START-UP SIZE AND POST-ENTRY PERFORMANCE: THE CASE OF TOURISM SERVICES IN ITALY*

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Abstract
In this paper a large and comprehensive longitudinal data base is used to identify the start-up of new firms in Italian tourism services and their subsequent post-entry performance. Analysed in particular is the link between the survival and growth of hotels, restaurants, and catering firms in each Italian region and their start-up size. While it was found that in twelve out of twenty regions the likelihood of survival is significantly influenced by the start-up size, Gibrat's Law proved to hold for most regions, in contrast to the results found by several authors with regard to other sectors and countries. This implies that whereas larger newborn firms in the tourism sector have in most Italian regions a higher probability of survival than their smaller counterparts, the probability of a proportionate change in size during the relevant period is the same for all firms belonging to this sector in the large majority of regions.

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I - INTRODUCTION

Recent studies on the economic role of entry have shown that newborn, small firms account for a significant share of the total number of enterprises, employment and sales in an industry. However, only modest effects of entry on market performance (profits) have been found (Geroski, 1991; Geroski - Schwalbach, 1991). This apparent paradox can perhaps be resolved by assuming the entrant to be an *agent of change* rather than a real participant in the industry. Accordingly, since in each industry the growth and survival of new firms depend on their ability to learn about the environment, it is very likely that in more turbulent market environments new firms have a higher probability of failing to cope (Audretsch, 1995b; Geroski, 1995). As a consequence, in industries with high entry rates the impact of entry on the overall levels of profitability and price is less strong than in industries with low entry rates.

In response to these findings, the recent body of literature on the *post-entry performance* of firms focuses on what happens to new firms subsequent to their entry, both in terms of their likelihood of survival and their growth patterns. In this respect, very little is known about the post-entry performance of new firms in Italy (cf. Giunta - Scalera, 1995; Audretsch - Santarelli - Vivarelli, 1996), particularly in the various branches of the service sector. The purpose of this paper is therefore to shed some light on industry dynamics in a branch of the service sector which, in Italy, accounts for a significant share of total employment and value added: that of tourism services. It will use a large and comprehensive longitudinal data base to identify the start-up of new hotels, restaurants, and catering firms and their subsequent post-entry performance. This will enable specific links to be established between the survival and growth of new firms in tourism services in each Italian region and their start-up size, while also carrying out an empirical test of Gibrat's Law (1931).

The paper is organized as follows. Section II contains a brief survey of recent work on entry. Section III analyzes the relation between new firm survival and start-up size in Italian tourism services over the period 1989-94 by using a set of longitudinal data provided by the National Institute for Social Security. Section IV employs the same data base for a formal test of Gibrat's Law. Finally, in section V some concluding remarks are drawn.

II - THE IMPACT OF THE START-UP SIZE ON POST-ENTRY PERFORMANCE

According to Jovanovic's (1982) theoretical model of noisy selection, new firms have no expectations about their post-entry performance, so that the likelihood of survival should be assumed to be stochastically distributed across firms. In a recent theoretical paper dealing with the distribution of firm sizes, Sutton (1995) has observed that each market consists of a large number of independent submarkets, corresponding to different size distributions. As a consequence, in studying the post-entry performance of firms the real problem is not the characterization of what happens on average in each market, but "the fact that a wide range of different patterns occur across different markets, so that it is difficult to make any generalisations as to what is the 'normal' size/growth relation, or the 'typical' shape of the size distribution" (Sutton, 1995, p. 4, footnote 8).

A different set of theories, including those propounded by Dixit (1989) and Hopenhayan (1992), suggest that post-entry performance may not be random across firms, but is instead shaped by characteristics specific to either the industry or the firm. These theories are supported by empirical evidence for the United States and other countries. Among industry-specific characteristics, the amount of sunk costs, the amount of scale economies and the degree of innovative activity have been shown to affect significantly both the likelihood of survival and the observed growth rates (cf. Audretsch (1991, 1995a) for the United States; Mata - Portugal (1994) for Portugal; Wagner (1994) for Germany). Among firm-specific characteristics, start-up size, capital intensity, and the use of advanced process technologies have been shown to influence the post-entry performance of firms in most countries (cf. Doms - Dunne - Roberts (1995) for the United States; Baldwin (1995) for Canada).

That post-entry performance is not stochastic across firms and industries has also been recently argued by Geroski (1995, pp. 435-6) who, in reviewing the empirical literature on the subject, concludes that "the most palpable consequence of entry is exit, and industries that exhibit high entry rates often also exhibit a high degree of churn at the bottom of the size distribution. [...] What is more, the fact that many entrants fail and surviving entrants require five to ten years to reach a competitive par with incumbent suggests that the short-run effects of entry are likely to be much less than the long-run effects".

