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The Importance of Being Consulted*

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Does management consulting facilitate the access to credit for start-ups? This paper tries to answer the question by developing a theoretical framework where a firm applies for a bank loan to implement a risky project. The probability of success increases if the firm exerts a costly managerial extra-effort, but the bank is unable to observe such an effort: a moral hazard problem may therefore occur. During an economic downturn the project's expected profitability is likely to be low relatively to the effort cost. In this case we find that credit is granted only if the bank hires a management consultant, even when the latter does not improve the business practice.

Key Words: Management consultancy; Moral hazard; Bank credit; Economic downturn.
JEL Classification Numbers: M11, M13, D82.

1. INTRODUCTION

The management consultancy industry experienced spectacular growth in the last decades and much debate pointed to the reasons for this boom (see Kipping and Engwall, 2002, *inter alii*). A frequently discussed explanation is based on a "market knowledge" argument and refers to the positive role of consultants in supplying expertise and skill. The rapid progress of information technology increased the internal complexity of the firm and forced managers to seek professional advice outside the firm itself.

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Consultancies are then hired to deliver up-to-date management practices and market information. On these grounds, they provide a service that clients cannot perform on their own (Docherty et al., 1997; Werr, 1999; Armbruster and Kipping, 2002).

A second explanation for the growth of consultancies is based on a "legitimacy" argument. According to this perspective, even when consultants do not improve the business project, they can be hired to confirm the validity of new entrepreneurial projects or the necessity of adopting some drastic measures (Ernst and Kieser, 2002; Gluckler and Armbruster, 2003). In other words, even when firms do not really need the expertise of a consultant to conceive a more efficient management practice, consultants may gain importance if, for example, they validate the decisions taken by the managers at the eyes of the shareholders, or if they justify unpopular changes, such as layoffs and downsizing. Other explanations have been added, as the provision of temporary management skills in difficult periods, or the ability of consultants themselves to create a "consulting fashion", *i.e.* to develop a series of rethorical techniques and strategic images to capture the client's attention (Abrahamson, 1996, and Kieser, 1997).[1]

We believe that something is missing. Casual observation suggests that consultants can be hired to mitigate informational frictions between lenders and borrowers, thereby facilitating the access to credit: banks often resort to consultants prior to granting loans for applicant firms. To the best of our knowledge, this aspect has been rather neglected but may provide new insights on the role of consulting companies.

Reviewing mainstream literature, the beneficial role of generic mediators has been initially studied by Myerson (1986) and Forges (1986) in communication games. Narrowing down the area of research, only Mitusch and Strausz (1999) and Demougin and Fabel (2007) provide theoretical scenarios in which consultants reduce informational asymmetries: the former consider an adverse selection model within a firm and derive conditions under which the consultancy's mediation is helpful; the latter investigate a tripartite incentive contract between an innovator supplying a new idea, a professional converting the idea into a productive project, and a consulting matching the two parties. The focus of these contributions is not on the risk of credit crunch. The recent financial crisis, however, showed that this is probably the key aspect for entrepreneurs who want to start up a business.[2]

[1] Bloomfield and Danieli (1995) suggest that consultants aim at characterizing their relationship with the client as between 'the indispensable and the dependent' (p. 27).

[2] Fedele and Mantovani (2008) demonstrate that, in presence of productive projects based on complementary activities, delegation of hidden tasks to an internal employee can facilitate the access to credit for a firm.

The aim of this paper is to fill this *lacuna*. In particular, we will show how management consulting can alleviate a moral hazard problem involving a start-up firm which applies for a bank loan. We believe that this is a relevant issue as the increased internal complexity of firms not only requires external professional advice, but may also exacerbate informational problems between firms and external financiers. This is especially true when the interaction between the firm and the bank is one-shot. If, in addition, the bank expects low returns from financing a productive project because of a global economic and financial crisis, then the issue at stake turns out to be even more relevant, as informational asymmetry becomes (relatively) costly and may *de facto* give rise to credit rationing.

