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IN ITALIAN MANUFACTURING**

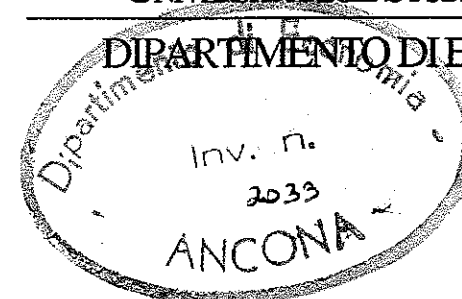
ALESSANDRO STERLACCHINI

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1. INTRODUCTION

This survey deals with the birth of new firms in Italian manufacturing, where the size of new entrants has been very small as compared with the size of existing firms. This peculiar process of small firm entry has characterised, in general, later developed countries (such as Italy, Spain, Greece and Portugal) and has been particularly intense during the 1970s and the 1980s.

The main argument developed in this paper is that small firm formation should be examined with the help of peculiar measures of entry and explained by means of specific determinants. The latter are fairly different from the explanatory variables employed in traditional entry models which, in fact, do not fit very well in the Italian case.

Section 2 analyses the main regional and industrial patterns of new firm formation in Italian manufacturing by using different rates of birth.

Section 3 briefly reviews the main determinants of new firm formation embodied in different models and contends that, in the presence of small firm entry, the most suitable approach is that of the income choice model.

Section 4 describes in details the income choice model of new firm formation and presents the results of two empirical applications carried out, respectively, across Italian manufacturing industries and Italian provinces.

Section 5 contains some concluding remarks and suggestions for further research.

2. REGIONAL AND INDUSTRIAL PATTERNS OF NEW FIRM FORMATION IN ITALY

In Italy, from the late 1960s to nowadays, the process of new firm formation has been mostly driven by small firms and has regarded the whole manufacturing sector albeit, in the earlier period, traditional consumer good industries recorded the highest rates of birth.

This peculiar pattern of small business starts and survival - examined in details by Brusco (1982), Fuà (1983), Contini and Revelli (1986) and, more recently, by Pyke, Becattini and Sengerberger (1990) - has been one of the main features of the Italian industrialization process. In fact, Italy shared with other later developed countries - like Spain, Greece and Portugal - two main structural characteristics: a large share of the population living in rural areas and a large proportion of productive activities carried out by small firms and self-employed workers (cf. Fuà, 1983, p. 355). These features, and in particular the second one, still characterise the Italian industrial structure especially in the Northeast and Central (henceforth NEC) regions.

In this section, by looking at the second half of the 1980s, I shall outline the main patterns of new firm formation across Italian macro regions and among some Italian manufacturing industries.

Table 1 shows the number of births and deaths of Italian manufacturing firms during the period 1986-90 and across the three macro regions labelled North-west, NEC and South. The same table also reports the average annual rates of birth and death and the net change rate in the number of firms. Such rates are computed as the number of firms born during a given year (or the number of firms that exited) divided by the number of existing manufacturing firms at the end of the previous year. Data

are taken from the National Institute of Social Security (INPS) which provides information on the population of newly and already established firms with at least one employee.

TABLE 1 - Births, Deaths, and Net Change in the number of Italian manufacturing firms - Period 1986-90.

	Births	Deaths	Net Change	Rate of Birth ^(a)	Rate of Death ^(b)	Net Change Rate ^(c)
North-west	46,420	39,788	6,632	7.88	6.76	1.13
NEC	65,024	52,650	12,374	8.98	7.26	1.71
South	29,879	25,387	4,492	9.60	8.19	1.41
ITALY	141,323	117,825	23,498	8.70	7.26	1.44

(a) = average annual ratio of newly established firms to existing firms (at the end of the previous year);

(b) = average annual ratio of firms that exited to existing firms (at the end of the previous year);

