

DRAFT

Credit crunch in Italy: Evidence on new ISAE survey data

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**Fourth joint EU-OECD Workshop on Business and Consumer Opinion Surveys
Bruxelles, 12-13 October 2009**

ABSTRACT

Using a new “credit section” of the ISAE survey on manufacturing firms, this paper investigates some feature of the credit tightening that occurred in Italy following the 2008-2009 financial crisis. The database allows to have a timely picture of the appearance and development of tension in the lending standard applied to a fundamental segment of Italian productive sector. In doing so, we find that in the period Q1/2008 – Q3/2009 at least two of the usual indicators for credit crunch emerged: a disproportionate drop in loans to small and medium enterprises (SMEs), and an increase in rejection rate of loan applications (a clue of credit rationing). In this context, we find relevant and enduring size effects, in that the SMEs are not only more negatively affected than the large ones, but the gap is also still widening. There are also recent slight geographical effect (to Southern regions’ detriment). Finally, we find that the higher the degree of firms’ internationalization, the worse the credit conditions: the credit crunch affects the offshoring and exporting firms more seriously than the ones operating domestically.

Keywords: credit crunch, credit rationing, manufacturing sector

JEL Classification: E51, L6, O52

1. Introduction

Since the beginning of the current financial crisis, in Italy the risk was that, in the presence of such a bank-oriented industry, any subsequent contagion on the inter-banking market side would be able to jeopardise the principal source of external finance for the firms, especially the small and medium ones, even though the banking system had been relatively immune from the financial turmoil (due to a more traditional banking model). In other words, had the Italian banks increasingly had difficulties in obtaining finance on inter-banking markets, they could end up by tighten the credit access to their borrowers.¹ On the other hand, when the recession spread internationally, the shrink of international markets would also deteriorate the firms' balance-sheets, making these latter riskier to their lenders.² To the extent that the average size of Italian firms is among the smallest in Europe, there were a double grip seriously threatening the usual bank-firm relationships in Italy.

In such a situation, "credit crunch" became the most evoked scenario in the academic and institutional debates, along with the request for timely data on the phenomenon. Actually, as illustrated more in detail below, the concept of credit crunch still lacks of an unanimously shared definition: it is usually referred to as a significant and widespread reduction in the banking loans to the economy, either due to a substantial increase in the cost conditions imposed to the borrowers or a real turn down of the loan applications by the banks.

On this basis, using a new ISAE's survey firstly carried out in March 2008 we study more in detail the current bank-firm relationships in the Italian manufacturing sector, one of the most important segment of the national productive system. In particular, we can verify the presence of at least two features that, according to the literature, are observed during a credit crunch: *a*) a remarkable increase in rejection rate of loan applications; and *b*) a disproportionate drop in loans to small and medium enterprises (SMEs). In doing so, we are also able to investigate in what terms the tensions on credit markets mostly arise (arose), i.e. whether through increases in costs – higher interest rates or collateral requirements by the banks – or in loan amount, and to point out other features of the credit tightening, such as what particular segment of the manufacturing sector is most seriously affected or the existence of possible geographical differences. Finally, matching the credit section of the survey with other structural sections it is possible to deal with an aspect of the credit issue that, in such a global downturn, becomes all the more important in an open economy, that is how the lending standards behaves depending on whether the firm operates internationally or only domestically. In this latter case we distinguish between the two main form of internationalization: the export and the offshoring. Internationalization, in fact, has often been referred to as a possible strategy to overcome the current small average size of Italian firms, but at the same time it involves relevant sunk costs and therefore needs substantial external financing.

The rest of the paper is organized as follows. Section 2 offers a concise survey of the relevant literature; Section 3 describes the data source; Section 4 illustrates the quantitative results; Section 5 concludes.

2. The literature background

There is not general consensus on a precise definition for "credit crunch" in the literature. In general it is used to describe a variety of phenomena including "tightening of monetary policy", "shortage in the supply of funds", and "credit rationing by banks". According to the Council of Economic Advisors (1991), credit crunch is "a situation in which the supply of credit is restricted below the range usually identified with prevailing market interest rates and the profitability of investment projects". In other words, credit crunch specifically refers to a widespread reduction, *coeteris paribus*, in the supply of credit, both for unviable and viable firms. When a credit crunch occurs, the relationship between credit availability and interest rates is affected, mainly in two forms: (i) a

¹ This is basically tantamount to the "bank-lending channel" for the transmission of the monetary policy pointed out by Kashyap and Stein (2000).

