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Entry in the Italian banking market: an empirical analysis

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Summary: This paper presents an analysis of the Italian banking market. We concentrate our study on the choice by banks to open new branches, considering both new entrant banks and incumbents. We first show the evolution of the branches in the Italian market in the period 2000-2007, and then propose a model to study the reasons which drive banks to their strategic choice. We emphasize the role of concentration of the market, functional distance and exogenous demand factors, as population density and pro-capita income.

Keywords: Branches, Banking, Barriers to entry

1. Introduction

The importance of the conditions of entry for competition has a venerable history in classical economic theory: freedom of entry to and exit from is one of the few conditions that must hold in order for a market to be perfectly competitive; if no entry barriers exist a market is "contestable". Baumol (1982) and Baumol et al. (1983) show that, in such a case, regardless of the structure of a market, monopoly pricing cannot take place because monopoly profits will immediately be contested by new entrants.

Previously, seminal works by Sylos-Labini (1956) and Bain (1956) had analyzed barriers to new competition and entry into a market, making it a central issue in regulatory economics and industrial organization.

The empirical studies on entry has focused on many sectors, from manufacturing industries (Evans and Siegfried, 1992) to airlines (Berry, 1992) and electricity industries (Joskow et al., 1994), and this literature has concentrated on factors such as profitability, concentration and growth of the market, suggesting antitrust authorities elements that have to be taken into consideration during inquiries.

Siegfried and Evans (1994) summarized the empirical work on entry across industries, both in the United States and in other countries. They found that entry is positively related to industry profitability and growth. Geroski (1995) found that "de novo" entry is common across industries, but the survival rate of entrants is low.

The most relevant entry evidence for our study comes from research on the banking industry: the banking industry is one of the most analyzed and an excellent case study, since data are available more than in other sectors. For a complete discussion of barriers to entry in banking see Rhoades (1997).

Many papers have empirically analyzed the decision to open new branches in different countries: Avery et al. (1997) analyze the American market in the de-regulation period 1975-1995; Moore and Skelton (1998) focus on the entry of new banks in local markets given the decrease in the total number of banking organizations; Berger et al. (2004) study the effect of mergers and acquisitions on the dynamic of market entry in the United States; other contributions about the decision of entry into the American market are in Berger and Dick (2004), Feinberg (2005), and Adams and Amel (2007). Greve (2000) focuses his analysis on the local market of Tokyo from 1894 to 1936; Barros (1999) uses a 2SLS method to analyze the Portuguese sector; Fuentelsaz and Gomez (2001) and De Juan (2002) study the entry of new competitors in Spain.

In Italy the bank sector has been analyzed by many scholars: Cerasi (1996) proposes a model of competition in the retail banking market and tests his model in Cerasi et al (2000); Calcagnini et al. (2001) analyze

the growth of new branches in Italy from 1992 to 1996; Alessandrini et al. (2005) concentrate on the geography of banking power in Italy, where most of the banks have their central offices in the North.

In this paper we study banks' decision to open new branches in Italy, analyzing the period 2000-2007 empirically: to our knowledge this period has not been previously analyzed by scientific literature, even if it is of central importance since it immediately follows the banking market liberalization of the nineties. Moreover we consider different kinds of banks (*Banche di Credito Cooperativo, Banche Popolari and Banche SPA*), while other analyses concentrate on big dimension banks only, mainly focusing *on Banche SPA* (joint stock companies).

From a theoretical point of view, the decision to open new branches is not different from that to enter into a new market: standard theories posit that greater entry (or potential entry) leads to more competitive market equilibria; hence entry assumes considerable importance in government regulation and antitrust laws.

In our analysis we first describe the growth of bank branches in Italy in the period 2000-2007, concentrating on the 103 Italian provinces which at that time were operative: from our study we obtain that there is an increasing gap between the North and the South of Italy, where the number of bank branches is considerable smaller.

In the second part of the paper we propose an empirical analysis concerning the decision of a bank to open new branches considering, for the first time in the literature on Italian banking market, both the case of "new entry" and the case of an incumbent deciding to open another branch. Entry can take place both through branching by existing banks and through the creation of *denovo* banks, in this paper we concentrate only on entry through branching by existing banks. The main result of our work shows that, on the supply side, concentration of the market is not a clear deterrence to the entry.

The structure of the paper is the following: the next section describes the main change in supply of branches in Italy in the period 2000-2007, showing in particular the evolution by provinces; in section 3 we propose a model to test, using *logit* methodology, the main forces that make a bank open new branches; the final section is a conclusion.