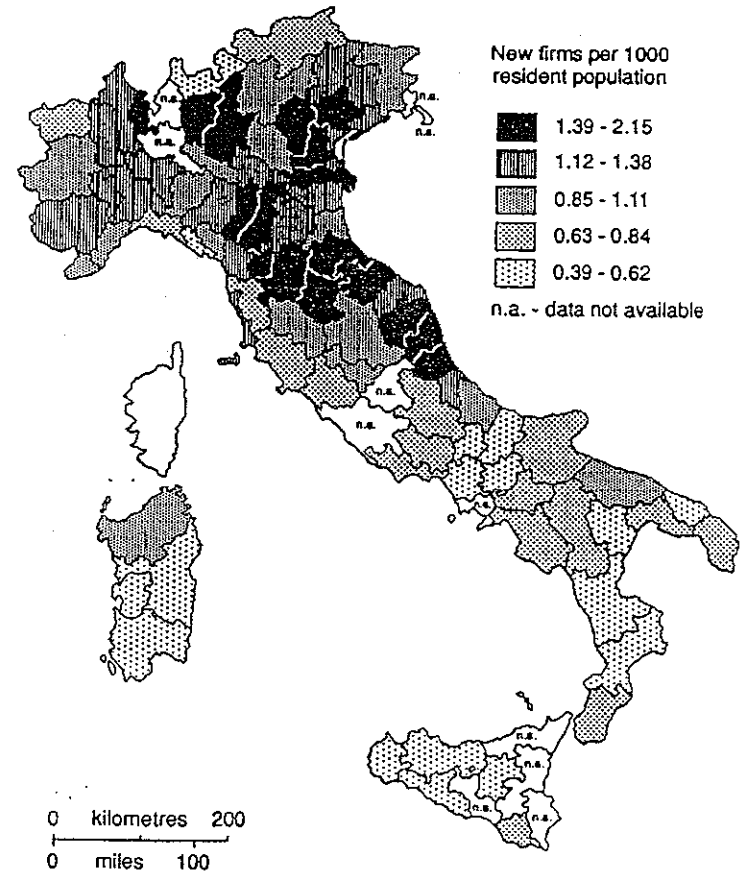
(c) = (a) - (b).

Source: own computations from INPS data.

During the period 1986-90, the joint process of new firm formation and firm closure has determined in Italy an increase of almost 24,000 manufacturing firms; more than 50 per cent of them are located in the NEC regions. In fact, the rate of new firm formation is higher in the South of Italy but the same regions have also experienced a higher rate of death or exit. North-western regions are instead characterised by lower rates either in terms of birth or death of manufacturing firms. As a consequence, looking at the net rate of new firm formation, the NEC regions appear to be the most dynamic ones.

However, as Garofoli (1992) points out, the method of calculating the rate of new firm formation on the basis of the ratio between new and existing manufacturing firms (considered in Table 1) or between new firms and the number of manufacturing employees yields results that do not change very much amongst the different macro regions. In effect, when the denominator of the ratio of new firm formation is very low - as it is for the southern regions of Italy - the value of the indicator will be high even in the presence of a few new business starts. As a consequence, for regional comparisons, it would be better to employ the number of working people or the total (resident) population as the denominator of the ratio.

By using this kind of ratio - that is the number of new manufacturing firms per 1,000 resident people - Garofoli¹ found that the large majority of the NEC Italian regions are characterised by the highest rates of new firm formation; in the North-west few provinces show similar birth rates while all the Southern regions record lower performances. Figure 1 effectively describes these regional patterns.



¹ The number of new firms used by Garofoli for the construction of Figure 1 are taken from the files of the Italian Chambers of Commerce and refer to the period 1987-89. These data are different from and, in some respects, less reliable than INPS data. The main points of strength and weakness of the two data sources are discussed in Santarelli and Sterlacchini (1994). In both cases, however, a new firm is simply recorded when it is inserted for the first time in the INPS files or in those of the Chambers of Commerce, so that the problem of distinguishing between wholly new firms and firms that diversify their activities by entering in new industries with new plants or through the acquisitions of existing plants is neglected. This distinction is particularly important for those industrialized countries - such as US and Canada - in which there is a strong presence of large diversified firms and has been considered by Gorecki (1975), Baldwin and Gorecki (1987) and Dunne, Roberts and Samuelson (1988). In a study applied to Scottish manufacturing, Hamilton (1985) has distinguished entrants between independent and dependent firms.

