BANCA D'ITALIA

EUROSISTEMA

Temi di Discussione

(Working Papers)

Bridging the gap between migrants and the banking system

by Giorgio Albareto and Paolo Emilio Mistrulli

BANCA D'ITALIA

EUROSISTEMA

Temi di discussione

(Working papers)

Bridging the gap between migrants and the banking system

by Giorgio Albareto and Paolo Emilio Mistrulli

The purpose of the Temi di discussione *series is to promote the circulation of working papers prepared within the Bank of Italy or presented in Bank seminars by outside economists with the aim of stimulating comments and suggestions.*

The views expressed in the articles are those of the authors and do not involve the responsibility of the Bank.

BRIDGING THE GAP BETWEEN MIGRANTS
AND THE BANKING SYSTEM

Giorgio Albareto* and Paolo Emilio Mistrulli**

Abstract

In this paper, we test whether micro firms run by migrants pay more for credit than firms run by natives and whether the differences in the cost of credit for these two groups of entrepreneurs decrease as the informational and cultural gaps narrow. We employ a large and unique data set providing us with detailed information on each overdraft loan granted by banks to sole proprietorships based in Italy. We find that migrants pay, on average, almost 70 basis points more for credit than natives. The interest rate differential is lower for entrepreneurs born in Italy whose parents were natives of other countries ("second generation" migrants) and 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 of credit history reduces the interest rate differential between the two types of entrepreneurs. Finally, we find that both increases in the size of the migrant community and improvements in banks' ability to deal with cultural diversity help narrow the interest rate differential between migrant and Italian entrepreneurs.

Contents

*Bank of Italy, Structural Economic Analysis Department.

**Bank of Italy, Economic Research Unit, Potenza Branch.

1. Introduction[1]

The recent strong growth in 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,[2] lending to migrants may require some further effort to 'bridge the gap' between lenders and borrowers due to cultural and institutional differences between the home and host country. All other things 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 migrants' access to the credit market.

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 for these two groups of entrepreneurs are attenuated as the informational and cultural gaps narrow. For this purpose 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.[3] This is the first paper to address these issues in Italy. To the best of our 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. In December 2009 there were over 250,000 sole proprietorships run by migrants, more than double the number in 2003, when they were around 100,000. Migration and foreign entrepreneurship, in particular, are relatively new phenomena in Italy. This may exacerbate the difficulties migrants face when accessing the credit market in Italy compared to other countries, which are more accustomed to lending to minorities.

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

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

---

[1] We wish to thank Giorgio Gobbi, Alfonso Rosolia, Enrico Sette, Alberto Zazzaro and an anonymous referee for their helpful comments, and Cristiana Rampazzi for excellent research assistance.

[2] The literature on bank financing to informational opaque firms is extensive; for a survey see Elyasiani and Goldberg (2004).

[3] For a detailed description of the data used in the paper see section 2 below.

investigate different channels through which the interest rate differential between migrants and Italians may narrow. First, we verify whether the cost of credit for migrants converges towards that charged to natives as the relationship with the banking system continues. In particular, we find that the interest rate spread narrows as credit history lengthens. We interpret the fact that firms run by migrants, due to their higher ex-ante "opaqueness", benefit more from repeated interaction with the banking system as evidence that relatively more information is conveyed to banks about migrant entrepreneurs compared to other firms. Moreover, a longer credit history helps migrants to participate more effectively in the financial sector ("financial integration"). Notwithstanding these effects, the interest rate differential does not disappear. This might be due to a persistent cultural gap between banks and migrants. This interpretation is consistent with the evidence on the cost of credit for some entrepreneurs who are presumably culturally close to natives: a) the interest rate differential is lower for entrepreneurs born in Italy whose parents are foreign (*second generation migrants*) and b) among those born abroad, for those whose family was originally Italian (*Italian migrants*). Secondly, we show that broad migrant social networking also reduces the interest rate gap. This result suggests that banks may obtain relevant information not only through 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 narrows as the banks' ability to deal with cultural diversities improves.

The rest of the paper is organized as follows. Section 2 describes the data. Section 3 reports our empirical results of our econometric analysis of the interest rate differential between migrant and Italian entrepreneurs. Section 4 investigates the ways in which the interest rate differential may be narrowed. Section 5 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 exceeds 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 size, category and location.

Data refer to overdraft loans granted to micro firms. We focus on micro firms (sole proprietorships) for two main reasons. First, by looking at their individual taxpayer's number, obtained from the CR, it is easy to identify migrants' countries of origin. Second, sole proprietorships are commonplace throughout Italy and they also prevail among start-ups.

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, a cross-firm comparison of the cost of credit is not affected by unobservable (to an econometrician) loan-contract specific covenants. Third, overdraft facilities are loans that are not granted for any specific purpose, as is the case of mortgages, or 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 strongly associated with the borrower-lender relationship, thus providing us with a better tool for testing the existence of discrimination against migrant entrepreneurs.

After a filtering procedure, we end up with a sample of over 2.4 million observations relative to 18 quarters from March 2004 to June 2008.[4] The number of migrant firms is much lower (about 5,000) than that of native firms (almost 225,000). Therefore our sample is highly unbalanced. In particular, migrants tend to be concentrated in a few towns and sectors. They display a much shorter credit history and they tend to borrow from a lower number of banks compared to natives. Non-Italian entrepreneurs are relatively younger than their Italian counterparts (table 1): those under 40 years of age 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 Italian firms, even if artisans are more widespread among migrants. The share of migrants' micro firms run by women (26 per cent) is higher than that of Italians (19 per cent). The credit history of Italian entrepreneurs is double that of migrants. 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 present 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) $r_{i,j,t} = a + \theta immi_j + \beta firm_{j,t} + \gamma credit_{i,j,t} + \delta public\ aid_{j,t} + \mu credit\ history_{j,t} + \rho time_t + \varepsilon_{i,j,t}$

where r is the interest rate charged on 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 the firm's characteristics including economic sector (around 200), location dummies (103 provinces), and the entrepreneur's age.

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 banks other than 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 likely to be granted public subsidies, which may affect credit conditions.

We control for the number of years that have elapsed since the firm was first recorded in the CR to establish the *credit history*. This is to ensure that the interest rate differential between migrant and native firms is not due to the shorter length of migrants' 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 the 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 balance between migrant and non-migrant firms.

---

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

As shown by descriptive statistics, migrants tend to be concentrated in specific economic sectors, towns, firm size classes. They also borrow from a lower number of banks and they may differ significantly in terms of credit history length. The mismatch between the characteristics of natives and migrants exacerbates estimation problems due to unobservables. To mitigate the effects of these unobservables on the estimates, we compare migrants with a sub-sample of natives that have the same characteristics as the migrants: for each combination of "lender, firm sector, firm size, firm town, entrepreneur gender, firm first year of reporting to the CR" observed among migrants (7,040 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.

