THE ENTREPRENEURIAL DECISION: THEORIES, DETERMINANTS AND CONSTRAINTS

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1. Introduction

In a 1954's work, Schumpeter defined the entrepreneur as 'the pivot on which everything turns'. Nowadays, scholars claim that this is the "era of the entrepreneur" (Goffee and Scase, 1987): governments have become more focused on the determinants of entrepreneurship because small, new firms are perceived as a source of new jobs and ultimately as the mainspring of economic growth and development (Blanchflower and Oswald, 1990). Many surveys and reviews have been written about entrepreneurship in the last twenty years (see among others Acs and Audretsch, 2003; Audretsch, 2002; Casson, 1982, 2003; Gartner, 1990; Glancey and McQuaid, 2000; Shane, 2000; Storey, 2000; Swedberg, 2000; Westhead and Wrigth, 2000) and a huge amount of conferences, workshops and debates have been devoted to this topic. The various existing interpretations and strands of research can be grouped in several ways. Among the others, Bull *et al*. (1996) suggest five broad categories: literature that is not directly concerned with the theory, but that focuses on the attempt of providing a definition for the word "entrepreneur"; analyses of the psychological traits of individuals defined as entrepreneurs; investigations on the formation of new ventures; studies on the strategies recognized as crucial to explain the success of business ventures; works on the environmental factors affecting entrepreneurial actions (see also Sorrentino, 2003). However, entrepreneurship is still "one of the most elusive and least understood forms of economic behaviour" (Eboli, 1997). This paper copes with one of the themes that did not receive much explicit attention in the existing works: the entrepreneurial decision. An exhaustive analysis of the peculiarities of the decision an individual makes when becoming entrepreneur has not been carried out yet. A lot of effort has been addressed to the way economic agents make their decisions, whereas no explicit study in this perspective has been dedicated to the entrepreneur. The aim of the paper is filling such a gap by looking at the entrepreneurial decision throughout the alternative approaches that literature in economics offers. The decision of becoming an entrepreneur can be understood in

its wholeness only if we consider the other meanings that this peculiar decision assumes. From the industrial organization point of view, the entrepreneurial decision corresponds to a firm's entry into an industry. From a financial point of view, the entrepreneurial decision represents a specific case of real business investment. Finally, from a labour market point of view the entrepreneurial decision is the result of a specific career choice in favour of self-employment. Consequently, the paper will analyse not only works that explicitly speak of entrepreneurship, but also contributions that focus on entry, investment decisions concerning a new business and employment choices that are not concerned with a paid job. To accomplish such an endeavour, the existing literature on who is the entrepreneur and what are the peculiarities of his decision will be reorganized and integrated with the insights of those additional perspectives. The paper will show how the elements identified as determinants or constraints of the entrepreneurial decision according to these different strands of literature strongly depend on the specific perspectives each theory belongs to, and claims that a complete frame needs to account for all these contributions, that have specific pros and cons. Moreover, an attempt of classification of the entrepreneurial decision's determinants according to their relatedness to the context where the entrepreneur operates or to his personal characteristics is carried out.

2. Who is the entrepreneur and who he is not?

Among the vast amount of definitions and characterizations that have emerged from studies across different disciplines (see Garavaglia and Grieco, 2005, for an exhaustive survey), this section focuses on studies about entrepreneurship belonging to the economic perspective.

Who is the entrepreneur and what exactly does the entrepreneur do? To provide a clear specification, we start by delineating the peculiarities of the entrepreneur with respect to similar and related figures: the firm, the manager, the capitalist, and the professional.

Classic economists and Marshall conceive the entrepreneur as the individual who primarily finances the firm, i.e. the owner that is simultaneously capitalist and manager. He is jointly the risk-bearer and the decision-maker, especially devoted to supervision and coordination. The entrepreneur is supposed to exercise control because of the power derived from his position in the ownership of the firm. Stauss (1944) claims that "the firm is the entrepreneur", and the entrepreneur holds two fundamental responsibilities: "the assumption of risk" and "the assumption of management". Nettl (1957), on the contrary, argues that entrepreneurship is a "fixed, if measurable, contribution to each firm": the firm and the entrepreneur are not perfect synonymous for each other, and the former is identified with only a part of the latter, that cannot vary. The identification between the entrepreneur and the firm has become more debated since

firms' average dimensions have increased and firms' control has been shared among several individuals, as occurred in the last fifty years: scholars and practitioners have get interested in studying and better understanding "corporate entrepreneurship" and research on this topic has grown rapidly over the past decade. Nowadays, the entrepreneurial management school predominantly focuses on large corporate firms and aims at individuating organizational structures that are efficient in exploiting opportunities and strategic management activities that assure competitive advantages over rivals.

Moving to the characterization of the entrepreneur with respect of the other figures that operate within the firm, we recall Baumol (1968)'s contribution in emphasizing the entrepreneur's position at "the apex of the hierarchy that determines the behaviour of the firm". Furthermore, Baumol points out the necessity to distinguish between entrepreneurial and managerial functions. The manager can be defined as "the individual who oversees the ongoing efficiency of continuing processes": he supervises the allocation of inputs, controls that schedules and contracts are respected, and makes decisions about pricing and advertising. In other words, the manager is in charge of routine activity. Conversely, the entrepreneur's function concerns the development and the implementation of new ideas: he is "the Schumpeterian innovator", but also "something more". The literature has devoted a lot of work to this distinction: among the others, Martin (1982) argues that the essential difference between the entrepreneur and the manager is "perception", and Kirzner (1983) emphasizes the fact that the entrepreneur perceives unmet needs concerning goods, services or new technologies. More recently, De Fraja (1996) presented a model of choice of the ownership composition where both structures (entrepreneurial firm or managerial firm) might emerge as the result of the interdependence between the individual's effort and external economic conditions determined by technological factors (such as the capital investment needed to carry out the project) and by the level of uncertainty characterizing the project. De Fraja's results show that the entrepreneur works harder than the manager when times are bad, and *viceversa*.