III - MEASURING SURVIVAL AND GROWTH AMONG ITALIAN HOTELS, RESTAURANTS, AND CATERING FIRMS

For those wishing to test empirically the two contrasting groups of explanations introduced above, the most serious limitation has traditionally been the lack of data sets tracking the evolution of firms subsequent to their start-up. The longitudinal data base used here to analyze the post entry performance of new hotels, restaurants, and catering firms in Italian regions represents in this sense a reliable source of information. It has been taken from the National Institute for Social Security (INPS), which identifies new firms with at least one employee born during each month in 1989 and tracks their post-entry performance at monthly intervals until December 1994. A major problem arising with this and similar data bases when used to test theoretical approaches concerned with the growth and survival of firms is that the researcher can only consider a given interval, usually referred to as *follow-up time* and comprised between t = 1 and t = T, during which N firms are observed. If a firm exits the market at any given time comprised by $1 \leq t \leq T$ its death (*failure time*) is correctly reported, otherwise the only possible finding is that its duration exceeds a given threshold corresponding to T. This *right-censoring* problem renders conventional econometric procedures (such as OLS) ill-suited for duration analysis, since they would produce biased and inconsistent estimates (Cox, 1972; Kiefer, 1988; Mata - Portugal, 1994). As a consequence, models specifically designed to overcome this problem must be employed, for example the Cox-regression model, which captures the effects of the explanatory variables upon death rather than upon times to death and corrects for the problems of censored data (cf. Greene, 1993, pp. 682-727).

Figures 1 and 2 and Tables 1 and 2 respectively plot and show the new-firm survival and hazard rates for 11,660 new tourism service firms identified in the INPS data base in 1989. The survival rate is defined as the share of new firms starting at any time (month) in 1989 and still in existence as of January of each subsequent year. Accordingly, the survival function can be written as

$$S(t) = 1 - F(t) \qquad (1)$$

where *S* is the survival rate for a firm, and F(t) is the distribution function. One year after start-up[1] 68 percent of the new firms stil existed. After six years only 45 percent of the new firms did so. This is significantly lower than 59 percent survival rate identified for Italian manufacturing firms between 1987 and 1992 by Audretsch - Santarelli - Vivarelli (1996) and implies that, in Italy, the mechanism of displacement affects young, new firms in the tourism services sector most severely than those in other sectors. In this respect, it is also likely that in Italy sunk costs and other barriers to exit are higher in manufacturing than in tourism services. Conversely, this survival rate is analogous to that identified for American manufacturing firms by Audretsch (1991, 1995a, 1995b) and higher than the 35 percent survival rate identified for Portuguese manufacturing by Mata - Portugal - Guimaraes (1995)[2].

The hazard rate is defined as the risk of failure at each point in time, conditional on the fact that the firm had survived up to the previous time period. By following Cox - Oakes (1995), and Mata - Portugal (1994), it may be formally expressed as

$$h(t) = \lim_{\Delta t \to 0^+} \frac{P(t \leq T \leq t + \Delta t | T \geq t)}{\Delta t} \qquad (2)$$

where T is the firm's life duration and *h* the hazard rate for the firm, and can be estimated as

$$h(t; x) = f(t) / S(t) \qquad (3)$$

where *x* is a vector of covariates (or explanatory variables), f(t) is the probability density function and S(t) the survival function presented in equation (1).

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[1] Since firms may have entered the market in any given month during 1989, I conventionally assume that those still in existence at the end of 1990 survived for *one year* after start-up, although some of them (those born in January 1989) will actually be approaching their second year of life at that time, while others (those born in December 1989) will have completed their first year of life just at the end of 1990. Of course, analogous considerations apply to subsequent years.

[2] These differences in survival rates confirm that, as already pointed out by Geroski (1995), they vary significantly across industries.

In the case of Italian tourism services between 1989 and 1994, the one year hazard rate is about 13 percent, and then rises to about 22 percent for the two year hazard rate, before falling to 6 percent for the six year hazard rate.