The 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 by introducing the dummy variable *large bank* and its interaction with *immi*.[5] 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).

The equation in column 4 adds "pair" fixed effects, i.e. we add dummies for each observed combination we use to balance the sample.[6] 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, the 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 that are 1.3 percentage points higher than those charged to Italian entrepreneurs; those from Asia and Africa pay almost 40 and 85 basis points more respectively. Entrepreneurs from Central and Latin America pay over 20 basis points more than their Italian counterparts, while the interest rates paid by entrepreneurs from North America and Oceania are not statistically different from those charged to native Italians.

One possible objection to these results is that the CR threshold affects migrants and natives differently, thus biasing our results. In particular, if migrant entrepreneurs were less rationed than natives our results would over-estimate the interest rate differential. In other words, it may be 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 relatively more likely to lend to riskier migrant firms compared to native ones. As a consequence, due to some unobserved variable that correlates with risk, the estimated higher cost of credit observed for migrants is only due to such a bias.

To address this issue we employ a sort of natural experiment. In January 2009 the CR census threshold was lowered from 75,000 to 30,000 euros. 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 that a firm lies 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 were reported to the Credit Register in January 2009, just after the threshold was lowered to 30,000 euros, and would not have been reported were the threshold still equal to 75,000 euros. We then check if this probability is lower for migrants,

---

[5] See, among others, Stein (2002) and Berger *et al.* (2005) for both theoretical and empirical evidence.
[6] See Ashenfelter and Krueger (1994).

compared to observationally equivalent natives, by estimating the following probit equation:

(ii) *Prob("rationing")$_j$)= a + ξimmi_j + βother firm characteristics$_j$ + ε$_j$*

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

All other things being equal, we find that the probability for migrants of being "rationed" is 1.2 per cent higher than for natives. This implies that, if anything, our previous results concerning 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 of credit for 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 the fact that banks can associate to single migrant entrepreneurs the characteristics of their countries of origin ("statistical discrimination") or to "taste-based discrimination". [7] We don't have the necessary information to assess the relative importance of these explanations. Instead, we now investigate the ways in which the interest rate differential may be narrowed.

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

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

Another channel through 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 might represent another way of bridging the gap between migrants and the banking system. In section 4.4. we test whether the recent upgrading in the supply of financial products to migrants may involve improved conditions in their access to the banking system.

---

[7] See Becker (1971) for more details about the definition of "statistical" and "taste-based" discrimination.

4.1 *Credit history*

The differential between interest rates on loans to migrant and Italian firms may be due to the lack of credit history of the former, which have accessed the credit market more recently than the latter. On the one hand, repeated interaction with the banking system may help banks assess firms' creditworthiness better,[8] in particular for opaque firms. On the other hand, the lengthening of their credit history may strengthen migrants' reputation and help them deal more effectively with banks. Indeed, through repeated interaction they may come to understand the rules and functioning of the host banking system better and as a result obtain better credit conditions. We also expect the length of credit history to have a greater impact on migrant financing conditions since, apart from helping banks overcome information asymmetries, it helps migrants to participate more fully in the financial sector ("financial integration").

To test this hypothesis we estimate the following equation:

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

which adds to the 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 the cost of credit to migrants, in accordance with the view that the length of credit history is a proxy for the improvement of banks' knowledge of firms' characteristics, for the strengthening of migrants' reputation and for their financial integration.

The results reported in column 1 of table 4 show that migrants benefit more than natives from an increase in their credit history length, in accordance with our hypothesis that, due to an ex-ante greater opaqueness, banks learn more about migrants than natives through repeated interaction. This result may also reflect the fact that as banks and migrants get to know each other better, mistrust and skepticism tend to diminish. It can reasonably be assumed that this factor is relatively less important for native entrepreneurs, who are culturally similar to bank officers. As a consequence, longer credit histories may also contribute to the narrowing of the interest rate differential.

However, our results might also reflect 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 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 in the direction of widening the interest rate differential between migrants and natives when their credit history lengthens. We show 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.

---

[8] Altonji and Pierret (1996) investigate a similar issue for the labour market, showing that wages become more closely tied to actual worker productivity as long as the employers obtain information during a worker's career.

If this hypothesis is true, the exit from our sample should concern Italian entrepreneurs more than migrant ones.[9] To check this hypothesis we construct a sample including only firms which entered into a relationship with the banking system during the first year of our sample period (2004 cohort): the percentage of migrant entrepreneurs out of 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. 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 for the total sample: both the coefficients of the interactions of *credit history* with the dummies identifying 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 also depend on a cultural mismatch between borrowers and bank officers. To test this hypothesis we isolate two groups of entrepreneurs. First, among the entrepreneurs born in Italy we identify those who do not have an Italian surname[10] (e.g. they have a Chinese surname but they were born in Italy). We call these borrowers "second generation" migrant entrepreneurs. Access to the credit market should be easier for them with respect to migrants since they were educated in Italy and know how Italian banks behave. Second, among entrepreneurs born abroad there might be someone with an Italian surname, indicating that their family was originally Italian. We call them "Italian migrants".[11] Indeed, their Italian origin may help them overcome better than others 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) $r_{i,j,t} = a + \theta immi_j + \varphi sndgen_j + \xi Italian\ migrants_j + \beta firm_{j,t} + \gamma credit_{i,j,t} + \delta public\ aid_{j,t} + \mu credit$
$\quad\quad history_{j,t} + \rho time_t + \varepsilon_{i,j,t}$

where *sndgen* and *Italian migrants* are dummy variables identifying, respectively, "second generation" and "Italian migrant" entrepreneurs.

---

[9] To see this, let us assume that natives and migrants can be of two types: "good" and "bad" entrepreneurs, who survive in a given period with probability P and Q, with $P>Q$, respectively. Let us assume also that the proportion of "good" in the population is the same for both natives and entrepreneurs. However, due to the fact that the credit register threshold is more binding for migrants, the proportion of "good" entrepreneurs among them is β_m, that is greater than the one among natives β_n. This means that at $t=0$, when banks grant the loan, the expected probability of survival for migrants in the first period (at $t=1$) is $\beta_m P + (1-\beta_m)Q$, i.e. greater than the one for natives $\beta_n P + (1-\beta_n)Q$. In the second period, from $t=1$ to $t=2$, due to the fact that "bad" firms are riskier than "good" ones, the proportion of "bad" firms at $t=1$ is lower compared to that at $t=0$ for both migrants and natives. However, since at $t=0$ the proportion of bad firms was greater among natives, the decline in that share is greater for natives than for migrants. Thus, the difference in terms of expected probability of survival between natives and migrants narrows. In general, as the credit history lengthens, the average probability of default for natives tends to converge towards that for migrants. Consequently, the initial interest rate differential, which was attenuated by the fact that natives were on average riskier than migrants, tends to widen as the credit history lengthens.

