born abroad whose parents were also foreign).

Another channel by which the gap may be bridged is related to the reputation of the community of migrants as a whole. In section 4.3 we explore this possibility by testing whether the size of the migrant business network helps foreign firms access the credit market.

Finally, bank improvements in interacting with migrants may represent another channel to bridge the gap between migrants and the banking system. In section 4.4. we test if the recent upgrading in the supply of financial products to migrants may involve better conditions in their access to the banking system.

4.1 *Credit history*

The differential between interest rates on loans to migrant and Italian firms may be due to a lack of credit history of the former, which have accessed the credit market more recently than the latter. On one hand, a repeated interaction with the banking system may help banks better assess firms’ creditworthiness, in particular for opaque firms. On the other hand, the lengthening of their credit history may help migrants better deal with banks. Indeed, by a repeated interaction they may better comprehend the rules and the functioning of the host banking system and consequently obtain better credit conditions. We then expect that the length of the credit history has a greater impact on migrant financing conditions since, apart from helping bank overcome asymmetries of information, it helps migrants better participate in the financial sector (“financial integration”).

To test this hypothesis we estimate the following equation:

$$(iii) \quad r_{i,j,t} = \alpha + \vartheta immi_j + \beta firm_{j,t} + \gamma credit_{i,j,t} + \delta public\ aid_{j,t} + \mu credit\ history_{j,t} * noimmi_j + v credit\ history_{j,t} * immi_j + \rho time_t + \varepsilon_{i,j,t}$$

which adds to econometric model (i) two interaction terms: one is *credit history*immi* and the other is *credit history*noimmi*, where *immi* and *noimmi* are dummy variables which equal 1 if the firm is run by a migrant (a non migrant for *noimmi*), and 0 otherwise. This allows us to test if the length of the relationship with the banking system has a greater impact on migrant cost of credit, consistently with the view that the length of credit history is a proxy for migrant financial integration.

Results reported in column 1 of table 4 show that migrants benefit more than natives from an increase in their credit history length, consistently with our hypothesis that, due to an ex-ante greater opaqueness, banks learn more about migrants than natives by a repeated interaction. It may also reflect the fact

that, as long as banks and migrants know each other better, mistrust and skepticism tend to soften. This factor is reasonably less important for native firms which are culturally similar to bank officers. As a consequence, this factor may also contribute to the narrowing in the interest rate differential driven by credit history lengthening.

However, our results might be also due to a survival bias affecting natives and migrants in a different way. Indeed, the length of credit history is highly correlated with the quality of the firm. It might be the case that, as long as credit history lengthens, riskier borrowers default and then drop out from the sample. If this process is faster for migrants compared to natives, then at least part of the reduction in the interest rate differential related to credit history might be due to an asymmetric survival bias. Our previous result on the probability of rationing suggests that, if any, an asymmetric survival bias exists but it goes in the direction of widening the interest rate differential between migrants and natives when their credit history lengthens. We showed that migrants tend to be more frequently rationed by banks, implying that ex-ante they are less risky than natives. This evidence suggests that creditworthiness evaluation by banks tends to be stricter with respect to migrants.

If this hypothesis is true, the exit from our sample should concern migrant entrepreneurs more than Italian ones. To check this hypothesis we construct a sample including only those firms which began a relationship with the banking system during the first year of our sample period (2004 cohort): the percentages of migrant entrepreneurs on total entrepreneurs at the beginning and at the end of the sample period are not statistically different (2.24 per cent in 2004 and 2.16 per cent in June 2008). This evidence indicates that the survival rate is similar for the two kinds of entrepreneurs. Besides that, we perform the estimate of equation (iii) only on firms belonging to the 2004 cohort. The results of the estimate (not reported) are similar to the ones concerning the total sample: both the coefficients of the interactions of *credit history* with the dummies identifying the Italian and migrant entrepreneurs are negative and the one associated with migrant entrepreneurs is higher in absolute value. This result confirms that the interest rate differential is not affected by the existence of a different survival bias between the two types of entrepreneur.