Figure 1 - Survival rates of new firms in tourism services: Italy, 1989-94

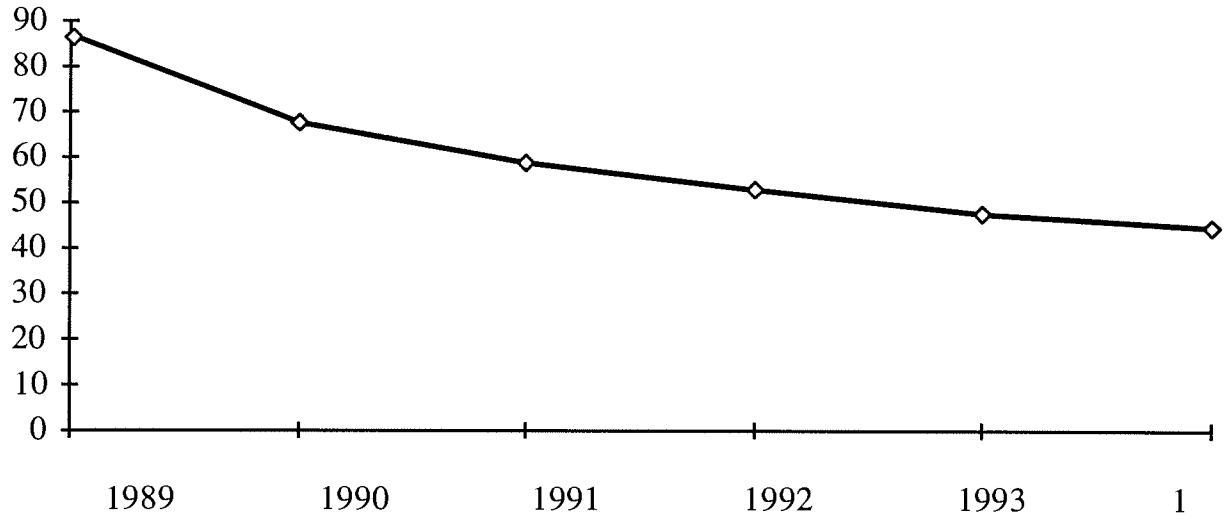
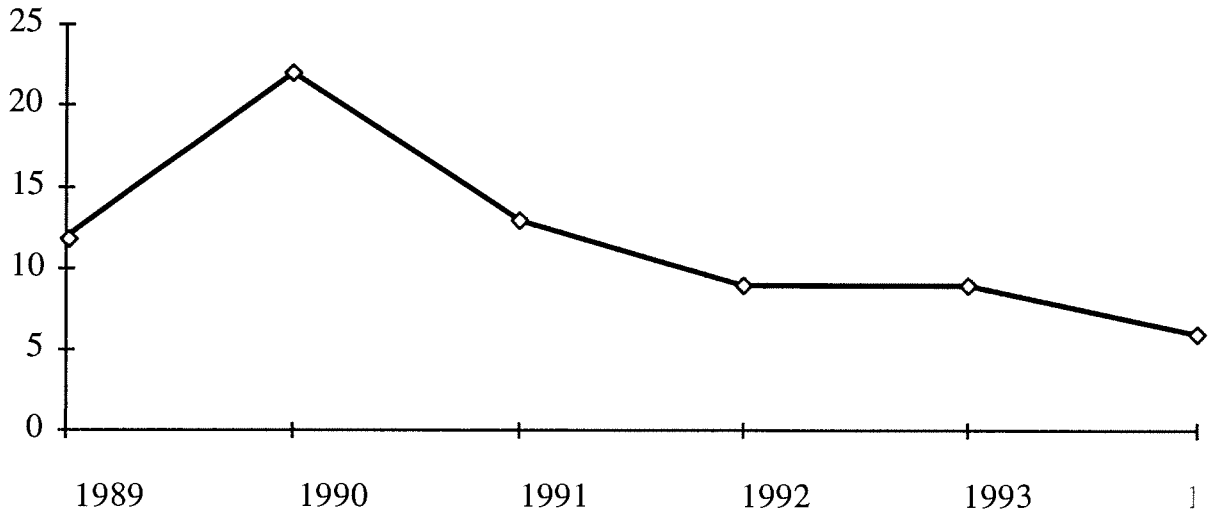


Figure 2 - Hazard rates of new firms in tourism services: Italy, 1989-94



These hazard rates follow a pattern similar to that identified by Audretsch - Santarelli - Vivarelli (1996) for Italian manufacturing, although in that case the second year hazard rate was much lower (12 percent)[3]. It should be noted that also in studies carried out for other countries hazard rates tend to increase during the first years and to decrease non-monotonically afterwards (cf. Audretsch, 1995a; Wagner, 1994)[4].

Table 1 - Survival rates of new firms in tourism services: Italian regions, 1989-94

Regions	*New firms in 1989*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*
Valle d'Aosta	113	88	69	57	56	50	48
Piemonte	890	84	61	50	42	37	33
Liguria	674	83	61	51	42	40	38
Lombardia	1,698	90	70	60	53	48	45
Trentino A.A.	622	91	73	65	60	56	52
Friuli V.G.	421	81	65	51	42	38	45
Veneto	1,152	87	67	60	54	48	45
Emilia-Romagna	1,517	85	65	56	50	44	41
Toscana	1,147	86	67	58	53	47	43
Lazio	784	91	74	66	63	60	57
Marche	346	85	68	62	55	52	49
Umbria	183	88	69	56	54	45	43
Abruzzo	271	90	69	59	56	49	44
Molise	46	89	54	52	52	43	43
Campania	365	93	78	69	66	63	62
Basilicata	55	93	69	53	49	44	44
Puglia	372	90	73	65	60	56	53
Calabria	194	93	68	63	59	57	57
Sicilia	493	88	69	60	59	55	53
Sardegna	316	93	74	65	61	57	54
ITALY	11,660	87	68	59	53	48	45

This implies that the conditional probability of exit by a new firm decreases along with the length of time that it has already survived.