² This, in turn, is equivalent to the "broad credit channel/financial accelerator channel" (see among others Oliner and Rudebusch, 1996).

leftward shift of the credit supply curve at a given interest rate level (price mechanism); (ii) rationing of the credit volume, independently of interest rates (non-price mechanism). In turn, credit rationing can take three different forms: (i) “pure rationing”, when some borrowers are denied credit; (ii) “divergent views rationing”, when borrowers would like to borrow at prevailing rates feeling their loans do not present a serious credit risk, but lenders disagree and refuse to lend, or impose too costly conditions on the loan, in terms of guarantees or interest rates, borrowers who do not obtain credit feel “rationed”; (iii) “sector rationing”, when credit standards are applied that shut off the credit to certain classes of borrowers or types of borrowing, because lenders cannot distinguish between good and bad credits and choose to make no loans at all. This work, as explained below, will focus on the first two forms of rationing.

Basing on the experience of the 1997-98 Asian crisis, Domaç and Ferri (2002) point out that one or more out of the following nine phenomena are observed during a credit crunch: *i*) a disproportionate drop in loans to SMEs; *ii*) an increase in rejection rate of loan applications (a clue of credit rationing); *iii*) a sharp slowing down in the loans growth rate; *iv*) flight to quality by depositors, across national banks and from national to foreign banks; *v*) flight to quality by banks (e.g. to central bank deposits and/or Treasury securities); *vi*) shortening maturity of loans; *vii*) an increase in real interest rate; *viii*) a rising spread loan rate vs. risk free rate; *ix*) a drop in “pre-committed” credit lines. In this case, too, we will deal with the first two features.

In such a context, the “size effect” plays a relevant role, because there is a large amount of theoretical and empirical literature focusing on the SMEs gap, namely the fact that for a number of reasons – stemming basically from a problem of information asymmetries – these firms have more difficulties, with respect to the large ones, in getting external finance, both from financial and banking markets.³ Also for this reason, in many advanced economies, like Italy, the banks are by far the most important source of external finance for SMEs. And in turn this become such a fundamental issue where, like in Italy, the small and medium enterprises account for more than 99% of the overall Italian enterprises, and in the industry sector they employ about the 52% of total employees.

It is not surprising, then, that every time some shocks hit the Italian banking or SMEs contexts, the debate animates on how to ease the credit granting to firms and how to foster a more financial market-oriented behaviour for SMEs. Therefore a conspicuous amount of literature emerged, under the stimuli coming from the transformation in the banking structure (due to M&A waves), the introduction of Basel II requirements, a downturn.⁴ Especially when the latter result in a global recession, the need for timely empirical works – preferably using firm-level data – becomes urgent. In this vein, in what follows we use a new ISAE data to provide a review of the prevailing conditions in

3. The data

The ISAE’s survey is conducted every month on a sample of about 4,000 manufacturing firms, and collects information on a variety of firm’s aspects, including the number of employees, industrial sector, location, export share on turnover, productive internationalization (offshoring).⁵ Starting from March 2008, a new section has been included, focusing on the firm-bank relationship, which reports information on the credit access conditions faced by the firms. In particular, each firm is asked whether:

- a) during the previous quarter its credit access conditions improved, worsened or remained the same;
- b) it obtained the loans requested and, in that case, whether the loan conditions worsened;

³ See OECD (2006) for an in-depth analysis of the issue.

⁴ See the works carried out at Bank of Italy, e.g. Bentivogli *et al.* (2007).

⁵ For a review of the ISAE survey on manufacturing firms, see Malgarini, Margani and Martelli (2005).

- c) (since June 2009) in case of worsened lending conditions, in what terms this occurred: higher interest rates, more personal guarantees, more real guarantees, limits to the loan amount, other costs;
- d) if it did not obtain the loan, whether this was due to a denial by the bank or a firm's giving up because the contractual conditions were too costly.

This allows to study one of most common indicators for analysing the performance of lending standards, namely the net percentage of firms declaring that their credit access conditions worsened during the period considered – in our case a quarter (see Bank of Italy, 2009b). More precisely, this indicator is given by the difference, in terms of percentage points, between the share of firms stating that their lending standard worsened and the share of firms whose credit conditions improved.