Figure 1- Regional variations in new manufacturing firm birth rates in Italy, 1987-1989. Source: Garofoli (1992)

With regard to the industrial characteristics of the birth process in Italian manufacturing, table 2 shows two alternative rates of births and the average size of both newly and already established firms among selected industries. These can be distinguished in two main groups: "traditional" consumer good industries (Basic Food; Sugar, Beverages & Tobacco; Footwear & Clothing; Wood & Furniture)² and "modern or advanced" capital good industries (Mechanical Engineering; Office Machinery & Computers; Electrical & Electronic Engineering).

TABLE 2 - Birth rates and relative size of newly established firms for selected Italian industries. Period 1986-90 (annual averages).

	Births/ Firms	Births/ Empl- yees	Size of Existing Firms	Size of New Firms	Relative Size of New Firms
Mechanical Engineering	7.32	0.40	18.17	6.22	0.34
Office Machinery & Computers	23.64	0.45	55.75	7.07	0.13
Electrical & Electronic Engineering	10.25	0.51	19.97	6.41	0.32
Basic Food	7.72	1.07	7.20	3.95	0.55
Sugar, Beverages & Tobacco	7.98	0.38	21.05	8.95	0.43
Footwear & Clothing	11.27	0.95	11.83	6.13	0.52
Wood & Furniture	7.22	1.06	6.81	3.21	0.47
TOTAL MANUFACTURING	8.70	0.63	13.87	5.47	0.39

Source: own computations from INPS data.

² A peculiar reason to select these "traditional" manufacturing activities is due to the fact that, within the ACE research project, the field studies carried out in Poland and Hungary refer to the same industries.

The latter group of industries should be characterised by higher barriers to entry mainly due to economies of scale and technology complexity. A rough proxy for the extent and the effectiveness of these barriers can be obtained by comparing the size of new firms with that of extant firms under the assumption that a low relative size of newly established firms is a consequence of high barriers to entry. The last column of table 1 provides such a measure and suggests that barriers to entry are indeed less effective in the case of traditional consumer good industries. As a consequence, one should expect higher rates of new firm formation in these latter industries and lower rates in those producing capital goods.

However, these expectations are not confirmed by the first column of table 1 showing the standard rate of entry - the number of new firms divided by the number of existing firms - for the different manufacturing industries. In effect, a high entry (or birth) rate is recorded by Office Machinery & Computers in particular, but also by Electrical & Electronic Engineering while, among consumer good industries, only Footwear & Clothing shows a similar performance.

Conversely, if one considers an alternative birth rate computed as the ratio of new manufacturing firms to manufacturing employees, the industry ranking changes in a way that is consistent with the "barriers to entry" hypothesis; in effect, the second column of table 1 shows that, apart from Sugar, Beverages & Tobacco, consumer good industries gain the top positions in terms of birth (or entry) rates.

What are the reasons of these discrepancies?

First of all, the second rate of new firm formation can be interpreted as the first (standard) rate divided by the average employment size of already established firms, that is

$$\frac{\text{new firms}}{\text{employees}} = \frac{\text{new firms}}{\text{existing firms}} : \frac{\text{employees}}{\text{existing firms}}$$

As a consequence, at a parity of the ratio between new and existing firms, the share of new manufacturing firms on manufacturing employees will be higher in industries dominated by firms with a lower employment size. In other words, the second indicator already embodies one of the most important structural characteristic of the market, i.e. the average size of existing firms, which is influenced - among other things - by the extent of barriers to entry due to economies of scale.

A second (and more complex) explanation refers to the peculiar patterns of small firm entry in Italian manufacturing. The traditional concept of entry implies that a new firm enters with a size sufficient to change the pre-entry market equilibrium (in terms of market shares, concentration level, prices and profits). In the case of small business starts the size of newly established firms is so small that the larger extant firms do not feel threatened by their entry while small extant firms are not able to react or retaliate. This pattern has been one of the dominant feature of the Italian experience. Small entrants, rather than directly compete with the larger existing firms, had either to find (and enter in) new market niches or to coordinate their production activities with those of existing firms in a framework of increasing specialisation and division of labour between firms of different size which, often, led to the phenomenon of "industrial districts" (cf. Brusco, 1982; Fuà, 1983; Pyke, Becattini and Sengerberger, 1990).