Inspection of the survival rates for each disaggregated Italian region (table 1) shows that these vary considerably across regions, ranging from 33 percent for the six-year survival rate in Piemonte (Northern Italy) to 62 percent in Campania (Southern Italy). In general, the

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[3] In this respect, the macroeconomic cycle deserves some attention, although previous studies have shown that exit displays little cyclical sensitivity (cf., for example, Boeri - Bellmann, 1995). As regards the study by Audretsch - Santarelli - Vivarelli (1996), the second year (1988) is still characterized by significant growth rates in the overall economy (4.1%), whereas different considerations apply to the present study, since the second year (1990) is in this case characterized by slower growth rates (2.1%).

[4] Opposite results are instead obtained by Mata - Portugal - Guimaraes (1995) who, for Portuguese manufacturing, identify hazard rates much higher for the first than for subsequent years.

survival rates are higher in the less developed Southern regions and lower in the advanced Northern regions[5]. Such apparently paradoxical results deserve further explanations. If one accepts the proposition that the barriers to entry (measured in terms of advertising and capital-raising requirements, shortage of bank credit, presence of modern infrastructures in the surrounding area, etc.) facing new entrants differ as one moves from one region to another, then the existence of different 'barriers to survival' in each region may also be suggested.

Table 2 - Hazard rates of new firms in tourism services: Italian regions, 1989-94

Regions	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*Firms surviving to 1994*
Valle d'Aosta	12	21	18	2	10	5	54
Piemonte	16	28	18	16	12	10	295
Liguria	17	27	17	16	5	6	255
Lombardia	10	23	14	10	10	6	769
Trentino A.A.	9	20	10	8	7	7	322
Friuli V.G.	19	21	21	18	9	11	144
Veneto	13	22	11	9	12	7	515
Emilia-Romagna	15	23	14	12	11	6	627
Toscana	14	22	13	10	11	9	493
Lazio	9	19	11	5	3	5	450
Marche	15	20	9	10	7	5	170
Umbria	12	22	19	4	16	4	79
Abruzzo	10	23	13	5	13	10	120
Molise	11	39	4	0	17	0	20
Campania	7	15	12	5	5	2	227
Basilicata	7	25	24	7	11	0	25
Puglia	10	19	11	7	8	5	197
Calabria	7	27	8	7	3	0	114
Sicilia	12	22	13	2	7	4	262
Sardegna	7	20	13	5	7	5	171
ITALY	12	22	13	9	9	6	5,309

These latter appear to be higher in the most advanced regions, where entry[6] is conversely easier due to more favourable environmental conditions[7]. In effect, from comparison of entry

[5] The emergence of a tourist industry in Italy can be traced back to the mid-1950s, when it became a leading economic activity in most Northern regions and in some Central ones (in particular Emilia-Romagna and Toscana). Conversely, the South began to catch-up only during the 1970s (cf. Politi - Preger, 1991)

[6] This can be defined as the number of new firms divided by resident population for the purpose of analysis carried out at the regional level, and as the number of new firms divided by the total number of incumbent and entrant firms producing in that year for the purpose of analysis carried out at the sectoral level.

[7] In a county-level analysis carried out for the UK, Love (1996) obtained results consistent with this hypothesis by showing that exit is influenced by entry.

rates in the initial year (1989) of the relevant period (table 3) it emerges that these are much higher in Northern regions than elsewhere, with all but one (Abruzzo) Southern regions displaying entry rates which are far below the national average.

Table 3 - Entry rates in tourism services: Italian regions, 1989

*Regions**	*Entry rates***
Valle d'Aosta	9.82609
Piemonte	2.06881
Liguria	4.02148
Lombardia	1.91734
Trentino Alto Adige	6.98876
Friuli Venezia Giulia	3.51713
Veneto	2.63014
Emilia-Romagna	3.88079
Toscana	3.25021
Lazio	1.52529
Marche	2.42127
Umbria	2.25647
Abruzzo	2.16974
Molise	1.39394
Campania	0.64831
Basilicata	0.90164
Puglia	0.92285
Calabria	0.9372
Sicilia	0.99275
Sardegna	1.91748
ITALY	2.05397

*The first seven regions are those in the North, the following five in the Center, the remaining eight in the South.
**New firms divided by resident population (all the ratios have been multiplied by 10,000).