Moreover, in order to detect evidence of credit crunch it is necessary to have a definition of credit crunch. To this aim, we define a firm as “rationed” when it does not obtain the loan it applies for. In particular, we say that a rationed firm is:

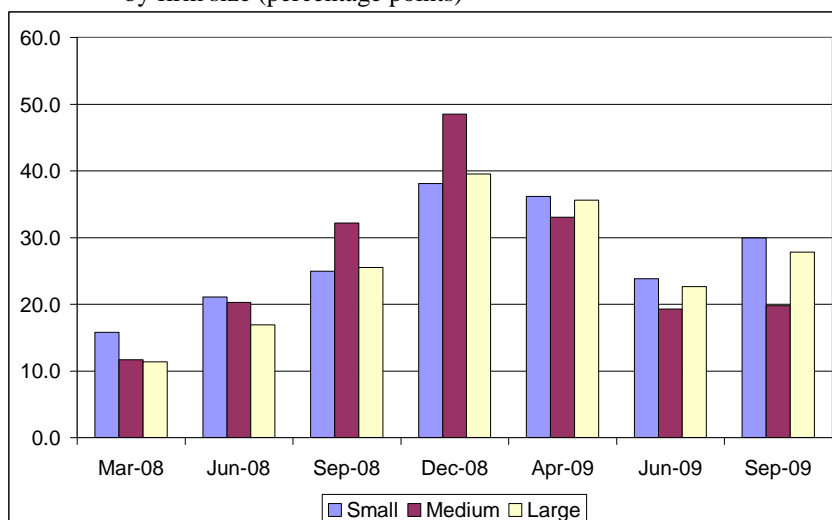
- a) “strongly rationed”, when the bank rejects the loan application;
- b) “weakly rationed”, when the firm gives the loan up because the bank imposes conditions that are too costly.

In what follows we report our results, for the period March 2008-September 2009.

4. Empirical evidence

According to the ISAE sample, it clearly emerges how the crisis began to affect the manufacturing sector in the third and fourth quarters 2008: between June and December 2008 the net percentage of firms experiencing worsening credit standards virtually doubles for the overall manufacturing sectors, passing from 20.7% to 40.1%. The relative increase is even larger for medium and large enterprises (see Figure 1). Consistently with the main surveys related to the supply side (e.g. Bank of Italy, 2009b; ECB, 2009a), in 2009 the situation improved among all the size classes – except for the very last wave –, while remaining well above the pre-crisis period.

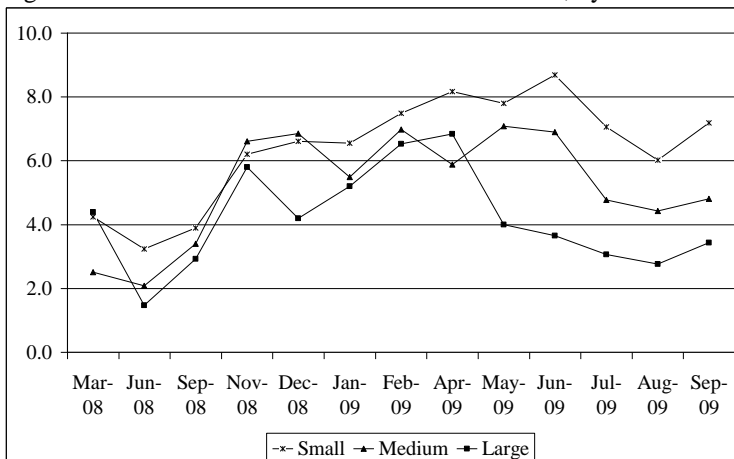
Figure 1 – Net percentage of firms whose credit access conditions worsened, by firm size (percentage points)



However, the most worrisome aspect of this credit tightening is that it went along with a relevant and widespread increase of the share of firms rationed. In particular, the share of enterprises that did not obtain the loan they asked for increased from 4% in March 2008 to about 8% in June 2009. In Summer 2009 the situation slightly improved, but last month we observed a new rise in credit rationing again.