2. The descriptive analysis

In the last decades liberalization of banking services has radically changed the presence of banks and branches in Italy. Even if exponential growth of new technology use has modified strategies and the role of banks, opening new windows is one of the most important decisions by banks: bank branches remain the main retail instruments used by banks, and the presence of financial intermediaries is a necessary condition to obtain resources for businessmen and firms. Hence the localization choice, i.e. the choice of the place where a new branch will be opened, is probably one of the most important strategic decision for a bank.

Analyzing the evolution of the banking system in Italy in the first years of the new century,[1] we can observe a growth in the number of branches that goes from 26923 in 2000 to 33060 in 2007, with a 23% total increase. Such an increase is not constant and fluctuates between a maximum of 4.82% in 2001 to a minimum of 1.42% in 2004.

Overall, in the period under scrutiny, the Italian banking sector has observed an increase in the concentration, with the total number of banks decreased from 777 to 727. As a consequence the average number of branches for institute has increased by 28.5%, from 35 in 1998 to 45 in 2007.

Moreover it is possible to distinguish banks according to the juridical structure of the institute. In such a case it is important to note the increase by 50% in the average number of branches of the *Banche di Credito Cooperativo*, which are local banks typically.

The change in the number of branches is reflected into the change in market share of any type of bank: as we can observe in Table 1, while the *Banche di Credito Cooperativo* (*bkcc*) have preserved their quota, the *Banche Popolari* (*bkpop*) have lost their share in favor of *Banche SpA* (*bkspa*) that now hold almost 80% of the market.

[1]All the banking statistics come from the Bank of Italy, while the remainder come from the Italian National Institute of Statistics (ISTAT). Data on individual banks include their locations, loans, deposits, branches, total assets, profits. Data are available on the web site of the Bank of Italy and, upon request, from authors.

Table 1. Number of branches and market share for type of bank.

	Banche Popolari		Banche Credito Cooperativo		Banche Spa	
	Branches	Share	Branches	Share	Branches	Share
2000	4800	17.24	2955	10.61	19168	68.83
2001	5037	17.26	3047	10.44	21105	72.30
2002	3704	12.41	3193	10.70	22955	76.90
2003	3472	11.41	3323	10.92	23624	77.66
2004	3627	11.76	3465	11.23	23759	77.01
2005	3746	11.93	3605	11.48	24047	76.59
2006	3841	11.92	3753	11.65	24625	76.43
2007	2860	8.65	3919	11.85	26281	79.49

Source: elaboration on the Bank of Italy data

The Bank of Italy provides data for Italian regions,we aggregate such data considering five macro-regions: North-West, North-East, Center, South and Islands. It is possible to calculate the evolution in the number of branches in any area and the quota of any area with respect to Italy: it is evident that the growth in the supply system of banks, i.e. the increase in the number of branches, does not cover the great divide between the North of the country and the Italian *Mezzogiorno*. Even if in all the five macro areas there is an increase in the supply of branches, Norh-East, North-West and Center branches show a bigger growth compared to the South and Islands: 17%, 20% and 23% respectively versus 14% and 8%. Moreover the quota of branches with respect to the Italian market decreases of 0.28% in the South and 0.65% in the Islands.

In order to analyze the banking system and to compare different areas, it is appropriate to ponder data with the number of inhabitants. Hence in Table 2 we built the number of branches for 10000 inhabitants. In such a way it is more evident the increasing gap between the North-East and the South: in 2000 an inhabitant of the North-Easthas on average 4.19 branches more than an inhabitant of the South; in 2007 such a gap turned to 4.52.

Table 2. Branches every 10000 inhabitants for macro-regions in Italy

	North-West	North-East	Center	South	Islands	Italy
2000	5.86	7.10	5.14	2.91	3.46	4.95
2001	6.07	7.34	5.39	3.02	3.56	5.14
2002	6.15	7.46	5.50	3.08	3.56	5.23
2003	6.17	7.58	5.58	3.10	3.53	5.27
2004	6.15	7.55	5.62	3.14	3.58	5.30
2005	6.21	7.62	5.72	3.18	3.61	5.36
2006	6.35	7.79	5.80	3.26	3.64	5.47
2007	6.45	7.90	5.92	3.32	3.70	5.57

Source: elaboration on the Bank of Italy and ISTAT data

Two kinds of operators can decide to open branches: entrant banks and incumbents. In the first case we have an expansion in the diversification of the supply, in the latter a sort of defense by banks present in an area.

The variation of branches in an area from time t to time t+1can be described by the following identity:

$$drbk \equiv ne + inc_{ex} + inc_{cl} - m - exit$$

where:

drbrk is the variation of branches from t to t+1;

ne is the number of branches opened by new entry banks, i.e. the branches opened by banks which did not operate into the local market in the previous period;

inc_{ex} is the number of branches opened by incumbents, i.e. banks which did operate into the local market in the previous period;

inc_{cl} is the number of branches closed by incumbents;

m represents the branches which changed owner in the period, which can happen in the case of mergers;

exit is the number of branches closed by banks which terminate their activity.