Thus, in those regions in which barriers to entry are lower, the entry process is less selective and a larger share of entry attempts are doomed to failure or, in any case, have a rather short life expectancy: as a consequence, since previous studies conducted for different industries show that higher rates of entry are usually associated with lower entry penetration rates[8] (cf. Geroski, 1995), it is highly likely that the same will be true of most industries (included the tourist sector) even at the regional level. Moreover, the duration of a firm's life is likely to be affected by the dynamics of industry evolution. In those regions in which the

[8] Gross sales by entrants divided by total industry sales.

tourism sector is growing at higher rates (albeit as the result of a catching-up process[9]) it may therefore be easier for new firms to survive: in effect, they may participate in the industry without inflicting market share losses on their rivals; accordingly, the likelihood of retaliation by incumbents will be lower. The cross-region variations in hazard rates (table 2) follow a pattern which is similar to that which emerged for survival rates, with the two year hazard rates far above 20 percent in most regions (17 out of 20) and the six year hazard rate equal to or around 10 percent in only four cases (Piemonte, Friuli Venezia Giulia, Toscana, and Abruzzo), with the remaining regions ranging between 0 (Basilicata and Molise) and 7 percent (Veneto). Six year hazard rates below 5 percent in all Southern regions confirm that the risk of early failure is lower in those areas in which the conditions of the tourism sector are more unsettled. In summary, analysis of hazard rates shows that the likelihood of a firm exiting is related to region-specific factors, with new firms in advanced regions facing a higher probability of early exit than do their counterparts in less developed regions.

The most important observable characteristic specific to the firm - the size of the firm - has been shown in the literature to affect significantly the likelihood of survival. In this respect, at least two important issues arise from table 4. First, only in three regions (Valle d'Aosta, Trentino Alto Adige, and Umbria) does the initial mean size of the surviving firms not exceed that of all new firms. Second, for firms exceeding the threshold corresponding to T (end of 1994) the final size is in all but one (Molise[10]) cases higher than the start-up size.

At this point, the hypothesis of a positive and significant association between start-up size, growth and likelihood of survival may be empirically tested. Accordingly, here I extend to the regional level the analysis by Dunne - Roberts - Samuelson (1988, 1989), who estimated a model for new-firm survival for each industry separately.

Based on logit estimation, where, for all firms entering the market in the relevant sector during 1989, survival until the end of 1994 is defined as 1 and exit is defined as 0, the results are shown in table 5.

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[9] In fact, in most Southern Italian regions the tourism sector is still at an earlier stage of the industry life cycle with respect to that reached in Northern Regions (cf. also footnote 5 above). Thus, it is also likely that in Southern regions entry involves mostly restaurants and catering firms, which represent the marginal fringe (in terms of mean size, capital and financial requirements, etc.) of the relevant market, characterized by lower barriers to survival.

[10] Which, however, accounts for only 0.39% of total firms entering the relevant market in 1989.

Table 4 - Mean start-up size, final size, and growth (%) of new firms in tourism services: Italian regions, 1989-94

Regions	*All firms born in 1989*	*Firms surviving to 1994*		
	Start-up size	*Start-up size*	*Size 1994*	*Growth*
Valle d'Aosta	2.57	1.43	2.44	70.63
	(7.39)	(0.77)	(2.23)	
Piemonte	1.61	1.84	2.91	58.15
	(1.82)	(2.51)	(8.23)	
Liguria	1.74	2.15	2.79	29.77
	(2.00)	(2.91)	(3.59)	
Lombardia	2.02	2.21	3.32	50.23
	(6.47)	(4.53)	(11.15)	
Trentino A.A.	2.51	2.61	2.85	10.30
	(3.52)	(3.52)	(5.42)	
Friuli V.G.	1.91	2.30	3.20	39.13
	(2.67)	(3.93)	(5.39)	
Veneto	2.22	2.40	3.05	27.08
	(4.74)	(5.33)	(5.13)	
Emilia-Romagna	2.39	3.14	4.74	50.96
	(8.36)	(12.75)	(12.66)	
Toscana	2.01	2.35	4.27	81.70
	(3.21)	(4.23)	(12.35)	
Lazio	1.89	2.12	2.30	8.49
	(2.44)	(2.90)	(3.99)	
Marche	1.78	1.96	2.78	41.84
	(1.97)	(2.21)	(3.37)	
Umbria	2.11	1.73	3.16	82.66
	(5.45)	(1.66)	(4.18)	
Abruzzo	1.79	2.14	3.04	42.06
	(1.54)	(1.88)	(4.28)	
Molise	2.09	3.25	3.10	-4.62
	(3.42)	(4.98)	(3.40)	
Campania	1.84	1.99	3.54	77.89
	(2.12)	(2.38)	(8.36)	
Basilicata	1.76	2.16	3.00	38.89
	(1.20)	(1.40)	(3.88)	
Puglia	2.10	2.23	4.25	90.58
	(2.36)	(2.58)	(13.01)	
Calabria	2.24	2.35	3.02	28.51
	(2.22)	(2.39)	(3.51)	
Sicilia	2.14	2.37	3.23	36.29
	(2.36)	(2.81)	(7.88)	
Sardegna	2.20	2.46	5.33	116.67
	(2.94)	(3.65)	(17.37)	
ITALY	2.06	2.35	3.41	44.49
	(4.72)	(5.61)	(9.28)	