Our model hinges upon a start-up firm run by an owner-manager which applies for a bank loan to implement a business project. We think of a (one-shot) "arm's lenght" transaction without monitoring rather than a (repeated) relationship one. This focus can be ascribed to numerous reasons. On the one hand, the owner-manager might need money only in the initial phase of the business, and then plan to finance the continuation of the activity through the accrued returns or resort to the capital market and look for alternative and cheaper forms of finance, like bond issues.[3] On the other hand, Boot and Thakor (2000) show that banks invest more in arm's lenght transactions after facing an increasing capital market competition, even if developing close relationships with borrowers over time can facilitate monitoring and screening tasks.

The productive project has a positive expected value, *i.e.* it is creditworthy, only if the owner-manager exerts an additional and costly managerial effort in the implementation phase. A plan of action is likely to fail unless it is properly designed, and this requires full commitment by the manager. In alternative, the bank can hire a consultant who provides temporary management skills, *i.e.* analyses the existing business project and develops a plan for operational improvement, instead of relying on the owner-manager's ability to do so.

We will consider therefore two different scenarios, depending on which agent the bank "employs" to obtain the realization of the managerial effort. In the first case, absent the consultant, the bank designs a standard debt contract, taking into account that the effort level cannot be observed. The owner-manager's commitment to exert the effort is credible only when the bank pays an informational rent, otherwise the former evades the provision of the effort (*i.e.* he shirks) and, according to agency theory, a moral

[3]When the bank-borrower relationship is not repeated, Hauswald and Marquez (2006) argue that the aquisition of information via monitoring implies a very costly screening and other losses in terms of time, effort and resources employed by the bank; Ravid and Spiegel (1997) suggest that monitoring start-ups may not be cost effective for banks, because the loans are complex to control.

hazard problem arises (Holmstrom, 1979). In the second scenario, on the contrary, the bank requires the service of the management consultant in the realization of the project, whose expected value is positive only if the latter provides the managerial extra-effort.

The intervention of the consultant requires additional specifications. Since management consulting is generally not subject to professional standards, the performance evaluation is not an easy task, as several papers pointed out (Alvesson, 2000; Clark and Mangham, 2004; Gluckler and Armbruster, 2003).[4] We rely on this literature to assume that the consultant's effort is unobservable, either by the bank and the firm. On one hand, this eliminates the possibility of collusion between the consultant and the client firm, thus simplifying the theoretical framework of our paper.[5] On the other hand, as consultancy firms are generally paid in a "cost plus" fashion, a moral hazard problem may re-emerge, in this case between the bank and the consulting firm.

A way to prevent the occurrence of such an opportunistic behaviour is to rely on market signals such as brand name and reputation. Indeed, in many cases the relationship between consultant and bank is an on-going one. The loss of reputation associated with delivering bad quality services implies a substantial reduction of future profits for the consultant that, when sufficiently forward-looking, may be disciplined to exert the additional managerial effort. This mechanism works insofar as the quality of the consulting service can be directly observed *ex post*, *i.e.* if such services are conceived as experience goods (Nelson, 1970). Yet, often clients are unable to do so, given that consultants provide both the "diagnosis" and the "therapy". This is why Armbruster (2004) considers the service provided by the consultant as a combination between an experience and a credence good.[6] We follow his approach by supposing that the *ex post* low quality (shirking by the consultant) cannot be ascertained with certainty by the bank.[7] Nonetheless, Gluckler and Armbruster (2003) coined the expression "networked reputation", *i.e.* reputation mediated through business or pri-

[4]Clark (1995) argues that consultants are capable of exploiting precisely those areas in which the client are not able to evaluate ex ante the quality of the service.

[5]See Fincham (1999) for an interesting study of the consultant-client relationship. As in other contributions on the field, however, the focus is on the consultant's role in the management of organizational change rather than on the potential collusion between the two parties. We believe the latter might represent an interesting extension of the current analysis.

[6]See Darby and Karni (1973) for a precise definition of credence goods and for a discussion of how reputation affects the amount of fraud in markets with this type of goods.

[7]Quality of credence goods can be discovered, for example, through the observation of a signal sent by independent and credible diagnosing experts (Emons, 1997).

vate network, to denote the peculiar combination of past performance and public recognition that ensures the success of a consulting firm.