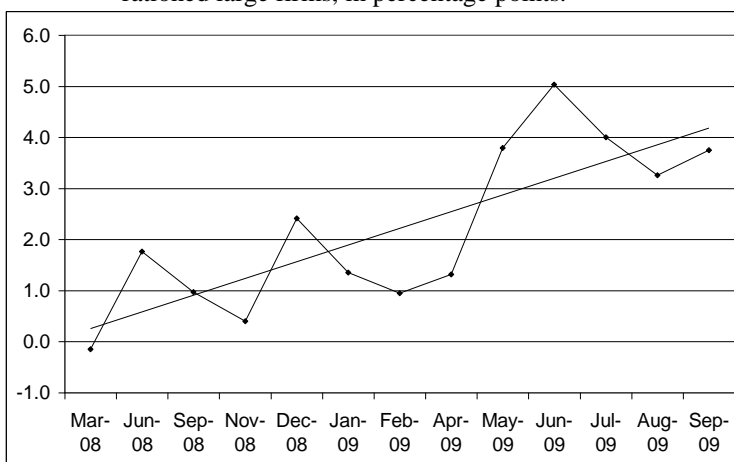
As reported in Figure 2, this is exactly the pattern followed by all the size classes of firms, even though to different extent. As far as the “size effect” is concerned, there are at least three aspects that have to be pointed out. Firstly, during Summer and Fall 2008 we observed a disproportionate rise in the number of loan applications that did not succeed in assure the finance to the firm. Moreover, while this phenomenon firstly affected all type of firms (small and large); in 2009 it concerns mainly the small firms. The difference with the pre-crisis period is evident both in absolute and relative terms (see figure 2). As stated before, this is traditionally associated to a situation of credit crunch.

Figure 2 – Share of firms that did not obtain the loan, by firm size



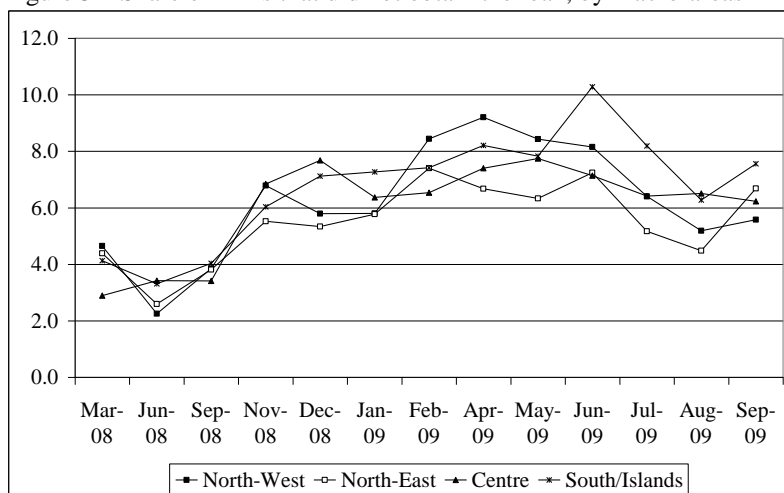
Finally, it is even more noteworthy that the gap between the SMEs and the large firms is not being reabsorbed. On the contrary, it is widening, as Figure 3 shows. This not only means that the SMEs are increasingly more rationed than the large ones, but also that even in the Fall 2009, after almost a year of several Government initiatives have been put into force, even specifically addressed to SMEs, we still observe a disequilibrium in credit supply to the detriment of a fundamental segment of Italian industry. Finally, note that two out of the three descending segments of the curve – precisely the first two – reflect periods in which the lending standard for *all* the size classes worsened, so slightly making the position of SMEs closer to the large.

Figure 3 – The difference between the share of rationed SMEs and rationed large firms, in percentage points.



Such results are all the more noteworthy if we look at how the tightening of the lending standard spreads all over the country. As can be seen in Figure 3, until November 2008 there are no significant differences in credit rationing between the four Italian macro-areas (North-West, North-East, Centre, South/Islands). In particular, in correspondence of the most critical months (Sept. 2008 – Dec. 2008) all the regions show the same soar in the share of firms that do not obtain the credit; then a more confused picture prevails, even though in 2009 we observe a systematically lower share of rationed firms in North-Eastern regions (with the exception of last month) and, since June, a higher percentage of rationed firms in the South/Islands macro-area, presumably due also to the smaller average firm size prevailing in this region and a traditionally higher risk profile for these firms.