Another issue to disentangle is related to the distinction between the entrepreneur and the capitalist. This dichotomy has been approached in different ways since the debate between Knight and Schumpeter. According to Knight (1921), bearing risk is an essential characteristic for an entrepreneur: capital markets provide too little financing due to moral hazard and adverse selection problems, so that entrepreneurs have to finance themselves and sustain the risk of failure. On the other hand, Schumpeter (1936) separates the entrepreneurial function from the capitalist one: it is the capitalist who has to bear risk for the entrepreneur, whose aim is only to identify arbitrage opportunities in the economy. Subsequent empirical studies have tried to test both hypotheses, and a stronger support emerged in favour of Knight's idea: Evans and

Jovanovic (1989), among the others, reject Schumpeter's view, because their results emphasize that entrepreneurs are significantly limited by capital stock availability.

Finally, a further clarification should be carried on when discussing the composition of the human capital stock, that is determined both by entrepreneurs and professionals. Whereas professionals use their accumulated knowledge to facilitate economic transactions, entrepreneurs "provide the economy with new ideas, products, and way of doing things" (Iyigun and Owen, 1998), as already emphasized above. These two types of human capital should be treated as different and the relative importance of each type varies by activity: in Iyigun and Owen's model, for example, entrepreneurial human capital is shown as relatively more important in intermediate-income countries, while professional human capital is relatively more abundant in richer economies.

3. The entrepreneurial decision across the literature

The distinction between entrepreneur and manager we have discussed above reflects the two types of functions - routine or non-routine functions - that have been ascribed to the entrepreneur across the economic though. Recent theories, however, tend to associate managers to routine functions and entrepreneurs to non-routine ones. Before going briefly through alternative approaches in economics and through the determinants they identify in motivating the entrepreneurial decision, we have to remember that such a 'function-based' definition for the entrepreneur is typical of the economic approach only; other disciplines' look at entrepreneurship in different ways (see Garavaglia and Grieco, 2005, for a discussion).

3.1. Routine decisions

In mainstream models of the firm, the entrepreneur has the role of coordinator in a situation of resource scarcity: the economic concept of coordination represents the dynamic counterpart of the static idea of allocation and individuals are motivated to achieve private coordination that allows them to be better off as a result of reallocation. Coordination can be analysed from either a general or a partial point of view. General equilibrium studies are pure theoretical models of markets that work as instruments of resource allocation. In this context, the economic system is characterised by perfect knowledge and firms are considered as black-boxes, i.e. as means for transforming inputs into output. When the role of entrepreneurs is merely a function of coordination of resources, there is little room for a theory of entrepreneurship: basically, in equilibrium the existence of entrepreneurship is not required, being all resources organised and allocated efficiently by definition (Barreto, 1989). In this framework, there are modest

possibilities for recognising the "proactive and dynamic behaviour of the type that is commonly associated to entrepreneurs" (Glancey and McQuaid, 2000).

In this line of thinking, Leibenstein (1966; 1979) in his X-efficiency theory stresses the organizing function of the entrepreneur. The successful entrepreneur is the one who manages to minimise the inefficiencies that inevitably arise in the process of coordinating the factors of productions. The role of the entrepreneur is therefore to improve the efficiency of information flows in these markets, and to "gap-filling", that is closely akin to the arbitrage function. Nonetheless, Leibenstein departs from the neoclassical theories because X-efficiency theory assumes that there are psychological costs in being fully rational. This limits the exploitation of all the opportunities available, and concretizes into incomplete contracts and possible disagreements about objectives among individuals. This type of approach implicitly assumes that the difference between simple arbitrage and the set up of a firm lies in the degree of complexity and in the type of contracts involved rather than in any difference of economic principle. In both cases, resources are reallocated, and if reallocation determines benefits for all agents, thereby "the entrepreneur stands to gain a pure entrepreneurial profit" (Ricketts, 2002). The idea that people start new ventures as a way to increase their personal wealth underlies this strand of research in entrepreneurship: the entrepreneur only coordinates resources, and the possibility of allocating these resources optimally represents the only determinant of the entrepreneurial decision. The neoclassical representation of the entrepreneur refers to an individual "who maximizes profit subject to various resources constraints" (Day and Sunder, 1996). Factors such as firm's revenues, profitability, the creation of personal wealth, revenues' growth and sustainability are used as indicators of entrepreneurial success (Amit *et al*., 2000), and the criteria guiding the entrepreneurial decision making in the this literature are essentially expected profit maximization, expected utility of profit maximization, and maximization of firm's stock market value (Kihlstrom and Laffont, 1979).

Entrepreneurship theories classified within this approach do not study the entrepreneurial choice explicitly, but nevertheless offer a general framework to analyze it. The lack such a perspective exhibits, however, lies in the fact that it appears too static and abstract, and does not pay enough attention to the entrepreneur as a decision maker. Subsequent approaches, still classifiable in the entrepreneurship literature but with a different idea about the type of functions an entrepreneur exercises, try to better disentangle the issue by looking at personal traits and delineating the peculiarities of an entrepreneur with respect to other economic agents.

3.2. Non routine decisions

Modern analyses of the entrepreneur develop Say's insight that the organization of production and the combination of resource inputs require skills of a different order that those of routine labour. Scholars like Von Mises, Hayek, Schumpeter, Knight, Kirzner provide a characterization of the entrepreneur such that entrepreneurial function belongs to the sphere of non-routine decision making: entrepreneurial decisions are not sufficiently alike, and do not recur sufficiently often, to warrant the development of routine procedures. The absence of an active role for the entrepreneur in neoclassical economics directly derived on the assumption of market equilibrium: changes might occur, but variations were perfectly foreseen and expectations could never be disappointed. According to Knight, however, it is not change that gives rise to profits, but uncertainty and the possibility of incorrectness of expectations. Uncertainty stresses the entrepreneur's willingness and ability to bear the responsibility for decision making: in particular, "Knightian uncertainty" refers to a situation where there is no factual experience to support the attachment of objective probabilities to the relevant random events (*versus* the case of risk, when probabilities can be assigned). If uncertainty characterizes the environment, the problem is no more represented by the actual execution of activity: the issue is deciding what to do and how to do it. This "primary function" is the entrepreneurial function: the endeavour of deciding how various objectives are to be achieved and of predicting which objectives are worth achieving competes to the entrepreneur, "a specialist who is prepared to bear the cost of uncertainty" (Knight, 1921). The exercise of entrepreneurship is usually associated with uncertainty bearing and has something to do with imperfect knowledge: recent theories especially emphasize that the entrepreneur does not merely deal with the consequences of imperfect knowledge, but rather concerns the rewards of discovering and using new knowledge.