Reputational concerns do not apply to the firm because *(i)* business start-ups, lacking prior history and financial/operating record, have no (or not yet) reputation (Huyghenbaert and Van Gucht, 2007); *(ii)* the interaction with the bank is one-shot.

We will solve the model under the two alternative scenarios and in each of them we will derive the conditions under which the bank grants the loan. As both the owner-manager and the consultant have to be compensated for the additional effort, the bank designs the appropriate incentive scheme for the agent at stake and then decides whether it is worthy or not to concede the loan. At equilibrium the bank compares the two scenarios and decides which agent to employ.

The remainder of the paper is as follows. The basic model is laid out in Section 2. Sections 3 and 4 considers the two scenarios, respectively without and with the intervention of the consultant. Section 5 derives the bank's decision and stresses on the welfare improving effect of the consultant service. Section 6 concludes.

2. THE MODEL

A firm run by an owner-manager applies for a bank loan to implement a risky productive project. The bank, once receiving the firm's application, decides whether to *(i)* proceed alone or hire a management consultant; *(ii)* grant the loan or not. If the loan is granted, the project starts up and, in case of success, the firm repays the bank. One can think of a decision process in which actions *(i)* and *(ii)* are simultaneous, or sequential. At the end what matters for the bank is the evaluation of the profitability of the project in the two scenarios.

The productive project can either succeed or fail, and only in the former case returns are positive. The success probability increases if the agent (either the owner-manager or the consultant) exerts a costly managerial (extra) effort. The bank may therefore be interested in financing the project, but it cannot observe whether the agent behaves or shirks, thus it cannot contract upon the effort choice. According to the agency theory, there is a potential moral hazard problem between the parties and the problem arises when the agent does not behave, as it will become clear shortly.

The description of the model proceeds by considering separately the two scenarios. If the bank chooses to proceed alone, it designs a standard debt contract and then the owner-manager selects the effort's intensity. If, on the contrary, the bank hires the consultant, a contract is signed between the parties with a specific remuneration offered to the consultant; after that, the consultant selects the level of effort. In both situations, if the loan is

granted, project returns accrue in case of success and the firm repays the bank.

Throughout the paper we refer to the bank as "it", to the consultant as "she" and to the owner-manager as "he"; in addition, they are all supposed to be risk-neutral.

3. THE ACCESS TO CREDIT WITHOUT CONSULTANCY

We consider first the situation where the bank does not resort to the consultant. The project's value is assumed to be Π with probability p and 0 with probability $1-p$. If the owner-manager exerts an extra-effort, the success probability increases to $P > p$. Yet, the additional deployment of resources implies for the owner-manager a disutility, whose monetary equivalent is captured by effort cost E. The value Π therefore denotes the project's earnings (before interests and taxes) in case of success, net of the managerial effort's monetary disutility.

Implementing the project requires one unit of funding, which is provided by the bank through a standard debt contract: a repayment R is due by the firm only when the project succeeds, in which case the repayment cannot exceed the project's profit: $R \leqslant \Pi$. The firm is thus protected by limited liability. The outside option for the bank is to invest the unit of capital in an alternative safe asset returning ρ per unit invested.

When the firm behaves and exerts the effort, the expected value of the project is $P\Pi + (1-P) \times 0 - E - \rho$, where ρ represents the opportunity cost of capital invested by the bank. According to the design of the debt contract, such a value is divided in the following way: $P(\Pi - R) - E$ is the firm's expected share whereas $PR - \rho$ is the bank's one. When the firm does not exert the effort, disutility E is nought and the project value amounts to $p\Pi + (1-p) \times 0 - \rho$. The firm's expected share is $p(\Pi - R)$, while that of the bank is $pR - \rho$.

We suppose that the project has a positive expected value only if the costly effort is exerted. As a consequence, the bank is not willing to grant the loan if the owner-manager shirks, being the project not creditworthy. This can be formally expressed in:

Assumption 1 $P\Pi - E - \rho \geqslant 0 > p\Pi - \rho$.

