

**Alma Mater Studiorum Università di Bologna**

LMEC – Department of Economics

Academic Year 2009-2010

# **Entrepreneurship: Economics and Policy**

## **Lecture 3**

Prof. Enrico Santarelli

[enrico.santarelli@unibo.it](mailto:enrico.santarelli@unibo.it)

<http://www2.dse.unibo.it/santarel/>

1

## **Determinants of firm exit**

**Carree – Verheul – Santarelli, *JEE*, 2011**

Dealing with the determinants of firm exit, Carree, Verheul and Santarelli (2009) estimate a fixed effects model, including dummies for the regions (next to the year dummies), to correct for unobservable regional attributes that may either prevent or foster firm exit.

The unit of analysis in this paper is NUTS 3 (Provinces).

The provinces are part of the larger NUTS 2 classification (Regions). In Italy NUTS 2 regions are responsible for the adoption and implementation of territory-specific public policies (Carree et al., 2009), whereas NUTS 3 provinces represent sub-regional levels of government with only statutory, regulatory and administrative authority:

- (Bolzano and Trento are exceptions, having the same (and even more) prerogatives of NUTS 2 regions.

## Determinants of firm exit

$Exit_{it}$  = number of firms exiting the industry and province divided by the number of incumbent firms in the industry and province in the previous period;

$Exit_{(t-1)}$  = exit rate in the previous year;

$Entry_{(t-1)}$  = entry rate in the previous year;

$ExitOther_{(t-1)}$  and  $EntryOther_{(t-1)}$  = exit and entry in the other industries in the previous year;

$FirmPC_{(t-1)}$  = the number of registered firms per population in the previous year (agglomeration effect);

$VAPC_{(t-1)}$  = value added per thousand inhabitants in the previous period;

$VAGrowth_{(t-1)}$  = growth of the provinces in terms of growth in value added in the previous period;

$EmployPC_{(t-1)}$  = one-year lagged measure of employment per capita;

$PopDensity$  = size of the population in 2001 in a province per 10,000 inhabitants per square kilometer;

$Districts$  = total number of industrial districts per 1,000 inhabitants in a province;

$ManuSpecialize_{(t-1)}$  = share of registered firms in manufacturing divided by the number of registered firms in all industries included in the analysis;

$Patents_{(t-1)}$  and  $Trademarks_{(t-1)}$  = number of patents and trademarks per employed individual in the previous period ;

## Determinants of firm exit

Carree, Verheul and Santarelli (2009) estimate an OLS regression with region ( $r$ ) and time ( $a$ ) fixed effects:

$$(5) \quad \begin{aligned} Exit_{i,j,t} = & a_{i,j} + r_{i,j} + b_0 Exit_{i,j,t-1} + b_1 Entry_{i,j,t-1} + c_0 ExitOther_{i,j,t-1} + c_1 EntryOther_{i,j,t-1} + \\ & dFirmsPC_{i,j,t-1} + f_1 VAPC_{j,t-1} + f_2 VAGrowth_{j,t-1} + f_3 EmployPC_{j,t-1} + f_4 PopDensity_j + \\ & f_5 Districts_j + f_6 ManuSpecialize_{j,t-1} + f_7 Patents_{j,t-1} + f_8 Trademarks_{j,t-1} + \varepsilon_{i,j,t} \end{aligned}$$

where index  $i$  represents industry ( $i$ =Food, Textile, ..., ICT, Other Business Services), index  $j$  refers to the (NUTS 3) province ( $j=1, \dots, 103$ ) and index  $t$  stands for year ( $t=1998, \dots, 2007$ ). Provinces that are part of the same Italian region (NUTS 2) are assumed to have the same value for  $r$ . Hence, these are regional fixed effects, not provincial fixed effects.