This peculiar process of small firm entry and survival led also to the formation of a dualistic market structure (cf. Contini and Revelli, 1986) that

still characterises most Italian manufacturing industries. Figure 2 describes a typical dualistic structure by plotting the number of existing firms by size classes (either in terms of sales or employees). As Contini and Revelli argue, there is an industry "fringe" composed by a large number of firms with a size smaller than the "threshold size" labelled T (which is slightly different among industries); within the fringe there is an intensive turnover (or turbulence) in terms of entries and closures³. Conversely, the industry "core", established on the right of T, is much more stable and each industry can be characterised by a fairly different minimum efficient size (mes) according the extent of economies of scale. Newly established firms may easily enter into the fringe but their problem is to jump over the threshold T, that is to become part of the industry core; the latter process is the most difficult one since, here, barriers to entry are stronger and their strength is different among industries according to the distance between the threshold T and the minimum efficient size.

This dualistic market structure, along with the above mentioned patterns of small business starts, helps to explain why the Italian experience does not appears consistent with the standard "barriers to entry" approach to new firm formation (see Santarelli and Sterlacchini, 1994).

³ In this connection, other scholars employ the idea - introduced by Marshall - that small firms play the role of "seedbed" for new enterprises which, in the future, will be able to challenge the dominant position of large established firms. As Beesley and Hamilton (1984, p. 218) put it, "The 'seedbed' can be viewed as the arena in which businesses are born and, judging by the body of evidence on the infant mortality of businesses [...] where most will die".

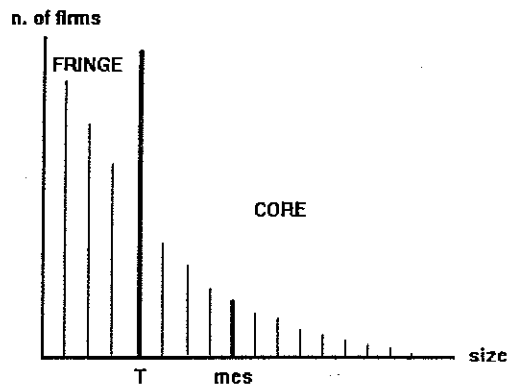


FIGURE 2 - A dualistic market structure

A further reason to prefer the second birth or entry rate (new firms/employees) is due to the fact that, in Italy, most new entrepreneurs previously had a dependent job in the same industry since their knowledge of productive processes, products and markets facilitated their passage to independent work (see Brusco, 1982; Gallo and Lupo Berghini, 1985; Vivarelli, 1991). The ratio presented in the second column of table 2 can be then read as the share of new entrepreneurs on those individuals who are more likely to become entrepreneurs (cf. Santarelli and Sterlacchini, 1994). As a consequence, the use of the second birth rate is preferable when the process of new firm formation in a given industry is depicted as a decision process in which the expected entrepreneurial income is compared with the earnings from employment. This "income choice" model of new business starts will be described in details in section 4.

3. THE DETERMINANTS OF NEW FIRM FORMATION

In this section I shall briefly review the main approaches to new firm formation to contend, ultimately, that the most suitable one appears to be a model of "income choice" rather than the standard models of entry described in Industrial Organization textbooks.

In a model of perfect competition, would be entrepreneurs are basically attracted by above normal profits because barriers to entry and sunk costs are assumed to be negligible.

Conversely, the structure-conduct-performance approach to industrial entry introduces into the model (along with profitability) two elements of market structure limiting the working of the competitive mechanism and exerting a negative impact on entry: barriers to entry and/or market concentration. The seminal work of Mansfield (1962) opened the road of a long series of entry studies adopting this kind of framework.

Subsequently, empirical models of entry have been enriched by other explanatory variables such as the intensity of R&D and advertising expenditures (cf. Orr, 1974) which help to better identify the interaction between market structure and conduct and its impact on entry. In effect, R&D and advertising expenditures fall in the realm of firm conduct (or strategy) and can be considered a form of strategic investment undertaken by extant firms to deter entry or, put in other words, to reduce the market contestability by raising sunk costs (see Geroski and Schwalbach, 1991).

