BUSINESS INVESTMENT DURING THE GLOBAL CRISIS: SOME EVIDENCE FROM THE ITALIAN EXPERIENCE

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1. Introduction

The recent economic crisis has gone through several phases after beginning with a major shock in the credit sector. However, in the literature there is no consensus as to whether this crisis was the main cause of the general deterioration of the economy or the other way round.

The influence of finance on the others sectors and the impact of real economy on finance has been analysed in a large number of contributions[1] but the recent debate focuses on the actual role of credit supply on investment. Typically, before a crisis, the banks are charged to foster the formation of speculative bubbles that cause the next crisis, while during a crisis the same banks tend to increase credit cost in order to reduce the losses due to the bubbles implosion, but this behaviour increases adverse selection, it excludes good firms from credit market and accelerates the crisis. This scheme repeated many times in the last centuries, as noticed recently also by Reinhart and Rogoff (2009).

As underlined by Kashyp and Stein (2000), if a shock reduces deposits and the banks have less possibility to raise funds on the stock market, the consequence is to reduce credit supply in order to secure balances. The effect on the real market is a reduction of investment if firms have no other possibility to finance them by other funds such as self-financing, hence a shock in the credit sector affects the whole economy through the so-called credit crunch. On the other hand, Dell'Ariccia et al. (2008) and Panetta et al. (2009) suggest that the banks are not separated from the rest of the economic system. A shock that reduces demand for firms also reduces the stimulus for entrepreneurs to realize investment or to give adequate guarantees to obtain funds for investment, so the reduction in investment causes a contraction of credit demand as well and more generally a contraction of credit market.

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1 For an exhaustive dissertation, see *Carpinelli 2009*.

The importance of the economic environment and perspectives on investment decisions during the last crisis is analysed empirically by Kahle and Stulz (2013). They found that, immediately after the highest point of the financial crisis, there was no substantial difference in investment decisions in 2008 and 2009 between American firms that were totally dependent from bank loans and firms that had other sources of funding. Their conclusion was that a decrease in investment is not driven by a credit market contraction but is much more related to the general economic conditions. The same conclusion was reached by Shoder (2013) who considered a larger time frame for his analysis, from 1977 to 2011. He found that investment decisions are not influenced by credit supply, while there is a strong correlation between investment trend, credit demand and economic conditions of companies: hence, it is the business cycle that leads investment decisions and credit demand, while credit supply plays a marginal role, especially in time of crisis.

Colombo et al (2013) also analysed a wide period of time. These authors analysed the investment decisions of a group of Italian firms between 1994 and 2008 and found that investment depended on cash flow and more generally on firms' performance only for small and "younger" firms while the larger and well-established companies obtain more support from the credit sector even in times of crisis. This result suggest that the characteristics of firms play a stronger role in the credit market than financial shocks.

The importance of the relationship between firms and banks was underlined by Holmberg (2013) that observed how Swedish firms with lower credit reserves, measured as unused lines of credit, had more difficult in finding new funds for investment but there is no evidence that declining investment is related to reducing credit supply.

On the other hand, Ivashina and Schafstein (2010) observed that banks with lower reserves and/or closer to Lehman Brothers had much more difficulties in granting loans in 2008, and reacted to the Lehman Brothers default with a strong reduction of credit supply that had tangible effects on the investment of those firms that usually borrowed capital from that bank. Thus, the shock in the banking sector had a straightforward effect on investments.

Ivashina and Schafstein (2010) analyse bank fragility close to the storm centre. Cingano et al (2013) conducted the same kind of analysis on the Italian bank system. Authors found that the banks that need to borrow much more money in the interbank markets are those that in the presence of a shock reduce their supply of credit to firms and these firms register a strong reduction of investment. As for Ivashina and

Schafstein (2010), the connection between financial and economic crisis is represented by weaker banks that cause a gap in the credit market.

Correlation between investment and credit supply is confirmed by Amiti and Weinstein (2013) that analyse data on loan movements in Japan between 1990 and 2010 and broke them down into four shock (bank, firm, industry and common shocks) by a structural VAR methodology and found that credit supply shock can explain between 20 and 40% of investment fluctuations.

In this short survey we present more recent contributes to the empirical literature to highlight the ambiguity of the link between credit market conditions and investment decisions. A previous analysis[2] of the state-of-the-art of Italian banking system during the crisis shows how credit supply decreased during the last years but also that banks were more favourable to granting capital to firms that had a project that could improve their productive capacity and not only a renegotiation of previous debts.

Also D'Elia et al (2014), analysing the Italian manufacturing sector, noticed that business investment mainly depends on the difference between actual and desired size of plants. More precisely, firms tend to jump from their actual size to a larger size discontinuously when the profitability of existing plant at the current production level is low and decreasing, so that only a larger plant would grant increasing profit in case of expected increasing demand. Thus, credit has only a minor role in determining investment decisions.

In this paper, we do not expect to identify univocally the causal nexus between financial and economic crisis but analyse the impact of credit conditions and other external factors on investment at firms' level in order to underline which elements are relevant for entrepreneurs investment decision in the time of crisis. Of course, this strictly microeconomic perspective may hide the macroeconomic factors underlying the business investment cycle, since the latter depend crucially on the interactions among economic agents other than on their individual decisions.

The rest of the paper is structured as follow: section 2 reports data description and econometric specification, section 3 presents estimation results, section 4 concludes.

2. Data description and the econometric specification

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2 See *Morettini, 2013*

Our data source is the Survey on Enterprises and Competitiveness[3] carried out every year by the Banks and Enterprises' Regional Observatory on Economics and Finance (OBI) on a representative sample of about 4,800 enterprises based in Italy that are at least in their second year of activity.

The survey is conducted at the beginning of each year and it includes a request to the entrepreneurs to evaluate any change in their activity and in economic, financial and social environment in which they do business. The questionnaire consists of six sections namely structure of the business, economic variables, investments, international activity, financial and credit system and special topics.

We are only using data from the 2013 survey, the last available as we write this paper[4], because in that year enterprises from all the regions of Italy were involved for the first time, extending the previous sample that included almost only the firms located in the South of Italy. As shown in Table 1, the sample included 4,818 firms working in four sectors of activity (manufacturing, ICT, tourism and construction).

[here table 1]

Table 2 presents some descriptive statistics of variables used in the empirical analysis. We included in our sample all the enterprises and we restricted the number of variables involved in our regression. Since we are interested in investment, we included a set of variables that could influence the decisions or planning of capital accumulation.

[here table 2]

This dataset presents a large number of qualitative variables. This characteristic give us the opportunity to analyse investment decision on the base of entrepreneurs' personal evaluation on structural and short run factors amid a crisis. In other words, in

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3 The use of dataset and the development of this analysis is based on the of the cooperation agreement between the Institute for the Study of Regionalism, Federalism and Self Government of Italian National Research Council (ISSIRFA-CNR) and the Osservatorio Regionale Banche- Imprese di Economia e Finanza.