On the one hand, the probability of success p is supposed to be sufficiently low for the project to be noncreditworthy when there is misconduct. On the other hand, the effort disutility must be low relatively to the expected profit $P\Pi$ when the effort is provided. Indeed, solving by E inequality $P\Pi - E - \rho \geqslant 0$, we get $E \leqslant P\Pi - \rho$, which is the relevant interval region for parameter E. We let $\overline{E} \equiv P\Pi - \rho$ to simplify the exposition.

The bank sets repayment R to maximize its expected share, which, net of the investment opportunity cost ρ, is either PR or pR. The probability of obtaining the repayment depends on the effort level exerted by the owner-manager, whose choice is in turn affected by the repayment level. Indeed, he gets $P(\Pi - R) - E$ when exerting the effort and $p(\Pi - R)$ otherwise. Solving in R the inequality $P(\Pi - R) - E \geqslant p(\Pi - R)$ yields $R \leqslant \Pi - \frac{E}{P-p}$, which represents the owner-manager's incentive compatibility condition: he exerts the effort only for relatively low values of the repayment R, *i.e.* when the positive effect on his expected utility brought by an increase in the probability of success outdoes than the negative effect due to the costly effort.

As a consequence, the bank faces a trade-off: its share is increasing in R, but when $R > \Pi - \frac{E}{P-p}$ the owner-manager prefers to shirk, thus reducing by $P - p$ the probability R is repaid. When setting $R = \Pi - \frac{E}{P-p}$, the maximum repayment that induces the owner-manager to behave, the bank gets $P\left(\Pi - \dfrac{E}{P-p}\right) - \rho$ and the firm $\frac{p}{P-p}E$. Notice that the latter value is higher than zero and increases along with E because it represents a compensation for the effort disutility: the firm receives a so-called *informational rent*.

The bank does not opt for a higher repayment. If it did, the owner-manager would be induce to shirk, with the effect that the bank's share would be at most equal to $p\Pi - \rho$. This value is negative by Assumption 1.

In conclusion, the bank is willing to grant the loan only if its share $P\left(\Pi - \dfrac{E}{P-p}\right) - \rho$ is positive, or at least non-negative. It is easy to check that this occurs when $E \leqslant \frac{P-p}{P}(P\Pi - \rho)$: the bank ends up with a non-negative share only if the effort disutility is low relatively to the expected project profitability, in which case the informational rent necessary to induce the owner-manager to behave is sufficiently cheap for the bank.

Let $a \equiv \frac{P-p}{P}$: given that $P > p$, then $0 \leqslant a \leqslant 1$. Moreover, recalling that $\overline{E} \equiv P\Pi - \rho$, then inequality $E \leqslant \frac{P-p}{P}(P\Pi - \rho)$ rewrites as $E \leqslant a\overline{E}$.

We can summarize the above findings in the following

LEMMA 1. *When the bank does not hire the consultant, it grants the loan if (and only if) the firm's effort disutility is low relatively to the project's expected value, i.e.* $0 \leqslant E \leqslant a\overline{E}$. *On the contrary, for higher values of the effort disutility, i.e.* $a\overline{E} < E \leqslant \overline{E}$, *the bank does not grant the loan.*

Notice that the bank induces the owner-manager to exert the effort through the informational rent, whose value increases with the effort disutility. When such a disutility is too high relatively to the expected project

profitability, then the bank prefers not to pay the informational rent. In this case the bank, anticipating that the owner-manager will shirk, does not grant the loan.

4. THE ACCESS TO CREDIT WITH CONSULTANCY

In this section we focus on the situation where the bank decides to hire the consultant. It is now the latter who is in charge of designing properly the project to increase its success probability: the owner gives up any management task. We denote with e the monetary equivalent for the consultant's effort disutility, who receives a fixed remuneration ϕ.[8]

If the consultant exerts the effort, expected value of the project is then $P\Pi + (1-P) \times 0 - e - \rho$. We let for the moment $e \leqslant E$ so that, when the consultant is hired, the project's expected value increases, in line with the "market knowledge" argument, or at least is not lower, according to the "legitimacy" one.