## Determinants of firm exit

**Table 1: Explaining exit in Food, Textile, Clothing, Metal, Construction & Commerce**

	Food	Textile	Clothing	Metal	Construction	Commerce
Exit <sub>(t-1)</sub>	0.162*** (0.036)	0.083*** (0.030)	0.113*** (0.033)	0.118*** (0.035)	0.229*** (0.037)	0.249*** (0.044)
Entry <sub>(t-1)</sub>	0.083*** (0.026)	0.112*** (0.031)	0.080*** (0.026)	0.128*** (0.028)	0.110*** (0.024)	0.038 (0.032)
ExitOther <sub>(t-1)</sub>	0.030 (0.054)	0.141 (0.119)	0.164 (0.101)	0.088 (0.055)	0.010 (0.043)	0.037 (0.039)
EntryOther <sub>(t-1)</sub>	0.039 (0.042)	0.138 (0.094)	-0.018 (0.079)	-0.005 (0.041)	-0.030 (0.032)	0.034 (0.027)
FirmsPC <sub>(t-1)</sub>	-2.165* (1.149)	0.821 (0.546)	5.220*** (1.358)	0.730 (0.771)	0.361** (0.164)	-0.048 (0.097)
VAPC <sub>(t-1)</sub>	0.025 (0.204)	-0.216 (0.469)	-0.359 (0.383)	0.388* (0.200)	0.377*** (0.141)	0.016 (0.113)
VAGrowth <sub>(t-1)</sub>	0.009 (0.019)	-0.108** (0.045)	-0.015 (0.037)	-0.007 (0.019)	-0.014 (0.013)	-0.004 (0.011)
EmployPC <sub>(t-1)</sub>	0.002 (0.014)	0.008 (0.035)	0.070** (0.039)	-0.011 (0.028)	-0.011 (0.014)	-0.003 (0.008)
PopDensity	0.022 (0.016)	-0.111*** (0.038)	0.061* (0.031)	0.020 (0.016)	0.008 (0.012)	-0.001 (0.010)
Districts	-0.828** (0.346)	0.755 (0.867)	-1.645** (0.665)	-0.359 (0.364)	-0.213 (0.245)	-0.478** (0.197)
ManuSpecialize <sub>(t-1)</sub>	-0.027* (0.015)	-0.134*** (0.051)	-0.051 (0.039)	0.022 (0.016)	0.001 (0.011)	0.010 (0.009)
Patents <sub>(t-1)</sub>	-0.818 (3.190)	-0.048 (7.699)	-4.004 (6.235)	-6.288* (3.450)	0.545 (2.231)	-2.004 (1.807)
Trademarks <sub>(t-1)</sub>	-2.533** (1.126)	-0.048 (2.650)	-2.532 (2.148)	-1.872* (1.133)	-1.910** (0.785)	-0.152 (0.642)
Adj. R <sup>2</sup>	0.298	0.165	0.173	0.222	0.572	0.511

N=1132. Standard error between brackets. \*\*\*, \*\*, \* refers to 99%, 95% and 90% confidence level, respectively. We included 10 year dummies (1998-2007) and 20 regional dummies in the analysis, the results of which are not reported.

## Determinants of firm exit

**Table 2: Explaining exit in Horeca, Transport, Finance, Real Estate, ICT & Business Services**

	Horeca	Transport	Finance	Real Estate	ICT	Other Bus. Services
Exit <sub>(t-1)</sub>	0.248*** (0.038)	0.056 (0.037)	0.040 (0.030)	-0.042 (0.028)	0.024 (0.031)	0.032 (0.032)
Entry <sub>(t-1)</sub>	0.135*** (0.025)	0.096*** (0.032)	0.048** (0.019)	-0.008 (0.006)	0.063*** (0.019)	0.096*** (0.020)
ExitOther <sub>(t-1)</sub>	0.072 (0.050)	0.177*** (0.059)	0.247*** (0.069)	0.140** (0.060)	0.260*** (0.075)	0.290*** (0.078)
EntryOther <sub>(t-1)</sub>	-0.107** (0.044)	-0.012 (0.041)	-0.060 (0.056)	0.041 (0.048)	-0.114* (0.068)	-0.220*** (0.064)
FirmsPC <sub>(t-1)</sub>	-0.556** (0.227)	-2.740*** (0.710)	-5.870** (2.728)	-1.377*** (0.387)	3.696 (2.705)	1.377 (1.030)
VAPC <sub>(t-1)</sub>	-0.175 (0.169)	-0.056 (0.198)	-0.321 (0.250)	-0.139 (0.224)	-0.123 (0.287)	-0.325 (0.279)
VAGrowth <sub>(t-1)</sub>	-0.003 (0.016)	-0.002 (0.019)	-0.001 (0.024)	-0.034 (0.022)	-0.017 (0.027)	0.021 (0.026)
EmployPC <sub>(t-1)</sub>	-0.018 (0.012)	0.000 (0.014)	-0.017 (0.019)	0.037** (0.017)	-0.041* (0.021)	-0.037* (0.022)
PopDensity	-0.017 (0.013)	0.007 (0.016)	-0.043** (0.020)	-0.005 (0.018)	-0.017 (0.023)	-0.015 (0.023)
Districts	0.171 (0.294)	-0.753** (0.344)	-0.330 (0.431)	-0.319 (0.392)	-0.603 (0.486)	-0.515 (0.471)
ManuSpecialize <sub>(t-1)</sub>	-0.025* (0.014)	0.017 (0.016)	-0.032* (0.019)	-0.025 (0.017)	-0.026 (0.022)	0.057*** (0.021)
Patents <sub>(t-1)</sub>	-0.331 (2.745)	0.967 (3.135)	0.683 (3.986)	0.373 (3.600)	-2.922 (4.479)	-6.307 (4.370)
Trademarks <sub>(t-1)</sub>	-0.967 (0.959)	0.938 (1.111)	-1.866 (1.451)	-1.802 (1.277)	-0.396 (1.583)	-3.433** (1.571)
Adj. R <sup>2</sup>	0.472	0.354	0.214	0.180	0.293	0.397

N=1132. Standard error between brackets. \*\*\*, \*\*, \* refers to 99%, 95% and 90% confidence level, respectively. We included 10 year dummies (1998-2007) and 20 regional dummies in the analysis, the results of which are not reported.