Standard deviation in brackets

For eighteen out of twenty regions (with the sole exceptions of Valle d'Aosta in Northern Italy and Umbria in the Center) the relationships have the expected sign, and twelve

relationships (including regions as Piemonte, Emilia-Romagna, Lazio) are significant[11], thereby supporting the hypothesis that firm size is conducive to new-firm survival.

Table 5 - Logit model estimates: Survival on start-up size for new firms in tourism services: Italian regions, 1989-94

Regions	α	β	*log-likelihood*	*N*
Valle d'Aosta	0.489504	-0.33264	-74.7074	113
	(1.426505)	(-1.81774)		
Piemonte	-0.86664	0.100945	-562.14	890
	(-8.66385)	(2.347961)		
Liguria	-0.88237	0.225248	-437.334	674
	(-6.8348)	(3.696208)		
Lombardia	-0.20812	0.009562	-1168.79	1,698
	(-3.97654)	(0.980898)		
Trentino A.A.	-0.23461	0.130414	-421.675	622
	(-2.08323)	(3.628347)		
Friuli V.G.	-0.84778	0.101365	-268.007	421
	(-5.82812)	(1.85643)		
Veneto	-0.24601	0.015116	-791.363	1,152
	(-3.70046)	(1.096438)		
Emilia-Romagna	-0.65116	0.137715	-1009.42	1,517
	(-8.72497)	(5.499227)		
Toscana	-0.46505	0.093309	-777.365	1,147
	(-5.61255)	(3.096913)		
Lazio	0.054622	0.135524	-529.599	784
	(0.513823)	(2.901986)		
Marche	-0.21271	0.10159	-238.286	346
	(-1.39462)	(1.610389)		
Umbria	-0.20916	-0.03355	-124.728	183
	(-1.2089)	(-0.69723)		
Abruzzo	-0.75633	0.297699	-180.26	271
	(-3.67269)	(3.100071)		
Molise	-0.99565	0.462439	-28.7066	46
	(-1.58746)	(1.080803)		
Campania	0.310154	0.102981	-240.13	365
	(1.950235)	(1.503076)		
Basilicata	-1.18262	0.576254	-35.2241	55
	(-2.1988)	(2.101322)		
Puglia	0.011044	0.05136	-256.564	372
	(0.077845)	(1.097795)		
Calabria	0.221136	0.060427	-131.095	194
	(1.038276)	(0.841957)		
Sicilia	-0.08389	0.100356	-337.856	493
	(-0.65513)	(2.241578)		
Sardegna	-0.00874	0.082096	-216.317	316
	(-0.05703)	(1.605493)		
ITALY	-0.30368	0.062695	-7997.05	11,660
	(-12.3764)	(7.585671)		

t statistics in brackets.

[11] Although three of them (those for Friuli Venezia Giulia, Marche, and Sardegna) are only at the 90% level of confidence.

Moreover, the estimate for Italy as a whole also takes the expected sign and is highly significant. This is consistent with the findings of the already mentioned (cross-industry) studies carried out for other countries, including the United States, Portugal and Germany. Conversely, it stands in a sharp contrast to the results obtained by Audretsch - Santarelli - Vivarelli (1996) for Italian manufacturing. Explanation of this finding is straightforward: larger firms survive longer because they are in general more efficient, employ more capital intensive methods, have a larger availability of internal finance besides benefiting from easier access to external finance, and, moreover, when the opportunity cost of staying in the market increases, they may decrease in size before they exit whereas under the same circumstance their smaller counterparts will be the first to leave the market.

IV - AN EMPIRICAL TEST OF GIBRAT'S LAW

The empirical relationship usually referred to as Gibrat's (1931) Law of Proportionate Effect can be summarized in the three following specifications: 1) the probability of a firm to grow at a certain rate is independent of its size at the beginning of the relevant period; 2) the standard deviation of growth rates does not differ significantly for firms of different sizes at the beginning of the relevant period; 3) the growth rate of a firm at time $t + n$ is independent of its growth rate at time t, and this holds irrespectively of the macroeconomic cycle.