The above determinants of new firm formation have been considered and evaluated especially in cross-industry studies. Recently, many scholars have recurred to other explanatory hypotheses which can be also applied to cross-regional analyses.

One of these hypotheses can be traced back to Schumpeter (1934) who stressed the role of new entrepreneurs as innovators and thus the idea that starting a new business via innovation may lead to higher expected profits. In this connection, Acs and Audretsch (1989 and 1990) found that, in the US, high innovative markets are characterised by high entry rates especially when only small firm entry is considered⁴.

Another approach refers to the seminal contribution of Frank Knight (1921) concerned with the uncertain nature of entrepreneurial income as opposed to an almost certain income achievable through a dependent job. This idea has been formalised by Kihlstrom and Laffont (1979) although they had to reduce the notion of true uncertainty *à la* Knight to measurable risk. In their model, individuals are confronted with the above choice which depends upon the expected utility of wage (riskless) as compared with the expected utility of profit (risky): ultimately, less risk averse individuals tend to become entrepreneurs. The relationship between the rate of new firm formation (measured as the ratio of new firms to industry employees) and alternative income perspectives has been examined by Creedy and Johnson (1983) across UK manufacturing industries; they found that labour earnings had a negative impact upon the birth rate while profits exerted a positive influence.

A third explanation - linked with the above mentioned income choice model - stresses the role of environmental factors and, in particular, the presence of "network externalities" in the formation of new firms and new entrepreneurs (cf. Audretsch and Vivarelli, 1993). As the Italian experience strongly supports, the large majority of new entrepreneurs were previously

⁴ It must be stressed that, in the US, small firms are defined as those with fewer than 500 employees. In Italy, almost 97 per cent of newly established firms have fewer than 20 employees (cf. Santarelli and Sterlacchini, 1994).

employed in the same industry and they have started with a small business activity. As a consequence, it is likely that a substantial presence of small firms already active in a given industry or area will favour in many respects⁵ the passage from a dependent to an independent job. Moreover, as Johnson and Cathcart (1979) argued, the propensity to be a new firm founder is higher for individuals previously employed in small firms: due to the close relationship between managers and employees, the latter can be viewed as real "schools" of entrepreneurship and thus as the most effective incubators of new small firms. It must be stressed that a strong presence of small firms will act, on the extent of new firm formation, as a variable having the opposite effect of market concentration and, in addition, the small firms' presence can be seen as an indirect measure of low barriers to entry⁶: in other words, this determinant is likely to embody also the structure-conduct-performance approach to industrial entry (cf. Santarelli and Sterlacchini, 1994).

A fourth approach emphasises the role of the employment status of individuals in making the choice of become entrepreneurs (cf. Storey, 1991). In the presence of high unemployment, individuals may be pushed towards self-employment either because this can be the only opportunity to have a job or because, in an income choice model, unemployment depresses wages. By means of spatial analyses referring to provinces, regions or states, Storey and Jones (1987) for the UK, Evans and Leighton (1990) for

⁵ The presence of a network of small firms may facilitate the access to essential information (relative, for instance, to production techniques and unfilled market niches) which are needed to start a small business. Such a network may also give rise to a secondary market for capital goods which decreases the amount of start-up capital and, at the same time, reduces the sunkness of these fixed costs (and thus barriers to exit).

⁶ With regard to the dualistic market structure described in the previous section (cf. figure 2), a strong small firm presence implies that the threshold T is not far from the minimum efficient size of the relevant industry.

the US and, partly, Audretsch and Vivarelli (1993) for the Italian case (see the next section) found some evidence consistent with this "unemployment-push" hypothesis.

Conversely, if one assumes that the establishment of new firms is fostered by the expansion of the market (either because it raises expected profits or creates more room for new firms), industrial or regional differences should be related to an index of growth in terms of sales (Gorecki, 1975; Acs and Audretsch, 1989), value added (Highfield and Smiley, 1987) or employment (Santarelli and Sterlacchini, 1994).

In the next section, many of the above discussed hypotheses will be inserted in an income choice model which seems the most suitable one in the presence of a process of new firm formation dominated by small firms and presents the additional advantage of being consistently applicable both among industries and geographical areas.