## **Entrepreneurship and firm entry**

### **Policy issues**

135

### **Entrepreneurship – Highly controversial issue**

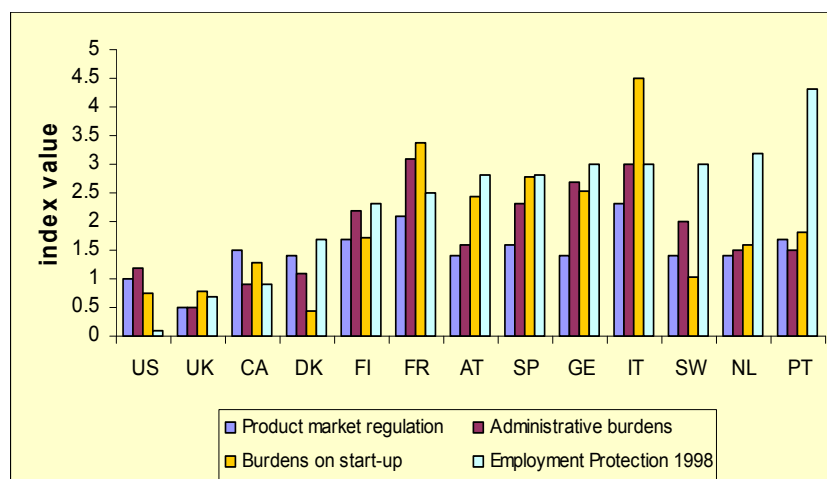
Two schools of thought on the impact of regulation:

1 - regulation imposes a cost burden upon those considering establishing a new business which is not in the public interest, leading to fewer businesses being started (Djankov *et al.*, *QJE*, 2002).

2 – the prime effect of regulation is to alter the distribution of entrepreneurship between “productive” and “unproductive” activities. Thus, highly regulated countries do not have less entrepreneurship than lightly regulated ones but, merely there are differences between those that are recorded or registered (Baumol, *JPE*, 1990).

136

## Regulatory barriers index (OECD)



137

## Entrepreneurial roles

- Knight (1921), Schumpeter (1934), and Kirzner (1997) drew attention to subjective features which act as “**push factors**” and are related both to environmental variables and to the potential founder’s personal characteristics:
- Knight neoclassical entrepreneur: “assuming the risk associated with uncertainty”.
- Schumpeter innovating entrepreneur (→): “carrying out new combinations we call enterprise; the individuals whose function it is to carry them out we call entrepreneurs”;
- Kirzner neo-Austrian “alert” entrepreneur: “perceiving profit opportunities”; “driving the competitive-equilibrative forces of the market”.

138

### **Small and large firms: W. Baumol's "David-Goliath" partnership**

innovative activity has been divided by market forces between small firms and large, with each tending to specialize in a different part of the task (Baumol, 2002a). Even though the preponderance of private expenditure on research and development (R&D) is provided by the giant business enterprises, a critical share of the innovative breakthroughs of recent centuries has been contributed by firms of very modest size. These radical inventions then have been sold, leased or otherwise put into the hands of the giant companies, which have then proceeded to develop them—adding capacity, reliability, user-friendliness and marketability more generally—to turn them into the novel consumer products that have transformed the way we live. I have referred to this division of labor as the "David-Goliath partnership," the value of whose combined contributions clearly exceed the sum of the parts.

## **ISSUE**

Entrepreneurial firms with favorable prospects for growth do not simply contribute to job creation and social cohesion. They are also important because of their :

- innovative and competitive power, when endowed with the "right" human capital (see Piergiovanni and Santarelli, 2006; Audretsch, Thurik, Verheul and Wennekers, 2002);
- social "values" and capital which can be transferred to future generations (through succession in family firms; cf. Uhlaner and Psathakakis, 1992; Santarelli and Lotti, 2005 →).

Policy-makers' fear that individuals may be discouraged to become entrepreneurs by administrative hurdles (**too much regulation**), lack of information on how to start, **an unfavorable economic climate**, shortage of **financial and human capital** (Thurik, 2006). They usually believe that **public subsidies in support of new form formation** are the **best and only** instrument for having more entrepreneurship in their countries.

## ISSUE

### THE MYTH:

“...an entrepreneur is innovative, flexible, dynamic, risk-taking, creative and growth-oriented”

(Stevenson and Gumpert, *HBR*, 1985)

### THE QUESTION:

Is Subsidizing Entry an Optimal Policy?