[10]   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 equal to at least 100.

[11] We follow a similar rule to that used for "second generation" migrants. See footnote 10.

The results of the estimate (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"); "Italian migrants" pay 55 basis points[12] 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 the interest rate differential narrows in a different way among these groups of entrepreneurs as their credit history lengthens. For this purpose we estimate the following equation:

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

where we add the interactions between *credit history* and *immi*, *noimmi*, *sndgen* and *Italian migrant* 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). One notable implication of these results is that the interest rate differential for "second generation" firms narrows very slowly, indicating a persistent mistrust of banks vis à vis entrepreneurs with a foreign family name, notwithstanding the fact that they were born in Italy.

4.3 *Migrant social networking*

Anecdotal evidence suggests that migrants are socially interconnected[13]. This can compensate for the lack of individual credit history, helping them to access the credit market in different ways and thus lower the cost of credit. First, migrants tend to benefit from the reputation gained by other people from the same country. Banks can exploit cross-sectional data to infer some migrant behavioral characteristics which could affect their default risk. Second, minorities tend to behave as a community. This implies that the most trustworthy migrant entrepreneurs act as mentors, helping firms which lack a credit history to access the credit market. This also means that people from the same community might be backed by a sort of informal mutual guarantee which lowers the loss given default for lenders. Indeed, in order to save the reputation of their ethnic group, members of the same community may want to help member firms in the event of financial distress, to prevent them from defaulting. Third, being a community with a solid reputation can create strong incentives for peer monitoring within the group, 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.

To measure what we call the "network effect" we make two assumptions. First, communities are made up of people from the same country. Second, physical proximity is required to make the

---

[12] "Italian migrant" entrepreneurs are a subset of migrants; the interest rate differential is obtained by summing the coefficients estimated for the variables *immi* and *Italian migrants*.
[13] See Unioncamere (2007).

community work. For these reasons, we define a variable (*network1*) which is equal to the number of migrant entrepreneurs from the same country and located in the same municipality.

The results of the estimate on a sample composed of observations only concerning migrant entrepreneurs (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 estimate 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 previously, 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 certain products tailored to migrant characteristics, opening multiethnic points or adopting specific projects supported by foundations and public institutions.

As we mentioned in section 4.1, migrants face a higher cost of credit when they lack a sufficiently long credit history. This problem can be quite severe when the banking system has accumulated little knowledge of foreign entrepreneurs, has not invested in improving its ability to interact with them or has failed to develop financial products suited to their needs.

To test whether banks have really upgraded their ability to interact with migrants by facilitating 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 was less than 2-years old in the first and 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 does not have an asymmetric effect on interest rates charged to migrant and Italian entrepreneurs.[14]

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 banks' supply for migrants determines a decrease in the interest rate differential between migrant and Italian entrepreneurs at the beginning of their relationship with the banking system.

5.   Conclusions

In recent years migrant entrepreneurship has spread rapidly 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.

---

[14] For 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 Italian entrepreneurs (*immi* and *noimmi*). In particular, we identify the period of monetary tightening (from December 2005 to 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 with the two interaction terms are not statistically different (table 6, column 1). However, the effect of monetary tightening on interest rates would be higher for migrants, widening the interest rate differential.

According to the results of the econometric analysis, migrant entrepreneurs pay interest rates that are almost 70 basis points higher than those paid by their Italian counterparts. The results of the "natural experiment" represented by the lowering of the CR threshold suggest that, if anything, our analysis tend to underestimate the interest rate differential between migrants and natives.

The lengthening of entrepreneurs' credit history 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 result of a process by which banks increase their knowledge about clients characterized by higher ex-ante "opaqueness", and migrant entrepreneurs learn how the Italian banking system works ("financial integration").

This interpretation is consistent 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 of foreign parents, and "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 that are slightly higher than the Italian ones, while "Italian migrant" entrepreneurs pay interest rates that are lower than those paid by "pure" migrants.

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 entrepreneurs coming from the same country 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.

Table 1

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

	Age of the entrepreneur					
	<30	30-39	40-49	50-59	>59	**TOTAL**
Number of micro firms owned by migrants (a)	503	1,756	1,557	606	198	**4,620**
percentage shares	*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**
percentage shares	*6.2*	*24.4*	*30.6*	*23.7*	*15.2*	*100.0*

	Sector						
	Agriculture	Manufacturing	Construction	Trade	Hotel and restaurant services	Other services	**TOTAL**
Number of micro firms owned by migrants (a)	139	966	1,140	1,077	339	959	**4,620**
percentage shares	*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**
percentage shares	*11.2*	*19.2*	*15.4*	*26.1*	*5.9*	*22.3*	*100.0*

	Size						
	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	**TOTAL**
Number of micro firms owned by migrants (a)	23	101	2,052	34	85	2,325	**4,620**
percentage shares	*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**
percentage shares	*0.7*	*3.6*	*34.6*	*0.6*	*2.2*	*58.4*	*100.0*

Source: Central Credit Register.
(a) Sole proprietorships owned by an entrepreneur not born in Norway, Switzerland or in a EU15 country. (b) Sole proprietorships owned by an 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	Entrepreneur's 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	Number of years elapsed since the firm was first entered in the Central Credit Register	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, entrepreneur gender, firm first year of reporting to the CR" among migrants (7,040 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 account for 48 per cent of the total. "Pair" fixed effects in columns 4 and 5 allow us to control jointly for "lender, firm sector, firm size, firm town, entrepreneur gender, firm first year of reporting to the CR". *, **, and *** indicate significance at the 10%, 5%, and 1% level, two-tailed.