4.2 *Cultural proximity*

The interest rate differential may depend also on a cultural mismatch between borrowers and bank officers. To test this hypothesis we isolate two particular groups of entrepreneurs. First, among those entrepreneurs born in Italy we identify those which have not an Italian surname⁴ (e.g. they have a Chinese surname but they were born in Italy). We call these borrowers “second generation” migrant entrepreneurs. The access to the credit market should be easier for them since they were educated in Italy and know how Italian banks behave. Second, among entrepreneurs born abroad there might be someone

⁴ To identify non Italian surnames we look at the occurrences of each surname in the CR (for both households and sole proprietorships). We assume that a surname is foreign if the number of borrowers with that surname born abroad is greater than the number of those born in Italy and their total number is at least equal to 100.

with an Italian surname, indicating that their family was originally Italian. We call them “Italian migrants”.⁵ Indeed, their Italian origin may help them better overcome some skepticism and mistrust from Italian banks. These two groups of entrepreneurs represent a non negligible share of the sample: “second generation” entrepreneurs represent 8 per cent of the Italian ones, the “Italian migrants” over 40 per cent of the migrants.

We estimate the following equation:

$$(iv) \quad r_{i,j,t} = \alpha + \vartheta immi_j + \varphi sndgen_j + \xi Italian\ migrants_j + \beta firm_{j,t} + \gamma credit_{i,j,t} + \delta public\ aid_{j,t} + \mu credit\ history_{j,t} + \rho time_t + \varepsilon_{i,j,t}$$

where *sndgen* and *Italian migrants* are dummy variables which identify, respectively, the “second generation” and “Italian migrants” entrepreneurs.

The results of the estimates (table 4, column 2) indicate that “pure” migrants pay the highest interest rate (79 basis points more than “pure” Italian entrepreneurs, i.e. Italians net of “second generation” ones); “Italian migrants” pay 55 basis points⁶ more, while “second generation” entrepreneurs pay only 19 basis points more than “pure” Italians. These findings suggest that cultural differences between the host and the home country may fuel banks’ skepticism and mistrust against migrants. Indeed, among migrants, those who were originally Italian pay 24 basis points less for credit compared to other migrants. Furthermore, among Italians, being born and educated in Italy is such that those who were originally foreigners pay little more for credit than Italians.

We then test whether interest rate differential narrow in a different way among those groups of entrepreneurs when their credit history lengthens. To this aim we estimate the following equation:

$$(v) \quad r_{i,j,t} = \alpha + \vartheta immi_j + \sigma noimmi_j + \varphi sndgen_j + \xi Italian\ migrants_j + \beta firm_{j,t} + \gamma credit_{i,j,t} + \delta public\ aid_{j,t} + \tau credit\ history_{i,j,t} + \lambda credit\ history_{i,j,t} * noimmi_j + \mu credit\ history_{i,j,t} * immi_j + \nu credit\ history_{i,j,t} * sndgen_{j,t} + \pi credit\ history_{i,j,t} * Italian\ migrants_j + \rho time_t + \varepsilon_{i,j,t}$$

where we add the interactions between *credit history* and *immi*, *noimmi*, *sndgen* and *Italian migrants* dummies. We find (table 4, column 3) that “second generation” and “Italian migrants” don’t benefit from the lengthening of their credit history more than Italian and migrant entrepreneurs respectively (i.e. the coefficients of the interaction between the variables *sndgen* and *Italian migrants* and the variable *credit history* are positive and statistically significant, even if they are economically negligible). A notable implication of these results is that the interest rate differential for “second generation” firms reduces very slowly, indicating a persistent mistrust of banks against entrepreneurs with a foreign family name, notwithstanding they were born in Italy.

⁵ We follow a similar rule to that used for “second generation” migrants. See footnote 4.

⁶ The “Italian migrant” entrepreneurs are a subset of migrants; the interest rate differential is then obtained by summing the coefficients estimated for the variables *immi* and *Italian migrants*.

4.3 *Migrant social networking*

Anecdotal evidence (Unioncamere, 2007) suggests that migrants are socially interconnected. This may compensate for the lack of individual credit history, helping them to access the credit market in different ways and thus lowering the cost of credit. First, migrants may benefit from the reputation gained by other people from the same country. Banks may exploit cross-sectional data to infer some migrant behavioral characteristics which may affect their default risk. Second, the minorities may behave as community. This may imply that the most trustworthy migrant entrepreneurs play as mentors, helping firms which lack credit history access the credit market. This may also mean that people from the same community may be backed by a sort of informal mutual guarantee which lowers the loss given default for lenders. Indeed, members from the same community, in order to save the reputation of their ethnic group, may want to help member firms in case of financial distress, preventing them from defaulting. Third, a sort of internal credit market may be working within communities. The most trustworthy community members may borrow money from banks to subsequently finance less creditworthy members. Fourth, being a community with a solid reputation may create strong incentives to peer monitoring within the group members, contributing to lower default risk. All these channels relate more to migrant entrepreneurs than to other migrants because the first ones can build their trustworthiness through their business performance and their behavior in the banking relationships.