Grounding on Knight's concept of the entrepreneur, Kihlstrom and Laffont build a competitive general equilibrium theory of the firm under uncertainty: as in Knight (1921), the entrepreneur's function is twofold, and consists of "exercising responsible control" and "securing the owners of productive services against uncertainty and fluctuations in the income". The entrepreneur provides managerial and organizational skills, facing the risk associated with the firm's activity. Production requires both entrepreneurial and normal labour inputs; workers receive fixed wages, whereas entrepreneurs get risky profits; individuals decide the type of employment by comparing the risky returns of entrepreneurship to the level of wage emerging in the competitive labour market. Crucially, the model assumes that all individuals are equal in their ability to perform entrepreneurial as well as normal labour functions. The results show that more risk adverse individuals become workers, while less risk adverse become entrepreneurs;

the equilibrium wage is a sort of premium for risk aversion, and less risk adverse entrepreneurs run larger firms. The allocation of labour to firms and the number of firms are not optimal due to inefficiencies cause by institutional constraints in risk trading.

If Knight's work and subsequent developments identify in the capability of treating uncertainty a crucial determinant of the entrepreneurial decision, according to alternative perspectives mere differences in risk aversion cannot explain the special role of entrepreneurs because independent risks can be insured by means of capital markets. These approaches assign the entrepreneur the role of coping with the unknown, i.e. to "produce an effort to get things done" but especially to deal with "unforeseen events", two functions that are related to potential situations of asymmetric information where risk can fail to be assured (Chamley, 1983).

The Austrian tradition, represented by Kirzner, emphasizes the role of the entrepreneur as a person who is "alert" to unexploited possibilities. The main role of the entrepreneur is the adjustment of prices: if the price prevailing in the market is not appropriate, then an opportunity for profit is created. Alertness to disequilibrium is the distinguishing characteristic of an entrepreneur. Whereas Knight identified the entrepreneur as the recipient of pure profit (intended as the reward for bearing the cost of uncertainty), for Kirzner the entrepreneur is able to perceive the opportunities and the benefits deriving from the availability of knowledge not apparently possessed by others. A general profit opportunity that is known to everyone and equally exploitable by everyone is a profit opportunity for no one in particular (Richardson, 1960): here the determinant of the entrepreneurial choice lies in the ability to notice an opportunity that may have been available before but that had escaped the others' attention. This alertness is a peculiar form of knowledge that cannot be obtained through a rational investment policy in search: entrepreneurs are profit-seeking speculators characterised by a kind of superior knowledge that enables them to gain from the ignorance of others. The entrepreneurial competition, therefore, is a process that accelerates the equilibrating adjustment process of the market, whereas entrepreneurs are the agents characterised by the ability to recognise market opportunities that are typically abundant in conditions of disequilibrium.

Conversely, Schumpeter considers economic change as endogenously determined. The Kirznerian and Schumpeterian views are clearly distinct: according to the former, entrepreneurship is a stabilising force, while the latter considers it as a source of disequilibrium. It is not the exploitation of unnoticed market opportunities, but the creation of new possibilities that represents the real essence of the entrepreneurial behaviour in Schumpeter's view. Entrepreneurs are revolutionary agents of change who identify or create new commodities, new technologies, new sources of supply, new types of organization (Schumpeter, 1942) and acts as the catalyst which loosens some transactional bonds and forges new ones. According to

Schumpeter, the entrepreneur is an extraordinary person who brings about extraordinary events: the entrepreneur is a revolutionary, an innovator overturning tried and tested convention and producing novelty. Such boldness and confidence require aptitudes that only a small fraction of the population holds: the entrepreneurial decision rests on the genius, the personality and the talent of the innovator-entrepreneur.

In a more recent work, Minniti (2004) recalls Kirzner's idea of in alertness and treats it as a crucial factor, together with asymmetric information, in shaping individuals' entrepreneurial decision: more alert agents have higher probabilities of exhibiting entrepreneurial behaviour. A notion that exhibit some similarities is the one introduced by Shackle (1970), who argued that the entrepreneur is an individual who has the ability of "imagining" a possible future state of affairs, not only "perceiving" an existing one. Therefore, opportunities may have not an objective existence independent of their discoverer, but spring from the entrepreneur's imagination.

Summing up, theories that assign the entrepreneur non-routine functions recognize in him the presence of very peculiar personal traits: attitude in coping with uncertainty for Knight, alertness for Kirzner, creativeness for Schumpeter, imagination for Shackle. The determinants of the entrepreneurial decisions do not lie in the expectation of maximizing a wealth depending on the characteristics of a temporary disequilibrium of the market, but in the individual manifestation of specific attitudes. These traits might be linked to an agent's preferences (as happens for their willingness to bear risk) or to his ability in making use of information.

In their efforts to define a distinctive domain for the field of entrepreneurship, however, researchers has recently shifted the attention away from approaches that tried to identify personal determinants of the entrepreneurial choice toward the comprehension of the "nexus of enterprising individuals and valuable opportunities" (Venkataraman, 1997). This new focus has required scholars to explain the role of opportunities in the entrepreneurial process. Following Casson (1982) and Shane and Venkataraman (2000), entrepreneurial opportunities can be defined as situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends or mean-ends relationships. While non-entrepreneurial decisions involve the creation and identification of new means and ends, entrepreneurial decisions involve the creation or identification of previously undetected or unutilized ones. Eckhardt and Shane (2000) argue that there exist three valuable ways of categorizing opportunities: by the locus of the changes that generate the opportunity; by the source of the opportunities themselves; by the initiator of the change. In their opinion, this kind of analysis represents a shifting from the 'entrepreneurial type' paradigm – that is rooted in implicit assumptions about differences between entrepreneurs and other types of people – to a

paradigm of entrepreneurship that is embedded in the concept of disequilibrium and incomplete information about opportunities. An opportunity-based perspective provides researchers with a general framework that is able to explain many parts of the entrepreneurial process. Moreover, it indicates that much of the entrepreneurial process depends heavily on factors beyond the control of individual entrepreneur.