(Santarelli and Vivarelli, *ICC*, 2002)

### THE ANSWER:

NO

141

## THE REVOLVING DOOR

### SURVIVAL RATES OF NEW FIRMS ARE REMARKABLY LOW:

20-40 per cent of entering firms fail within the first two years after start-up, while only 40 to 50 per cent survive beyond the seventh year (Dunne, Roberts and Samuelson, *RJE*, 1988 and *QJE*, 1989; Reid, *IJIO*, 1991; *OECD*, 2003; Bartelsman, Scarpetta and Schivardi, *ICC*, 2005)

### ENTRY AND EXIT RATES ARE SIGNIFICANTLY CORRELATED:

The “..mechanism of displacement, which seems to be the most palpable consequence of entry, affects young, new firms more severely” (Geroski, *IJIO*, 1995, p. 424).

### PRELIMINARY CONCLUSION No. 1:

**A SIGNIFICANT PORTION OF WHAT WE CALL “ENTREPRENEURSHIP” IS IN FACT JUST “BUSINESS OWNERSHIP” AND IT OFTEN IDENTIFIES CHURNING AND TURBULENCE.**

142

**Audretsch, Santarelli and Vivarelli (*IJIO*, 1999) studied 1570 new Italian manufacturing firms – with at least one employee - and tracked their post-entry evolution for six years. They found that hazard rates increased markedly during the first two years and then tended to decrease, with a final survival rate after 6 years of activity equal to 59.1%.**

Table 1  
Survival and hazard rates of new firms in Italian manufacturing: 1987–93

Month	Survival		Hazard	
	Surviving firms	Survival rate <sup>a</sup>	Exiting firms	Hazard rate <sup>b</sup>
1/87	1570			
1/88	1435	91.1%	141	9.4%
1/89	1286	81.6%	149	11.0%
1/90	1183	75.1%	103	8.3%
1/91	1077	68.3%	106	9.4%
1/92	988	62.7%	89	8.6%
1/93	932	59.1%	56	5.8%

<sup>a</sup> share of new firms started up in January 1987 still in existence as of January of each subsequent year.

<sup>b</sup> ratio of firms escaping from operation in each year following start-up to the average number of firms surviving during that year (mean of the absolute values at the beginning and the end of the relevant year).

}

## ENTREPRENEURSHIP VS HETEROGENEITY

### ENTRY # ENTREPRENEURSHIP # INNOVATION

- Schumpeter (1934) informs us that entry of new firms is due to a large majority of “imitators” and a tiny minority of leaders (innovators).
- According to Baumol (2005), “replicative” entrepreneurs are those who start a firm similar to previously-started businesses.
- We have to recognize that when dealing with gross entry across all economic sectors we encounter a multitude of “followers” and very few “real” entrepreneurs (innovators).
- As in many other fields of industrial organization literature, “heterogeneity” (see Dosi, *JEL*, 1988; Dosi *et al.*, *SBEJ*, 1995) is a crucial feature in explaining the start-up of new firms, their extremely diverse chances of survival and their very different post-entry performances.

### PRELIMINARY CONCLUSION No. 2:

**“ERGA OMNES” ENTRY SUBSIDIES ARE WASTEFUL**

144

## A POSSIBLE ROLE FOR SELECTIVE POLICIES?

In principle, mapping out the **different microeconomic determinants** of new firm formation and the relationship between ex-ante characteristics of the founder and his/her post-entry performance, may help policy makers in singling out “entrepreneurship” from market “churning” and “turbulence” (Business Plan?).

For instance:

- Financial constraints and entry decision
- Entry size
- Determinants of entry and motivations
- Human capital
- Innovativeness
- Firms which are not new but are not run any longer by their founder (heirs continuing his/her activity after the founder’s retirement)

145

## ARE WOULD-BE ENTREPRENEURS FINANCIALLY CONSTRAINED?

- Piergiovanni and Santarelli (*SBEJ*, 1995) found that capital market imperfections and credit constraints may prevent otherwise efficient firms from becoming established and growing (with UTRATE = ratio of utilized credit to the total line of credit).

Determinants of new firm formation in Italian Producer Services

	Dep. var.	Fertility	index	Dep. var.	Birth	index		
Intercept	-14.494 (-6.039)	-12.730 (-5.408)	-14.235 (-5.895)	-12.560 (-5.306)	-0.305 (-2.964)	-0.197 (-1.871)	-0.298 (-2.892)	-0.185 (-1.751)
EMPEF	0.046 (2.517)	0.043 (2.334)			0.002 (2.021)	0.002 (2.399)		
SFP	0.216 (7.915)	0.193 (7.283)	0.214 (7.785)	0.192 (7.201)	0.006 (4.843)	0.005 (4.069)	0.005 (4.753)	0.005 (3.938)
UTRATE	<b>-0.016</b> (-2.159)	<b>-0.008</b> (-1.088)	<b>-0.015</b> (-1.976)	<b>-0.007</b> (-0.959)	<b>-0.003</b> (-8.167)	<b>-0.003</b> (7.932)	<b>-0.003</b> (-8.052)	<b>-0.003</b> (-9.165)
WAGE	-0.197 (-2.649)	-0.258 (-3.572)	-0.151 (-2.086)	-0.213 (-3.041)	0.003 (9.322)	0.003 (7.932)	0.003 (9.846)	0.003 (8.437)
Dpol	0.470 (3.038)		0.449 (2.889)		0.041 (5.734)		0.042 (5.895)	
Adj. R2	0.172	0.154	0.160	0.144	0.453	0.406	0.448	0.399
F	16.755	18.236	19.088	22.235	63.682	65.788	77.940	84.728

