

ABSTRACT. This paper deals with the birth of new enterprises both from a theoretical and an empirical point of view. In the first part of the work, the conventional economic wisdom is compared with some alternative approaches leading to multicausal frameworks. The author tests their relative explanatory features in the second part of the paper. Elaborating the results of 720 questionnaires filled by new Italian entrepreneurs, the importance of economic variables as income expectations and barriers to entry in shaping the diffusion of new enterprises is confirmed. On the other hand, personal backgrounds and motivations as well as environment factors turn out to have a crucial role, too.

1. Introduction

The goal of this paper is to deal with a phenomenon which can be considered crucial to economic development: the generation of new enterprises. In spite of its importance in real economic life and its crucial role in economic modelling, the birth of new firms has rarely been studied in depth by theoretical economists. More frequently, the entry of new firms is merely assumed to be a direct consequence of the presence of excess profits. In other words, actual entry in competition models or the threat of entry in oligopolistic and "price limit" models are simply considered characteristics of the economic environment and thus do not merit an explanation in themselves.

In Section Two the conventional view assumed in most of the current economic models will be compared with some more complete approaches. If the latter are taken into account, the question of

new firm entry — far from being only an effect of increasing expected profits — becomes a much more complex matter. Rival theories stress the importance of different factors able to explain new firm formation and open the way to empirical approaches devoted to testing the explanatory power of different determinants in the causes of the generation of new enterprises. In Section Two some empirical tests are compared and discussion is focused both on methodological issues and the relevance of the results obtained from these estimates.

This paper is indeed based on a more direct approach to studying the determinants of the foundation of new firms: employing the largest sample ever used in Italian studies on this subject, founders have been asked directly about the reasons which led them to start a new independent activity. In Section Three the characteristics and the methodology of our questionnaire analysis are described while Section Four is devoted to a discussion of the outcomes of the research.

The general hypothesis of this study is that conventional "pull factors" underlined by theoretical models are insufficient in explaining new firm formation. Far from denying their importance, our results stress the necessity of taking into account "push factors", as well. This outcome is largely consistent with the approach of recent applied studies in industrial organization (surveyed in Section Two).

A more specific aim of the paper concerns the appraisal of the relative explanatory powers of the different variables put forward by these more complete models. Some relationships are decisively confirmed by our results, while others are not. In the concluding Section Five, consistencies and inconsistencies with regard to previous literature will be singled out in detail. Finally, the questionnaire analysis offers an opportunity to shed light on some sociological and psychological motivations.

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2. Previous studies: Models and econometric tests

The cornerstone of economic theory is still the traditional competitive model. In this framework, the equalization of the sector price with the minimum long run average cost is assumed by the free entry of new firms into the sector. If excess profits occur (caused by an increase in demand or by a cost-saving innovation or by a differentiation of products, etc.), additional agents are attracted into the market. This concourse of firms causes an increase in supply, a decrease in the price of goods and finally the elimination of excess profits (see Varian, 1984). In this view, a queue of well-informed entrepreneurs is assumed to be waiting outside the market. When the possibility of profits above the average occurs in one of the markets, these entrepreneurs are immediately informed and they enter the sector. The current level of profit (or the expectations of future profits) is the "trigger" factor of the whole process. The entry is "pulled" by market conditions and no subjective or environmental factor is investigated. Localization models are very similar to the competitive ones in describing the distribution of firms in a linear or circular space (see, for instance, Salop, 1979). Also in this case entry is driven only by profit conditions.

In more sophisticated models the maximization of expected profits takes into account barriers to entry which hinder the free concourse of firms into a specific market. Since the seminal works of Bain (1956) and Sylos Labini (1956), consideration of these factors, which do not permit entirely free competition, has made theoretical analyses more realistic. Thus, oligopolistic models compound now different forms of barriers to entry (financing costs, minimum efficient size of the plant, promotion costs, patent protection, etc.) and can be developed in more accurate models with "strategic barriers to entry" (see Tirole, 1989, Ch. 8).