Analyzing the data set provided by the Bank of Italy we found out the value of each variable included in the identity: Table 3 describes our results.

Table 3. Evolution of branches in Italy

	Dbrbk	Ne	Inc-ex	Inc-cl	M	Exit	Bra	Ne/Bra %
2000	768	833	1364	777	649	3	27849	2.99
2001	1341	2816	1499	478	2411	85	29189	9.65
2002	663	369	3575	267	2983	31	29852	1.24
2003	567	1455	909	1413	357	27	30419	4.78
2004	432	265	730	464	85	14	30851	0.86
2005	546	189	936	443	133	3	31398	0.60
2006	821	375	1015	358	208	3	32219	1.16
2007	841	364	2134	266	1387	4	33060	1.10

Source: elaboration on the Bank of Italy data.

The last two columns illustrate the total number of branches and the ratio between new entrants and branches. Such a ratio shows that, in the first four years of the century, the Italian market was open to new entrants, that partially modified the equilibria in market composition. On the contrary, in more recent years, the banking market seems to be more stable and less open to change its composition. This result is partially confirmed by the observation that the wave of mergers and acquisitions in the sector was particularly intense in the same period, decreasing in the last years.

The entry in a provincial market by a new bank is more interesting to analyze than the opening of a new branch by an incumbent, because it represents a geographical diversification strategy and, as a consequence, it might be more risky for the bank. In Table 4 we link the number of entrant banks with the number of provinces: for example in 2001, that is the years with the greatest number of new entry, the total number of provinces with new entries is 103, that is every single Italian province had at least 1 new entry; moreover in seven provinces there was just 1 new entry, in eleven provinces 2 new entries and so on up to one province (Milan) with 27 new entries.

Table 4. New entry in Italian provinces

	2000	2001	2002	2003	2004	2005	2006	2007
1	22	7	34	13	27	27	22	24
2	23	11	26	14	17	24	26	26
3	26	18	11	28	23	18	14	21
4	4	20	8	19	5	1	9	9
5	7	16	2	10	5	3	1	3
6	3	9	0	6	2	3	1	1
7	3	4	0	0	1	0	1	0
8	1	1	2	6	0	0	0	2
9	3	4	1	0	0	0	0	0
10	1	4	2	1	1	0	0	0
11	2	1	1	0	0	0	0	0
12	2	2	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	3	0	1	0	0	0	0
17	1	1	0	0	0	0	0	0
24	0	1	0	0	0	0	0	0
27	0	1	0	0	0	0	0	0
Prov. with n. e. (out of 103 provinces)	98	103	87	98	81	76	74	86
Total n.e.	344	557	217	360	204	166	170	212
Av. n. of n.e.	3.34	5.41	2.11	3.50	1.98	1.61	1.65	2.06

Source: elaboration on the Bank of Italy data.

The last row shows the average number of new entrant banks for every single Italian province. Also these data support the hypothesis that, in the first years of the century, entry in the banking market was more intense due to the fact that an equilibrium was still to be reached. On the contrary, in recent years, the number of new entrants is more constrained.

It is important to note that entry is not a homogenous phenomenon through provinces and that there is a systematical difference between metropolitan provinces (Turin, Milan, Venice, Genoa, Bologna,

Florence, Rome, Bari, Naples) and other zones (and specifically rural areas).

In Table 5 we underline this gap. Banks are interested in increasing their market quota in metropolitan areas: the evidence is that, on average, in the period 2000-2007, the metropolitan provinces have over 6 new entries every year while the other provinces just 2.32.

Table 5. New entry for type of province

	Metropolitan Provinces		Other Provinces	
	New Entry	Average	New Entry	Average
2000	88	9.78	256	2.72
2001	130	14.44	427	4.54
2002	66	7.33	151	1.61
2003	68	7.56	292	3.11
2004	41	4.56	163	1.73
2005	33	3.67	133	1.41
2006	25	2.78	145	1.54
2007	28	3.11	184	1.96
Av.		6.65		2.32

Source: elaboration on the Bank of Italy data

Finally it is important to underline that, analyzing the data provided by the Bank of Italy, we see that entrant banks prefer to open their branches in the South while incumbents prefer to reinforce their structure in the North of Italy. The main reason might be the structural deficiency of banks in the South that makes new entry easier: a big financial group that has not opened a branch in a province of the South yet, is an "entrant" in the South and an "incumbent" in its original region of the North. In other words, the areas of the South are less saturated, even if the appeal of many provinces is not so strong.