Casson devoted a lot of effort in studying entrepreneurship and provided a possible synthesis of the issues that are crucial to understand the entrepreneurial decision. In one of his most recent works (Casson, 2003), he argues that "the theory of entrepreneurship is a necessary element in any comprehensive synthesis of theories of the firm". Entrepreneurship can be analysed by extending orthodox modelling techniques; the defining characteristic of the entrepreneur is specialization in judgemental decision making. The entrepreneur differs not only in terms of risk aversion (Milgrom and Roberts, 1992) but also in their access to information, and consequently in the subjective probabilities he attaches when assessing risk. Focusing on judgement, Casson emphasizes the crucial reason why the theory of entrepreneurship has diverged from the neoclassical approach: he recognizes the importance of "volatility in the environment". The environment is continuously affected by the presence of shocks; if shocks are specific in influencing a particular individual, firm or market, information must be gathered by people specializing in a particular field of activity. Central is the idea of judgemental decision, "where different individuals, sharing the same objectives and acting under similar circumstances, would make different decisions". Agents make different decision because they have "different access to information, or different interpretation of it". An entrepreneur would be a person whose judgement inevitably diverges form others: whereas Kirzner saw the entrepreneur as gradually coming to perceive the opportunities latent in given circumstances, Casson depicts him as spotting and evaluating some of the opportunities thrown up as circumstances change.

This branch of literature on entrepreneurship tries to devote a higher level of attention to the specific characteristics an entrepreneur displays. Such an interest allows to provide a less static and simplified framework with respect to previous studies on entrepreneurship. However, the existence of an "entrepreneurial personality" whose behavior is presumed to be constant regardless of the situation has often been criticized (e.g. Shaver, 1995). Furthermore, the critique that can be moved to the entrepreneurship literature - in both the lines we have investigated - is the generalized inattention to study the entrepreneurial determinants as specifically related to the industry where the entrepreneurial decision takes place and the moment when it occurs. The industrial organization literature offers important contributions to overcome this limit.

4. The entrepreneurial decision as an "entry" decision

Industrial organization literature conceptualizes the entrepreneurial decision as the entry of a new firm into a market: more specifically, Mueller (1991) refers to a "firm that supplies a product within an industry without having supplied it previously". According to the neoclassical theory, entry plays a re-equilibrating function and represents "a transition toward the equilibrium" (Garavaglia, 2004): when an industry exhibits extra-profits with respect of the market long-run equilibrium (where entry does not occur), new firms come in and "erode" these rents, in a picture that exhibits strong similarities with the first block of theories about entrepreneurship. The probability of entry is negatively affected by the presence of barriers that might prevent potential entrants to exploit profitable market opportunities and allow incumbent firms to earn super-profits. Thus, it is industry characteristics, both in terms of industry profitability and in terms of the level of structural or behavioural barriers, that determine or not a firm's entry decision. Firms are here assumed to be homogeneous with respect to their cost functions and to the amount of information they are provided with. Subsequent refinements introduce strategic interaction among newcomers and incumbent, but still depict entry as a profit-driven phenomenon.

The evolutionary approach grounds on the concept of "technological regime" (Nelson and Winter, 1982) and shift the attention on the technological attributes of the industrial environment: appropriability of the innovative rents, cumulativeness of technological advance, level of technological opportunities and characteristics of knowledge (Malerba and Orsenigo, 1996). Therefore, we cannot generalize the understanding of the process of entry disregarding the technological features of the industry: some technological conditions favour entry more than others, as the industry might evolve in a direction that widens the spectrum of available opportunities and competences required or deepens the existing ones. Analogously, Audretsch (1995) suggests two possible models describing industry evolution: the "revolving door" that captures high turbulence and difficulty in surviving (and correspond to Nelson and Winter's "routinized regime"), and the "metaphor of the forest" where new entrants displace established firms that grounded their roots in the industry and force them to exit (as in the "entrepreneurial regime").

Focussing on another level of analysis, studies on the industry life cycle (e.g. Jovanovic and MacDonald, 1994; Klepper, 1996) emphasize the importance of considering the stage of evolution of the industry. Grounding on previous works by Abernathy and Utterback (1978), this kind of analysis stresses the fact that entry is much easier in early stages of evolution: a radical innovation gives birth to a new industry, entry barriers are low and product innovations

frequent. As the industry evolves toward the maturity, output considerably grows, the number of versions of the product decline and more investment is devoted to process innovation: barriers to entry become significant, entry rates decrease and a shakeout in the number of producers occurs.

Interestingly, the population ecology approach (Carrol and Hannan, 1995; Carroll, 1997), although belonging to the sociological area, offers an alternative interpretation that has engaged a fruitful dialogue with the economic evolutionary theory: in this framework, however, an organization's entry choice is determined on the basis of forces of sociological nature. The "legitimization" effect plays a crucial role in affecting the viability of a given organisational form and its diffusion. The difficulties associated with the novelty of the beginning are overcome as time passes by, but the presence of a higher number of organisations implies a tough competition such that entry becomes less and less attractive.

Within this approach, the "resource partitioning model" helps in making sense of the increase in the number of entrants that might occur in mature industries (which usually exhibit high concentration rates). When industry's concentration is high, there is more room in terms of resources for new organisations (e.g. Carroll, 1985; Carroll and Swaminathan, 1992) that are typically small and assume a different organisational form from the prevalent one in the industry: big generalist producers leave some resource space free for small specialist producers, whose entry choice is therefore more favourable when the industry is mature.

Another bunch of models in industrial organization focuses on the role of information and uncertainty in affecting the entry decision. The essence of the decision to enter lies in firms' willingness to discover their own true efficiency level that determines the probability of surviving and prospering. A model in which uncertainty represents a key ingredient in the explanation of entry is suggested by Jovanovic (1982): firms do not know exactly how good their own capabilities are: by means of a mechanism of "noisy selection" some of them are discovered to be more efficient than others, survive and prosper while less efficient ones decline and exit.