Expected surplus is now divided in the following way: $P(\Pi - R)$ is the share accruing to the firm, who does not bear the effort disutility anymore, whereas $PR - \phi - \rho$ and $\phi - e$ are the shares respectively accruing to the bank and to the consultant. On the contrary, when the consultant shirks, the expected surplus is $p\Pi + (1-p) \times 0 - \rho$ and the corresponding shares are $p(\Pi - R)$, $pR - \phi - \rho$ and ϕ, respectively.

Before proceeding, it is worth remarking that the moral hazard problem shifts from the owner-manager's behaviour to the consultant's one. On the one hand, as the owner-manager does not produce any costly effort, he always prefers the consultant to behave because this increases his expected share from $p(\Pi - R)$ to $P(\Pi - R)$, with $P > p$ by hypothesis. On the other hand, as the choice of the effort level is hidden, the consultant has an incentive to pocket the money and shirks. Indeed, she gets $\phi - e$ when behaving, while receiving $\phi > \phi - e$ when not behaving.

However, following the discussion in the introductory section of this paper, the consultant can be induced to behave on the basis of a reputational argument. To set it up in a simple way, we assume that the consultant lives for an infinite amount of periods and that in each period she can potentially sign a new contract with this or other banks. The terms of the contract are supposed to be the same as those described above; however, new contracts are signed only if the consultant is not detected to shirk in any previous period.

[8] Consultants are sometimes paid in a "success fee" fashion. The analysis of this alternative mode of payment would be a possible extension of the current work. Yet, we do not explicitly tackle it because a remuneration based on the project's success would soften the consultant's incentive to shirk, with the effect of reinforcing the result (derived in the next section) that she may facilitate the access to credit for the firm.

More precisely, we suppose that at least a bank has already resorted to the consultant in the past and that our bank believes that the effort will be exerted in the current period. The consultant's discounted flow of expected profits is

$$\phi - e + \sum_{t=1}^{\infty} \delta^t (\phi - e), \tag{1}$$

if she behaves, thereby obtaining a remuneration equal to $\phi - e$ in each period. Parameter δ is the discount factor and will play a crucial role in the forthcoming analysis. If, on the contrary, the consultant decides to shirk, then there exists a probability of being discovered by the bank equal to α; when this happens, the consultant's reputation is completely spoiled and her services are not anymore required by any potential client bank. The consultant's expected gain in this case is given by

$$\phi + \sum_{t=1}^{\infty} \delta^t (1-\alpha)^t \phi; \tag{2}$$

she obtains ϕ in the first period, because shirking entails zero disutility; hereafter ϕ is obtained only if the bank, with probability $(1-\alpha)^t$, does not detect the misconduct. Either δ and α are between zero and one.

Expression (1) is higher than (2) if and only if $\phi \geqslant e\frac{1-\delta(1-\alpha)}{\alpha\delta}$: the consultant behaves only when receiving a remuneration higher than a threshold value $e\frac{1-\delta(1-\alpha)}{\alpha\delta}$. Such a cut-off decreases with δ: for relatively high values of the discount factor the consultant puts a lot of weight on future profits, *i.e.* she cares a lot about reputation. In this case even a low remuneration is sufficient to induce her to exert the effort.

As the owner-manager's moral hazard issue is not present, the bank's problem is simply to choose R and ϕ in order to maximize its expected share, subject to *(i)* the owner-manager's limited liability condition, $R \leqslant \Pi$ and *(ii)* the consultant's incentive compatibility constraint, $\phi \geqslant e\frac{1-\delta(1-\alpha)}{\alpha\delta}$. Since the bank's share is increasing in R and decreasing in ϕ, the bank makes both conditions binding by setting respectively $R = \Pi$ and $\phi = e\frac{1-\delta(1-\alpha)}{\alpha\delta}$. By doing so, its share amounts to $P\Pi - e\frac{1-\delta(1-\alpha)}{\alpha\delta} - \rho$; the firm's share is equal to zero, while the consultant gets the positive amount $e\frac{1-\delta}{\alpha\delta}$. The consultant receives therefore an extra-remuneration, which we refer to as a *reputational rent*.[9] Notice that the rent decreases along with δ: the compensation for the effort disutility diminishes when the consultant cares about future profits.