Figure 3 – Share of firms that did not obtain the loan, by macro-areas



As a further confirmation of the seriousness of the credit crunch that hit the Italian economy in 2008, we have that the credit rationing is largely accounted for by its “strong” form – namely the bank turning down the loan application – rather than the “weak” one (the firm gives up because of too costly conditions). Indeed, in correspondence of the appearance of the credit tightening the relative importance of the two forms of rationing suddenly overturned, and since then the strong rationing has constantly been overwhelming the weak one, accounting for over the 80% of the total rationing (see Figure 4). Finally, also with regard to the strong rationing there are a relevant size-related factors (see Figure 5): the small enterprises are systematically more affected by this phenomenon, and they are not involved at all in the improvement recently emerged among the medium ones. In any case, it must be noted that despite the recent progresses, the distance between demand and supply on the credit market still remains wider than it used to be before the crisis: beside the data reported in Figure 5, we also have that for the manufacturing sector as a whole, the strong rationing – namely the rejection of the loan application by the banks – affected about 5.5% of the sample in September 2009, while in March 2008 it was below 2%. Of course, this might partially (and in that case properly) reflects a deterioration in the firm’s risk profile to the bank, but it reveals anyway some tension in credit market that deserves further investigation.

Figure 4 – The relative share of strong and weak rationing (in percentage of rationed firms)

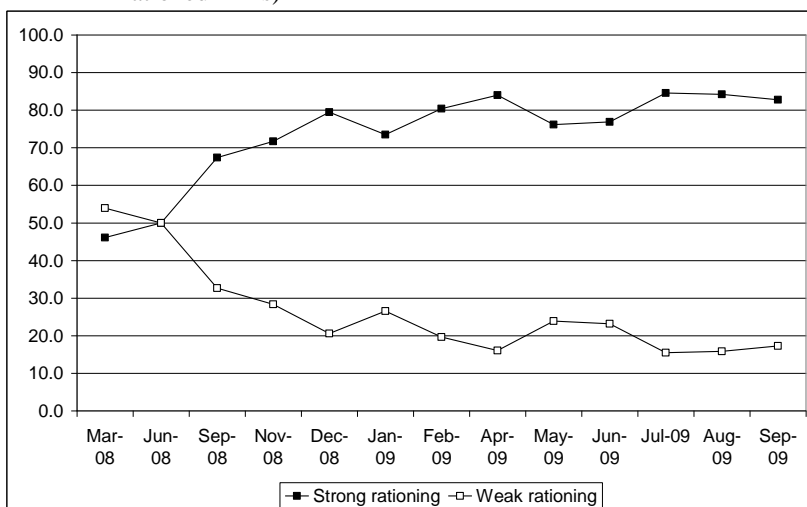
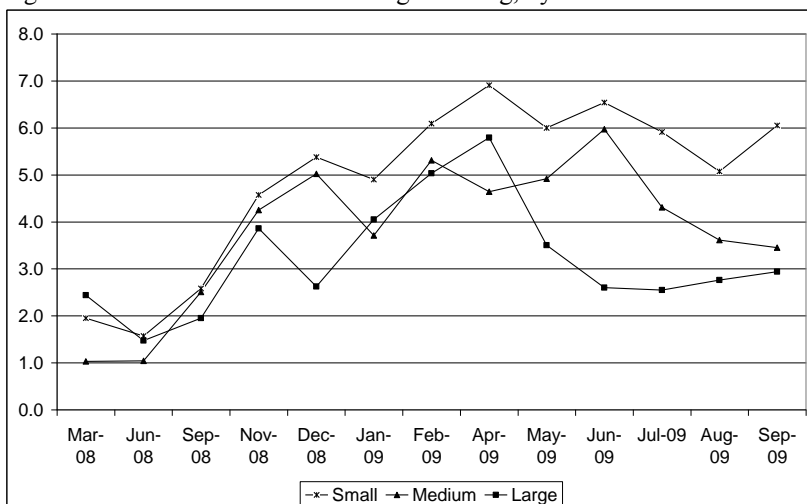