In a similar flavour, Horvath, Schivardi and Woywode (2001)'s model shows the relevance of uncertainty and information disclosure in determining entrants' decision. After observing other firms' performances, potential entrants reduce their uncertainty: the larger the number of firms in the market, the wider information available to potential entrants and the higher the frequency of entry choices, that is governed by a self-reinforcing mechanism.

Many contributions in industrial organization therefore succeeds in pointing out that entrepreneurial decision is idiosyncratic to the industry and the moment when it occurs. The theories that account for these aspects find higher confirmation in data about entry.

Recently, industrial economics theories have tried to integrate the analysis of entry determinants related to the industrial structure with an investigation of the biases and limitations that can affect firms' decision. In fact, potential entrants' expectations of success determine entry choice, but these expectations may be affected by mistakes that concern one's own abilities and probability of success. The most famous contribution is represented by Camerer and Lovallo (1999)'s paper that stresses the importance of overconfidence in leading the entry decision and shows that entrants are able to predict the amount of competitors correctly, but lack in evaluating their performance with respect to their peers. Not only they overestimate their capabilities, but also seem to reason as they were alone in the competitive arena ("reference group neglect" phenomenon). This work opened up a strand of literature that involves psychological insights to understand the entry decision (e.g. Grieco and Hogarth, 2004; More and Cain, 2004). Several studies show how entrepreneurs failures in intuitive reasoning may play a part in the findings of a number of recent studies in entrepreneurship. Entrepreneurs seem to be affected by cognitive biases like the ones qualified as heuristics by Kahneman, Slovic and Tversky (1982). Cooper, Woo and Dunkelberg (1988), among others, show that entrepreneurs perceive their prospects for success as substantially better than those for similar businesses. Moreover, their degree of optimism appears to be higher if they have already made the commitment to become business owners: the theory of cognitive dissonance studies decision makers' attitude to bolster or exaggerate the attractiveness of an option after it has been chosen (Abelson and Levi, 1985).

Thus, the determinants of entry should concern not only the features of the industry where it takes place (observed in a specific moment), but also the way entrants frame their decision and the possible distortions affecting them.

In general, however, the industrial organization approach does not investigate properly the motivational mechanism behind the entrepreneurial choice. This could be due only by trying to understand the way how a potential entrepreneur frames his decision. Is a new business an opportunity to invest some money or a new career chance? Conceiving the decision in a manner or in another has important implication in shaping its determinants: the following sections shed more light on this issue.

5. The entrepreneurial decision as an "investment" decision

A few works belonging to the financial area conceptualize the entrepreneurial decision as a particular case of real business investment. Investment is usually a macro concept, studied at integrated level: in elementary macroeconomic models, the private investment flow plays a

crucial role in connecting real markets and monetary markets. Aggregate investment depends on individual firm's choice: since in orthodox neoclassical theories macroeconomics and microeconomics are not distinctly different disciplines, analyzing macroeconomic investment is analytically identical to analyzing microeconomic investment, because both theories describe profit maximizing behaviour of firms balancing their marginal costs and benefits.

If a firm can instantaneously and costlessly adjust its capital stock, then - as in Jorgenson (1963)'s seminal work - its decision about how much capital to use is a static decision where the marginal product of capital is equated to the user cost of capital. The investment literature, however, has emphasized the presence of two types of frictions: adjustment costs and irreversibility. The adjustment cost literature (e.g. Eisner and Strotz, 1963) assumes the adjustment cost function to be strictly convex and have a value of zero at zero investment. In the 1970s and 1980s, this literature merged with the literature on Tobin's *q* (Tobin, 1969), that is centred on the fact that the optimal rate of investment is an increasing function of the ratio of the firm's market value and the replacement cost of firm's capital. Mussa (1977) and Abel (1982) argued that the optimal rate of investment is the rate that equates the marginal adjustment cost to the marginal value of installed capital (marginal *q*).

On the other hand, the fact that investment might be irreversible represents another type of friction affecting the investment decision. Irreversibility makes investment especially sensitive to various form of risk, such as uncertainty over the future product prices and operating costs that determine cash flows, uncertainty over future interest rates, and uncertainty over the cost and timing of the investment itself. An investment is made a sunk cost by the fact that capital is firm or industry specific, so that it cannot be used productively elsewhere. Dixit (1989) investigates entry (and exit) decisions as forms of investment (and disinvestment) that occur in an environment characterized by uncertainty. Hysteresis, defined as the failure to reverse an effect when its causes have been reverted, is the main feature in this setup. Pyndick (1991) and Dixit and Pyndick (1994) emphasize the analogy between real and financial investment decisions and conceptualize the opportunity of making an irreversible investment as a call option on a stock that consists of the capital in place. Standard financial economics techniques are used to find the "price of the option" (i.e. the value of the entry opportunity for the firm) and the rule concerning the "optimal timing of exercising the option" (i.e. the optimal timing of entering) after which the option to enter is "killed": the investor gives up the possibility of waiting for new information that might influence the appeal of this investment itself. Performing an irreversible investment in the creation of a new firm when payoffs are stochastic means sacrificing the option to invest in the future: to maximize profits, therefore, one must balance the profits foregone by delaying entry against the option value relinquished when entry

has occurred (Lambrecht and Perraudin, 2003). This might imply that the optimal entry timing turns to occur later than the first date when the present discounted value of future cash flow exceeds zero. Intuition suggests that an idle firm will enter when demand condition become sufficiently favourable, and an active firm will abandon when they become sufficiently adverse. Dixit (1989) shows that the optimal strategy for this kind of investment and abandonment will take the form of two threshold prices. In most real-world situations, the demand and cost conditions a firm faces change all the time, and the firm must make its entry and exit decisions taking into account that the future is uncertain.