Variables	Full sample	Balanced sample			
	Baseline regression	Baseline regression	Large banks	"Pair" fixed effects	"Pair" fixed effects and migrant continent of origin
	(1)	(2)	(3)	(4)	(5)
Firm characteristics					
Migrant entrepreneur	0.6772 ***	0.6234 ***	0.9131 ***	0.6963 ***	
	0.0130	0.0201	0.0284	0.0350	
Age	-0.0189 ***	-0.0183 ***	-0.0199 ***	-0.0076 ***	-0.0077 ***
	0.0001	0.0010	0.0010	0.0012	0.0012
Public aid	-0.1552 ***	0.4258 ***	0.2937 **	0.0880	0.0446
	0.0155	0.1205	0.1195	0.1441	0.1441
Loan characteristics					
Loan size	0.0585 ***	0.1227 ***	0.1380 ***	0.0564 ***	0.0558 ***
	0.0015	0.0091	0.0090	0.0081	0.0081
Real guarantees	0.9333 ***	1.2225 ***	1.1992 ***	0.5710 ***	0.5618 ***
	0.0046	0.0240	0.0238	0.0226	0.0226
Bad loans	1.5592 ***	1.1267 ***	1.1273 ***	0.5101 ***	0.5139 ***
	0.0134	0.0704	0.0697	0.0657	0.0657
Bank-firm relationship					
Multiple lending	-0.3713 ***	-0.6381 ***	-0.6794 ***	-0.3412 ***	-0.3327 ***
	0.0035	0.0225	0.0223	0.0232	0.0232
Credit history	-0.2105 ***	-0.0929 ***	-0.0941 ***	-0.1628 ***	-0.1579 ***
	0.0021	0.0032	0.0032	0.0614	0.0614
Large bank			0.8840 ***		
			0.0272		
Large bank*Migrant entrepreneur			-0.4067 ***		
			0.0382		
Migrant continent of origin					
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 ***	9.3531 ***	8.7338 ***	9.7190 ***	9.7238 ***
	0.0213	0.1233	0.1236	0.2363	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, entrepreneur gender, firm first year of reporting to the CR" among migrants (7,040 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 account for 48 per cent of the total. In all regressions "pair" fixed effects are introduced; they allow us to control jointly for "lender, firm sector, firm size, firm town, entrepreneur gender, firm first year of reporting to the CR". *, **, and *** indicate significance at the 10%, 5%, and 1% level, two-tailed.

Variables	Balanced sample		
	Credit history	Cultural proximity	Cultural proximity and credit history
	(1)	(2)	(3)
Firm characteristics			
Migrant entrepreneur	1.0792 ***	0.7916 ***	1.1350 ***
	0.0553	0.0412	0.0592
Second generation		0.1858 ***	-0.0193
		0.0474	0.1062
Italian migrant		-0.2416 ***	-0.3168 ***
		0.0642	0.1145
Age	-0.0072 ***	-0.0076 ***	-0.0073 ***
	0.0012	0.0012	0.0012
Public aid	0.1127	0.0756	0.0946
	0.1440	0.1441	0.1441
Loan characteristics			
Loan size	0.0560 ***	0.0552 ***	0.0554 ***
	0.0081	0.0081	0.0081
Real guarantees	0.5656 ***	0.5692 ***	0.5626 ***
	0.0226	0.0226	0.0227
Bad loans	0.5279 ***	0.5127 ***	0.5329 ***
	0.0657	0.0657	0.0657
Bank-firm relationship			
Multiple lending	-0.3364 ***	-0.3387 ***	-0.3364 ***
	0.0232	0.0232	0.0232
Credit history		-0.1580 ***	
		0.0614	
Credit history*Italian entrepreneur	-0.1290 **		-0.1267 **
	0.0615		0.0615
Credit history*Migrant entrepreneur	-0.1929 ***		-0.1987 ***
	0.0615		0.0617
Credit history*Second generation			0.0257 **
			0.0121
Credit history*Italian migrant			0.0377 ***
			0.0133
Constant	9.4911 ***	9.7008 ***	9.4985 ***
	0.2375	0.2362	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	Migrants' sample	
	Municipality networking	Province networking
	(1)	(2)
Migrant continent of origin		
Central America	0.3549 **	0.3606 **
	0.1443	0.1443
Latin America	-0.0010	0.0031
	0.0514	0.0514
Asia	0.6404 ***	0.6244 ***
	0.0548	0.0547
Africa	0.3785 ***	0.3769 ***
	0.0511	0.0512
Eastern Europe	0.4897 ***	0.4935 ***
	0.0545	0.0545
Firm characteristics		
Age	-0.0276 ***	-0.0277 ***
	0.0014	0.0014
Public aid	-0.3431 **	-0.3357 **
	0.1449	0.1449
Loan characteristics		
Loan size	0.0940 ***	0.0941 ***
	0.0125	0.0125
Real guarantees	0.9030 ***	0.9027 ***
	0.0293	0.0293
Bad loans	0.6524 ***	0.6552 ***
	0.0780	0.0780
Bank-firm relationship		
Multiple lending	-0.5681 ***	-0.5816 ***
	0.0306	0.0304
Credit history	-0.1807 ***	-0.1821 ***
	0.0140	0.0140
Network1	-0.0157 ***	
	0.0038	
Network2		-0.0036 **
		0.0019
Constant	9.8975 ***	9.8884 ***
	0.1936	0.1938
Fixed effects		
Bank and province	yes	yes
Adjusted R-squared	0.3114	0.3112
Number of observations	37,574	37,574

Table 6

Bank supply 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, entrepreneur gender, firm first year of reporting to the CR" among migrants (7,040 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 account for 48 per cent of the total. "Pair" fixed effects in column 1 allow us to control jointly for "lender, firm sector, firm size, firm town, entrepreneur gender, firm first year of reporting to the CR". *, **, and *** indicate significance at the 10%, 5%, and 1% level two-tailed.

Variables	Balanced sample	1st quarter sample	Last quarter sample
	Monetary policy	"Supply side effect"	
	(1)	(2)	(3)
Firm characteristics			
Migrant entrepreneur	0.6684 ***	1.0291 ***	0.7275 ***
	0.0382	0.1112	0.0852
Age	-0.0076 ***	-0.0186 ***	-0.0193 ***
	0.0012	0.0031	0.0029
Public aid	0.0883	0.0514	0.0562
	0.1441	0.4360	0.3998
Loan characteristics			
Loan size	0.0563 ***	0.0537	0.1548 ***
	0.0081	0.0345	0.0338
Real guarantees	0.5710 ***	1.3670 ***	1.5161 ***
	0.0226	0.0818	0.0752
Bad loans	0.5084 ***	1.6695 ***	0.8885 ***
	0.0657	0.3005	0.2584
Bank-firm relationship			
Multiple lending	-0.3410 ***	-0.4023 ***	-0.4627 ***
	0.0232	0.1046	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 ***	9.0744 ***	8.2862 ***
	0.2363	0.5162	0.5090
Fixed effects			
Bank and province		yes	yes
Adjusted R-squared	0.5934	0.2642	0.2418
Number of observations	74,035	5,991	6,569

References

[1] Alesina A. and E. La Ferrara (2005), "Ethnic Diversity and Economic Performance", *Journal of Economic Literature* ,43, 762-800.

[2] Alesina A., Lotti F. and Mistrulli P.E. (2008), "Do Women Pay More for Credit? Evidence from Italy", NBER Working Papers 14202, National Bureau of Economic Research.

[3] Altonji J.G. and C.R. Pierret (1996), "Employer Learning and the Signaling Value of Education," NBER Working Papers 5438, National Bureau of Economic Research.