In order to measure what we name “network effect” we make two assumptions. First, communities are made of people coming from the same country. Second, physical proximity is required to make the community working. For these reasons, we define a variable (*network1*) which is equal to the number of migrant entrepreneurs coming from the same country and headquartered in the same municipality.

The results of the estimates (table 5, column 1) indicate the existence of a strong “network effect”: interest rates are 16 basis points lower when the number of community members increases by ten units. We replicate our estimates by measuring the network effect at the province level (*network2*). Column 2 shows that the effect is weaker when the area where the community is located is extended from a municipality to the province, supporting the view that social interaction requires physical proximity.

4.4 *The supply side*

As mentioned before, the fourth channel for “bridging the gap” between migrants and the banking system may be to improve the ability of banks to deal with cultural diversities by, for example, offering specific products which are tailored to migrant characteristics, by opening multiethnic points or by the adoption of specific projects supported by foundations and public institutions.

As we mentioned in section 4.1, migrants face higher cost of credit when they lack a sufficiently long credit history. This problem may be quite severe when the banking system has accumulated little knowledge of foreign entrepreneurs and it has not invested in improving their ability to interact with them and in

developing financial products suited for their necessities. To test if banks have really upgraded their ability to interact with migrants facilitating their access to credit and lowering the migrant/Italian interest rate differential, we estimate the benchmark equation on a sample of firms whose relationship with the banking system is less than 2-year old in the first and the last quarter of the sample period. If our hypothesis is correct, the differential between interest rates applied to micro firms run by migrants and by Italians should be lower in the last quarter of the sample period, after controlling that monetary policy tightening has not an asymmetric effect on interest rates charged on migrant and Italian entrepreneurs.⁷ The results of the estimates confirm our hypothesis: the interest rate differential in the last quarter of our sample is 30 basis points lower than the one in the first quarter (table 6, columns 2 and 3). The upgrading of bank supply for migrants determines a decrease in interest rate differential between migrant and Italian entrepreneurs at the beginning of their relationship with the banking system.

5. Conclusions

During the last years migrant entrepreneurship has rapidly spread in Italy. The financing of migrant firms presents some specificities, only partially investigated by the economic literature. In this paper we concentrate on the cost of bank credit.

According to the results of the empirical analysis, migrant entrepreneurs pay interest rates almost 70 basis points higher than those paid by the Italian ones. Results of the “natural experiment” represented by the lowering of the CR threshold suggest that, if any, our estimates tend to underestimate the interest rate differential between migrants and natives.

The lengthening in the credit history of entrepreneurs lowers interest rates; this effect is stronger for migrants, narrowing the differential between the interest rates charged to the two types of entrepreneur. We interpret this stronger effect as a form of “financial integration”, through which banks increase their knowledge about clients characterized by higher ex-ante “opaqueness”, and migrant entrepreneurs learn the functioning of the Italian banking system.

This interpretation is coherent with the empirical results concerning the cost of credit for two other kinds of entrepreneurs, characterized by different degrees of cultural integration: the “second generation” ones, born in Italy but whose parents came from other countries, and the “Italian migrants”, born in other countries but whose parents were born in Italy. According to the results of the estimates, the “second generation” entrepreneurs pay interest rates slightly higher than the Italian ones, while “Italian migrants” entrepreneurs pay interest rates lower than those paid by “pure” migrants.

⁷ To this purpose we add two interaction terms between a dummy variable which identifies the quarters in which monetary policy has been tightened (*restr*) and the two dummy variables identifying migrant and non migrant entrepreneurs (*immi* and *noimmi*). In particular, we identify the period of monetary tightening (since December 2005 until December 2007) considering both the rise in official interest rates and in the 3-month interest rate in the interbank market. The results of the estimate show that the coefficients associated to the two interaction terms are not statistically different (table 6, column 1).

We also find that the size of the migrant community may, at least partially, compensate for the lack of an individual credit history. As the number of firms headquartered in a given municipality increases the interest rate declines.

Finally, the improvement in the ability of the Italian banking system to interact with migrants has determined a decrease in the interest rate differential between migrant and Italian entrepreneurs at the beginning of their relationship with the banking system.