## IS ENTRY SIZE A GOOD PREDICTOR OF SURVIVAL? - 1

Some studies have discovered a **positive relationship between start-up size** – which can be seen as a sort of precommitment - **and survival** (see Audretsch and Mahmood, *RESTAT*, 1995; Mata, Portugal and Guimaraes, *IJIO*, 1995).

Audretsch, Santarelli and Vivarelli (1999a (*IJIO*) and 1999b) found that start-up size was not statistically significantly correlated with survival in **9** industrial sectors out of **13** and barely statistically significantly correlated (90% of confidence) only in **3** (see also Agarval and Audretsch, *JIE*, 2001).

At least in some situations - such as Italian manufacturing where small and microfirms are dominating – **virtually all new firms enter the markets well below the MES** and so entry size becomes not so informative about the possible chances of survival.

A recent contribution (Taymaz and Köksal, 2006) rightly points out that start-up size should be considered an **endogenous** variable in survival models. According to this view, entrepreneurs determine their entry size taking into account the risk of failure, limiting their pre-commitment where the risk is higher. If such is the case, the empirical result linking start-up size with a higher likelihood of survival should be considered – at least partially – **spurious**.

147

## IS ENTRY SIZE A GOOD PREDICTOR OF SURVIVAL? - 2

Santarelli (*EmpEc*, 2000) found that in the Italian financial intermediation industry larger firms have lower risk of early exit.

**Table 2.** The determinants of new-firm survival in the Italian financial intermediation industry: regression results from the Proportional Hazards Model

Variables	Cohort 1989			Cohort 1990		
	I	II	III	IV	V	VI
Start-up size	-0.817*** (0.286)	-0.725*** (0.280)		-0.419** (0.176)	-0.391** (0.176)	
Branchpop		-0.363 (0.536)	0.127 (0.528)		-0.570* (0.347)	-0.600* (0.337)
Herfindahl		-0.118 (0.278)	-0.074 (0.268)		0.208 (0.230)	0.373* (0.217)
Cred		-2.407*** (1.080)	-2.547** (1.060)		-2.750*** (1.063)	-2.875*** (1.052)
-2log L	485.760	469.446	480.180	291.324	274.100	280.69
Chi squared	8.479***	19.375***	11.878***	6.245**	19.369***	13.548***
LRI	0.984	0.921	0.932	0.981	0.953	0.965
N	110	110	110	72	72	72

Standard errors in brackets. \* = significant at the 90% level of confidence; \*\* = significant at the 95% level of confidence; \*\*\* = significant at the 99% level of confidence

148

## ENTRY DETERMINANTS AND INDIVIDUAL MOTIVATIONS - 2

Indeed, Knight (1921), Schumpeter (1934) and Oxenfeldt (1943) drew attention to subjective features which act as “**push factors**” and are related both to environmental variables and to the potential founder’s personal characteristics:

1. **Self-employment choice** based on:  $(\Pi - W)^e$  (Creedy and Johnson, *AE*, 1983; Audretsch and Vivarelli, *EL* 1995; Parker, *Economica*, 1996)
2. “**Escape from unemployment**” (Evans and Leighton, *AER*, 1989 and *SBEJ*, 1990; Storey, 1991; Masuda *SBEJ*, 2006)
3. **Geographical/family/sectoral inertia**, and previous job experience (Storey, 1982 and 1994; Johnson, 1986; Shane, *OS*, 2000; Klepper, *ICC*, 2001; Santarelli and Lotti, *JEB*, 2005)
4. **Non economic-personal motivations** such as self-satisfaction and desire to be independent (Blanchflower and Meyer, *SBEJ*, 1994; Blanchflower and Oswald, *JLE*, 1998; Vivarelli, *SBEJ*, 2004)

149

## Defensive entrepreneurship

A **defensive motivation** may be identified when new firm formation is triggered by an “**income choice**” and by a high number of job losses (Audretsch and Vivarelli, *EL*, 1995, studying entry rates in 78 Italian provinces over the period 1985-88)

150

80 *D. Audretsch, M. Vivarelli / Economics Letters 48 (1995) 77–81*Table 1  
Startups of Italian manufacturing firms: Regression results (within-group estimator)<sup>a</sup>