[4] Ashenfelter O. and B.A. Krueger (1994), "Estimates of the Economic Returns to Schooling from a New Sample of Twins," *American Economic Review*, American Economic Association, 84, 5, 1157-73.

[5] Becker G.S. (1971), The Economics of Discrimination, University of Chicago Press.

[6] Berger A. and G. Udell (1995), Relationship Lending and Lines of Credit in Small Firm Finance, *Journal of Business*, 50, 2, 187-229.

[7] Berger A., N. Miller, M. Petersen, R. Rajan and J. Stein (2005), Does Function Follow Organizational Form? Evidence from the Lending Practices of Large and Small Firms, *Journal of Financial Economics*, 76, 237-270.

[8] Blanchflower D.G., P.B. Levine and D.J. Zimmerman (2003), "Discrimination in the Small-Business Credit Market", *The Review of Economics and Statistics*, 85, 4, 930-943.

[9] Bottazzi L., M. Da Rin and T.F. Hellmann (2007), "The Importance of Trust for Investment: Evidence from Venture Capital", mimeo, University of British Columbia.

[10] Browne L.E., J. McEneaney, A.G. Munnell, and M. B. Tootell (1996), "Mortgage Lending in Boston: Interpreting HMDA Data", *American Economic Review*, 86, 1, 25-53.

[11] Cavalluzzo K.S. and L.C. Cavalluzzo (1998), "Market Structure and Discrimination: The Case of Small Business", *Journal of Money, Credit, and Banking*, 30, 4, 771-792.

[12] Cavalluzzo K.S., L.C. Cavalluzzo and J.D. Wolken (2002), "Competition, Small Business Financing, and Discrimination: Evidence from a New Survey", *Journal of Business*, 75, 641-679.

[13] Eldeberg W. (2007), "Racial Dispersion in Consumer Credit Interest Rates", Finance and Economics discussion series, Federal Reserve Board, Washington, D.C.

[14] Elyasiani E. and L. G. Goldberg (2004), "Relationship lending: a survey of the literature", *Journal of Economics and Business*, 56, 4, 315-330.

[15] Fraser S. (2009), "Is there Ethnic Discrimination in the UK Market for Small Business Credit?" *International Small Business Journal*, 27, 583-607.

[16] Giannetti M. and Y. Yafeh (2008), "Do Cultural Differences Between Contracting Parties Matter? Evidence from Syndicated Bank Loans", CEPR Discussion Paper 7020.

[17] Guiso L., P. Sapienza and L. Zingales (2006), "Does Culture Affect Economic Outcomes?", *Journal of Economic Perspectives*, 20, 2, 23-48.

[18] Osili U.O. and A. Paulson (2008), "Institutions and Financial Development: Evidence from International Migrants in the United States", *The Review of Economics and Statistics*, 90, 3, 498–517.

[19] Osili U.O. and A. Paulson (2008), "What Can We Learn about financial Access from U.S. Migrants? The Role of Country of Origin Institutions and Immigrant Beliefs", *The World Bank Economic Review*, 22, 3, 431-455.

[20] Ross S.L. and J. Yinger (2002), The Color of Credit: Mortgage Discrimination, Research Methodology, and Fair-Lending Enforcement, Cambridge: MIT Press.

[21] Stein J. (2002), "Information production and capital allocation: decentralized versus hierarchical firms", *Journal of Finance*, 45, 1891-1921.

[22] Tootell G.M.B. (1996), "Redlining in Boston: Do Mortgage Lenders Discriminate Against Neighborhood?", *The Quarterly Journal of Economics*, 11, 4, 1049-1079.

[23] Unioncamere (2007), Comportamenti finanziari e creditizi della società multietnica, Roma.

RECENTLY PUBLISHED "TEMI" (*)

N. 769 – *Does investing abroad reduce domestic activity? Evidence from Italian manufacturing firms*, by Raffaello Bronzini (July 2010).

N. 770 – *The EAGLE. A model for policy analysis of macroeconomics interdependence in the euro area*, by Sandra Gomes, Pascal Jacquinot and Massimiliano Pisani (July 2010).

N. 771 – *Modelling Italian potential output and the output gap*, by Antonio Bassanetti, Michele Caivano and Alberto Locarno (September 2010).

N. 772 – *Relationship lending in a financial turmoil*, by Stefania De Mitri, Giorgio Gobbi and Enrico Sette (September 2010).

N. 773 – *Firm entry, competitive pressures and the US inflation dynamics*, by Martina Cecioni (September 2010).

N. 774 – *Credit ratings in structured finance and the role of systemic risk*, by Roberto Violi (September 2010).

N. 775 – *Entrepreneurship and market size. The case of young college graduates in Italy*, by Sabrina Di Addario and Daniela Vuri (September 2010).

N. 776 – *Measuring the price elasticity of import demand in the destination markets of Italian exports*, by Alberto Felettigh and Stefano Federico (October 2010).

N. 777 – *Income reporting behaviour in sample surveys*, by Andrea Neri and Roberta Zizza (October 2010).

N. 778 – *The rise of risk-based pricing of mortgage interest rates in Italy*, by Silvia Magri and Raffaella Pico (October 2010).

N. 779 – *On the interaction between market and credit risk: a factor-augmented vector autoregressive (FAVAR) approach*, by Roberta Fiori and Simonetta Iannotti (October 2010).

N. 780 – *Under/over-valuation of the stock market and cyclically adjusted earnings*, by Marco Taboga (December 2010).

N. 781 – *Changing institutions in the European market: the impact on mark-ups and rents allocation*, by Antonio Bassanetti, Roberto Torrini and Francesco Zollino (December 2010).

N. 782 – *Central bank's macroeconomic projections and learning*, by Giuseppe Ferrero and Alessandro Secchi (December 2010).

N. 783 – *(Non)persistent effects of fertility on female labour supply*, by Concetta Rondinelli and Roberta Zizza (December 2010).

N. 784 – *Stars and comets: an exploration of the patent universe* , by Carlo Menon (January 2011).

N. 785 – *Sectoral money demand and the great disinflation in the US*, by Alessandro Calza and Andrea Zaghini (January 2011).

N. 786 – *Public sector efficiency and political culture* , by Raffaela Giordano and Pietro Tommasino (January 2011).

N. 787 – *Monetary incentives vs. monitoring in addressing absenteeism: experimental evidence*, by Francesco D'Amuri (January 2011).

N. 788 – *FaMIDAS: A Mixed Frequency Factor Model with MIDAS structure*, by Cecilia Frale and Libero Monteforte (January 2011).

N. 789 – *Policies for local development: an evaluation of Italy's "Patti Territoriali"*, by Antonio Accetturo and Guido de Blasio (January 2011).