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Table 1

Main features of micro firms
(March 2004 - June 2008)

	Age of the entrepreneur					TOTAL
	<30	30-39	40-49	50-59	>59	
Number of micro firms owned by migrants (a)	503	1,756	1,557	606	198	4,620
<i>percentage shares</i>	10.9	38.0	33.7	13.1	4.3	100.0
Number of micro firms owned by Italians (b)	13,772	54,437	68,213	52,772	33,800	222,994
<i>percentage shares</i>	6.2	24.4	30.6	23.7	15.2	100.0

	Sector						TOTAL
	Agriculture	Manufacturing	Construction	Trade	Hotel and restaurant services	Other services	
Number of micro firms owned by migrants (a)	139	966	1,140	1,077	339	959	4,620
<i>percentage shares</i>	3.0	20.9	24.7	23.3	7.3	20.8	100.0
Number of micro firms owned by Italians (b)	24,897	42,869	34,286	58,176	13,138	49,628	222,994
<i>percentage shares</i>	11.2	19.2	15.4	26.1	5.9	22.3	100.0

	Size						TOTAL
	Artisans			Non artisans			
	More than 20 employees	Between 5 and 20 employees	Less than 5 employees	More than 20 employees	Between 5 and 20 employees	Less than 5 employees	
Number of micro firms owned by migrants (a)	23	101	2,052	34	85	2,325	4,620
<i>percentage shares</i>	0.5	2.2	44.4	0.7	1.8	50.3	100.0
Number of micro firms owned by Italians (b)	1,481	7,975	77,113	1,439	4,861	130,125	222,994
<i>percentage shares</i>	0.7	3.6	34.6	0.6	2.2	58.4	100.0

Source: Central Credit Register.

(a) Individual firms owned by entrepreneur not born in Norway, Switzerland or in a EU15 country.

(b) Individual firms owned by entrepreneur born in Norway, Switzerland or in a EU15 country.

Table 2**Variable names and definitions**

Name	Description	Mean	Std. Deviation
R	Interest rate charged to firm j by bank i on overdraft facilities	9.62	2.701
Migrant entrepreneur	Dummy variable that takes value 1 if the firm is run by migrants (0 if not)	0.02	0.123
Second generation	Dummy variable that takes value 1 if the firm is run by a second generation migrant (0 if not)	0.02	0.131
Italian migrant	Dummy variable that takes value 1 if the firm is run by an Italian migrant (0 if not)	0.01	0.109
Age	Entrepreneurs' age	49.60	12.024
Public aid	Dummy variable that takes value 1 if the firm has received public aid (0 if not)	0.01	0.103
Loan size	Amount of the outstanding loans (in log)	11.54	1.064
Real Guarantees	Dummy variable that takes value 1 if the firm is required a real guarantee (0 if not)	0.14	0.349
Bad loans	Dummy variable that takes value 1 if the firm has insolvency problems (0 if not)	0.01	0.118
Multiple lending	Dummy variable that takes value 1 if the firm has multiple lending relationships	0.46	0.499
Credit history	Time elapsed since the first entry of the firm in the Central Credit Register in years	2.94	0.914

Table 3

Micro firms and loan interest rates

This table lists the coefficients from a regression with the loan rate charged to sole proprietorships on credit lines (overdraft facilities), in percentage points, as the dependent variable. We employ ordinary least squares estimation. The "balanced" sample is obtained by identifying first the combination of "lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR" among migrants (7040 different combinations). Then we look for the same combination among natives, excluding the other ones left. We end up with a highly balanced sample where observations referred to migrants are 48 per cent of the total. "Pair" fixed effects in columns 4 and 5 allow us to jointly control for "lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR". *, **, and *** indicate significance at the 10%, 5%, and 1% level, two-tailed.