Thus, according to this approach, it's the information that entrepreneurs can acquire by observing an uncertain environment – like price reflecting demand or supply conditions - that turns to be crucial as entrepreneurial decision's determinant and stimulate it in a specific moment. Thus, when the entrepreneurial decision is explicitly analysed, and framed as investment decision, contextual factors play a major role. The next section will show how motivational factors might become crucial when the entrepreneurial decision is perceived as a career choice.

6. The entrepreneurial decision as a "self-employment" decision

Literature in labour economics has devoted a lot of effort in investigating the entrepreneurial decision, that has been conceptualized as "self-employment". Since Osborne (1976), these works have depicted the entrepreneurship decision as involving the choice between two income streams: a rational individual can decide to accept a wage position earning a certain amount of money per year, or go into business with the anticipation of receiving a share of profits.

According to the definition prevailing in labour-market statistics, self-employment does not correspond exactly to entrepreneurship because self-employed are not necessarily innovative entrepreneurs pursuing growth enhancing business projects. However, the two phenomena can be considered equivalent with a good level of approximation: also the literature exhibits some overlapping.

The proliferation of econometric works investigating the determinants of self-employment has been motivated by the sharp increase in self-employment that occurred in Europe, in the United States and in Canada in the Seventies and Eighties, after a downward trend that had persistently characterized the period 1910-1970 (Fairlie and Meyer, 2000). This stylized fact strongly suggests that a change of fundamental nature had occurred in the advanced industrial economies that made self-employment more attractive.

Possible explanations have initially concerned: the presence of changes in an industrial structure that previously had bolstered industries in which small firms were viable and scale economies relatively unimportant; prices shifts in favour of industries where self-employment was relatively common; rising marginal tax rates in a context where the ease of underreporting income is higher for self-employment; increased wage rigidity that rationed a proportion of paid workers out of wage jobs; rising real retirement benefits that allowed to obtain higher flexibility and "partially retire". Among these, Blau (1987) shows empirically that changes in industrial structure and technology are the most important determinants of the rising of self-employment. Parker (1996) summarizes the explanations of this fact into two categories. The first views self-employment as the outcome of adverse conditions in the paid employment sector ("recession push" theories). In contrast, scholars may emphasize the presence of pull factors in the supply side of the economy: lower tax rates, greater ease of hiring and firing and "rejuvenated entrepreneurial spirit" (Hughes, 1992). Both push and pull theories emphasize the returns from self-employment as being of central importance.

Hamilton (2000) tried to classify models explaining the self-employment choice that were based on the assumption of wealth maximization in three categories. First, investment and agency models (e.g. Lazear, 1981; Lazear and Moore, 1984) claim that self-employment differentials derive from differences in earning profiles across sectors. While the expected present value of self-employment income is equal to the paid employment alternative for the marginal worker, a cross-sectional earning differential may exist as a result of sectoral differences in earnings or in the experience profile due to the patterns of career earnings' growth in paid and self-employment. The investment model argues that the self-employment earning profile will be steeper than those in paid employment because human and capital investment are not shared with an employer in self-employment. On the contrary, agency models explain paid employment's steeper earning profiles referring to the need of discourage shirking since agency problems are not present in self-employment.

Second, matching and learning models (e.g. Roy, 1951; Jovanovic, 1982) emphasize that earning differences arise from differences in sector-specific abilities. Individuals have unobserved, time-invariant, sector-specific abilities and human capital: earning differential therefore may reflect selection effects that cause workers choose the sector where they have a relative advantage (individuals may understand immediately which sector they have to match with or, due to uncertainty, they may need a certain time to learn it), and low-ability entrepreneurs are expected to drop out of self-employment.

Finally, "superstar" theory (Rosen, 1981) argues that the comparison between self-employment and paid work can be significantly influenced by a handful of high income

entrepreneurial superstars. Small differences in skills might be magnified into large disparities in returns in labour market characterized by imperfect substitution among different sellers and in which the costs of production do not rise in the same proportion of the size of a seller's market. MacDonald (1988) demonstrates that, as in the learning models, workers who realize they are not "rising stars" tend to return to paid employment.

However, expected monetary earnings can turn to be insufficient to explain self-employment. As Hamilton (2000) emphasizes, differences in non-pecuniary aspects may lead to compensating earning effects for equally productive workers. A popular view is that entrepreneurship offers a higher level of freedom in the work environment, that can be translated into the possibility of being "one's own boss". Evans and Leighton (1989) show that individuals preferring higher autonomy are more likely to become self-employed. Conversely, Kanbur (1982) emphasizes the role of risk-aversion in the self-employment decision: business owners may earn a risk premium because of the higher uncertainty in their earnings. Risks may have a temporal structure, so that the entrepreneurial decision is influenced by impatience levels: by entering a risky activity an agent can acquire information about his ability, which is useful for future occupational choice. In equilibrium, risk-taking has the characteristics of postponed gain relative to the safe alternative, so that in environment with lower time rates of discount more risk taking activities will be observed.

Still drawing upon Knight (1921)'s notion that individuals respond to risk-adjusted relative earnings, Rees and Shah (1986) carry out an exhaustive empirical work in the aim of shading further light on the binary choice between self-employment and paid work. Self-employment is generally regarded as being more risky since, on average, the coefficient of variation of self-employment earnings is over three times that for paid-employed earnings. Another important determinant, however, is given by the nature of the work involved. The attractions of self-employment are the flexibility and the independence entailed; on the other hand, self-employment usually implies a larger number of working hours and a higher level of responsibility, so that it can be mentally and physically more demanding. Moreover, education affects the choice primarily by reducing the coefficient of variation in self-employment earnings: in fact, education serves as a filter such that the more educated are more likely to be uniform in their abilities; furthermore, they tend to be better informed, implying an higher efficiency when assessing self-employment opportunities. Concerning the influence of age, data show that there exists a tendency for employees to switch to self-employment towards the end of their working life as an alternative to retirement (Quinn, 1980); however, the old can be less likely to take risk than the young. Health is expected to affect elf-employment trough work

characteristics: the longer hours and the higher responsibility imply that the less healthy might find the self-employment status too demanding.