However, both "price limit" models and strategic models put forward with the help of game and supergame theories are still concerned with the "pull" factors affecting the potential entrepreneurs. The latter are attracted (excess profits) or deterred (barriers to entry) in relation to the market conditions and the strategic behaviour of

competitors. Of prime importance in these models are the internal objective conditions of the market known to everybody.

The conventional view of entry driven by expected profits and hindered by barriers to entry has been largely tested in econometric studies. Edwin Mansfield (1962) put forward a regression comprising profits and the cost of capital needed to reach the "minimum efficient size" as a proxy of the barriers to entry. Coefficients showed the expected signs, a degree of significance of 5% and a correlation coefficient of $R = 0.70$. On the other hand, the R coefficient is rather low and — more importantly — estimated values showed a high degree of dispersion around actual values, suggesting the lack of some other explanatory variables (see below the discussion about the "push" factors).

The relative importance of different barriers to entry has also been singled out. Orr (1974) found negative and significant coefficients relating the rate of entry with: (a) initial capital requirements; (b) minimum efficient size; (c) high degree of industry concentration; (d) advertisement expenditures. Less significant were the negative correlations with (e) R&D expenditures; and (f) the degree of risk characterizing the sector. More recently, other studies based on Canadian data (Gorecki, 1976; Baldwin and Gorecki, 1987; Khemani and Shapiro, 1986) turned out to be consistent with the six Orr results mentioned above with the additional specification of the presence of multiplant operations as an effective deterrent to entry (see, in particular, Duetsch, 1984).

Moreover, these works not only confirmed the "pulling" function of profit expectations but also underlined the positive and significant correlation between entry and rate of growth within the industry. Thus actual opportunities attract new firms but potentialities are crucial, as well.

As a complement of the simplified view of entry discussed so far, a different tradition can be singled out in the history of economic thought: namely, Schumpeter (1912) and Knight (1921) underlined the subjective qualities of the founder of a new firm. Their well known definitions of entrepreneurship can lead to the proposing of a more general framework where the objective

conditions of the market are studied together with some "push" factors concerning the environment and the subjective condition of the potential founder.

The first complete contribution in this direction was put forward by Oxenfeldt (1943) in a seminal book dealing with those determinants of the birth of new firms which are the ingredients of modern studies in industrial organization. These researches try to take into account other factors as well as profit expectations and barriers to entry. Following a terminology introduced by Kilby (1971), these studies address both the "demand for entrepreneurship" (pull factors) and the "supply of entrepreneurship" (push factors). The former have been discussed in the first part of this section, attention will now be turned towards push factors. Recent contributions can be classified according to the following taxonomy.

A. Background factors

According to the results of the surveys carried out in the outstanding contributions of Storey (1982) and Johnson (1986), the founder of a new enterprise is strictly linked to his own background, with particular reference to his previous job experience. Far from the universal choice that characterizes theoretical models, entrepreneurial action is relatively constrained. Instead of looking around to seek the most profitable opportunity, the potential entrepreneur concentrates his attention on a familiar sector (60% of new founders emerge from the same sector, according to Storey, 1982) and generally in a familiar geographical area. His view is limited by previous job experience where the potential founder acquired his technical and managerial capabilities. According to this view, managers have a higher incentive to start an independent activity because of their keener organizational capabilities in comparison with blue-collar workers. (In Johnson (1986) 52.5% of founders were involved in previous managerial or supervisory functions.)

Moreover, educational and family backgrounds are underlined as key factors by econometric tests devoted to explaining new firm formation as an act of self-employment. Particularly, higher education and the presence of family traditions in the field of

entrepreneurship correspond to an higher probability of choosing a self-employment activity (Evans and Leighton, 1989; de Wit and van Winden, 1989).