	(1)	(2)	(3) <sup>b</sup>
Profits	0.147** (2.353)	0.164** (2.565)	0.317** (5.299)
Wages	-0.566** (-3.492)	-0.635** (-3.697)	-0.962** (-7.125)
Job losses	0.055 (1.363)	0.041 (0.983)	0.149** (3.492)
Small firms	0.582** (7.944)	0.509** (6.724)	-
Agglomeration	0.010 (0.252)	0.052 (1.214)	0.061 (1.185)
Employment	0.322** (4.648)	0.385** (5.206)	0.758** (13.735)
Northwest	-	0.228** (2.477)	0.290** (3.281)
Northeast-centre	-	0.296** (3.372)	0.408** (5.351)
South	-	0.192* (2.294)	0.218** (2.762)
Intercept 1985	4.937* (2.131)	5.524* (2.101)	7.244** (3.340)
Intercept 1986	4.857* (2.096)	5.443* (2.069)	7.163** (3.301)
Intercept 1987	4.797* (2.066)	5.386* (2.043)	7.137** (3.282)
Intercept 1988	4.686* (2.016)	5.276* (1.997)	6.994** (3.210)
R <sup>2</sup>	0.890	0.900	0.880
F	280.662**	218.692**	204.346**
Covariance test for overall homogeneity	F(21; 284) = 2.36**	F(30; 272) = 2.42**	F(27; 276) = 1.79
Covariance test for slope homogeneity	F(18; 284) = 1.14	F(27; 272) = 1.59*	F(24; 276) = 1.00
Breusch-Pagan's test for heteroskedasticity	$\chi^2(9) = 12.79$	$\chi^2(12) = 20.90$	$\chi^2(11) = 21.22^*$
Sample size	312	312	312

<sup>a</sup>t-statistics in parentheses.<sup>b</sup>Heteroskedasticity – consistent covariance matrix.

\*Significant at 95% level of confidence.

\*\*Significant at 99% level of confidence.

151

**Non economic factors** turn out to be more important than economic ones (Vivarelli and Audretsch, *ICC*, 1998; 100 Italian newborn firms; score: 1-5)

————— *Entry Decision and Post-entry Performance* —————

TABLE 1. Mean Importance in Startup Decision

Motivation	Mean score	SD	Maximum score <sup>a</sup>
Independence	4.26	1.25	65
Skill	4.06	1.33	55
Profit	3.93	1.31	50
Niche	3.37	1.56	35
Unemployment	2.19	1.55	15
Innovation	2.09	1.54	17
Family	1.77	1.42	11

<sup>a</sup>Indicates the number of interviewed entrepreneurs awarding the maximum score (5).

152

**Non economic factors** turn out to be more important than economic ones (Arrighetti and Vivarelli, *SEJ*, 1999; 147 Italian spin-offs; score: 1-10)

*Innovation and Firms' Postentry Performance* 933

**Table 1.** Ranking of Factors Influencing New Firm (Spin-off) Formation (Range 0-10)

	Median	Mean	Standard Deviation	Variation Coefficient
Desire to Manage Working Time	9	7.701	2.996	0.389
Refusal to Carry Out Tasks for Others	8	6.286	3.640	0.579
Openness of a Market Niche	7	6.299	2.980	0.473
Perceived Potential for Income Increase	6	5.503	3.062	0.556
Disagreement About the General Managing Criteria of the Mother Firm	5	4.122	3.721	0.903
Belief in Introducing a Marketing Innovation	5	4.122	3.501	0.849
Underestimation of Skills by the Mother Firm	4	3.939	3.642	0.925
Belief in Introducing a Process Innovation	4	3.809	3.706	0.973
Concern About Future Career Developments	3	3.776	3.848	1.019
Underestimation of Technological Opportunities by the Mother Firm	3	3.374	3.309	0.981
Belief in Introducing a Product Innovation	2	3.388	3.582	1.057
Scepticism About Prospects of the Mother Firm	1	3.395	3.711	1.093
Waste of Market Opportunities by the Mother Firm	1	2.003	3.361	1.123
Fear of Becoming Unemployed	1	2.905	3.602	1.240
Support from the Mother Firm	0	1.714	2.017	1.702

3

## IMPLICATIONS

1. New firm formation is not only a response to market opportunities (highest sectoral profit expectations);
2. Inertia and path dependence are important;
3. Defensive motivations such as low wages, concern about future career developments and the fear to be unemployed may be important;
4. Non economic "push factors" dominate economic "pull factors".

This picture confirms that "entrepreneurship" is a controversial phenomenon, where **heterogeneity**, **overconfidence** (Camerer and Lovo, *AER*, 1999) and "entry mistakes" (Geroski and Mazzucato, *IJIO*, 2001; Dosi and Lovo, 1998) may play an important role.