4 A new survey was presented in June 2014, a few weeks after we concluded our study.

this paper we show a representation of the influence of crisis perception on productive investment through an evaluation of economic and social factors,. We analyse different drivers of investment decisions using the following Probit specification:

$$Prob\left[I_j = 1\right] = \beta X_i + \gamma E_i + \delta C_i + \alpha S_i + \varepsilon_i \tag{1}$$

where I_j is a dummy variable that is 1 if the j-th firm invests and zero otherwise; the variables and parameters (in greek letters) on the right hand side of (1) explain the probability of investment and ε_i is a stochastic disturbance. In particular, X is the vector that describes firm structure, it includes some observable characteristics such as dimension in terms of number of employees, localisation, if the firm is an artisan firm or not, if it is part of a network or a district of firms, its propensity to export and if operates for final market. Vector E presents entrepreneur evaluation about economic performance respect to 2011 and in case of deterioration are indicated even some relevant causes, moreover in the same group are included expectations about 2013. Survey was completed at the beginning of 2013, in the middle of the crisis, this vector shows us how entrepreneurs evaluate their performance, so give us a measure of individual cycle in a general context of difficulty. Vector C represents capital market condition, it involves entrepreneurs' evaluations on credit system, on its accessibility and relevant causes of deterioration of access conditions. For a subset of observations, the source of funds (private or public) used to finance investment are specified. Vector S includes indication on some factor that are present in the same area of the firms and that each entrepreneur recommend as strategic for the success of his company.

The main aim of this paper is to estimate δ that is the impact of credit market conditions on investment decision.

Not all the variables described above are used at the same time, describing results we will introduce which explanative variables are involved for each set of regressions.

We consider four different combinations of variables. In a first set of regressions we will use as dependent variable the investment realized in 2012; in the second set of regressions we consider a subset of the first one, i.e. we consider only the firms that invest in innovation ; the third sample includes only the firms that have planned investment in 2013.

Finally the last group of regressions uses a multinomial Probit specification:

$$Prob\left[I_j = k\right] = \beta\, X_i + \gamma\, E_i + \delta\, C_i + \alpha\, S_i + \varepsilon_i \tag{2}$$

white $k = 0, 1, 2, 3$. Each categories defines a combination of firms' investment decisions between 2012 and 2013:

- first group (k=0) includes firms that did not invest, neither in 2012 nor in 2013;
- the second one (k=1) are firms that planned to invest only in 2013;
- the third group (k=2) is given by firms that invested only in 2012,
- finally we have a group of firms that invested in 2012 and that planned to invest also in 2013 (k=3).

3. Estimation results

This section starts by estimating a baseline specification that includes only firm characteristics (table 3, column 1). Estimates confirm some expected results. Investment propensity is positively correlated with firm size: large firms tend to invest more than medium firms and both invest more than the small ones. Regarding localization, firms in northern regions invest more than firms in the southern (used as benchmark) and central Italy. The δ coefficient is higher for the north-western firms than for the north-eastern ones: this result seems coherent with the previous evidence since large firm are mainly located in the North West region.

[here table 3]

Some other characteristics have a positive influence on investment decision: firms that declare to export a large part of their product invest more than firms that are specialised in serving the internal market and the same result is found for firms that are part of a network of enterprises[5] even if with to a minor extent.

Some other characteristics have a negative influence on investment decisions: to be an artisan firm reduces investment propensity and the same is true for firms that work for the final market (both these variables are not included in table 3). Other variables that are not included in table 3 are dummies related to sectors: we use as benchmark constructions sector and we find that manufacturing and tourism have an investment propensity (slightly) higher while the propensity of ICT is surprisingly not statistically different from the baseline. However, the latter result could depend from the very low number of ITC firms included in the sample.

5 The definition of network includes network agreements according to Italian legislation (l. 99/2000), informal agreements of cooperation, national and international joint ventures and GEIE (European economic interest grouping).

This first estimate give us a picture of the typical investing firm as a large business, located in North Italy that mainly exports its product and that constantly cooperates with other firms.

In column 2, we add to the explanatory variables some indicators of the firm's performance in 2012 respect to 2011, as reported qualitatively by the entrepreneurs. We find that investment decision are strongly "pro cycling": in fact, firms that improve their financial situation tend to invest while negative economic results reduce the propensity to invest. In order to better investigate how economic performance influences investments, we add the specific causes of deterioration in column 3. The OBI questionnaire gives the possibility to indicate up to three causes of deterioration from a group of seven[6] and we report in table 3 the three most recurring answers. We find that respect to a general dummy, decreasing demand and increasing short term debts have both a stronger negative effect on investments. On the other hand, increasing fixed costs coefficient is still negative but is not significant and the same is true for all the other causes not reported in table.

In column 4 we introduce the credit market conditions. Entrepreneurs have the possibility to indicate if access conditions to credit market are better, worst or the same respect to the previous year. Improvement and deterioration do not have significant coefficients (compared to the invariance in condition benchmark) even if their sign are the expected ones. However, as for deterioration in the financial situation, entrepreneurs have the possibility to indicate the reasons of their evaluation choosing from a group of three: more guarantees required, high credit costs[7] and increasing in response time after a credit request. Column 5 reports the main results for this estimate: we find that guarantees request represents a problem for firms and this problem is strong enough to have a negative influence on investment decision. This result seems to suggest a first interesting conclusion that confirms a well know outcome in literature: the credit market has an entry barrier represented by the fact that banks do not take into account enough the timing of investment plans, having as a priority the assets that the firm can offer as guarantee for their loans.

In column 6 we add some strategic external factors. Each entrepreneur can choice up to three from a list of six[8]. We report the coefficients for three of them, those that we consider more significant: financial system, universities and research centres and the

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6 Possible answers were: decreasing in demand, increasing in short term debts, increasing in middle term debts, increasing in fixed costs, increasing in stocks, increasing in proceeds time, not profitable previous investments.

7 In this definition are included interest rate and indirect costs related to bank activity.

tax system. Financial system seems to be a variable that dominates the other explanation, and this is partially true, but in this dummy are included an evaluation on presence of credit institutions at local level, the range of services that firms can obtain from them and the importance of all these elements for the success of the firm. The same is true for universities and research centres that are evaluated for their presence at local level and for their "contribution" to the firm's activity. The tax system represents the incidence of tax and fiscal incentives on firm's performance and includes local and national taxes and incentives. Estimates show that even if all these factors are indicated as important only the financial system and R&D have a strong positive effect on investment decisions, while the tax system is not statistically significant. These results seem to suggest that knowledge and financial support are important for investments and that a close connection of credit institutes and research centres with firms is desirable in order to facilitate investment decisions; on the other hand, taxes and fiscal incentives do not seem to have a direct effect on investment, particularly during a crisis. In fact, if firms decide to invest just in the mid of a crisis, they do not wait for external "help" but use the elements that they can find at local level and that can help achieve the desired results as best as possible, both from a financial and technical point of view.

The other three factors deserve only few remarks: their coefficient is positive, lower than financial system and R&D system but is not statically significant.

In column 7 we test how strong is the guarantees limit on investment decisions. We use a dummy variable that indicates if entrepreneurs evaluate as desirable a public support for banking guarantees, regardless if they invest or not. What we find a strong correlation between investment and this possible policy decision that underlies as guarantees are a strong barrier for investment.

Column 8 shows a final estimate with all the variables and give us a more detailed picture of the typical investor firm. Respect to the other columns the coefficients are stable in their value and their sign. However, not all the variables preserve their statistical significant, for instance the localization in North Eastern regions is no more significant and the North Western regions too lose part of its significance. All the other characteristics are confirmed: investment attitude is stronger for large firms that are export oriented and involved in networks, investment decisions are related to economic performance, decreasing demand has a strong negative effect on investment. Credit seems to have a minor influence on investment except for request

8 Strategic external factors: financial system, bureaucracy, fiscal system, universities and research centres, infrastructures, high value-added services

of higher guarantees by banks: this fact is the second strongest negative factor influencing investment decisions. The importance of guarantees in investment decisions is also confirmed by the fact that investors desire a policy that can ensure public coverage of guarantees. Finally in term of policy, our empirical results suggest that a policy that improves the financial system and R&D could be more efficient than a fiscal policy.