Figure 5 – The incidence of the strong rationing, by firms' size



Moreover, all that glitters, even for medium and large enterprises, is not gold, once we analyse a little more in detail the most recent credit access conditions for the Italian manufacturing firms. In fact, the absence of a real rationing does not exclude the presence of other tensions in the bank-firm relationship. That is exactly what seems to emerge in the last months, especially among the medium and large enterprises: they tend to be less rationed than in the (recent) past and with respect to the small ones, but often at higher costs than before. As Figure 6 shows, particularly in these very last months, the size classes of firms that “benefited” from a slight improvement on the credit rationing side are required to pay higher interest rates than they are used to pay before. Analogously, apparently they are also required to pledge more *real* guarantees to have the loan granted (see Figure 7a).⁶ This of course does not imply that larger firms are suffering from more disadvantageous conditions with respect to the smaller ones; on the contrary, the SMEs face usually

⁶ We remind that the “real” guarantees include a set of securities or real assets provided by the debtor or third parties as a partial or total guarantee for a loan, while the “personal” guarantees include all the contractual provisions that require the third parties to pay in case of debtor’s default. Another relevant distinction is that between “internal” and “external” guarantee, the former being assets provided by the borrower while the latter are provided by third parties. Therefore, the personal guarantees may be only external, while the real guarantees may be both external and internal. See Costa *et al.* (2008) and Pozzolo (2004) for analyses of the guarantees in banking loans to firms.

higher interest rates than large ones do (see e.g. Bank of Italy, 2009a), and this leaves little room for further increases. On the other hand, as far as guarantees are concerned, we have to point out the different role of real and personal guarantees: as a set of (financial or physical) assets, the formers are more difficult to pledge for the borrower, especially when this is a small enterprise, so that this type of guarantee is particularly used as collaterals in loans to larger firms. In turn, the personal guarantees are within easier reach for the borrowers, and result in a powerful incentive tool to smooth information asymmetries, and as such they are usually associated to small size loans and used in lending to smaller firms (see Carletti, Costa and Costagli, 2008). This helps to explain the differences in Figures 7(a) and 7(b), where among the firms that obtained the loans at the cost of more guarantees pledged, the SMEs are imposed more personal guarantees while the large enterprises (with the exception of July 2009) have to pledge more real guarantees. In any case, it is worth noting the negative correlation between the requirement of *additional* guarantees and the incidence of strong rationing.

Figure 6 – Percentage of firms that obtained the loans, but at higher interest rates

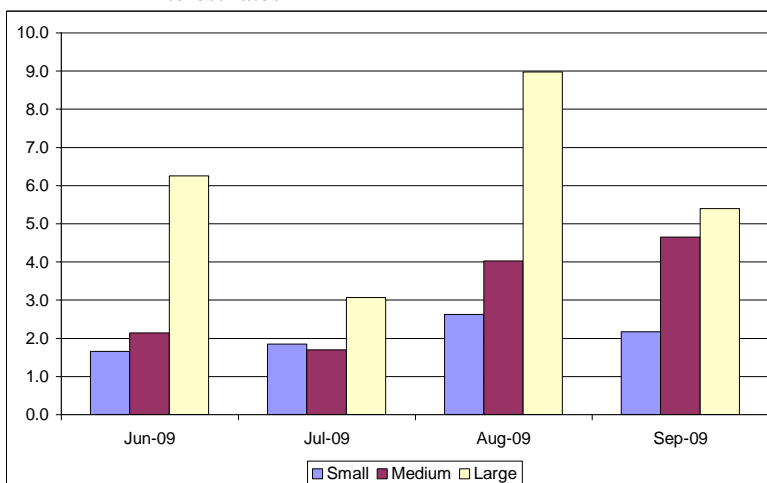
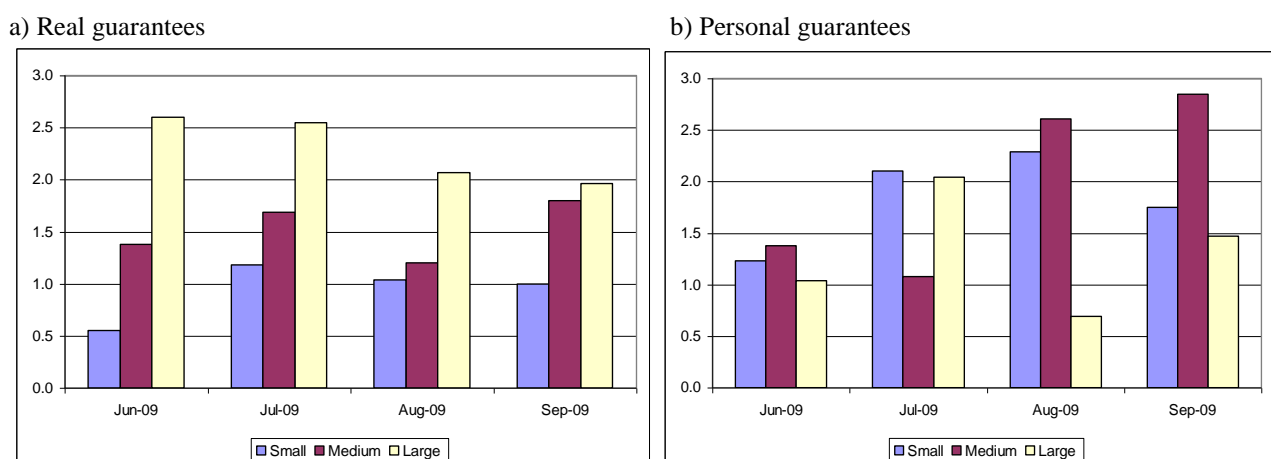