### PRELIMINARY CONCLUSION:

In most cases new firm formation can be seen as a "try and see" bet. In this view, new founders – mainly driven by personal motivations and "local" circumstances - "visit" a sectoral niche searching for business chances; later, they discover whether their entry decision was right or wrong and may decide to exit (Jovanovic, *Econometrica*, 1982).

**Accordingly, market churning, turbulence and early failure should be considered as normal features of industrial dynamics**

154

### IS HUMAN CAPITAL A GOOD PREDICTOR OF AN ABOVE-THE-AVERAGE POST-ENTRY PERFORMANCE?

- **New firm formation is not an “unicum”**: entry and entrepreneurship are not synonyms.
- Since new firm formation is an aggregate where innovators and escapers from unemployment, rational entrepreneurs and over-optimists, experienced and committed founders and “try and see” gamblers are all mixed up together, **post-entry performance of newborn firms may vary greatly**.
- Policy makers should be aware of this **compositional effect**.
- Do *ex-ante* characteristics such as **founder’s education and human capital** increase the likelihood of survival and new firm’s *post-entry* economic performance?

**YES** ( Bates, *RESTAT*, 1990; Brüderl, Preisdörfer and Ziegler, *ASR*, 1992; Gimeno *et al.*, *ASQ*, 1997). In particular, specific rather than generic education and skills are better predictors of improved post-entry performance, especially as far as *NTBFs* are concerned (see Almus and Nerlinger, *SBEJ*, 1999; Colombo and Grilli, *RP*, 2005).

- Against the **“Jack of all trades”** hypothesis, some authors (Lazear, *AERPP* 2004 and *JLE*, 2005), Åstebro (2005) and Silva (2006) consider the “taste for variety” endogenous and show that no casual relationship can be detected between the spread of knowledge across different fields and the choice to become an entrepreneur

155

### IS INNOVATIVENESS A GOOD PREDICTOR OF AN ABOVE-THE-AVERAGE POST-ENTRY PERFORMANCE?

- **YES, WHILE DEFENSIVE MOTIVATIONS HAVE THE OPPOSITE EFFECT**
- Cefis and Marsili (*ICC*, 2005 and *RP* 2006) find evidence of an **“innovation premium”** in survival time: being an innovator enhanced the expected time of survival by 11 per cent compared with non-innovator counterparts.
- Vivarelli and Audretsch (*ICC*, 1998) find that an **innovative propensity** is a good predictor of better post-entry performance in terms of economic returns, employment growth and export growth, while the opposite is true for the **“escape from unemployment”** motivation.
- New founders formerly unemployed exit to a higher extent than those who have entered from paid employment (Carrasco, *OBES*, 1999; Pfeiffer and Reize, *LE*, 2000) and have lower economic outcomes and a lower propensity to positively contribute to job creation (Andersson and Wadensjö, 2006).
- Arrighetti and Vivarelli (*SEJ*, 1999) - after applying both a factor and a cluster analysis on a sample of 147 Italian spin-offs - found that **innovative factors are correlated with a better post-entry performance**, while **defensive motivations such as the concern about future career developments and the fear of becoming unemployed are predictors of a below-the-average post-entry evolution**.

156

936 *Alessandro Arrighetti and Marco Vivarelli***Table 5.** Dependent Variable: Postentry Performance (Two-Tailed *t*-Tests in Brackets)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
F1	0.21*** (3.09)	0.20*** (2.73)			
F2	0.15 (1.08)	0.13 (0.92)			
F3	0.02 (0.22)	0.02 (0.25)			
F4	0.04 (0.45)	0.05 (0.68)			
Position		0.10* (1.77)		0.10* (1.80)	
FF1			0.06 (0.70)	0.06 (0.68)	
FF2			0.24*** (3.88)	0.22*** (3.32)	
FF3			0.08 (0.99)	0.03 (0.30)	
Innovation					0.52** (2.15)
Experience					0.06 (0.34)
Defense					-0.15* (-1.71)
<i>R</i> <sup>2</sup>	0.23	0.24	0.22	0.23	0.05
Adj. <i>R</i> <sup>2</sup>	0.10	0.11	0.09	0.10	0.04

All regressions except *e* were run controlling for sectoral fixed effects and applying White's correction for heteroscedasticity.

\**p* < 0.10.

\*\**p* < 0.05.

\*\*\**p* < 0.01.