[9]Such an extra remuneration is better known as quality premium (Klein and Leffer, 1981).

The bank does not pay less than $e\frac{1-\delta(1-\alpha)}{\alpha\delta}$ for this would induce the consultant to shirk, with the final effect that the project's value would be negative and equal to $p\Pi - \rho$.

In conclusion, the bank will grant the loan only if share $P\Pi - e\frac{1-\delta(1-\alpha)}{\alpha\delta} - \rho$ is non-negative, *i.e.* when $e \leqslant \frac{\alpha\delta}{1-\delta(1-\alpha)}(P\Pi - \rho)$: the effort disutility must be sufficiently low with respect to the expected profitability of the project and/or the discount factor.

Let $b \equiv \frac{\alpha\delta}{1-\delta(1-\alpha)}$. One can easily ascertain that parameter b is increasing in both the discount factor, δ, and the probability of being discovered when cheating, α. More precisely, b equals zero when the consultant does not care about the future ($\delta = 0$) and/or her misconduct cannot be detected ($\alpha = 0$): in this case reputation is worthless. On the contrary, b equals one when $\delta = 1$ and $\alpha = 1$, *i.e.* when reputation matters. We therefore interpret b as a reputation indicator for the consultancy. Recalling that $\overline{E} \equiv P\Pi - \rho$ inequality $e \leqslant \frac{\alpha\delta}{1-\delta(1-\alpha)}(P\Pi - \rho)$ rewrites as $e \leqslant b\overline{E}$. Using this simplification, we can state:

LEMMA 2. *When the bank hires the consultant, it grants the loan if (and only if) the consultant's effort disutility is low relatively to the project's expected surplus, i.e.* $0 \leqslant e \leqslant b\overline{E}$. *On the contrary, for higher values of the effort disutility, i.e.* $b\overline{E} < e \leqslant \overline{E}$, *the bank does not grant the loan.*

5. THE IMPORTANCE OF BEING CONSULTED

In this section we derive the bank's equilibrium decisions concerning *(i)* the issue of loan and *(ii)* the hiring of consultant by comparing its expected gains in the two alternative scenarios described in the previous sections.

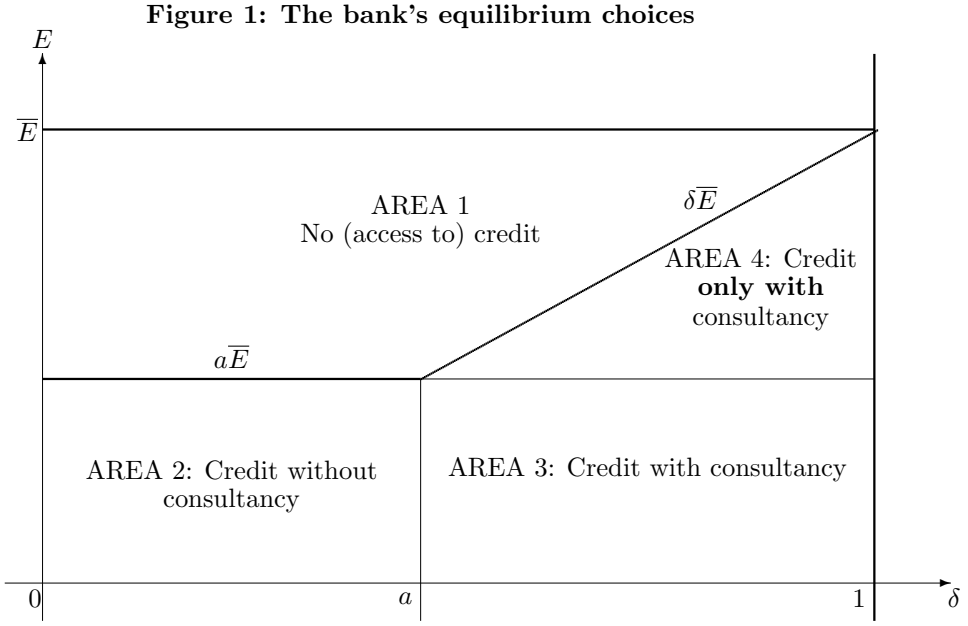
Focus first on decision *(i)*: recalling the results of Lemmata 1 and 2, we know that the loan is granted when the effort disutility borne by the agents, either E for the owner-manager or e for the consultant, is lower than the cut-off values, either $a\overline{E}$ or $b\overline{E}$, respectively. When this happens, in order to characterize decision *(ii)*, we have to compare $P\Pi - e\frac{1-\delta(1-\alpha)}{\alpha\delta} - \rho$, what the bank gets when availing itself of the consultant's competency, with $P\left(\Pi - \frac{E}{P-p}\right) - \rho$, its share when proceeding alone. We can easily ascertain that the former value is higher for $\delta \geqslant \frac{1}{1+\alpha\left(\frac{E}{ae}-1\right)}$: when the loan is granted, the bank hires the consultant only if the above inequality holds.