_____

"TEMI" LATER PUBLISHED ELSEWHERE

2008

P. ANGELINI, *Liquidity and announcement effects in the euro area*, Giornale degli Economisti e Annali di Economia, v. 67, 1, pp. 1-20, **TD No. 451 (October 2002).**

P. ANGELINI, P. DEL GIOVANE, S. SIVIERO and D. TERLIZZESE, *Monetary policy in a monetary union: What role for regional information?*, International Journal of Central Banking, v. 4, 3, pp. 1-28, **TD No. 457 (December 2002).**

F. SCHIVARDI and R. TORRINI, *Identifying the effects of firing restrictions through size-contingent Differences in regulation*, Labour Economics, v. 15, 3, pp. 482-511, **TD No. 504 (June 2004).**

L. GUISO and M. PAIELLA,, *Risk aversion, wealth and background risk*, Journal of the European Economic Association, v. 6, 6, pp. 1109-1150, **TD No. 483 (September 2003).**

C. BIANCOTTI, G. D'ALESSIO and A. NERI, *Measurement errors in the Bank of Italy's survey of household income and wealth*, Review of Income and Wealth, v. 54, 3, pp. 466-493, **TD No. 520 (October 2004).**

S. MOMIGLIANO, J. HENRY and P. HERNÁNDEZ DE COS, *The impact of government budget on prices: Evidence from macroeconometric models*, Journal of Policy Modelling, v. 30, 1, pp. 123-143 **TD No. 523 (October 2004).**

L. GAMBACORTA, *How do banks set interest rates?*, European Economic Review, v. 52, 5, pp. 792-819, **TD No. 542 (February 2005).**

P. ANGELINI and A. GENERALE, *On the evolution of firm size distributions*, American Economic Review, v. 98, 1, pp. 426-438, **TD No. 549 (June 2005).**

R. FELICI and M. PAGNINI, *Distance, bank heterogeneity and entry in local banking markets*, The Journal of Industrial Economics, v. 56, 3, pp. 500-534, **No. 557 (June 2005).**

S. DI ADDARIO and E. PATACCHINI, *Wages and the city. Evidence from Italy*, Labour Economics, v.15, 5, pp. 1040-1061, **TD No. 570 (January 2006).**

S. SCALIA, *Is foreign exchange intervention effective?*, Journal of International Money and Finance, v. 27, 4, pp. 529-546, **TD No. 579 (February 2006).**

M. PERICOLI and M. TABOGA, *Canonical term-structure models with observable factors and the dynamics of bond risk premia*, Journal of Money, Credit and Banking, v. 40, 7, pp. 1471-88, **TD No. 580 (February 2006).**

E. VIVIANO, *Entry regulations and labour market outcomes. Evidence from the Italian retail trade sector*, Labour Economics, v. 15, 6, pp. 1200-1222, **TD No. 594 (May 2006).**

S. FEDERICO and G. A. MINERVA, *Outward FDI and local employment growth in Italy*, Review of World Economics, Journal of Money, Credit and Banking, v. 144, 2, pp. 295-324, **TD No. 613 (February 2007).**

F. BUSETTI and A. HARVEY, *Testing for trend*, Econometric Theory, v. 24, 1, pp. 72-87, **TD No. 614 (February 2007).**

V. CESTARI, P. DEL GIOVANE and C. ROSSI-ARNAUD, *Memory for prices and the Euro cash changeover: an analysis for cinema prices in Italy*, In P. Del Giovane e R. Sabbatini (eds.), The Euro Inflation and Consumers' Perceptions. Lessons from Italy, Berlin-Heidelberg, Springer, **TD No. 619 (February 2007).**

B. H. HALL, F. LOTTI and J. MAIRESSE, *Employment, innovation and productivity: evidence from Italian manufacturing microdata*, Industrial and Corporate Change, v. 17, 4, pp. 813-839, **TD No. 622 (April 2007).**

J. SOUSA and A. ZAGHINI, *Monetary policy shocks in the Euro Area and global liquidity spillovers*, International Journal of Finance and Economics, v.13, 3, pp. 205-218, **TD No. 629 (June 2007).**

M. DEL GATTO, GIANMARCO I. P. OTTAVIANO and M. PAGNINI, *Openness to trade and industry cost dispersion: Evidence from a panel of Italian firms*, Journal of Regional Science, v. 48, 1, pp. 97-129, **TD No. 635 (June 2007).**

P. DEL GIOVANE, S. FABIANI and R. SABBATINI, *What's behind "inflation perceptions"? A survey-based analysis of Italian consumers*, in P. Del Giovane e R. Sabbatini (eds.), *The Euro Inflation and Consumers' Perceptions. Lessons from Italy*, Berlin-Heidelberg, Springer, **TD No. 655 (January 2008).**

R. BRONZINI, G. DE BLASIO, G. PELLEGRINI and A. SCOGNAMIGLIO, *La valutazione del credito d'imposta per gli investimenti*, Rivista di politica economica, v. 98, 4, pp. 79-112, **TD No. 661 (April 2008).**

B. BORTOLOTTI, and P. PINOTTI, *Delayed privatization,* Public Choice, v. 136, 3-4, pp. 331-351, **TD No. 663 (April 2008).**

R. BONCI and F. COLUMBA, *Monetary policy effects: New evidence from the Italian flow of funds,* Applied Economics , v. 40, 21, pp. 2803-2818, **TD No. 678 (June 2008).**

M. CUCCULELLI, and G. MICUCCI, *Family Succession and firm performance: evidence from Italian family firms,* Journal of Corporate Finance, v. 14, 1, pp. 17-31, **TD No. 680 (June 2008).**

A. SILVESTRINI and D. VEREDAS, *Temporal aggregation of univariate and multivariate time series models: a survey,* Journal of Economic Surveys, v. 22, 3, pp. 458-497, **TD No. 685 (August 2008).**

2009

F. PANETTA, F. SCHIVARDI and M. SHUM, *Do mergers improve information? Evidence from the loan market*, Journal of Money, Credit, and Banking, v. 41, 4, pp. 673-709, **TD No. 521 (October 2004).**

M. BUGAMELLI and F. PATERNÒ, *Do workers' remittances reduce the probability of current account reversals?*, World Development, v. 37, 12, pp. 1821-1838, **TD No. 573 (January 2006).**

P. PAGANO and M. PISANI, *Risk-adjusted forecasts of oil prices*, The B.E. Journal of Macroeconomics, v. 9, 1, Article 24, **TD No. 585 (March 2006).**

M. PERICOLI and M. SBRACIA, *The CAPM and the risk appetite index: theoretical differences, empirical similarities, and implementation problems*, International Finance, v. 12, 2, pp. 123-150, **TD No. 586 (March 2006).**