A peculiar distinction is proposed by Kuhn and Schuetze (2001), who investigated the reasons why self-employment had risen dramatically in Canada in the period 1982-1998. Using data on flows (not on stocks) that provided cues on the causes of changes, they found out a gender effect in the entrepreneurial choice. In fact, men's increase in self-employment is associated with a decrease in permanence with high jobs, whereas women's increase is related to higher survival rates in self-employment. Their results also emphasized the fact that general labour market conditions play a more relevant role in explaining the changes in women and men's transition probabilities than changes in observable demographic conditions, such as age, education, and immigration.

Another occupational choice story is the one suggested by Jovanovic (1979), who sustains the idea that age is a crucial determinant because individuals tend to try riskier occupations such as entrepreneurship when they are younger. However, entrepreneurship may not be a feasible option for younger people because they have had less time to build the capital needed to start a business. This liquidity constraint, together with other significant categories of internal and external limitations that may affect the entrepreneurial decision, will be discussed in depth in the following section.

Summing up, theories in labour economics frame the entrepreneurial choice as a career choice, and this argument has heavy implications in terms of the attention that is devoted to motivational aspects of the decision. The interest in personal characteristics recalls the idea of the importance of personal traits in entrepreneurship theory, but here personality features are interpreted more explicitly as engines of entrepreneurial choice and involve more complex considerations than what follows from considering the entrepreneurial choice as a form of investment.

7. Constraints affecting the entrepreneurial decision

After examining how different strands of literature have conceptualized the entrepreneurial decision, and which determinants have been identified as crucial across the selected approaches, we need to pay attention to the constraints that might limit entrepreneurs' in making their own choice. These constraints can concern the availability of (financial) assets and the external and institutional environment, in terms of policies, reforms, or geographical localization.

Our discussion about the limitations to the entrepreneurial choice starts from a stylized fact. The International Social Survey Program of 1999 revealed that a large proportion of individuals

(more that 50% on average across countries) express an apparent preference for being an entrepreneur instead of being an employee: however, the actual proportion of self-employed people in the same countries is approximately 15%. So, why such a large fraction of workers do not follow their apparent desire to run their own business?

Theoretical literature (e.g. Stiglitz and Weiss, 1988) explains how credit rationing can emerge even in a world where agents are optimizing. Consequently, many econometric studies have tested the hypothesis that capital market constraints may be an important determinant of the decision to become an entrepreneur: some initial capital is required for establishing the new firm and perspective entrepreneurs are price-takers in the credit market, so that the possibility to obtain capital, and then to become entrepreneur, depends not only on a vector of personal attributes (affecting the utility achieved when the individual is a wage earner or self-employed) but also on an individual's asset. Blanchflower and Oswald (1990) try to give reason to the previous puzzle by investigating the factors that might be important in determining who becomes entrepreneur: studying British data, they find out that a crucial impediment is lack of capital. Evidence about gifts and inheritances shows that individuals who have received a sum of money are more likely to run their own business. Analogously, Lindh and Ohisson (1996) exploit Swedish micro-data to investigate the positive effect of a windfall gain such as a lottery winning or an inheritance on the probability of becoming self-employed. Similarly, Holtz-Eakin, Joulfain and Rosen (1994) use the receipt of an inheritance as a "natural experiment" to evaluate potential entrepreneurs' behaviour when a lump sum of capital is received: if owning a significant stock of capital is important to establish an enterprise, individuals who received an inheritance are expected to have a higher probability to start a new business. Their results show that the size of inheritance affects significantly the likeliness of becoming an entrepreneur and the amount of capital employed in the new enterprise.

Recent family business literature (e.g. Romano, Tanewski and Smyrnios, 2000) points out that firms' owner financing decisions are crucially influenced by the firm owner's attitudes towards the utility of debt as a form of funding, that however is moderated by external environmental conditions. Small family business and owners who do not have formal planning processes in place tend to rely on family loans as a source of support: this finding can be explained referring to Sonnenfeld and Spence (1989)'s idea that family business owners are averse to debt and by the possibility of large losses in case of loan failure. Small family firms' reliance on family loans and debt might be related to owners' interest in retaining control and choosing to establish limits on gearing because of risk factors and belief that stock exchange might be disadvantageous. However, Mullins and Forlani (2005) show that "entrepreneurs are more prone to choose new ventures that have higher likelihood of loss when the venture is

funded with other people's money": the use of other people's money can make entrepreneurs more likely to choose more uncertain ventures.

Dunn and Holtz-Eakin (2000) emphasize the importance of intergenerational links not only from a financial point of view: parents transmit their offsprings valuable work experience, reputation, and other components of human capital in general. In this flavour, Lentz and Laband (1990) show that the probability that a young man is self-employed is significantly higher when his father is self-employed.

Entrepreneurship research has paid little attention to the context (especially in terms of institutions and of the policies implemented) in which new business are started. As firm's ownership is significant in accounting for aggregate wealth accumulation and distribution (Gentry and Hubbard, 1999; Quadrini, 1999), the entrepreneurial decision turns out to be significantly constrained by the specific tax policy selected (Gentry and Hubbard, 2000). Whereas a proportional tax with a full loss offset does not influence the entrepreneurial decision when the entrepreneur is a risk-neutral individual, a progressive tax with an imperfect loss offset might discourage entry: higher convexity on tax schedule, in fact, raises the tax burden.

Tan (2004) develops a stage model to examine how changes in organizational environment can affect the decision to become an entrepreneur. The turbulent but uninterrupted transition that occurred in China from 1978 to 2002 provided a unique opportunity to verify that business environment became more conducive to entrepreneurial activity. Socio-political continuity across the transition allowed entrepreneurs to move along the learning curve gradually and raise entrepreneurs' commitments in risk-taking and innovation. This study shows how gradual reforms can be politically preferred to dramatic reforms in determining entrepreneurs' willingness to commit to future growth and make more innovative and risk-oriented decisions.

Similarly, Minniti (2004) emphasizes the important role played by institutions and argues that entrepreneurial behaviour and entrepreneurship rate may depend less on individuals' characteristics and more on relationships among individuals, that are regulated by institutions themselves. Political and institutional settings are more conductive to the entrepreneurial choice when they succeed in producing a jump strong enough to push the community in the desired direction; moreover, institutions and routines are difficult to modify in time and the entrepreneurial attitude is contingent on the history of the considered community.