The discussion of our result becomes more reader's friendly by setting $e = E$ and $\alpha = 1$. We disregard therefore the positive role of consultants in supplying expertise and skill and suppose that the misconduct by the consultant is detected with absolute certainty. These additional assump-

tions are innocuous in that they do not affect the equilibrium choices of the bank. Indeed, we know from the above analysis that the loan will be denied only if $E > a\overline{E}$ and $e > b\overline{E}$, and that the consultant will be hired only if $\delta \geqslant \frac{1}{1+\alpha\left(\frac{E}{ae}-1\right)}$. After substituting $\alpha = 1$ and $e = E$, the first two inequalities reduces to $E > \max\left\{a\overline{E}, \delta\overline{E}\right\}$ and the second one boils down to $\delta \geqslant a$. Since the values b, δ, $\frac{1}{1+\alpha\left(\frac{E}{ae}-1\right)}$ and a are all lower than 1, the latter conditions are qualitatively equivalent to the former ones. However, and this is why we suggested such a simplification, we are now able to sum up our findings through a simple representation in the two-dimensional space (δ, E).

Area 1 in Figure 1 represents the case where the compensation required by both agents to behave is too costly for the bank because effort cost is high, $\max\left\{a\overline{E}, \delta\overline{E}\right\} < E \leqslant \overline{E}$: the bank denies the loan and invests in alternative assets. There are two subintervals. In $\delta < a$ and $a\overline{E} < E \leqslant \overline{E}$, the consultant is not particularly concerned with reputation in term of future flow of profits, and therefore the "cheapest" agent is the owner-manager; yet, his effort overcomes the repayment roof established by the bank. The same reasoning applies, *mutatis mutandis*, for the $\delta \geqslant a$ and $\delta\overline{E} < E \leqslant \overline{E}$, with the consultant being preferred to the owner-manager, but still requiring an excessive repayment to exert the effort.

Figure 1: The bank's equilibrium choices



In Area 2 it is always more expensive to induce the consultant to behave than the manager, given that $\delta < a$. However, the bank realizes that it is profitable to induce the cheaper owner-manager to behave, given that $0 \leqslant E \leqslant a\overline{E}$, *i.e.* his effort cost is relatively low. It follows that the loan is granted without external consultancy.

On the contrary, in Areas 3 and 4 the consultant is more convenient for the bank, as $\delta \geqslant a$: when the discount factor is relatively high, the consultant cares about reputation and the rent she needs in order to behave is smaller than the informational rent paid to the owner-manager. However, for the project to be financed, the bank should find it convenient to induce the consultant to behave: this happens in both areas given that $0 \leqslant E \leqslant \delta\overline{E}$.