U. ALBERTAZZI and L. GAMBACORTA, *Bank profitability and the business cycle,* Journal of Financial Stability, v. 5, 4, pp. 393-409, **TD No. 601 (September 2006).**

S. MAGRI, *The financing of small innovative firms: the Italian case*, Economics of Innovation and New Technology, v. 18, 2, pp. 181-204, **TD No. 640 (September 2007).**

V. DI GIACINTO and G. MICUCCI, *The producer service sector in Italy: long-term growth and its local determinants,* Spatial Economic Analysis, Vol. 4, No. 4, pp. 391-425, **TD No. 643 (September 2007).**

F. LORENZO, L. MONTEFORTE and L. SESSA, *The general equilibrium effects of fiscal policy: estimates for the euro area*, Journal of Public Economics, v. 93, 3-4, pp. 559-585, **TD No. 652 (November 2007).**

R. GOLINELLI and S. MOMIGLIANO, *The Cyclical Reaction of Fiscal Policies in the Euro Area. A Critical Survey of Empirical Research*, Fiscal Studies, v. 30, 1, pp. 39-72, **TD No. 654 (January 2008).**

P. DEL GIOVANE, S. FABIANI and R. SABBATINI, *What's behind "Inflation Perceptions"? A survey-based analysis of Italian consumers,* Giornale degli Economisti e Annali di Economia, v. 68, 1, pp. 25-52, **TD No. 655 (January 2008).**

F. MACCHERONI, M. MARINACCI, A. RUSTICHINI and M. TABOGA, *Portfolio selection with monotone mean-variance preferences,* Mathematical Finance, v. 19, 3, pp. 487-521, **TD No. 664 (April 2008).**

M. AFFINITO and M. PIAZZA, *What are borders made of? An analysis of barriers to European banking integration*, in P. Alessandrini, M. Fratianni and A. Zazzaro (eds.): The Changing Geography of Banking and Finance, Dordrecht Heidelberg London New York, Springer, **TD No. 666 (April 2008).**

A. BRANDOLINI, *On applying synthetic indices of multidimensional well-being: health and income inequalities in France, Germany, Italy, and the United Kingdom*, in R. Gotoh and P. Dumouchel (eds.), Against Injustice. The New Economics of Amartya Sen, Cambridge, Cambridge University Press, **TD No. 668 (April 2008).**

G. FERRERO and A. NOBILI, *Futures contract rates as monetary policy forecasts,* International Journal of Central Banking, v. 5, 2, pp. 109-145, **TD No. 681 (June 2008).**

P. CASADIO, M. LO CONTE and A. NERI, *Balancing work and family in Italy: the new mothers' employment decisions around childbearing*, in T. Addabbo and G. Solinas (eds.), Non-Standard Employment and Qualità of Work, Physica-Verlag. A Sprinter Company, **TD No. 684 (August 2008).**

L. ARCIERO, C. BIANCOTTI, L. D'AURIZIO and C. IMPENNA, *Exploring agent-based methods for the analysis of payment systems: A crisis model for StarLogo TNG,* Journal of Artificial Societies and Social Simulation, v. 12, 1, **TD No. 686 (August 2008).**

A. CALZA and A. ZAGHINI, *Nonlinearities in the dynamics of the euro area demand for M1*, Macroeconomic Dynamics, v. 13, 1, pp. 1-19, **TD No. 690 (September 2008).**

L. FRANCESCO and A. SECCHI, *Technological change and the households' demand for currency*, Journal of Monetary Economics, v. 56, 2, pp. 222-230, **TD No. 697 (December 2008).**

G. ASCARI and T. ROPELE, *Trend inflation, taylor principle, and indeterminacy*, Journal of Money, Credit and Banking, v. 41, 8, pp. 1557-1584, **TD No. 708 (May 2007).**

S. Colarossi and A. Zaghini, *Gradualism, transparency and the improved operational framework: a look at overnight volatility transmission*, International Finance, v. 12, 2, pp. 151-170, **TD No. 710 (May 2009).**

M. Bugamelli, F. Schivardi and R. Zizza, *The euro and firm restructuring*, in A. Alesina e F. Giavazzi (eds): Europe and the Euro, Chicago, University of Chicago Press, **TD No. 716 (June 2009).**

B. Hall, F. Lotti and J. Mairesse, *Innovation and productivity in SMEs: empirical evidence for Italy*, Small Business Economics, v. 33, 1, pp. 13-33, **TD No. 718 (June 2009).**

2010

A. Prati and M. Sbracia, *Uncertainty and currency crises: evidence from survey data*, Journal of Monetary Economics, v, 57, 6, pp. 668-681, **TD No. 446 (July 2002).**

S. Magri, *Debt maturity choice of nonpublic Italian firms* , Journal of Money, Credit, and Banking, v.42, 2-3, pp. 443-463, **TD No. 574 (January 2006).**

R. Bronzini and P. Piselli, *Determinants of long-run regional productivity with geographical spillovers: the role of R&D, human capital and public infrastructure,* Regional Science and Urban Economics, v. 39, 2, pp.187-199, **TD No. 597 (September 2006).**

E. Iossa and G. Palumbo, *Over-optimism and lender liability in the consumer credit market,* Oxford Economic Papers, v. 62, 2, pp. 374-394, **TD No. 598 (September 2006).**

S. Neri and A. Nobili, *The transmission of US monetary policy to the euro area,* International Finance, v. 13, 1, pp. 55-78, **TD No. 606 (December 2006).**

F. Altissimo, R. Cristadoro, M. Forni, M. Lippi and G. Veronese, *New Eurocoin: Tracking Economic Growth in Real Time,* Review of Economics and Statistics, v. 92, 4, pp. 1024-1034, **TD No. 631 (June 2007).**

A. Ciarlone, P. Piselli and G. Trebeschi, *Emerging Markets' Spreads and Global Financial Conditions*, Journal of International Financial Markets, Institutions & Money, v. 19, 2, pp. 222-239, **TD No. 637 (June 2007).**

U. Albertazzi and L. Gambacorta, *Bank profitability and taxation,* Journal of Banking and Finance, v. 34, 11, pp. 2801-2810, **TD No. 649 (November 2007).**

M. Iacoviello and S. Neri, *Housing market spillovers: evidence from an estimated DSGE model,* American Economic Journal: Macroeconomics, v. 2, 2, pp. 125-164, **TD No. 659 (January 2008).**

F. Balassone, F. Maura and S. Zotteri, *Cyclical asymmetry in fiscal variables in the EU*, Empirica, **TD No. 671**, v. 37, 4, pp. 381-402 **(June 2008).**