In table 4 we present the main results of adding to the explanatory factors of investment the percentage variation in sales volume. This variable gives us the possibility to investigate the effects of the demand changes, and more in general the effects of economic situation using demand changes as a quantitative proxy other than the qualitative judgements of entrepreneurs. This variable is strongly correlated with investment decision and confirms that investment are "pro cyclical", while coefficients' value of all the others variable does not substantially change but we have some interesting change in the statistical significance of our results. As expected, the new variable has a direct effect on decreasing the significance of demand judgement and partially of the reported financial situation dummy and on other causes of deterioration. But more interesting is the effect on firm's localization: with this new variable no geographic variable preserves its statistical significance until the general estimate (column 8). This value seems to suggest that investment is not influenced by the firm's localization in itself while is strongly correlated with the economic situation. This is the real reason why the northern regions' firms are those that suffer for economic stagnation less than others do.

[here table 4]

In table 5 we change our dependent variable and we reduce our sample. We consider only firms that invested in 2012 and our dependent variable is now a dummy that signals which firm has invested in innovation. We consider this particular kind of investment because we agree whit OBI when it underlies that innovation trend in Italy is slower than in rest of Europe (Osservatorio regionale banche – imprese di economia e finanza, 2013), so it is crucial to understand which are the factors that facilitate or delay innovation. We consider only the investor firms because in the OBI survey are present some characteristics such as the information about financial resources used for investment that were not available for the whole sample. We can consider these

results as an additional evidence that complements the estimate about general investment decisions.

[here table 5]

The first four columns report same variables used in table 3: we consider structural factors, economic situation, credit conditions and external factors.

We find that investment in innovation are less related to firm dimension; the only variable that is partially significant is the dummy for large firms, a results that seems to confirm that only large firms have enough resources to invest in innovation in a permanently way. We have positive and significant effects even for export, involvement in networks and propensity to operate for the final market (not reported in table). Export and final market dummies seem to suggest that firms that need to find a new space or to preserve their space on more volatile markets are more interested in improving their products, and innovation allow them to preserve or to strengthen their position. Contrarily, the positive effect of being involved in networks is fully expected: often cooperation between firms is based on a project to develop a new product, so innovation is the base of those agreements and it is easy to see that firms that are part of a network have a higher propensity to invest in innovation.

A first interesting result is given by the localization dummies: all the regions have an advantage to invest respect to the South (that is used as a benchmark). This means that firms located in the Central Regions invest in innovation like those localized in the northern region: with respect to the general case, investments in innovation present less disparity between regions analysed, although there is still an advantage for the North East.

The financial situation does not seem to have any effect on investments in innovation, improvement and deterioration causes are all not significant, and for decreasing demand, it results even positive. We can say that investing in innovation is not related to actual firm's performance, since it can be thought of as a premise of future economic success. In other words, firms seem to invest in innovation mainly to increase their competitiveness and profitability, not to widen their productive capacity in view of facing an increasing demand. Thus a declining demand is not considered by the most forward-looking entrepreneurs in R&D and innovation. The other face of this coin is that investing in innovation has expectedly only minor effects on employment

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and potential output, which is innovation in itself cannot be considered a sufficient condition for growth.

Column 3 introduces access to credit dummies. We can say that the only variable that is significant is the improvement in access conditions, but this evidence can be interpreted also as an outcome of the banks policy. Since banks simply prefer to support investment in innovation that strengthen the firms' profitability, even at the actual production levels, instead of general investment that increases the overall productive capacity of firms and thus becomes profitable only if the market demand is increasing. In other words, innovation seem to facilitate the access to credit and not the other way round. On the other hand, the causes of deterioration in credit market access seem to have a minor effect on innovation investment. These results seem to confirm that innovation follows different rules respect to the other kind of investments.

Finally, in column 4 we add some strategic factors. As expected R&D has positive effect on innovation investment while financial system is only partially significant. As for general investment, the tax system has no significant effect on investment.

Column 5, 6, 7 and 8 introduce new variables. In column 5 we add private financial resource for investment. We present results related to the three most frequent options[9]: all the options have a positive and significant coefficient but the three coefficients reported in the table have the stronger influence. This result suggests that the entrepreneurs seeking to invest in innovation mainly find capital in private equity markets and use self-financing or short-term debt as second options. Also we can argue that innovation allows to gather some financial resources that are usually less available for most firms such us capitals from private equity.

In column 6 we test the importance of public sources of capital for investment. Not all the firms used them and entrepreneurs may use some or all of them at the same time. Tax credit has the strongest influence on investment in innovation and also guarantees and subsidized funding coefficients are positive and significant. However, the most interesting element is that the coefficient of public guarantees is not statistically significant. This result confirms what we noted above about credit market conditions: the guarantees are not a fundamental problem for investment in innovation, a result that is sharply different from the evidence coming from the analysis of the whole sample of investment decision.

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9 Financial resources for investments: self-financing, private equity, long term debts, short term debts, other sources

In column 7 we estimate our regressions including all the financial sources. There are no major differences with respect to the previous two regressions, so it is fair to say that there is no direct interaction between private and public financial sources.

Finally, in column 8 we present a general estimate adding the goals that the firms want to achieve by investing. Each entrepreneur had the possibility to indicate up to three targets between: costs reduction, productivity growth, value-added per unit growth, quality standard improvement, environment protection, quality acknowledgment, entering new markets, customer care improvement. Coefficients are not reported in Table 5 since there is not a clear strategy that firms follow with investment in innovation. In fact, all the coefficients are positive and significant except cost reduction and environment production. These results seem to suggest that innovation is a tool that is not oriented to a specific goal but rather is used as a tool for a general improvement of the business.

 In table 6 we try to look at the "future". We show estimates for investments planned for 2013. Indeed, the dependent variable does not distinguish among a large range of intentions to invest that go from a real already developed investment to a hypothetic and not yet defined idea of investment. The reason of this question in the OBI survey is to understand if there are changes in the trend of the firms' decisions and if it is reasonable to expect new investment in different regions. So this variable is useful mainly to understand which elements can influence potential investment, instead of actual plans of firms.

[here table 6]

The explanatory variables are introduced in the models in the same sequence adopted in Table 3: the column 1 reports the results for structural factors; the column 2 introduces previsions on financial situation; the column 3 reports results for credit market conditions; the column 4 presents estimates for strategic factors; the column 5 tests the importance of public support for guarantees and the column 6 presents the effects of the general economic situation.

As for investment realized in 2012, investment forecasts are strongly related to firm's size, cooperation with others firms and propensity to export. Almost no role was played by localization or other characteristics such as business sector, if the firm is an artisan firm or if it works for the final market. In fact, the coefficients of all these variables are not significant.

An expected improvement of financial situation has a positive and significant effect while forecasts indicating a deterioration of the financial situation are not significant. This result suggests that only entrepreneurs that are sure about a future positive performance of their firms are interested in new investment and seems to confirm the hypothesis that investment are strongly "pro-cyclical". With respect to the previous case, we have no information about causes of deterioration but this is a natural consequence of the fact that we are using expectation of improvement or deterioration and not an-ex post evaluation.