B. Incubator factors

While related to the previous argument, this view underlines the importance of the environmental factors which can facilitate the emergence of new firms. It has been argued that the presence of a small firm network can be an effective incubator for new entrepreneurs because of easier opportunities to acquire a general management capability within a small firm. More generally, the presence of an "industrial district" (Brusco, 1986; Garofoli, 1990) with its "external economies" — according to Marshall's terminology — may be an important push factor in stimulating the creation of new enterprises. In addition, the existence of a particular "flexible specialization" in a specific geographical area can involve multiplicative effects (Piore and Sabel, 1984).

From an econometric point of view, different studies have taken into account the influence of the presence of a well established network of small firms (Gudgin, 1978; Cathcart and Johnson, 1979; Storey, 1982; Storey and Johnson, 1987). Generally, the positive correlation between the birth of new firms and the presence of small firms has been confirmed in cross sectional analyses. Indeed, the discovered relationship can simply disguise the presence of low barriers to entry which leads to a large presence of small enterprises. Thus, these regressions are distorted by sectoral characteristics and they may reflect the conventional negative link between entry and an industry's barriers. On the other hand, the simple addition of another regressor approximating the barriers to entry involves even worse problems of multicollinearity. The way out of the problem is to test cross-country equations, that is to study the same sectors in different areas characterized by different diffusion of small firms. Adopting this kind of approach Storey also finds a confirmation of the relation supposed by the theory (Storey, 1982, p. 68).

More rare are the econometric contributions about the influence of sectoral and regional

specialization on birth rates; as far as the Italian case is concerned, Revelli and Tenga (1989) and Garofoli (1990) found out positive and significant correlations between regional specialization and local new firm formation.

C. The "self employment" choice

Put forward, once again, by Oxenfeldt (1943), the theory of self employment has recently experienced a revival (Johnson, 1981; Storey, 1982; Blau, 1987). This theory tries to combine pull and push factors with regard to the income choice of the potential founder. This has to compare his present income and perspectives as employee and the expected income from the independent activity; if this difference is more than a given threshold the new firm will be founded. So, in this model profit expectations become a comparative variable and the subjective situation of the entrepreneur is directly taken into account. In addition, the self employment approach can explain some situations where choice of an independent activity is induced by unemployment or threat of unemployment (the surveys by Johnson (1986) and Storey and Jones (1987) discovered a percentage of founders previously unemployed varying between 25% and 50%).

Creedy and Johnson (1983) put forward a clear specification of the income choice supposed by the self employment theoretical models. In their estimation coefficients are positive or negative as expected and significant while regression presents a satisfactory value of *R*-squared (0.791).

More recently, Storey and Jones (1987) discovered a positive relationship between job losses and creation of new enterprises which turned out to be much more significant than the relationship between profits and entry rates. Finally, Evans and Leighton (1990) put forward estimated results where the choice of self-employment turns out to be more likely when previous job experience has been characterized by either low wages, or frequent changes of job (uncertainty about perspectives as employee) or unemployment. These results are consistent with the "opportunistic scenario" proposed by Highfield and Smiley (1986): the authors found some evidence for a counter-cyclical feature of new firm formation.

3. Data and sample characteristics

The questionnaire analysis concerned the strongly industrialized province of Milan and was carried out in early 1988. The identification of sample and data conformed to the following steps:

1. Only entirely new firms were singled out in order to avoid mispecification of the entry phenomenon which has to be studied separately from diversification and merger activities.
2. These firms belonged to 22 manufacturing sectors and to the sector of services directed to production (financing, insurance, software houses, etc.) according to ISTAT classification.
3. Two sub-periods (1977–79 and 1982–84) were chosen with the aim of avoiding distortions due to the economic cycle.
4. With the help of the local Chamber of Commerce's data files, 15,000 firms founded in 1977–79 and 1982–84 were randomly selected. The original sample composition reflected sectoral and size composition of the actual population and was equally weighted over the two periods.
5. The 15,000 firms (about 42% of the population of firms created in the two periods) were sent mail questionnaires; about 500 of them answered completely fulfilling the questionnaire. The original symmetry in the relative composition of population and sample was obviously compromised at the end of this step.
6. Direct interviews were put forward in order to reportion the sample according to the temporal and sectoral percentages characterizing the population. This procedure stopped where the differences between these percentages were considered reasonably low.
7. At the end, a sample of 720 firms was obtained, 568 of which belonged to the manufacturing sectors. The final composition of the sample turned out to be slightly distorted in favour of the more recent subperiod (56%); it represented 5% of the original sample (response rate) and about 2% of the actual population.

The 720 questionnaires were completely filled out and they represent the largest questionnaire data base existing in Italy on the topic of the establishment of new firms.

The random selection of new firms led to an important qualification of the sample. Given the very fragmented industrial structure in the province of Milan and the dominant presence of individual and small firms in the process of new entry, the sample showed a strong bias towards the very small dimension: 87.5% of the sample concerns firms with fewer than 5 employees at the birth date, 10.2% firms with fewer than 19 employees, 1.6% firms with fewer than 49 employees, and only 0.7% firms with more than 50 employees.

As Acs and Audretsch (1989a and 1989b) have correctly pointed out, determinants in the generation of new enterprises can be different if we look at either small or big firms. Assuming a looser definition of what constitutes a small firm (fewer than 500 employees) the two authors found out the following econometric relationships (in comparison with the general results discussed in the previous section): (1) a significant correlation with the industrial rate of growth but not with the rate of profit; small firms seem to be more attracted by sub-market niches rather than by average profitability (see also MacDonald, 1986); (2) a significant negative correlation with some barriers to entry (R&D expenditures, degree of industrial concentration), a weaker correlation with some other barriers (initial capital requirements, advertisement expenditures).

The final part of this section will briefly deal with the general features of the questionnaire sent to the recently generated firms.

Although necessarily simplified in order to facilitate the understanding of the entrepreneur interviewed, questions were chosen to cover most of the theoretical issues discussed in the previous section. As far as "pull" determinants are concerned, questions tried to specify in detail both the attractive power of profits and growth opportunities and the more insuperable barriers to entry (financial or marketing or innovation drawbacks).

Looking at the background factors (see Section 2.A), founders were asked about their previous position in the workforce and their qualifications in order to test the theoretical hypotheses concerning "sectoral inertia" and the better incubator performance of managerial experience. Educational and family backgrounds were also investigated.

Turning attention to the "incubator factors" (see Section 2.B), founders were asked about the dimensions of the firm of their previous employer and about the persistence of relationships with the previous firm (network externalities). With regard to the validity of the self-employment framework (see Section 2.C) some tentative indicators can be deduced by the answers concerning previous position in the workforce.

Finally — in addition to collecting some empirical results with regard to theoretical relationships — the questionnaire tried to take into account other social or psychological determinants which push the potential founder to create a new firm.

4. Pull and push factors: Determinants and motivations

This section will be devoted to discussing the results of the research, following the theoretical stimuli surveyed in Section Two and finally discussing extra-economic motivations.

Aspiration to a higher income — underlined by conventional and self-employment models — is confirmed to be a powerful determinant of the foundation of a new firm; 47.1% of entrepreneurs interviewed indicate the desire for a higher income as a determinant of the choice to start an independent activity. More precisely, the opportunity to get extra income is deduced from favourable demand expectations rather than factors affecting the supply conditions. On the one hand 50.2% claim to have been attracted by the supposed existence of a market niche and 44.3% from an unsatisfied demand; on the other hand only a minority think that profit opportunities are correlated with supply factors as the possibility to apply a technical innovation (20.7%) or to exploit a favourable localization (18.4%) or a splitting off from the parent company (17.7%), see Table I.