4. THE INCOME CHOICE MODEL AND THE ITALIAN EVIDENCE

The starting point of the model of income choice can be the following implicit function

$$RNF = f(\Pi_e, W_e) \quad \text{with} \quad \frac{\partial RNF}{\partial \Pi_e} > 0 \quad \text{and} \quad \frac{\partial RNF}{\partial W_e} < 0 \quad (1)$$

which assumes the presence of a positive relationship between the rate of new firm formation (RNF) and the expected level of profit (Π_e) and a negative impact of the expected level of wages (W_e) on RNF. All the variables can be alternatively ascribed (with some qualifications to be

discussed later) either to different industries or localities (let say provinces). RNF denotes the ratio of new firms to actual employees since, according to the arguments introduced in sections 2 and 3, such a dependent variable is particularly suitable for the income choice model.

If one assumes that the explicit function is linear, the following equation can be estimated by means of OLS across industries or provinces

$$RNF = \gamma_0 + \gamma_1 \Pi_e - \gamma_2 W_e + \varepsilon \quad (2)$$

where ε is an error term with the standard properties.

Suppose that even the function of expected profits can be estimated by means of a linear equation such as

$$\Pi_e = \alpha_0 + \alpha_1 \Pi_a + \alpha_2 SFP + \alpha_3 GR + \eta \quad (3)$$

where Π_a are the average (actual) profits, SFP stands for the "small firm presence" (the share of total output or employment in a given industry or province accounted for small firms), GR is a measure of the growth of the relevant industry or province (in terms of value added or employment) and η is the error term. According to the discussion developed in the previous section, all the independent variables will exert a positive impact on the expected level of profits.

The linear equation for the expected labour earnings is instead assumed to be

$$W_e = \beta_0 + \beta_1 W_a - \beta_2 JL + \omega \quad (4)$$

where W_a stands for the actual (observed) level of wages, JL is the level of gross job losses and ω is the error term. Actual wages have a positive effect

on expected labour earnings while the amount of (observed) gross job losses is assumed to depress expected wages according to the "unemployment-push" hypothesis.

Thus, substituting (3) and (4) in (2), the final equation for the rate of new firm formation will be the following:

$$\text{RNF} = (\gamma_0 + \gamma_1 \alpha_0 - \gamma_2 \beta_0) + \gamma_1 \alpha_1 \Pi_a + \gamma_1 \alpha_2 \text{SFP} + \gamma_1 \alpha_3 \text{GR} - \gamma_2 \beta_1 W_a + \gamma_2 \beta_2 \text{JL} + (\varepsilon + \gamma_1 \eta - \gamma_2 \omega) \quad (5)$$

where, if one assumes that the error terms of equation (2), (3) and (4) are uncorrelated, the error term of equation (5) will satisfy the usual properties for an OLS estimate.

Equation (5) can be considered a general framework for the income choice model of new firm formation. It contains a sufficient number of explanatory variables for the identification of profitability and labour market conditions. It can be applied both in cross-sectional or time-series studies with industries or geographical areas as units of observation. In this connection, the only caveat refers to the variable of job losses which (even on the basis of the empirical evidence mentioned in section 3) seems particularly suitable for regional studies. In fact, it is difficult to assume that the labour market tensions in a particular industry will necessarily push unemployed workers towards self-employment since they may also find a dependent job in other industries characterised by better opportunities.

Table 3 reports the main results arising from the application of the income choice model to the Italian case by considering, respectively, Italian manufacturing industries (Santarelli and Sterlacchini, 1994) and Italian provinces (Audretsch and Vivarelli, 1993). However, before comparing the results of the two empirical applications some qualifications are needed.