Credit market conditions are based on evaluations made for 2012 that could change in 2013. Of all the variables describing the credit market, only the request for more guarantees is statistically significant and negative. This result confirms how the guarantees could be an obstacle for investment even for future situations. The influence of guarantees on future investment is confirmed by the strong and positive correlation between investment forecasts and the dummy for desirable public support for guarantees.

Finally, among the external strategic factors we found some relevant difference respect to the case of investment realized in 2012. While R&D preserves its importance, it was found that the financial system loses part of its significance and the fiscal system became partially significant. This result seems to suggest that while taxes are not relevant when investment are realized, they do play a role when investment are planned. Thus, fiscal incentive are expectedly effective, but their positive effects cannot be seen in the very short run. In other words, investment support cannot be intended as a tool to improve the domestic demand and production in the next few months, but mainly as a tool to orientate investment decisions.

In table 7 we reproduce the same regressions but with the addition of the investment realized in 2012 as explanatory variable. The aim of this set of regressions is to isolate the "new" investing firms i.e. all the investments not made by firms that have already invested. Using investment realized in 2012 as explanatory variable, we try to isolate the effect of all the other variables on the new investment.

[here table 7]

There are few differences among the coefficients reported in table 6 and table 7 but these differences are relevant for our analysis. All the coefficients related to localization variables are again negative but the coefficient of North West regions is

now significant: this result suggests that investment in the North West are mainly made by firms that follow long term investment plans and not realized following the "instinct" of the moment.

Others relevant elements are the effect of external factors. In this group of variables, we note that the financial system is not significant while the fiscal system and R&D preserve their significance. But while the value of R&D coefficient decreases, the fiscal system increases. This result seems to confirm that the tax system may play a role in stimulating long run investment plans. However, by using the investment made in 2012 as an explanatory variable, we have isolated the elements that influence the less structured part of the new investments that have lower probability of being made. These results suggest that a fiscal policy stimulating investment has expectedly no effect on firms that already invest, while they have a positive but limited effect on the new investors, although there is no guarantee that this new investment will be made. On the other hand, the estimates suggest that R&D still have a positive and higher effect than fiscal policy even on this class of investors.

In order to analyse the behaviour of all the different type of investors that we have met in our analysis we present in table 8 the results of a multinomial regression. With this type of regression, it is possible to analyse and compare the effects of the same factors on firms that invest for just one period and on those that invest in 2012 and 2013.

[here table 8.a; 8.b; 8.c]

Table 8 is divided in three sub-tables; each part represents a group of investors. Table 8.a is about firms that have only planned to invest in 2013 (hereafter group 1), table 8.b is about firms that have invested only in 2012 (group 2) and table 8.c is about firms that have invested in 2012 and have planned to invest in 2013 (group 3). The three groups have different sizes, the first one is the smallest with only 137 firms, while the other two have similar dimensions: 652 the second group and 569 the third one.

We replicate the scheme used for the other regressions, starting with structural variables, and adding variables related to economic conditions, access to credit market and strategic factors. Variables are the same except for economic situation where we use a new set of dummies obtained by the intersection of the three states of economic situation for each year (improvement, constancy, deterioration), so we have

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a new set of nine variables that represents all the possible combinations of the original ones

We will present results of all the groups of investors at the same time, describing common elements and underling individual characteristics. About the firm's size, medium-sized firms have a positive and significant coefficient for all the groups whereas large firms are significant only within the group 3. This element suggests that big firms tend to plan their investment instead of deciding year after year. On the other hand, medium-sized firms do not have a specific strategy and are equally distributed among the three groups.

Localization has an influence on investment decisions of firms in group 2, since the coefficient of North West and North East is positive and significant.

All the other structural factors provide homogenous results among the groups: investments are negatively related to artisan firms (not reported in tables) and positively related to firms that are part of a network and that mainly export their product.

In column 2 we report the results for economic situation variables. We can notice that the pro cyclical trend of these variables is confirmed: for all the groups we have positive significant coefficients for cases where there is an improvement in situations for the year considered and a negative and significant coefficient for cases where there is a deterioration of economic situation. The group 3 presents the highest coefficient for the variable that signals an improvement in both years. On the other hand, the group 3 shows some anti-cyclical elements: there is a positive and significant coefficient also for variables where are not present indication of improvement like the coefficient for constancy in 2012 and deterioration in 2013. This result seems to suggest that some firms program to invest in order to overcome a stagnation in economic situation.

The colum3 presents the main results on the influence of access to the credit market. The element common to all the groups is the negative and significant influence of guarantees requested. This result recurs in all the sections of our analysis like a *fil rouge* that suggests that this may be the real problem that needs to be faced in order to stimulate investment and improve the attitude of banks toward investing firms.

 Finally, the column 4 presents the main effects of the external factors. For all the groups of firms R&D is relevant and positive correlated with investment decisions. About the other factors, there are some differences between the groups: for the group 1, the fiscal system is relevant, for group 2 and group 3 financial system is. These results seem to confirm what we express above: while tax and fiscal incentives are

important for those firms that are thinking about a new investment, for firms that have already decided to invest is much more important to have an efficient financial system that can satisfy their request.

4. Conclusions

In this study we had the opportunity to investigate which elements influences investment decisions by using a new source of data, that is the OBI annual survey on firms. In particular, this new dataset allow us to focus on the entrepreneurs' point of view.

The main focus of our analysis mainly is the influence of credit market conditions on investment decisions and we find that the main obstacle to the investment is the level of guarantees that bank demand to grant loans. This element was a constant among all our results, it is relevant for realized investment and for planned ones. All these elements suggest without doubt that the requested guarantees is the most important obstacle in the relationship between firms and banks.

An exception to this situation is represented by investments in innovation: guarantees and other elements related to the credit market have no influence on investment decisions suggesting that if the investment project aims at an improvement of firms' productivity, banks are less hesitant to grant the necessary funding.

About economic situation, we found that investments are mainly connected to economic cycle and only a small number of firms invest in order to contrast present economic difficulties.

Other interesting results were found for external factors: while for firms the proximity of efficient financial and R&D structures is always important, the tax system plays a role only on future and not defined programs. For firms that have already decided to invest, the proximity of factors that can give them an adequate financial and technical support is more important.

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Table 1 – Distribution of enterprises between sectors of activity and localization

Zone	Manufacturing	ICT	Tourism	Construction	Total
North West	610	49	46	430	1,135
North East	660	45	137	409	1,251
Centre	645	39	87	470	1,241
South	677	86	99	325	1,187
Total	2,592	219	369	1,634	4,818

Table 2 – Descriptive statistics

	OBS	Mean	Standard deviation	Dummy Variable
Investment realized in 2012	4814	0.2534	0.4350	Yes
Investment planned for 2013	4814	0.1464	0.3536	Yes
Investment in innovation realized in 2012	1220	0.3549	0.4787	Yes
Multinomial variable for investments	4814	0.6533	1.0980	Yes
Small companies (less than 50 employees)	4814	0.8396	0.3670	Yes
Medium companies (50 - 249 employees)	4814	0.1332	0.3398	Yes
Large companies (250 or more employees)	4814	0.0272	0.1627	Yes
North West	4814	0.2358	0.4245	Yes
North East	4814	0.2599	0.4386	Yes
Centre	4814	0.2578	0.4375	Yes
South	4814	0.2466	0.4311	Yes
Artisan enterprises	4814	0.1529	0.3599	Yes
Enterprises that work for final market	4814	0.6325	0.4822	Yes
Enterprises that export their products	4814	0.3941	0.4887	Yes
Enterprises involved in networks	4814	0.1180	0.3226	Yes
ICT	4814	0.0455	0.2084	Yes
Constructions	4814	0.3394	0.4736	Yes
Manufacturing	4814	0.5384	0.4986	Yes