In the first of the above formulations, Gibrat's law may be tested by estimating the following log-linear regression

$$\log SIZE_{it} = a + \beta \log SIZE_{it-1} + \varepsilon_{it} \qquad (4)$$

where $SIZE_{it}$ stands for the size of the i_{th} firm at time t, $SIZE_{it-1}$ represents the size of the i_{th} firm at the previous time, and ε_{it} is a random variable which is assumed to be distributed independently of $SIZE_{it-1}$. Since what we have here is a very short series, the distribution of ε_{it} may be assumed to be stationary, i.e. not changing over time.

Gibrat's Law will be confirmed if and only if $\beta = 1$. Conversely, if $\beta < 1$ Gibrat's Law is not accepted, and small firms grow at a systematically higher rate than larger ones. If $\beta > 1$ the opposite will be the case.

The regression results of fitting equation (5) to the firms which survived over the period 1989-94 are presented in Table 6: for seventeen regions the β coefficients are significant and positive, turning out to be less than one. However, based on the Wald Test for the hypothesis that $\beta = 1$, the null hypothesis can be rejected only for six regions (five in Northern and Central Italy: Lombardia, Trentino Alto Adige, Emilia Romagna, Lazio, Marche; one in the South: Campania) where the estimated coefficient is significantly different from (below) 1. The Law of Proportionate Effect therefore holds for the remaining fourteen regions in which, contrary to what one might have expected in view of the fact that the mean size of newborn firms in any industry and any geographical area is usually below the MES level of output, the proportional growth of new entrants is independent of size. These results testing Gibrat's Law are somewhat in contrast to those obtained for the United States (Hall, 1987; Audretsch, 1995a), Portugal (Mata - Portugal, 1994), Germany (Wagner, 1994), Canada (Baldwin, 1995), United Kingdom (Dunne - Hughes, 1994), and Italian manufacturing (Audretsch - Santarelli - Vivarelli, 1996). In order to provide plausible empirical explanation and theoretical justification for the results obtained for Italian tourism services, three different interpretations may be given to the cases in which Gibrat's Law holds.

Firstly, previous studies in other countries considered the sectoral level, without taking explicit consideration of regional[12] patterns and inter-regional differences. Therefore, one cannot exclude that replication of the present regional analysis in other sectors and countries might produce results analogous to those presented here. Not coincidentally, the findings of the regression analysis conducted in the present paper contrast to those of the other studies only when the regional level is taken into account, since in the estimate carried out for the country as a whole the null hypothesis of $\beta = 1$ can be rejected.

Secondly, following Simon - Bonini (1958) one might conclude that the Law of Proportionate Effect always holds in the presence of scant significant variability in the size of the relevant firms. In fact, just as these authors obtained results consistent with Gibrat's Law studying for Britain and the USA a sample composed of large firms alone, so in this paper I have obtained similar results for a sample of small firms with a start-up size which only in 184 out of 5,309 cases is above 10 employees. It thus seems that the Law of Proportionate

[12] With the sole exceptions of Wagner's (1994) study, which, however, takes into account only the Lower Saxony region in Germany, and Storey *et al.*(1987).

Effect holds when testing the size-growth relationship within narrow size classes, whereas the opposite is true when the analysis is carried out within broad size classes.

Table 6 - The relationship between firm size and firm growth in tourism services: Italian regions, 1989-94

Regions	α	β	R^2	*F*	*White*[a]	*Wald*[b]	*N*
Valle d'Aosta	0.243728	0.711686	0.066467	3.702351	0.265533	0.607622	54
	(1.371974)	(1.924149)					
Piemonte	-0.06884	0.819289	0.129229	43.48344	0.502824	2.11552	295
	(-0.818773)	(6.594198)					
Liguria	-0.039027	0.814929	0.16465	49.86714	1.732536	2.57188	255
	(-0.423284)	(7.061667)					
Lombardia	-0.21179	0.821918	0.132951	117.6102	0.620705	5.521145**	769
	(-3.542545)	(10.84482)					
Trentino A.A.	-0.111979	0.609189	0.102177	36.41764	7.835906***	14.9879***	322
	(-1.058442)	(6.034703)					
Friuli V.G.	0.014834	0.967133	0.282069	55.79068	0.729973	0.064432	144
	(0.136655)	(7.469316)					
Veneto	-0.390842	0.96226	0.167364	103.1157	3.347301*	0.158617	515
	(-4.841421)	(10.15459)					
Emilia-Romagna	0.424039	0.806696	0.292853	258.8337	1.533524	14.86223***	627
	(8.443121)	(16.08831)					
Toscana	0.087063	0.965044	0.222938	140.867	0.415408	0.184824	493
	(1.26277)	(11.86874)					
Lazio	-0.612295	0.761958	0.096849	48.04098	7.254088***	4.68873**	450
	(-7.033135)	(6.93116)					
Marche	0.130816	0.729757)	0.133309	25.84073	0.474603	3.543712*	170
	(1.236029)	(5.083378)					
Umbria	0.290428	0.632569	0.083894	7.051399	1.031947	2.379088	79
	(1.855162)	(2.655447)					
Abruzzo	-0.370198	1.02009	0.166861	23.63295	0.990616	0.009166	120
	(-2.127119)	(4.861373)					
Molise	0.039611	0.742944	0.252529	6.081192	1.160747	0.728002	20
	(0.120937)	(2.466007)					
Campania	-0.138991	0.564891	0.046514	10.97615	13.3523***	6.512047**	227
	(-1.09405)	(3.313027)					
Basilicata	-0.648161	1.422868	0.276089	8.771848	1.571095	0.774768	25
	(-1.619286)	(2.96173)					
Puglia	-0.355834	1.048767	0.171114	40.25541	1.836386	0.08704	197
	(-2.580264)	(6.344715)					
Calabria	-0.110024	0.695549	0.094184	11.64542	0.408257	2.231183	114
	(-0.609425)	(3.412539)					
Sicilia	-0.666813	0.895512	0.135554	40.77064	7.789269***	0.555062	262
	(-5.365666)	(6.385189)					
Sardegna	-0.519761	0.837771	0.100101	18.79883	10.21166***	0.704918	171
	(-3.021379)	(4.335762)					
ITALY	-0.152169	0.845101	0.147584	918.8338	9.744551***	30.86843***	5,309
	(-6.428462)	(30.31227)					