157

## Family firms

### Family firm:

- 1 – direct family involvement in daily operation;**
- 2 – More than one family member with direct managerial responsibilities;**
- 3 – multiple generations involved**

158

### Succession problem in family firms (Santarelli and Lotti, IJEC, 2005)

Table 1. Number of firms registered in the chamber of commerce files and active for at least 25 years, and number of survivors in 1999

	Number of firms born in the 1950-65 period and active for at least 25 years	Percentage	Number of firms still active in 1999	Percentage of survivors
Manufacturing	172	19.94	107	62.21
Retailing	573	63.10	345	60.21
Hospitality	163	17.95	115	70.55
<b>Total</b>	<b>908</b>	<b>100</b>	<b>567</b>	<b>62.44</b>

159

### Succession problem in family firms (Santarelli and Lotti, IJEC, 2005)

188 E. Santarelli & F. Lotti

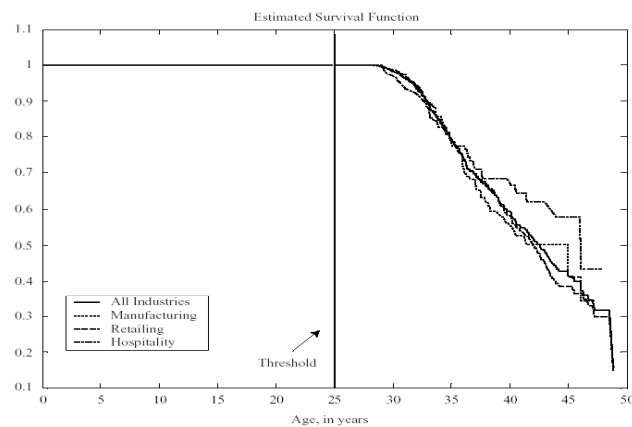


Figure 2. Kaplan-Meier survival estimates.

160

## POLICY IMPLICATION 1: WASTE AND SUBSTITUTION EFFECTS

### GENERAL CONCLUSION:

Far from being solely the result of the entrepreneurial “creative destruction”, any set of entrepreneurial ventures can be seen as a heterogeneous aggregate where innovative entrepreneurs are together with passive followers, over-optimist gamblers and even escapees from unemployment.

Since founders are heterogeneous and may make “entry mistakes”, most new firms are doomed to early failure; this type of entry is not conducive to technological renewal and economic growth, but simply to excess of entry, market churning and turbulence.

HENCE “ERGA OMNES” ENTRY SUBSIDIES ARE BOTH WASTEFUL (WHEN THEY SUPPORT REVOLVING DOOR FIRMS) AND AFFECTED BY THE “SUBSTITUTION EFFECT”: THEY MAY SUPPORT THE LESS EFFICIENT NEWBORN FIRMS CROWDING OUT THE MORE EFFICIENT ONES.

For instance, some vulnerable groups characterised by regressive determinants and thus by the highest expected early-failure rates, are the most commonly targeted by start-up promotion policies (see the widespread incentives for the unemployed to start a new business).<sup>181</sup>

## POLICY IMPLICATION 2: DEADWEIGHT EFFECT

### GENERAL CONCLUSION:

*Ex-ante* “genetic” features of the founder, such as specific education and innovativeness, may be positive predictors of a higher likelihood of survival and a better post-entry business performance.

NEVERTHELESS, SELECTIVE ENTRY SUBSIDIES MAY IMPLY A “DEADWEIGHT EFFECT”: THE BENEFICIARY FROM THE SUBSIDY WOULD HAVE SURVIVED AND GROWN IN ANY CASE.

Hence, subsidies should be conditional on an obvious and unambiguous market failure (such as capital market imperfections and credit constraints; cf. Piergiovanni and Santarelli, *SBEJ*, 1995) which prevents otherwise efficient firms from becoming established and growing.

However, recent studies have shown that – at least in Anglo-Saxon countries - the role of credit rationing has been over-emphasized and that entrepreneurial saving plans may be able to overcome borrowing constraints (Cressy, *EJ*, 1996 and *EL*, 2000; Parker, *SBEJ*, 2000 and *SJPE*, 2002; Hurst and Lusardi, *JPE*, 2004).

### POLICY IMPLICATION 3: MARKET DISTORTION

#### GENERAL CONCLUSION:

Since new firm formation is affected by entry mistakes and churning, market selection can efficiently single out real entrepreneurs from “revolving door” founders and so pick up those newborn firms which can really contribute to technological progress and economic growth.

HENCE, ENTRY SUBSIDIES MAY CANCEL – OR AT LEAST REDUCE – THE INTRINSIC DIFFERENTIALS BETWEEN *EX-ANTE* LESS EFFICIENT AND MORE EFFICIENT NEWBORN FIRMS, DISTORT BOTH MARKET SELECTION AND THE LEARNING PROCESS THAT NEW FOUNDERS HAVE TO UNDERTAKE AND SO POSTPONE THE EXIT OF THE LESS EFFICIENT FIRMS.

#### FINAL (PROVOCATIVE?) CONCLUSIONS:

While most politicians and practitioners are claiming that the economy needs more new firms and “entrepreneurship”, one may well argue that the opposite is the case:

Modern developed economies are affected by too many start-ups and policy makers should be worrying about “in fact excess of entry”, turbulence and revolving door market churning, rather than an alleged lack of “entrepreneurship”.

163