	4			
Tourism	4814	0.0767	0.2661	Yes
Variation in sales volume (%)	4495	-8.1575	18.8806	No
Improvement in financial situation	4814	0.0690	0.2534	Yes
Deterioration in financial situation	4814	0.3914	0.4881	Yes
Causes of deterioration: decreasing demand	4814	0.2823	0.4502	Yes
increasing short term debts	4814	0.0231	0.1501	Yes
increasing fixed costs	4814	0.0409	0.1981	Yes
Constancy in financial situation	4814	0.5019	0.5000	Yes
Prevision of Improvement in financial situation in 2013	4814	0.0575	0.2329	Yes
Prevision of deterioration in financial situation in 2013	4814	0.2345	0.4237	Yes
Prevision of constancy in financial situation in 2013	4814	0.5883	0.4922	Yes
Improvement in 2012 improvement in 2013	4814	0.0247	0.1553	Yes
Improvement in 2012 deterioration in 2013	4814	0.0056	0.0747	Yes
Improvement in 2012 constancy in 2013	4814	0.0322	0.1765	Yes
Deterioration in 2012 improvement in 2013	4814	0.0199	0.1398	Yes
Deterioration in 2012 deterioration in 2013	4814	0.2036	0.4027	Yes
Deterioration in 2012 constancy in 2013	4814	0.1161	0.3204	Yes
Constancy in 2012 improvement in 2013	4814	0.0123	0.1100	Yes
Constancy in 2012 deterioration in 2013	4814	0.0251	0.1566	Yes
Constancy in 2012 constancy in 2013	4814	0.4389	0.4963	Yes

		4			
Improvement in term of access to credit		4814	0.0183	0.1340	Yes
Constancy in access to credit condition		4814	0.4381	0.4962	Yes
Deterioration in access to credit condition		4814	0.4676	0.4990	Yes
Causes of deterioration:	more guarantees required	4814	0.3542	0.4783	Yes
	high credit costs	4814	0.3170	0.4654	Yes
	delay of response time	4814	0.1859	0.3891	Yes
Desirable public support for banking guarantees		4814	0.0224	0.1481	Yes
Strategic external factors:	financial system	4814	0.5521	0.4973	Yes
	Bureaucracy	4814	0.3388	0.4734	Yes
	fiscal system	4814	0.5415	0.4983	Yes
	universities and research centres	4814	0.0494	0.2168	Yes
	Infrastructures	4814	0.1537	0.3607	Yes
	high value-added services	4814	0.0629	0.2429	Yes
Financial resources for investments:	self-financing	1220	0.1469	0.3540	Yes
	private equity	1220	0.0054	0.0733	Yes
	long term debts	1220	0.0789	0.2697	Yes
	Short term debts	1220	0.0789	0.2697	Yes
Strategic goal of investments:	costs reduction	1220	0.0752	0.2637	Yes
	productivity growth	1220	0.1398	0.3468	Yes
	value-added per unit growth	122	0.0258	0.1584	Yes

	0			
quality standard improvement	1220	0.0407	0.1976	Yes
environment protection	1220	0.0343	0.1820	Yes
quality acknowledgment	1220	0.0258	0.1584	Yes
new markets	1220	0.0301	0.1709	Yes
customer care improvement	1220	0.0118	0.1082	Yes
Public support to investments:	1220	0.0127	0.1119	Yes
Grant funding	1220	0.0305	0.1721	Yes
Subsidized funding	1220	0.0054	0.0733	Yes
Guarantees	1220	0.0060	0.0774	Yes
Tax credit				

Table 3 – Probit regression for investment realized in 2012

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Medium companies (50 - 249 employees)	0.401*** (7.05)	0.393*** (6.88)	0.385*** (6.71)	0.383*** (6.68)	0.384*** (6.69)	0.384*** (6.67)	0.394*** (6.79)	0.394*** (6.76)
Large companies (250 or more employees)	0.530*** (4.64)	0.472*** (4.07)	0.461*** (3.97)	0.453*** (3.90)	0.454*** (3.90)	0.446*** (3.81)	0.388*** (3.22)	0.378*** (3.12)
North West	0.168*** (2.87)	0.151** (2.56)	0.142** (2.40)	0.137** (2.31)	0.137** (2.32)	0.131** (2.20)	0.139** (2.32)	0.126** (2.09)
North East	0.119** (2.07)	0.107* (1.84)	0.0973* (1.67)	0.0945 (1.62)	0.0994* (1.71)	0.0973* (1.66)	0.0939 (1.59)	0.0839 (1.41)
Centre	0.0113 (0.19)	0.0101 (0.17)	-0.00056 (-0.01)	-0.00261 (-0.04)	0.00346 (0.06)	-0.0002 (-0.00)	-0.0113 (-0.19)	-0.0212 (-0.35)
Enterprises that export their	0.538*** (12.91)	0.516*** (12.26)	0.520*** (12.31)	0.515*** (12.16)	0.508*** (12.00)	0.509*** (11.85)	0.504*** (11.81)	0.498*** (11.33)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
products								
Enterprises involved in networks	0.163*** (2.70)	0.151** (2.47)	0.157** (2.57)	0.155** (2.53)	0.162*** (2.64)	0.149** (2.42)	0.154** (2.47)	0.138** (2.21)
Improvement in financial situation		0.612*** (8.11)	0.592*** (7.94)	0.583*** (7.77)	0.578*** (7.69)	0.584*** (7.73)	0.556*** (7.25)	0.559*** (7.25)
Deterioration in financial situation		-0.127*** (-2.89)						
Causes of deterioration: decreasing demand			-0.203*** (-4.12)	-0.193*** (-3.89)	-0.186*** (-3.74)	-0.193*** (-3.86)	-0.188*** (-3.71)	-0.188*** (-3.67)
Causes of deterioration: increasing in short term debts			-0.353** (-2.08)	-0.335** (-1.97)	-0.293* (-1.71)	-0.321* (-1.86)	-0.305* (-1.76)	-0.332* (-1.91)
Causes of deterioration: increasing in fixed costs			-0.195 (-1.63)	-0.191 (-1.59)	-0.187 (-1.55)	-0.200* (-1.66)	-0.194 (-1.58)	-0.200 (-1.63)
Improvement in term of access to credit				0.126 (0.88)	0.106 (0.74)	0.0912 (0.63)	0.0911 (0.62)	0.0644 (0.44)
Deterioration in access to credit condition				-0.0565 (-1.33)				
Causes of deterioration: more guarantees required					-0.155*** (-2.87)	-0.181*** (-3.32)	-0.170*** (-3.09)	-0.180*** (-3.19)
Causes of deterioration: high credit costs					0.0533 (0.89)	0.0446 (0.74)	0.0194 (0.32)	0.0293 (0.46)
Causes of deterioration: delay of response time					-0.0762 (-1.15)	-0.0683 (-1.03)	-0.0683 (-1.00)	-0.0563 (-0.82)
Strategic external factor: financial system						0.143*** (3.31)		0.121*** (2.75)
Strategic external factor: fiscal system						0.0444 (1.03)		0.0251 (0.57)
Strategic external factor: universities and research centres						0.332*** (3.70)		0.302*** (3.28)
Desirable public support for banking guarantees							1.898*** (11.41)	1.863*** (11.14)
Observations	4814	4814	4814	4814	4814	4814	4814	4814