t statistics in brackets; *a* = null hypothesis: homoskedasticity; in case of heteroskedasticity (at least 90% significance level) a consistent covariance matrix has been used (White's correction); *b* = null hypothesis: β (start-up size coefficient) = 1; * = significant at the 90% level of confidence; ** = significant at the 95% level of confidence; *** = significant at the 99% level of confidence

Thirdly, this result may be explained by industry-specific factors, such as the division of the relevant sector into different submarkets each of which characterised by a different degree of competition (cf. Sutton, 1995). In particular, some industry-specific factors may influence cross-region differences in concentration. Assuming the realistic hypothesis of a dualistic market structure composed of a relatively stable share of firms and a fringe of firms operating in marginal market niches, it becomes highly likely that in those regions for which the Law of Proportionate Effect holds entry is concentrated mostly in the marginal fringe, in which competition is less strong, firms are not involved in learning processes, sunk costs are very low and the exit decision is never seen as a tragedy. In this portion of the market, barriers to survival are lower and new entrants do not have to grow faster in order to survive: not surprisingly, the fourteen regions for which Gibrat's Law holds comprise most of those in the South (Abruzzo, Molise, Basilicata, Puglia, Calabria, Sicilia, Sardegna, with the only exception of Campania[13]), where this marginal fringe is wider than elsewhere, entry rates are lower (cf. table 3 above), and barriers to survival have also been shown to be lower (cf. section 3 above). Of course, opposite considerations apply to the six regions for which Gibrat's Law proved out not to hold: in such cases smaller firms must grow faster than their larger counterparts in order to survive. In fact, these are regions in which the tourism sector is traditionally well-developed, entry rates are high due to favourable environmental conditions, and incumbents are more likely to protect existing rents by promoting increases in efficiency and introducing organizational innovations.

V - CONCLUDING REMARKS

In this paper I have analyzed industry dynamics in Italian tourism services. The main findings of the paper are that: a) survival patterns differ significantly across different Italian regions; b) the hazard function has a bell shape with a peak at the second year of activity; c) start-up size is statistically related to the likelihood of new-firm survival for the majority of regions and for the country as a whole; d) Gibrat's Law *does* apply to new-firm start-ups in fourteen Italian regions, whereas it *does not* in six regions and the country as a whole.

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[13] As regards Northern Italy, Gibrat's Law holds for five (Valle d'Aosta, Piemonte, Liguria, Friuli Venezia-Giulia, Veneto) out of seven regions, whereas in the case of Central Italy it is true for two (Toscana and Umbria) out of five regions.

In view of recent theories and the results of other empirical studies on the links between firm size and the likelihood of survival, the empirical evidence presented in this paper concerning the probability of survival for new firms in Italian tourism services substantially confirms the importance of firm-specific factors as determinants of post-entry performance. The puzzle is instead why Gibrat's Law should hold among new and small enterprises in most regions, whereas it has been shown not to hold in the case of other countries and in that of Italian manufacturing. The simplest explanations are i) that previous studies have been conducted at the national level and therefore do not consider region-specific aspects of this phenomenon, and ii) that the Law of Proportionate Effect is more likely to hold within narrow size classes. An alternative interpretation is that the probability of a proportionate change in size during the relevant period is the same for all new entrants in the marginal fringe of market to which most new tourism service firms in such regions belong.

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