In another recent study, Minniti (2005) investigates the reasons why entrepreneurship flourishes in some reasons and not in others: the Silicon Valley, Boston's Route 128, BadenWurttemberg and Emilia-Romagna (Italian districts) are just a few examples of the fact that entrepreneurial activity tends to cluster geographically. Local social environment is crucial to understand the determinants of the entrepreneurial decision (Aldrich and Fiol, 1994;

Granovetter, 1985). As an entrepreneurial venture requires the introduction of innovation and the handling of multiple tasks in an ambiguous environment (March and Olsen, 1976), potential entrepreneurs benefit of the observation of other entrepreneurs through which they can acquire information and skills, for instance concerning how to find competent employees, inputs, financial support, potential buyers an so on. Furthermore, the presence of a significant number of entrepreneurs legitimates their activity and enables them to exploit established routines. When making decision in an unknown environment, agents base their choices on "social cues"(Aldrich, 1999), and participation in social networks is a crucial element for entrepreneurs (Aldrich and Zimmer, 1986). As perceptions about the desirability of becoming entrepreneurs are formed on the basis of the available information set, the social network of an individuals turns to affect the part of that set that is collected locally. Minniti (2005) models this influence as a network externality in which entrepreneurship exhibits increasing returns with respect to adoption: entrepreneurship "creates a culture of itself that influences individual behaviour on its favour".

Another determinant of a region's vitality is represented by the presence of spin-offs (Klepper, 2002), i.e. firms that are founded by employees of incumbent firms in the same sector and area. In some industry, "spin-offs are legion" (Klepper and Thompson, 2005), and a possible explanation of this occurrence lies on the level of disagreement that may emerge within strongly hierarchical structures in decision making.

8. Discussion

The purpose of this paper consists of providing an integrated investigation of the determinants of the entrepreneurial decision. We claim that literature belonging to the entrepreneurship field may be insufficient to generate a comprehensive framework of this issue. The entrepreneurial decision can be conceived also as the entry of the firm leaded by the entrepreneur into an industry, as a peculiar form of real investment, as a career choice in favour of self-employment: the entrepreneurial phenomenon can be understood in its wholeness only taking into account all these contributions that have limits, but also might add fruitful insights. Thus, after discussing who is the entrepreneur and who he is not, different strands of literature within the economic approach have been reviewed. The determinants that each perspective identifies as crucial in affecting the entrepreneurial choice are obviously idiosyncratic to that perspective itself. Industrial organization assesses a crucial role to the industrial structure, whereas finance looks at the uncertain matching between market conditions, and labour economics focuses on individuals' evaluation of possible career patterns. The three

perspectives, however, present several nuances: a transversal analysis can be carried out in the aim of distinguishing between internal and contextual determinants of the entrepreneurial choice.

The literature explicitly related to entrepreneurship has been classified according to decision making criteria as well: in the aim of improving tractability, theories have been grouped on the basis of the fact that a part of them (the older ones) assign the entrepreneur only routine functions concerned with coordination, while the other attributes a non-ordinary role to the entrepreneur, who should exhibit peculiar personal traits linked to his preferences or inferential skills. The former group sheds light on the contextual determinants of the entrepreneur's choice: the entrepreneurial decision is stimulated by the entrepreneur's expectation of maximizing wealth in dependence of the possibility of optimally allocating resources; the latter focuses on the characteristics of the "entrepreneurial type" and consequently on internal aspects. The synthesis operated by scholars like Casson in shifting the accent on the relationship between agents' incomplete information and market opportunities allows to account for both demand and supply of entrepreneurship.

Conversely, the industrial organization literature stresses the importance of studying the entrepreneurial decision starting from the features of a specific industry in a definite moment of its evolution. There emerges a demand of entrepreneurial services in dependence of the level of profit opportunities and entry barriers, the peculiar technological regime that describes that industry, the stage of the industry life cycle and the degree of uncertainty disclosure in that moment. More recent contributions have been enriched with the investigation of the internal characteristics of entrepreneurs, especially in terms of the cognitive biases that may drive the entry decision, often against the dictates of a fully rational behaviour.

Contextual determinants play a major role also in the financial approach, that looks at the entrepreneurial choice within the real business investment framework. Entrepreneurs make their decisions on the basis of the signals deriving from indicators of market condition.

Finally, we have examined the way how labour market models conceive the entrepreneurial decision. When reasoning about their career, individuals both consider internal and external factors. Industrial structure (in terms of the possibilities of exploiting economies of scale or not, the occurrence of price shifts, the movements in tax rate and the condition of flexibility of wages) has been traditionally identified as a determinant of a choice in favour of self-employment. However, literature in labour economics emphasizes the need of going beyond macroeconomic conditions and sectoral specific earnings when evaluating the form of employment selected: the analysis of internal factors provides interesting insights as it suggests

of looking at the need of flexibility and independence when deciding in favour of an entrepreneurial career.

Since the number of persons that actually become entrepreneurs is considerably lower that the amount of people who declare to wish to be self-employed, the analysis is completed with an enquiry concerning the constraints that may limit the entrepreneurial choice. The more relevant impact appears to be caused by financial constraints. However, also environmental conditions like the characteristics of institutions, policies and geographical localization play an important role.

9. Conclusions

The decision of becoming entrepreneur can be understood in all its components only if the perspective of analysis accounts for the alternative ways of conceiving it that the economic thought offers. The paper emphasizes the need of relating each characterization of the entrepreneurial decision within the circumstance where it takes place, and purposes a classification of this choice's determinants based on the distinctions between internal and contextual factors. Among the most relevant aspects shaping the entrepreneurial decision, we discuss the role of "internal determinants" like personal traits, biased perceptions of success, desire of independence and flexibility that shape the supply-side of the phenomenon. Conversely, "contextual determinants" are represented by market opportunities to earn profits, industry and timing specific structural features, presence of signals concerning market conditions, environmental contingences related to prices, taxes and wages. The final section is devoted to the constraints that may limit the action of the previously discussed determinants.

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