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 4 – Probit regression for investment realized in 2012 with variation in sales volume

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variation in sales volume (%)	0.0117*** (9.24)	0.0095*** (6.84)	0.0083*** (5.90)	0.0082*** (5.78)	0.0081*** (5.70)	0.0078*** (5.49)	0.0080*** (5.56)	0.0077*** (5.35)
Medium companies (50 - 249 employees)	0.365*** (6.22)	0.369*** (6.28)	0.365*** (6.21)	0.364*** (6.18)	0.365*** (6.19)	0.367*** (6.21)	0.375*** (6.30)	0.377*** (6.32)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Large companies (250 or more employees)	0.588*** (4.86)	0.554*** (4.52)	0.548*** (4.47)	0.540*** (4.41)	0.539*** (4.40)	0.532*** (4.31)	0.471*** (3.69)	0.463*** (3.61)
North West	0.115* (1.89)	0.111* (1.81)	0.108* (1.75)	0.102* (1.66)	0.103* (1.67)	0.0949 (1.54)	0.110* (1.76)	0.0941 (1.50)
North East	0.0919 (1.54)	0.0921 (1.54)	0.0873 (1.45)	0.0840 (1.40)	0.0896 (1.49)	0.0881 (1.46)	0.0853 (1.40)	0.0754 (1.23)
Centre	-0.0142 (-0.23)	-0.0122 (-0.20)	-0.0174 (-0.29)	-0.0195 (-0.32)	-0.0130 (-0.21)	-0.0156 (-0.25)	-0.0223 (-0.36)	-0.0334 (-0.53)
Enterprises that export their products	0.174*** (2.78)	0.165*** (2.62)	0.172*** (2.72)	0.171*** (2.70)	0.177*** (2.80)	0.166*** (2.61)	0.168*** (2.61)	0.153** (2.37)
Enterprises involved in networks	0.506*** (11.70)	0.498*** (11.45)	0.497*** (11.42)	0.491*** (11.27)	0.485*** (11.11)	0.486*** (10.97)	0.475*** (10.70)	0.477*** (10.60)
Improvement in financial situation		0.494*** (6.24)	0.482*** (6.14)	0.475*** (6.02)	0.474*** (5.99)	0.488*** (6.14)	0.448*** (5.55)	0.459*** (5.65)
Deterioration in financial situation		-0.0173 (-0.36)						
Causes of deterioration: decreasing demand			-0.0924* (-1.71)	-0.0840 (-1.55)	-0.0781 (-1.43)	-0.0868 (-1.59)	-0.0827 (-1.49)	-0.0839 (-1.50)
Causes of deterioration: increasing in short term debts			-0.311* (-1.81)	-0.292* (-1.69)	-0.254 (-1.46)	-0.280 (-1.60)	-0.270 (-1.53)	-0.298* (-1.68)
Causes of deterioration: increasing in fixed costs			-0.140 (-1.15)	-0.137 (-1.12)	-0.135 (-1.11)	-0.143 (-1.17)	-0.139 (-1.12)	-0.140 (-1.13)
Improvement in term of access to credit				0.0859 (0.59)	0.0646 (0.44)	0.0451 (0.31)	0.0484 (0.33)	0.0138 (0.09)
Deterioration in access to credit condition				-0.0676 (-1.54)				
Causes of deterioration: more guarantees required					-0.146*** (-2.63)	-0.169*** (-3.02)	-0.161*** (-2.84)	-0.169*** (-2.90)
Causes of deterioration: high credit costs					0.0193 (0.31)	0.0151 (0.24)	-0.0133 (-0.21)	-0.0001 (-0.00)
Causes of deterioration: delay of response time					-0.0631 (-0.93)	-0.0577 (-0.84)	-0.0586 (-0.84)	-0.0486 (-0.69)
Strategic external factor: financial system						0.127*** (2.83)		0.107** (2.34)
Strategic external factor: fiscal system						0.0236 (0.53)		0.00472 (0.10)
Strategic external factor: universities and research centres						0.336*** (3.66)		0.309*** (3.27)
Desirable public support for banking guarantees							1.893*** (11.00)	1.863*** (10.76)
Observations	4495	4495	4495	4495	4495	4495	4495	4495

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 5 – Probit regression for investment in innovation realized in 2012

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)
Medium companies (50 - 249 employees)	-0.0898 (-0.93)	-0.0791 (-0.82)	-0.0720 (-0.74)	-0.110 (-1.10)	-0.115 (-1.16)	-0.0538 (-0.54)	-0.0865 (-0.85)	-0.167 (-1.59)
Large companies (250 or more employees)	0.363** (2.18)	0.337** (2.02)	0.364** (2.17)	0.280 (1.63)	0.328* (1.94)	0.393** (2.31)	0.354** (2.07)	0.254 (1.42)
North West	0.198* (1.77)	0.200* (1.79)	0.190* (1.68)	0.172 (1.49)	0.235** (2.06)	0.265** (2.29)	0.300** (2.56)	0.231* (1.90)
North East	0.325*** (2.94)	0.324*** (2.93)	0.339*** (3.04)	0.355*** (3.13)	0.385*** (3.40)	0.421*** (3.67)	0.459*** (3.95)	0.365*** (3.01)
Centre	0.214* (1.86)	0.214* (1.86)	0.213* (1.83)	0.223* (1.86)	0.266** (2.25)	0.253** (2.11)	0.298** (2.46)	0.254** (2.01)
Enterprises involved in networks	0.396*** (3.79)	0.391*** (3.72)	0.355*** (3.34)	0.336*** (3.11)	0.389*** (3.63)	0.313*** (2.86)	0.336*** (3.04)	0.256** (2.23)
Enterprises that export their products	0.300*** (3.76)	0.299*** (3.73)	0.272*** (3.35)	0.232*** (2.77)	0.260*** (3.18)	0.239*** (2.88)	0.229*** (2.74)	0.145 (1.62)
Improvement in financial situation		0.157 (1.42)	0.117 (1.05)	0.125 (1.10)	0.109 (0.97)	0.0676 (0.59)	0.0575 (0.50)	0.0310 (0.26)
Causes of deterioration: decreasing demand		-0.00289 (-0.03)	0.0319 (0.32)	0.0310 (0.30)	0.0343 (0.34)	-0.0137 (-0.13)	-0.0113 (-0.11)	0.0196 (0.18)
Causes of deterioration: increasing in short term debts		0.00787 (0.02)	0.0634 (0.16)	-0.129 (-0.32)	0.0110 (0.03)	0.0130 (0.03)	-0.0279 (-0.06)	-0.0763 (-0.18)
Improvement in term of access to credit			0.892*** (3.73)	0.856*** (3.46)	0.892*** (3.69)	0.912*** (3.71)	0.926*** (3.74)	0.916*** (3.55)
Causes of deterioration: more guarantees required			0.105 (1.05)	0.0323 (0.31)	0.0618 (0.61)	0.0962 (0.94)	0.0581 (0.56)	-0.0685 (-0.63)
Causes of deterioration: high credit costs			-0.169 (-1.51)	-0.164 (-1.43)	-0.137 (-1.21)	-0.170 (-1.48)	-0.137 (-1.17)	-0.0906 (-0.75)
Strategic external factor: financial system				0.152* (1.88)				0.114 (1.33)
Strategic external factor: fiscal system				0.0480 (0.59)				0.0229 (0.26)
Strategic external factor: universities and research centres				0.869*** (5.68)				0.814*** (4.93)
Financial resources for investments: self-financing					0.188* (1.95)		0.210** (2.12)	0.104 (1.00)
Financial resources for investments: equity					1.044*** (3.68)		0.887*** (2.94)	0.499 (1.50)
Financial resources for investments: short term debts					0.268*** (2.78)		0.222** (2.21)	0.220** (2.11)
Public support to investments: grant funding						0.417** (2.17)	0.417** (2.12)	0.365* (1.81)
Public support to investments: subsidized funding						0.623*** (5.10)	0.614*** (4.95)	0.505*** (3.84)