In other words, the answers permit a specification of the most important pull factor — income expectations — as a determinant mainly linked with demand conditions and growth potentialities. Hence — as Acs and Audretsch (1989a, p. 262) stated — small firms turn out to be attracted by particular market opportunities and commercial niches.

As far as barriers to entry are concerned, our

TABLE I
Economic determinants

Supposed existence of a market niche	50.2%
Supposed presence of an unsatisfied demand	44.3%
Opportunity to apply a technological innovation	20.7%
Favourable localization	18.4%
Split off from the parent company	17.7%
Financial opportunities	5.4%
Others	12.8%

Tables report all the alternatives offered to the founders interviewed: they could choose more than one answer (this also applies in Tables II and V).

questionnaire analysis confirms their important role as a hindrance to the birth of new firms. More specifically, financing problems appear to be the most powerful deterrents; this result is consistent with econometric estimates which put forward proxies of capital costs or stress the necessity for a minimum efficient size. On the other hand, skill shortage and organizational troubles seem to be as important as the financing difficulties (see Table II).

Therefore, policies devoted to facilitating the generation of new enterprises have to intervene: (1) on the credit side (87.5% of the sample relied on personal or family financing and only 18.5% on bank loans); (2) on the consultancy side in order to help the founder to organize each firm function and coordinate the functions with each other; (3) on the training of the labour force in order to control skill shortage. Finally, neither R&D (12.1%) nor advertising drawbacks (17.8%) turn

TABLE II
Main barriers to entry

Financing	46.4%
Skill shortage	40.3%
Institutional hindrances	19.6%
Need for external services	15.8%
Localization problems	12.3%
Organizational troubles in	
administration	18.6%
production	17.9%
marketing	17.8%
R&D	12.1%
management	10.5%
Others	6.1%

out to be barriers to entry comparable to the financial constraint (46.4%).

In summary, income expectations as well as tangible and intangible barriers to entry play an important role in explaining the entrance of new firms. On the other hand, according to the theoretical approaches sketched in Section Two, other factors merit consideration.

Concerning the importance of the founder's background, "sectoral inertia" is confirmed; 68.8% of entrepreneurs declare themselves to have come from the same sector. As we already noted above, this is an important refutation of ideal theoretical models. Founders are attracted by high profits but they do not consider all the possibilities offered by different markets; indeed they focus their attention on the familiar sector.

Most of the new entrepreneurs were employed in the firm of origin as dependent workmen (68.0%), while only 24.4% were independent professionals and 6.8% started as entrepreneurs. As stated by other empirical studies, managerial background seems to be a better training for future independent activity (see Table III).

TABLE III
Qualifications in the previous dependent job

Clerk	30.5%
Director	24.9%
Skilled workman	21.8%
Foreman	6.6%
Workman	6.1%
Technician	4.2%
Others	5.9%

As far as educational and family backgrounds are concerned, founders show a degree of education higher than the average: 62.4% have a diploma or graduated (respectively, corresponding to 13 and 17 years of education in the Italian school system). On the other hand, only 14.1% of the founders included family tradition among the motivations of the entrepreneurial choice.

Our research confirms the importance of personal as well as environmental background; Table IV shows empirical evidence of the crucial role played by small firms in "bringing out" new entrepreneurs.

Some evidence about the opportunities of spe-

TABLE IV
Dimension of the firm of origin

0-9	employees	30.9%
10-19	"	16.2%
20-49	"	11.1%
50-99	"	9.7%
100-499	"	13.0%
> 500	"	19.1%

cialization and network externalities is given by the rate of founders who kept productive or commercial links with the parent firm (15%).

To verify the self employment model is more difficult and our results appear to be controversial.