The distinction between Areas 3 and 4 will be specified below. For the moment, the above findings can be summarized in the following:

PROPOSITION 1. *The bank (i) does not grant the loan when both agents' effort disutility is high relatively to the project's expected profitability (*$\max\left\{a\overline{E}, \delta\overline{E}\right\} < E \leqslant \overline{E}$*); (ii) does grant the loan otherwise, in which case it prefers to (a) hire the consultant if she cares about reputation ($\delta \geqslant a$); (b) proceed alone otherwise ($\delta < a$).*

Many insights can be derived from the above analysis. For example, one can notice that Area 1 shrinks as $a \equiv \frac{P-p}{P}$ increases. This means that a credit rationing scenario is less likely to occur when the extra effort exerted by the agent significantly increases the success probability of the project.

However, the main lesson that stems from Proposition 1 is that, for any given a, credit crunch can be avoided if the option of hiring a consultant who cares about reputation is available. Indeed, consider a point in Area 1, where the loan is denied, and then move rightward along the same level E. This amounts to focus on higher values of δ and, at the same time, enables to reach Area 4, where credit is granted thanks to the intervention of the consultant.

The above reasoning opens the door to a crucial consequence of our findings. Suppose the consulting service is not available and focus on Area 4. Here, E is higher than $a\overline{E} \equiv a\left(P\Pi - \rho\right)$ and the bank does not grant the loan, according to Lemma 1, because the owner-manager's effort cost is high relatively to the project's expected profitability. This is likely to occur in a situation of global downturn, when even a full commitment by the manager cannot ensure high returns to the initial investment.

Yet, the discount factor is higher than the cut-off value of a in Area 4, meaning that if a consultant is available, she cares about reputation and can therefore be easily induced to behave. This reduces the bank's cost

of issuing the loan and turns out to be the only way for the creditworthy productive project to get access to financing.

We summarize the above reasoning in the following

Remark 5.1. During an economic crisis, the firm has access to credit only if the bank has the option of hiring a consultant who cares about reputation, even when she does not improve the business practice.

An important lesson from Remark 5.1 is that the reputation of the consultant turns out to be a powerful device to mitigate the moral hazard problem between the bank and the owner-manager. Even when not providing new solutions to existing problems (this aspect is captured by setting e equal to E), the very presence of a consulting company can reduce the possibility that a lending institution is not willing to finance a creditworthy project.

6. CONCLUSION

In this paper we have analyzed the investment problem of a start-up firm. The firm applies for a bank loan to implement a project which promises a positive expected return only if a managerial effort is exerted in the implementation phase.

We have considered two alternative scenarios: in the first one only the bank and the firm are involved, while in the second a consulting company can be hired. In both situations there exists a moral hazard problem, as the effort of the agents, either the manager or the consultant, is hidden. We have therefore computed the compensation that has to be provided to each agent in order to behave, and concluded that the loan would have been conceded by the bank only below some specific threshold values of the effort costs.

Finally, we have compared the respective rent of the two agents to evaluate the decision of the bank at equilibrium. A crucial point is that, while the relationship between the bank and the start-up firm is supposed to take place only once, that between the bank and the consultant is repeated: the bank (or other banks) can propose new contracts to the consultant if satisfied by previous performance. We have concluded that the bank decides to hire the consultant when the latter cares about reputation in terms of foregoing future profits, thus requiring a lower compensation than the owner-manager. When this is the case, then there exists an interval region where credit is granted only under the presence of the consulting service. The reputation of the consultant becomes therefore a powerful tool to reduce information frictions between the bank and the owner-manager.

With respect to the existing literature, we have tried to fill a theoretical gap: we have provided a moral hazard framework that demonstrates the ability of consultants, even when not proposing more efficient solution to existing management and organizational problems, to facilitate the access to credit for start-ups. We have shown that this issue is relevant due to the recent financial crisis.

We believe that at least two important and somewhat natural extensions of the current analysis should be included in our future research agenda. First, as the outcome of a consultancy process depends on a strict interaction between the consultant and the firm, the consequences of collusion has to be studied. Second, the role of venture capital firms is worth investigating, since their activity mainly consists in providing entrepreneurial firms with financing, often in conjunction with managerial expertise. Concerning the latter point, it is however important to remark that, in presence of moral hazard, high values of a venture capitalists' share, often necessary to get sufficient return to the investment, negatively affect the incentives of owners-managers to provide effort, as predicted by Amit et al. (1998).

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