Public support to investments: guarantees						0.0443 (0.14)	-0.0455 (-0.14)	-0.117 (-0.35)
Public support to investments: tax credit						1.210*** (4.29)	1.145*** (3.98)	1.224*** (4.08)
Observations	1220	1220	1220	1220	1220	1220	1220	1220

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 6 – Probit regression for investment planned for 2013

	(1)	(2)	(3)	(4)	(5)	(6)
Medium companies (50 - 249 employees)	0.389*** (6.28)	0.366*** (5.80)	0.364*** (5.77)	0.361*** (5.69)	0.378*** (5.90)	0.373*** (5.80)
Large companies (250 or more employees)	0.618*** (5.26)	0.565*** (4.70)	0.549*** (4.55)	0.519*** (4.27)	0.472*** (3.79)	0.446*** (3.56)
North West	-0.0441 (-0.66)	-0.0354 (-0.52)	-0.0421 (-0.62)	-0.0331 (-0.48)	-0.0472 (-0.68)	-0.0406 (-0.58)
North East	-0.0139 (-0.22)	-0.00838 (-0.13)	-0.00461 (-0.07)	0.00877 (0.13)	-0.0179 (-0.27)	-0.0106 (-0.16)
Centre	-0.0822 (-1.25)	-0.0564 (-0.84)	-0.0509 (-0.76)	-0.0367 (-0.54)	-0.0753 (-1.10)	-0.0653 (-0.94)
Enterprises involved in networks	0.213*** (3.21)	0.209*** (3.12)	0.213*** (3.17)	0.200*** (2.97)	0.210*** (3.06)	0.196*** (2.83)
Enterprises that export their products	0.543*** (11.45)	0.547*** (11.31)	0.532*** (10.94)	0.515*** (10.44)	0.518*** (10.42)	0.502*** (9.97)
Prevision of improvement in financial situation in 2013		0.829*** (9.99)	0.824*** (9.90)	0.838*** (10.00)	0.784*** (9.21)	0.797*** (9.29)
Prevision of deterioration in financial situation in 2013		-0.0624 (-1.06)	-0.0455 (-0.76)	-0.0358 (-0.60)	-0.0613 (-1.00)	-0.0540 (-0.87)
Improvement in term of access to credit			0.150 (0.97)	0.134 (0.86)	0.124 (0.79)	0.101 (0.64)
Causes of deterioration: more guarantees required			-0.195*** (-3.11)	-0.223*** (-3.51)	-0.219*** (-3.41)	-0.239*** (-3.61)
Causes of deterioration: high credit costs			-0.0172 (-0.25)	-0.0319 (-0.46)	-0.0641 (-0.90)	-0.0725 (-0.99)
Causes of deterioration: delay of response time			-0.0254 (-0.33)	-0.0207 (-0.27)	-0.0175 (-0.22)	-0.00989 (-0.12)
Strategic external factor: financial system				0.0836* (1.69)		0.0530 (1.05)
Strategic external factor: fiscal system				0.0896* (1.81)		0.0734 (1.45)
Strategic external factor: universities and research centres				0.427*** (4.47)		0.396*** (4.05)
Desirable public support for banking guarantees					1.691*** (12.32)	1.667*** (12.02)
Observations	4814	4814	4814	4814	4814	4814

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 7 – Probit regression for investment planned for 2013 whit investment realized in 2012

	(1)	(2)	(3)	(4)	(5)	(6)
Investment realized in 2012	1.609*** (29.53)	1.583*** (28.78)	1.578*** (28.59)	1.579*** (28.41)	1.517*** (26.99)	1.523*** (26.86)
Medium companies (50 - 249 employees)	0.232*** (3.27)	0.214*** (2.98)	0.210*** (2.92)	0.208*** (2.88)	0.228*** (3.14)	0.225*** (3.10)
Large companies (250 or more employees)	0.417*** (3.05)	0.379*** (2.72)	0.372*** (2.67)	0.341** (2.42)	0.321** (2.25)	0.296** (2.06)
North West	-0.163** (-2.12)	-0.155** (-1.99)	-0.160** (-2.04)	-0.145* (-1.84)	-0.159** (-2.01)	-0.139* (-1.74)
North East	-0.0965 (-1.29)	-0.0916 (-1.21)	-0.0888 (-1.17)	-0.0761 (-1.00)	-0.0927 (-1.21)	-0.0776 (-1.00)
Centre	-0.128* (-1.67)	-0.114 (-1.46)	-0.113 (-1.44)	-0.0991 (-1.26)	-0.130 (-1.64)	-0.113 (-1.42)
Enterprises involved in networks	0.184** (2.44)	0.189** (2.48)	0.191** (2.49)	0.184** (2.40)	0.188** (2.44)	0.183** (2.36)
Enterprises that export their products	0.325*** (5.84)	0.330*** (5.84)	0.321*** (5.65)	0.295*** (5.11)	0.323*** (5.62)	0.296*** (5.08)
Prevision of improvement in financial situation in 2013		0.653*** (7.01)	0.652*** (6.97)	0.665*** (7.05)	0.628*** (6.63)	0.636*** (6.67)
Prevision of deterioration in financial situation in 2013		-0.0382 (-0.55)	-0.0329 (-0.47)	-0.0291 (-0.41)	-0.0509 (-0.71)	-0.0515 (-0.71)
Improvement in term of access to credit			0.0376 (0.21)	0.0340 (0.19)	0.0251 (0.14)	0.0243 (0.13)
Causes of deterioration: more guarantees required			-0.152** (-2.09)	-0.172** (-2.33)	-0.174** (-2.36)	-0.199*** (-2.63)
Causes of deterioration: high credit costs			-0.0168 (-0.21)	-0.0299 (-0.37)	-0.0504 (-0.62)	-0.0738 (-0.89)
Causes of deterioration: delay of response time			0.0246 (0.28)	0.0283 (0.32)	0.0295 (0.33)	0.0295 (0.32)
Strategic external factor: financial system				0.0175 (0.31)		-0.00538 (-0.09)
Strategic external factor: fiscal system				0.0966* (1.70)		0.0850* (1.48)
Strategic external factor: universities and research centres				0.342*** (3.15)		0.326*** (2.97)

Desirable public support for banking guarantees					1.014*** (7.43)	1.012*** (7.33)
Observations	4814	4814	4814	4814	4814	4814

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 8.a – Multinomial analysis: investment planned for 2013