Figure 7 – Percentages of firms that obtained the loans, but are required to pledge more guarantees



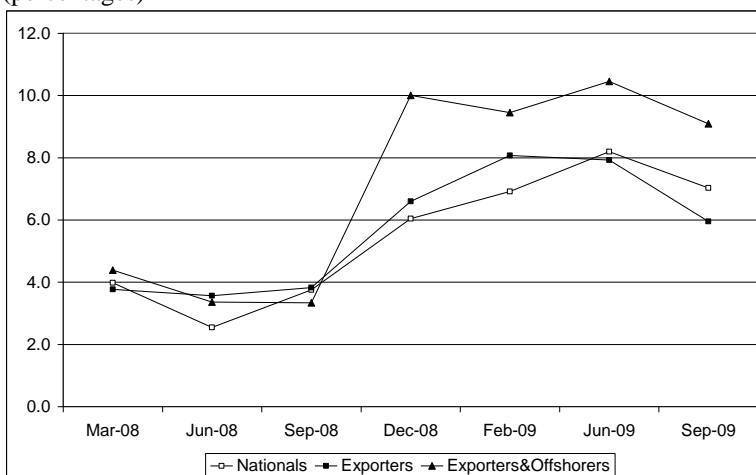
5.1. Lending standard and firms' internationalization

Whether or not a firm operates internationally may play an important role in influencing the firm's credit relationships (see e.g. De Bonis, Ferri and Rotondi, 2008), both because expanding abroad implies higher sunk costs – thus increasing their external finance needs – and because, if the bank's activity is not adequately internationalized itself, new and enhanced information asymmetries may

emerge. When this occurs, the firm's profitability and risk profile become more opaque to the bank, and the usual lending standard are consequently put at risk. Moreover, the economic literature has pointed out a sort of hierarchy among the various forms of a firm's internationalization, on the basis of the amount of sunk costs they imply. In particular, the sunk costs would increase in passing from the *trade* internationalization (i.e. export) to the *productive* one (i.e. offshoring, vertical FDI, horizontal FDI) and, among the latter, they would reach a maximum in case of horizontal FDI, that is when the firm relocates abroad the whole of the production (the vertical FDI – the most widespread among Italian manufacturing firms – implying the relocation of only some productive phases).⁷ Therefore, in the presence of a global crisis like the current one, it is necessary to investigate the possible existence of a “internationalization effect”.

Indeed, according to the ISAE sample data, such an effect characterized at least the most intense phases of the credit crunch. Figure 8 reports the incidence of the credit rationing among three categories of Italian manufacturing firms: *a*) the nationals, that operate only domestically; *b*) the exporters, that performed a trading internationalization and sell their products abroad; *c*) the exporters and offshorers, i.e. the firms fully internationalized, that sell and realize their output abroad.⁸ As can be noted, while in March 2008 there was no significant difference in the credit rationing between the three categories, in the second and third quarters of 2008 the “openness” of the firms' activity was associated with a more severe rationing (much more severe in case of fully internationalized firms). Once again, in 2009 the situation generally improves, despite the very recent worsening in September, and – maybe due to a slight increase in international trade – there appears also a convergence among the different degree of internationalization, but at higher levels of rationing that are still almost twice those in the pre-crisis period. Moreover, despite the convergence, the type of credit rationing faced by the firms is quite different (see Figure 9): with respect to the categories of firms that are “closest” to the bank – nationals and exporters – the most “distant” category – i.e. the offshorers – is more likely to see its loans applications turned down by the bank. This effect, finally, characterizes all size classes and macro-areas.