In Santarelli and Sterlacchini's study, the dependent variable is the ratio of new manufacturing firms to manufacturing employees in the relevant industry, all the explanatory variables are inserted with a lag of one year and the estimated equation has a linear form. The proxy for the industry growth (GR) is the annual rate of employment change in a given industry due exclusively to the behaviour of existing firms (the net job creation jointly generated by newly established firms and firms that exited is neglected). The rationale for using this variable relies upon the fact that the employment growth of existing firms is a clear (and easily observable) signal of increasing opportunities for "would be entrepreneurs" and can foster the formation of new small firms within the same industry. Actual profits (Π_a) refer only to the sub-set of existing small firms (with less than 20 employees) in the relevant industry and are computed as the difference between valued added and labour costs divided by sales. The small firms' presence (SFP) is computed as the share of industry sales accounted for firms having between 20 and 49 employees. Given the high positive correlation between SFP and W_a , the two variables are alternatively inserted in separate regressions.

The specification of the equation estimated by Audretsch and Vivarelli is instead log-linear, the denominator of the dependent variable is alternatively the number of manufacturing employees or the population resident in the province and there are no lags between dependent and independent variables. Π_a (computed as the value added minus the average wage per employee) refers to the whole manufacturing sector of the relevant province and the "growth" variable (GR) is not employed⁷. SFP denotes the

⁷ With a view to test the schumpeterian hypothesis mentioned in section 3, Audretsch and Vivarelli employ, for the Italian provinces, the amount of R&D expenditures in manufacturing per employee (or per resident person). However, the estimated

number of existing manufacturing firms with fewer than 10 employees divided by the manufacturing employees (or the resident population) of a given province. Along with year dummies used also by Santarelli and Sterlacchini⁸, Audretsch and Vivarelli employ three dummies for the Italian macro-regions mentioned in section 2 (North-west, NEC and South) and, finally, their sample differ from that of Santarelli and Sterlacchini both in terms of number of observations (78 provinces versus 21 industries for 4 years) and period considered (1985-88 versus 1986-89).

Despite the above mentioned differences it is interesting to compare the results of the two studies. Obviously, due to the different context, such a comparison must be limited to the sign and the significance of the explanatory variables' coefficients.

Starting from the set of consistent results and according to the expected signs of the explanatory variables, both studies show that the rate of new firm formation is negatively related to labour earnings (W_a) suggesting that in industries and provinces with below average wages individuals found greater stimuli to become entrepreneurs. At the same time, the presence of small firms (SFP) provides a further and stronger incentive to would be entrepreneurs either because barriers to entry are weaker or because the network of existing small firms is an effective incubators of new business activities.

coefficient of this variable is negative and, statistically, not significant. This result can be ascribed either to the fact that the R&D intensity is not a good proxy for the innovativeness of Italian manufacturing firms or to the fact that, in Italy, newly established firms do not own "schumpeterian" characters.

⁸ Both authors estimate their equations by pooling cross-section and time series data and the employment of year dummies allows the intercept to vary over time.

TABLE 3 - Regression results for the income choice model applied to Italy

Dependent Variable	New mfg. firms/ Mfg. Employees	New mfg. firms/ Mfg. Employees	New mfg. firms/ Mfg. Employees	New mfg. firms/ Res. Population
Type of regression	Cross-Industry	Cross-Industry	Cross-Provinces	Cross-Provinces
Π_a	- 0.136 (4.99)	- 0.077 (2.21)	0.190 (2.99)	n.s.
W_a	omitted	-0.196 (6.13)	- 0.613 (3.38)	- 0.400 (2.35)
GR	0.109 (6.99)	0.127 (6.75)	n.a.	n.a.
SFP	1.891 (9.59)	omitted	0.553 (7.33)	0.621 (9.46)
JL	n.s.	n.s.	n.s.	0.085 (2.14)
Year dummies	yes	yes	yes	yes
Regional dummies	n.a.	n.a.	yes	yes
Other variables	no	no	yes	yes
Sample size	84 (21 industries x 4 years)	84 (21 industries x 4 years)	312 (78 provinces x 4 years)	312 (78 provinces x 4 years)
Period	1986-89	1986-89	1985-88	1985-88
Adj. R ²	0.68	0.52	0.43	0.75
F	29.78	16.06	19.04	75.27

n.s. = non significant; n.a. = non available or non applicable.
Sources: Audretsch and Vivarelli (1993); Santarelli and Sterlacchini (1994).