Variables	<i>Full sample</i>		<i>Balanced sample</i>		
	<i>Baseline regression</i>	<i>Baseline regression</i>	<i>Large Banks</i>	<i>"Pair" fixed effects</i>	<i>"Pair" fixed effects and migrant continent of origin</i>
	(1)	(2)	(3)	(4)	(5)
<i>Firm Characteristics</i>					
Migrant entrepreneur	0.6772 *** 0.0130	0.6234 *** 0.0201	0.9131 *** 0.0284	0.6963 *** 0.0350	
Age	-0.0189 *** 0.0001	-0.0183 *** 0.0010	-0.0199 *** 0.0010	-0.0076 *** 0.0012	-0.0077 *** 0.0012
Public aid	-0.1552 *** 0.0155	0.4258 *** 0.1205	0.2937 ** 0.1195	0.0880 0.1441	0.0446 0.1441
<i>Loan Characteristics</i>					
Loan size	0.0585 *** 0.0015	0.1227 *** 0.0091	0.1380 *** 0.0090	0.0564 *** 0.0081	0.0558 *** 0.0081
Real Guarantees	0.9333 *** 0.0046	1.2225 *** 0.0240	1.1992 *** 0.0238	0.5710 *** 0.0226	0.5618 *** 0.0226
Bad loans	1.5592 *** 0.0134	1.1267 *** 0.0704	1.1273 *** 0.0697	0.5101 *** 0.0657	0.5139 *** 0.0657
<i>Bank-firm Relationship</i>					
Multiple lending	-0.3713 *** 0.0035	-0.6381 *** 0.0225	-0.6794 *** 0.0223	-0.3412 *** 0.0232	-0.3327 *** 0.0232
Credit history	-0.2105 *** 0.0021	-0.0929 *** 0.0032	-0.0941 *** 0.0032	-0.1628 *** 0.0614	-0.1579 *** 0.0614
Large bank			0.8840 *** 0.0272		
Large bank*migrant entrepreneur			-0.4067 *** 0.0382		
<i>Migrant continent of origin</i>					
North America and Oceania					0.2232 0.1444
Central and Latin America					0.2341 *** 0.0848
Asia					0.3727 *** 0.0719
Africa					0.8504 *** 0.0569
Eastern Europe					1.3495 *** 0.0770
Constant	10.2520 *** 0.0213	9.3531 *** 0.1233	8.7338 *** 0.1236	9.7190 *** 0.2363	9.7238 *** 0.2364
Adjusted R-squared	0.1502	0.1603	0.1756	0.5933	0.5942
Number of observations	2,443,198	74,035	74,035	74,035	74,035

Table 4

Financial integration, cultural proximity and loan interest rates

This table lists the coefficients from a regression with the loan rate charged to sole proprietorships on credit lines (overdraft facilities), in percentage points, as the dependent variable. We employ ordinary least squares estimation. The "balanced" sample is obtained by identifying first the combination of "lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR" among migrants (7040 different combinations). Then we look for the same combination among natives, excluding the other ones left. We end up with a highly balanced sample where observations referred to migrants are 48 per cent of the total. In all regressions "pair" fixed effects are introduced; they allow us to jointly control for "lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR". *, **, and *** indicate significance at the 10%, 5%, and 1% level, two-tailed.

Variables	<i>Balanced sample</i>		
	<i>Credit history</i>	<i>Cultural proximity</i>	<i>Cultural proximity and credit history</i>
	(1)	(2)	(3)
<i>Firm Characteristics</i>			
Migrant entrepreneur	1.0792 *** 0.0553	0.7916 *** 0.0412	1.1350 *** 0.0592
Second generation		0.1858 *** 0.0474	-0.0193 0.1062
Italian migrant		-0.2416 *** 0.0642	-0.3168 *** 0.1145
Age	-0.0072 *** 0.0012	-0.0076 *** 0.0012	-0.0073 *** 0.0012
Public aid	0.1127 0.1440	0.0756 0.1441	0.0946 0.1441
<i>Loan Characteristics</i>			
Loan size	0.0560 *** 0.0081	0.0552 *** 0.0081	0.0554 *** 0.0081
Real Guarantees	0.5656 *** 0.0226	0.5692 *** 0.0226	0.5626 *** 0.0227
Bad loans	0.5279 *** 0.0657	0.5127 *** 0.0657	0.5329 *** 0.0657
<i>Bank-firm Relationship</i>			
Multiple lending	-0.3364 *** 0.0232	-0.3387 *** 0.0232	-0.3364 *** 0.0232
Credit history		-0.1580 *** 0.0614	
Credit history*Italian entrepreneur	-0.1290 ** 0.0615		-0.1267 ** 0.0615
Credit history*migrant entrepreneur	-0.1929 *** 0.0615		-0.1987 *** 0.0617
Credit history*second generation			0.0257 ** 0.0121
Credit history*native			0.0377 *** 0.0133
Constant	9.4911 *** 0.2375	9.7008 *** 0.2362	9.4985 *** 0.2376
Adjusted R-squared	0.5938	0.5935	0.6327
Number of observations	74,035	74,035	74,035

Table 5

Network effect and loan interest rates

This table lists the coefficients from a regression with the loan rate charged to sole proprietorships on credit lines (overdraft facilities), in percentage points, as the dependent variable. We employ ordinary least squares estimation. The sample is composed of observations only concerning migrant entrepreneurs. *, **, and *** indicate significance at the 10%, 5%, and 1% level, two-tailed.