The correlation between unemployment and creation of new firms is disproved by our data: only 0.8% declare themselves to have been unemployed in the period before starting the new activity. However, this fact is not sufficient to deny the validity of the theory of self-employment. In fact, the actual condition of unemployment is not necessary to induce the choice of an independent activity; as discussed in Section Two, the threat of unemployment or perhaps mere concern about the future possibility of keeping one's job can be sufficient. Indeed, only 78.2% of interviewees declared they deliberately interrupted their previous job experience. This result, apparently in contrast to the absence of correlation between unemployment and foundations, can be interpreted in the light of previous considerations. Thus, our results do not strongly contradict the self-employment theory, but suggest rather the necessity of taking into account more flexible theoretical formulations instead of putting forward a rigid correlation between unemployment and the birth of new enterprises. Just the fear of a recession or concern about job security can induce "escape from unemployment".

So far theoretical relationships have been discussed; now attention will be turned to extra-economic motivations neglected by pure theory and econometric tests because of their "qualitative" nature. In Table V some of these push factors are reported.

The most powerful personal aspiration is to be independent; almost 80% of the sample consider this factor an important determinant of their entrepreneurial choice. Very important too is the

TABLE V
Personal motivations

Desire to be independent	78.9%
Better exploitation of own technical capabilities	53.6%
Aspiration to a higher income	47.1%
Better exploitation of own managerial capabilities	36.6%
Better exploitation of own commercial capabilities	31.3%
Family tradition	14.1%
Others	7.9%

desire to turn to use one's own technical and managerial capabilities. These personal motivations appear to be more deep seated among former manual workers rather than in former clerks or managers, who are more concerned about economic opportunities. At any rate, the relevance of these psychological and social factors is obvious and theory has to take them into account. For instance, some situations can be imagined where personal aspirations are so strong as to push the creation of new firms in spite of the absence of economic attractors. On the other hand, good economic conditions may be insufficient to guarantee the development of new activities because of low levels of motivation. Therefore economic policy has to adopt complete explanatory schemes in order to stimulate entrepreneurship.

As a last stage of our inquiry, the relationship between the birth of new firms and innovative activity was investigated. A broad definition of innovation was adopted, including the application and development of new products or new processes tested and patented elsewhere. Notwithstanding this broad definition, Schumpeterian entrepreneurs are a minority; 20.7% of the founders declare technological opportunities as determinants of their choice and a similar percentage (20.3%) of the newly created firms has been particularly dynamic in the introduction of process innovations. Therefore to speculate any correlation between the creation of new firms and economic and technological development seems to be, at the least, rather risky.

5. Principal findings and conclusions

The questionnaire analysis, the results of which have been presented above, is a further confirmation in favour of multicausal explanatory frame-

works. As we have seen, "pull" determinants are crucial in explaining the birth of new firms but they are not sufficient to give account of the entire phenomenon.

"Push" factors concerning personal and environmental backgrounds as well as psychological motivations turn out to be variables of high explanatory power in the generation of new firms. To be more specific, the results of this study can be summarized in the following statements:

1. Income expectations are confirmed to be an important determinant of the foundation of firms. Particularly, income opportunities are related to the presence of market niches and the opportunity of growth in demand.
2. Barriers to entry do matter for small firms. In comparison with other studies, financial constraint is confirmed as a powerful hindrance, whilst advertisement and R&D drawbacks appear to be only complementary problems. In addition, skill shortage and other organizational troubles emerge as important difficulties in the early stages of a firm's "life cycle".
3. Turning attention to "push" factors, "sectoral inertia" and superiority of managerial background in determining self-employment choice are largely confirmed. Higher education increases the probability of becoming a new founder, whereas family tradition does not seem to be very important.
4. The role of small firms as more suitable incubators of new firms is confirmed. Network externalities with the parent firm, however, are not so crucial.
5. This research offers little support for self-employment models. Yet, it is true to say, the theoretical views which stress the uncertainty of the dependent-job perspective as a determinant of new firm formation are not rejected by this study.
6. Dealing with personal motivations and innovative attitude, the new founders are shown to be driven by a strong desire for independence and they do not reveal a strong propensity towards innovation.

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