The profitability variable (Π_a) has a positive impact on new firm formation only in the cross-provinces study (and only when the dependent variable is the ratio of new manufacturing firms to manufacturing

employees) while, contrary to expectations, inter-industry differences in terms of profits are negatively related to the birth rate of manufacturing firms. The unsatisfactory performance of the profit variables can be justified according to various reasons. First of all, the variable employed in both studies is a rough proxy for gross profits and, accordingly, does not take into account the presence of inter-industry differences in terms of capital/labour ratios. Secondly, as Oxenfeld (1943, p.109-10) stressed,

"... most entrepreneurs not only fail, but consciously do not, undertake a precise estimate of profits. ... The frequency with which businesses are established in unprofitable trades suggests that non-monetary advantages of business ownership are often the most potent considerations."

Moreover, according to the income choice model, would be entrepreneurs certainly try to estimate future profits but they always compare such an estimate with the earnings from continued employment, so that if expected profits are low but, at the same time, expected wages are even lower there is still an incentive to become entrepreneurs⁹.

The "unemployment-push" hypothesis found support only in one case, that is when the dependent variable of the cross-provinces study is the ratio of new manufacturing firm to resident population (cf. the last column of Table 3); in the remaining regressions, and especially in the cross-industries ones, the coefficients of the variable denoting gross job losses (JL) are always not significant.

Finally, the growth variable (GR), employed only in the cross-industry study, exerts a positive and very significant influence on the rate of new firm formation.

⁹ In fact, from the results reported in the third column of Table 3, it emerges that the coefficient of wages is bigger and more significant than the (negative) coefficient of profits.

5. CONCLUDING REMARKS

Even during the second half of the 1980s, the process of new firm formation in Italian manufacturing has been particularly strong, in line with the trend experienced during the previous decade. This process has been essentially driven by small size firms and has regarded all the Italian regions and manufacturing industries (although a greater entrepreneurial liveliness has been recorded by the Northeast and Central regions and by traditional consumer good industries).

The Italian case is peculiar in many respects, but its most interesting feature is that small firm entry or formation seems particularly linked to a process of increasing division of labour and specialisation between firms of different size which characterises most Italian manufacturing industries.

As a consequence, the Italian experience can be hardly encompassed in the traditional framework of industrial entry and appears to be better explained by an income choice model. Therefore, would be entrepreneurs (most of them having a dependent job in the same industry) are confronted with different income perspectives (wages versus profits) and stimulated by further incentives related to structural variables (mainly to the fact that a large share of small firms is already established in the relevant industry) and to the cyclical phases of economic growth. According to two recent empirical studies carried out in Italy and adopting the income choice model, these variables explain a significant portion of the variance of new firm formation both across industries and provinces.

It must be stressed that the considerations developed in this survey are far from giving an exhaustive and dynamic picture of the entry process driven by small manufacturing firms. In effect, a central question remains

unsolved. What are the factors affecting the capability of small entrants to survive, grow and become part of the industry core?

In Section 1 it has been shown that, in Italy, higher rates of exit (or death) are strongly associated with higher rates of entry and, according to some studies (Contini and Revelli, 1986; Santarelli and Sterlacchini, 1994), both processes involve almost exclusively small firms. In addition, there is a substantial evidence that a large share of exits is due to a process of infant mortality. By consequence, more efforts should be devoted to the analysis of the determinants of small firm survival since this seems the most important issue for policy makers. In the Italian case, for instance, a specific policy to raise small firm entry does not appear necessary (birth rates are already high) but a peculiar set of financial, fiscal, industrial and technological policies are needed in order to foster the small firms' survival and to eliminate market imperfections which, often, reduce their growth chances.

Finally, with respect to the application of a similar approach to the process of new firm formation in Eastern countries, a last consideration must be stressed. Even many former socialist economies (such as Poland and Hungary) have recently experienced very high rates of firm birth in manufacturing and small firms have played a dominant role. However, in spite of this crude similarity, the above countries differ in many respects from a late industrialized country like Italy and the emergence of their entrepreneurship is a too recent phenomenon (fostered by dramatic changes in the institutional framework of the economy). As a consequence, before extending the arguments developed in this paper to Eastern countries, it will be necessary to collect further empirical evidence by monitoring their patterns of industrial evolution.

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