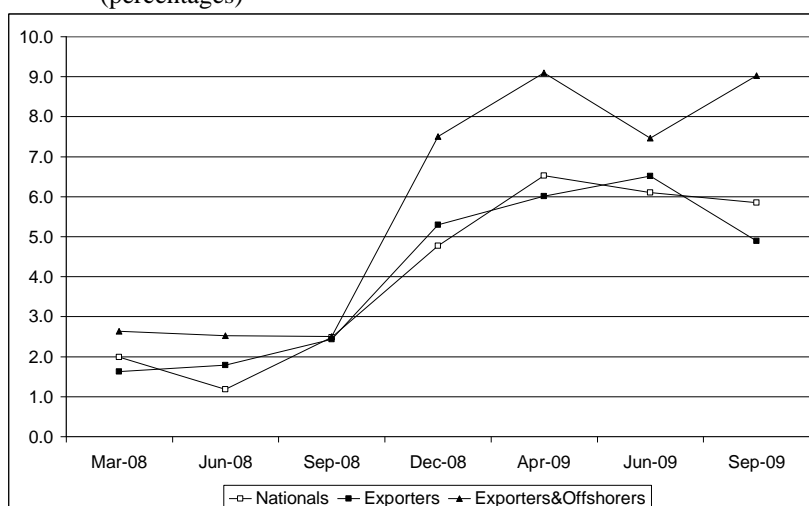
Figure 8 – Rationed firms, by degree of firm's internationalization (percentages)



⁷ For a comprehensive analysis of this issue see Barba Navaretti e Venables (2004).

⁸ We ignore a fourth possible category – the offshorers, i.e. the firms that produce abroad without exporting – because of the extremely small number of such cases (ranging from 0.3 and 0.7% of the sample).

Figure 9 – Strongly rationed firms, by degree of firm’s internationalization (percentages)



5. Conclusions

A severe and widespread crisis like the current one threatens the bank-firm relationships in Italy from a twofold point of view: on the one side, the financial turmoil deteriorates the banks’ balance-sheets and induce these institutions to pay much more attention in granting loans and to generally tighten the lending standard. On the other side, the stagnation/recession in the real economy worsens the firms’ profitability and makes them riskier to the bank. In a bank-oriented economy like the Italian one this is likely to result in a credit crunch which, in turn, may end up by further emphasize the detrimental effects of the crisis. In such situations it is necessary to have an in-depth picture of the tensions arising between banks and firms.

In this regard, the new ISAE survey data on the credit access conditions faced by the manufacturing firms allows to sketch a timely picture of the credit conditions in one of the most important sectors of the Italian productive system. We found that at least two factors usually related to a credit crunch clearly appeared in Italy in Fall 2008: a remarkable drop in loans to small and medium enterprises, and an increase in rejection rate of loan applications (a clue of credit rationing). The seriousness is also testified by the prevalence of the strong rationing. The credit crunch had only slight geographical effects (in that it hit more seriously the Southern/Island regions) but notable size effects, as the SMEs are not only more negatively affected than the large ones, but the gap is also widening, despite any sign of slight general improvement in bank-firm relationships. This latter, however, is still very fragile, because actually the firms that declare to be less rationed obtain their loans at higher costs, both in terms of higher interest rates and guarantees. This is all the more worrying in Italy, where the presence of micro, small and medium enterprises is overwhelming and the banking funds are still the most important source of external finance.

Moreover, the Italian industry is periodically the object of studies and policies aimed to increase the currently small average size of firms. The internationalization of firms’ activity is constantly one of the most debated and promoted measures. In this respect, however, we find that this strategy, especially in the presence of an internationally spread downturn, can make the firm riskier to the bank, making the firm’s activity more indefinite – thus opaque – to the lender: according to our data, in fact, the credit crunch affects the offshoring and exporting firms more seriously than the ones that operate domestically, or that simply export. Of course this does not imply that such a growth strategy be put into question by policy-maker, but it points out that this aspects need to be carefully taken into account in formulating measures aimed to take the Italian economy out of the crisis.

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