Variables	<i>Migrants' sample</i>	
	<i>Municipality networking</i>	<i>Province networking</i>
	(1)	(2)
<i>Migrant continent of origin</i>		
Central America	0.3549 ** 0.1443	0.3606 ** 0.1443
Latin America	-0.0010 0.0514	0.0031 0.0514
Asia	0.6404 *** 0.0548	0.6244 *** 0.0547
Africa	0.3785 *** 0.0511	0.3769 *** 0.0512
Eastern Europe	0.4897 *** 0.0545	0.4935 *** 0.0545
<i>Firm Characteristics</i>		
Age	-0.0276 *** 0.0014	-0.0277 *** 0.0014
Public aid	-0.3431 ** 0.1449	-0.3357 ** 0.1449
<i>Loan Characteristics</i>		
Loan size	0.0940 *** 0.0125	0.0941 *** 0.0125
Real Guarantees	0.9030 *** 0.0293	0.9027 *** 0.0293
Bad loans	0.6524 *** 0.0780	0.6552 *** 0.0780
<i>Bank-firm Relationship</i>		
Multiple lending	-0.5681 *** 0.0306	-0.5816 *** 0.0304
Credit history	-0.1807 *** 0.0140	-0.1821 *** 0.0140
Network1	-0.0157 *** 0.0038	
Network2		-0.0036 ** 0.0019
Constant	9.8975 *** 0.1936	9.8884 *** 0.1938
<i>Fixed effects</i>		
Bank and province	yes	yes
Adjusted R-squared	0.3114	0.3112
Number of observations	37,574	37,574

Table 6

Bank supply evolution and loan interest rates

This table lists the coefficients from a regression with the loan rate charged to sole proprietorships on credit lines (overdraft facilities), in percentage points, as the dependent variable. We employ ordinary least squares estimation. The "balanced" sample is obtained by identifying first the combination of "lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR" among migrants (7040 different combinations). Then we look for the same combination among natives, excluding the other ones left. We end up with a highly balanced sample where observations referred to migrants are 48 per cent of the total. "Pair" fixed effects in column 1 allow us to jointly control for "lender-firm sector-firm size-firm town-firm gender-firm first year of reporting to the CR". *, **, and *** indicate significance at the 10%, 5%, and 1% level, two-tailed.

Variables	<i>Balanced sample</i>	<i>1st quarter sample</i>	<i>2nd quarter sample</i>
	<i>Monetary policy neutrality</i>	<i>"Supply side effect"</i>	
	(1)	(2)	(3)
<i>Firm Characteristics</i>			
Migrant entrepreneur	0.6684 *** 0.0382	1.0291 *** 0.1112	0.7275 *** 0.0852
Age	-0.0076 *** 0.0012	-0.0186 *** 0.0031	-0.0193 *** 0.0029
Public aid	0.0883 0.1441	0.0514 0.4360	0.0562 0.3998
<i>Loan Characteristics</i>			
Loan size	0.0563 *** 0.0081	0.0537 0.0345	0.1548 *** 0.0338
Real Guarantees	0.5710 *** 0.0226	1.3670 *** 0.0818	1.5161 *** 0.0752
Bad loans	0.5084 *** 0.0657	1.6695 *** 0.3005	0.8885 *** 0.2584
<i>Bank-firm Relationship</i>			
Multiple lending	-0.3410 *** 0.0232	-0.4023 *** 0.1046	-0.4627 *** 0.0897
Credit history	-0.1628 *** 0.0614		
Monetary tightening*Italian entrepreneur	1.1384 *** 0.2044		
Monetary tightening*migrant entrepreneur	1.1907 *** 0.2047		
Constant	9.7307 *** 0.2363	9.0744 *** 0.5162	8.2862 *** 0.5090
<i>Fixed effects</i>			
Bank and province		yes	yes
Adjusted R-squared	0.5934	0.2642	0.2418
Number of observations	74,035	5,991	6,569