	(1)	(2)	(4)	(6)
Medium companies (50 - 249 employees)	0.560*** (4.36)	0.536*** (4.09)	0.540*** (4.09)	0.541*** (4.06)
Large companies (250 or more employees)	-0.0257 (-0.07)	-0.0628 (-0.17)	-0.0801 (-0.22)	-0.134 (-0.36)
North West	0.0526 (0.39)	-0.00325 (-0.02)	0.0117 (0.08)	0.0306 (0.22)
North East	0.0170 (0.13)	-0.00476 (-0.04)	0.0139 (0.10)	0.0227 (0.16)
Centre	-0.250* (-1.75)	-0.252* (-1.72)	-0.227 (-1.54)	-0.221 (-1.48)
Enterprises involved in networks	0.383*** (2.88)	0.391*** (2.89)	0.413*** (3.01)	0.408*** (2.96)
Enterprises that export their products	0.553*** (5.52)	0.530*** (5.18)	0.513*** (4.97)	0.479*** (4.57)
Improvement in 2012 improvement in 2013		0.506 (1.56)	0.475 (1.45)	0.490 (1.48)
Improvement in 2012 deterioration in 2013		0.762 (1.27)	0.798 (1.29)	0.782 (1.27)
Improvement in 2012 constancy in 2013		0.638*** (2.81)	0.650*** (2.85)	0.642*** (2.78)
Deterioration in 2012 improvement in 2013		1.154*** (4.72)	1.232*** (4.99)	1.250*** (5.04)
Deterioration in 2012 deterioration in 2013		-0.552*** (-3.44)	-0.531*** (-3.26)	-0.525*** (-3.19)
Deterioration in 2012 constancy in 2013		-0.135 (-0.81)	-0.0955 (-0.57)	-0.121 (-0.71)
Constancy in 2012 improvement in 2013		0.911*** (2.94)	0.918*** (2.95)	0.963*** (3.05)
Constancy in 2012 deterioration in 2013		-0.106 (-0.29)	-0.0979 (-0.27)	-0.0646 (-0.18)
Improvement in term of access to credit			-0.428 (-1.00)	-0.440 (-1.02)

	(1)	(2)	(4)	(6)
Causes of deterioration: more guarantees required			-0.506*** (-3.52)	-0.545*** (-3.73)
Causes of deterioration: high credit costs			0.169 (1.14)	0.140 (0.93)
Causes of deterioration: delay of response time			0.0134 (0.08)	0.00991 (0.06)
Strategic external factors: financial system				0.148 (1.41)
Strategic external factors: fiscal system				0.190* (1.79)
Strategic external factors: universities and research centres				0.629*** (3.25)

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 8.b – Multinomial analysis: investment realized in 2012

	(1)	(2)	(4)	(6)
Medium companies (50 - 249 employees)	0.491*** (5.51)	0.477*** (5.31)	0.479*** (5.31)	0.481*** (5.32)
Large companies (250 or more employees)	0.240 (1.23)	0.197 (1.00)	0.194 (0.98)	0.198 (1.00)
North West	0.363*** (3.94)	0.325*** (3.49)	0.324*** (3.47)	0.313*** (3.32)
North East	0.239*** (2.62)	0.187** (2.02)	0.192** (2.07)	0.182* (1.95)
Centre	0.0284 (0.30)	0.000493 (0.01)	0.0117 (0.12)	-0.000591 (-0.01)
Enterprises involved in networks	0.209** (2.20)	0.200** (2.08)	0.217** (2.25)	0.205** (2.11)
Enterprises that export their products	0.583*** (8.90)	0.550*** (8.27)	0.535*** (8.01)	0.553*** (8.16)
Improvement in 2012 improvement in 2013		0.800*** (4.04)	0.778*** (3.93)	0.794*** (3.99)
Improvement in 2012 deterioration in 2013		1.580*** (4.41)	1.592*** (4.35)	1.579*** (4.32)
Improvement in 2012 constancy in 2013		0.476*** (2.86)	0.474*** (2.84)	0.495*** (2.94)
Deterioration in 2012 improvement in 2013		0.288 (1.22)	0.320 (1.35)	0.325 (1.37)
Deterioration in 2012 deterioration in 2013		-0.458*** (-4.96)	-0.439*** (-4.71)	-0.442*** (-4.73)
Deterioration in 2012 constancy in 2013		-0.120 (-1.15)	-0.102 (-0.97)	-0.125 (-1.18)
Constancy in 2012 improvement in 2013		-0.0158 (-0.05)	-0.0134 (-0.04)	0.0177 (0.06)
Constancy in 2012 deterioration in 2013		0.189 (0.94)	0.192 (0.96)	0.228 (1.13)

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Improvement in term of access to credit			-0.146 (-0.60)	-0.159 (-0.64)
Causes of deterioration: more guarantees required			-0.269*** (-3.12)	-0.295*** (-3.40)
Causes of deterioration: high credit costs			0.171* (1.82)	0.157* (1.65)
Causes of deterioration: delay of response time			-0.144 (-1.37)	-0.130 (-1.23)
Strategic external factors: financial system				0.223*** (3.26)
Strategic external factors: fiscal system				0.0213 (0.31)
Strategic external factors: universities and research centres				0.340** (2.35)

t statistics in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Table 8.c – Multinomial analysis: investment realized in 2012 and planned for 2013

	(1)	(2)	(4)	(6)
Medium companies (50 - 249 employees)	0.639*** (7.06)	0.618*** (6.70)	0.619*** (6.70)	0.616*** (6.64)
Large companies (250 or more employees)	0.981*** (5.81)	0.901*** (5.18)	0.884*** (5.06)	0.854*** (4.85)
North West	0.0347 (0.36)	0.0176 (0.18)	0.00427 (0.04)	0.00588 (0.06)
North East	0.0519 (0.55)	0.0249 (0.26)	0.0288 (0.30)	0.0387 (0.40)
Centre	-0.0491 (-0.51)	-0.0349 (-0.36)	-0.0289 (-0.30)	-0.0179 (-0.18)
Enterprises involved in networks	0.286*** (2.94)	0.273*** (2.77)	0.275*** (2.78)	0.254** (2.54)
Enterprises that export their products	0.901*** (13.02)	0.910*** (12.82)	0.889*** (12.45)	0.878*** (12.12)
Improvement in 2012 improvement in 2013		1.510*** (8.26)	1.476*** (8.06)	1.501*** (8.15)
Improvement in 2012 deterioration in 2013		0.758* (1.67)	0.629 (1.37)	0.612 (1.33)
Improvement in 2012 constancy in 2013		0.740*** (4.32)	0.761*** (4.43)	0.782*** (4.53)
Deterioration in 2012 improvement in 2013		1.239*** (6.13)	1.274*** (6.26)	1.281*** (6.27)
Deterioration in 2012 deterioration in 2013		-0.120 (-1.27)	-0.0793 (-0.83)	-0.0720 (-0.75)
Deterioration in 2012 constancy in 2013		0.0575 (0.52)	0.109 (0.98)	0.0967 (0.86)
Constancy in 2012 improvement in 2013		0.814*** (3.06)	0.802*** (3.00)	0.850*** (3.17)

Constancy in 2012 deterioration in 2013		0.571*** (2.81)	0.605*** (2.97)	0.642*** (3.13)
Improvement in term of access to credit			0.287 (1.29)	0.255 (1.14)
Causes of deterioration: more guarantees required			-0.255*** (-2.80)	-0.301*** (-3.27)
Causes of deterioration: high credit costs			-0.0520 (-0.51)	-0.0679 (-0.67)
Causes of deterioration: delay of response time			-0.0609 (-0.54)	-0.0475 (-0.42)
Strategic external factors: financial system				0.165** (2.27)
Strategic external factors: fiscal system				0.0808 (1.12)
Strategic external factors: universities and research centres				0.658*** (4.66)

t statistics in parentheses; * $p<0.10$, ** $p<0.05$, *** $p<0.01$