F. D'Amuri, O. Gianmarco I.P. and P. Giovanni, *The labor market impact of immigration on the western german labor market in the 1990s,* European Economic Review, v. 54, 4, pp. 550-570, **TD No. 687 (August 2008).**

A. Accetturo, *Agglomeration and growth: the effects of commuting costs,* Papers in Regional Science, v. 89, 1, pp. 173-190, **TD No. 688 (September 2008).**

S. Nobili and G. Palazzo, *Explaining and forecasting bond risk premiums,* Financial Analysts Journal, v. 66, 4, pp. 67-82, **TD No. 689 (September 2008).**

A. B. Atkinson and A. Brandolini, *On analysing the world distribution of income*, World Bank Economic Review , v. 24, 1 , pp. 1-37, **TD No. 701 (January 2009).**

R. Cappariello and R. Zizza, *Dropping the Books and Working Off the Books,* Labour, v. 24, 2, pp. 139-162 ,**TD No. 702 (January 2009).**

C. Nicoletti and C. Rondinelli, *The (mis)specification of discrete duration models with unobserved heterogeneity: a Monte Carlo study,* Journal of Econometrics, v. 159, 1, pp. 1-13, **TD No. 705 (March 2009).**

V. Di Giacinto, G. Micucci and P. Montanaro, *Dynamic macroeconomic effects of public capital: evidence from regional Italian data,* Giornale degli economisti e annali di economia, v. 69, 1, pp. 29-66, **TD No. 733 (November 2009).**

F. Columba, L. Gambacorta and P. E. Mistrulli, *Mutual Guarantee institutions and small business finance,* Journal of Financial Stability, v. 6, 1, pp. 45-54, **TD No. 735 (November 2009).**

A. Gerali, S. Neri, L. Sessa and F. M. Signoretti, *Credit and banking in a DSGE model of the Euro Area,* Journal of Money, Credit and Banking, v. 42, 6, pp. 107-141, **TD No. 740 (January 2010).**

M. Affinito and E. Tagliaferri, *Why do (or did?) banks securitize their loans? Evidence from Italy*, Journal of Financial Stability, v. 6, 4, pp. 189-202, **TD No. 741 (January 2010).**

S. FEDERICO, *Outsourcing versus integration at home or abroad and firm heterogeneity,* Empirica, v. 37, 1, pp. 47-63, **TD No. 742 (February 2010).**

V. DI GIACINTO, *On vector autoregressive modeling in space and time,* Journal of Geographical Systems, v. 12, 2, pp. 125-154, **TD No. 746 (February 2010).**

A. DI CESARE and G. GUAZZAROTTI, *An analysis of the determinants of credit default swap spread changes before and during the subprime financial turmoil,* Journal of Current Issues in Finance, Business and Economics, v. 3, 4, pp., **TD No. 749 (March 2010).**

A. BRANDOLINI, S. MAGRI and T. M SMEEDING, *Asset-based measurement of poverty*, Journal of Policy Analysis and Management, v. 29, 2 , pp. 267-284, **TD No. 755 (March 2010).**

G. CAPPELLETTI, *A Note on rationalizability and restrictions on beliefs,* The B.E. Journal of Theoretical Economics, v. 10, 1, pp. 1-11,**TD No. 757 (April 2010).**

S. DI ADDARIO and D. VURI, *Entrepreneurship and market size. the case of young college graduates in Italy*, Labour Economics, v. 17, 5, pp. 848-858, **TD No. 775 (September 2010).**

FORTHCOMING

L. MONTEFORTE and S. SIVIERO, *The Economic Consequences of Euro Area Modelling Shortcuts*, Applied Economics, **TD No. 458 (December 2002).**

M. BUGAMELLI and A. ROSOLIA, *Produttività e concorrenza estera*, Rivista di politica economica, **TD No. 578 (February 2006).**

G. DE BLASIO and G. NUZZO, *Historical traditions of civicness and local economic development,* Journal of Regional Science, **TD No. 591 (May 2006).**

S. DI ADDARIO, *Job search in thick markets*, Journal of Urban Economics, **TD No. 605 (December 2006).**

F. SCHIVARDI and E. VIVIANO, *Entry barriers in retail trade*, Economic Journal, **TD No. 616 (February 2007).**

G. FERRERO, A. NOBILI and P. PASSIGLIA, *Assessing excess liquidity in the Euro Area: the role of sectoral distribution of money,* Applied Economics, **TD No. 627 (April 2007).**

P. E. MISTRULLI, *Assessing financial contagion in the interbank market: maximun entropy versus observed interbank lending patterns,* Journal of Banking & Finance, **TD No. 641 (September 2007).**

Y. ALTUNBAS, L. GAMBACORTA and D. MARQUÉS, *Securitisation and the bank lending channel*, European Economic Review, **TD No. 653 (November 2007).**

E. CIAPANNA, *Directed matching with endogenous markov probability: clients or competitors?*, The RAND Journal of Economics, **TD No. 665 (April 2008).**

M. BUGAMELLI and F. PATERNÒ, *Output growth volatility and remittances*, Economica, **TD No. 673 (June 2008).**

P. SESTITO and E. VIVIANO, *Reservation wages: explaining some puzzling regional patterns*, Labour, **TD No. 696 (December 2008).**

P. PINOTTI, M. BIANCHI and P. BUONANNO, *Do immigrants cause crime?*, Journal of the European Economic Association, **TD No. 698 (December 2008).**

L. FORNI, A. GERALI and M. PISANI, *Macroeconomic effects of greater competition in the service sector: the case of Italy,* Macroeconomic Dynamics, **TD No. 706 (March 2009).**

Y. ALTUNBAS, L. GAMBACORTA, and D. MARQUÉS-IBÁÑEZ, *Bank risk and monetary policy,* Journal of Financial Stability, **TD No. 712 (May 2009).**

P. ANGELINI, A. NOBILI e C. PICILLO, *The interbank market after August 2007: What has changed, and why?*, Journal of Money, Credit and Banking, **TD No. 731 (ottobre 2009).**

L. FORNI, A. GERALI and M. PISANI, *The macroeconomics of fiscal consolidations in euro area countries*, Journal of Economic Dynamics and Control, **TD No. 747 (March 2010).**

A. DI CESARE and G. GUAZZAROTTI, *An analysis of the determinants of credit default swap spread changes before and during the subprime financial turmoil,* in C. V. Karsone (eds.), Finance and Banking Developments, Nova Publishers, New York., **TD No. 749 (March 2010).**

G. GRANDE and I. VISCO, *A public guarantee of a minimum return to defined contribution pension scheme members,* Journal of Risk, **TD No. 762 (June 2010).**

S. MAGRI and R. PICO, *The rise of risk-based pricing of mortgage interest rates in Italy*, Journal of Banking and Finance, **TD No. 696 (October 2010).**