In the period 2000-2007 the banking industry has increased the number of branches into the Italian territory; liberalization can be seen as one reason of such an expansion, together with the necessity to reorganize the selling structure. The trend seems to be a strong entry in

metropolitan markets and the progressive exit from the less desirable southern markets.

3. The empirical model

In this paragraph we present a model that analyzes the choice of a bank to open new branches in Italian provinces in the years 2000-2007. We estimate a logistic regression for each years, considering separately both new entrant banks and incumbents (for a description of *logit* models see, for instance, Greene, 2000).

We identify entry with the decision of a bank to open a branch in a market at time *t*, provided it owned no branches in the same market at time *t*-1.

Following Berry (1992), who developed his model with respect to the airline industry, the decision of a bank to open new branches can be described by a two-stage game: in the first stage banks decide where to localize new branches and the number of branches to open; in the second one they compete in prices and quality. We skip the analysis of this second stage and concentrate the investigation on the first stage.

The lack of independence of entry decisions may entail difficulties in the estimation procedure. To address this problem, following the literature, we assume that banks take their entry decision simultaneously, moreover we assume that entry in a market is independent from the decision taken by the same bank in other markets.

Here we define a very simple entry decision rule: a bank decides to enter into a market if it obtains positive profits in that market. Under this rule and previous assumptions, it can be shown that Nash equilibrium in pure strategies exists such that all entering banks earn positive profits and all those staying out of the market have zero expected profits (see Barry, 1992).

Formally a bank enters into a market if:

$$\pi_{b,j}\,(X_j;\, N_b;\, Z_{b,j}) \geq c_b$$

where $\pi_{b,j}$ represents the profits of a single bank *b* in a local market *j*; X_j are the characteristics of the local market in terms of demand and

industrial structure, common for all banks in that market; N_b are the characteristics of the single bank; $Z_{b,j}$ represents factors which describe the interactions between market and firms characteristics; finally *c* are the opportunity costs a firm faces, which can be normalized to zero.

We can explicit the previous equation in the following way:

$$\pi_{b,j} = \alpha + \beta X_j + \lambda N_b + \gamma Z_{b,j} + \varepsilon_{b,j}$$

where α, β, λ, γ are the parameters we estimate, and $\varepsilon_{b,j}$ is the error term.

We built a data set for the period 2000-2007 using information on the single banks and the economic peculiarity of Italian provinces; the data we used on Italian banks are available on the web site of the Bank of Italy in the sections *Albi ed Elenchi di Vigilanza* and *Base Informativa Pubblica On Line*, and the ISTAT web site.

We introduce a logit model in order to estimate the probability to enter the provincial market, specifically for each bank we consider the subset of provinces where it had no branches at time t–1. If entry occurs at time t in province j our dependent variable assumes value equals to 1; if entry does not occur the dependent variable assumes value equals to 0.

Following profit equation and entry rule, the probability an entrant bank opens a branch in a province is described by:

$$\begin{aligned} Pr(Yne_{j,b} = 1) = G(& \alpha + \beta_0 pop_j + \beta_1 dep_j + \beta_2 av_j + \beta_3 her_j + \\ & + \beta_4 ne_j + \lambda_0 dim_b + \lambda_1 Ddiv_b + \lambda_2 Dmerger_b + \\ & + \lambda_3 Dacq_b + \lambda_4 Dsouth + \gamma_0 bra_{j,b} + \gamma_1 dist_{j,b} + \\ & + \gamma_2 Dtype) \end{aligned}$$

Similarly the probability an incumbent opens a branch in a province is:

$$\begin{aligned} Pr(Yne_{j,b} = 1) = G(& \alpha + \beta_0 pop_j + \beta_1 dep_j + \beta_2 av_j + \beta_3 her_j + \\ & + \beta_4 ne_j + \lambda_0 dim_b + \lambda_1 Ddiv_b + \lambda_2 Dmerger_b + \\ & + \lambda_3 Dacq_b + \lambda_4 Dsouth + \gamma_0 bra_{j,b} + \gamma_1 dist_{j,b} + \\ & + \gamma_2 Dtype + \gamma_3 mks_{j,b}) \end{aligned}$$

Ceteris paribus a larger demand in the local market may increase incumbent profits and encourage entry. In the traditional oligopoly models, for instance, the number of competing firm in equilibrium increase with the size of total demand. We proxy this effect with three variables: the population density in a province (*pop*), the log of per capita bank deposit (*dep*) and the change in the value added as a measure of the economic trend (*av*). The degree of competition on provincial market is approximated by the Herfindal concentration index, the commonly used concentration measure (*her*), while the evolution of the market structure is described by the number of new entrants in the market over the previous year (*ne*).

Large organization may enter more easily in a new market thank to scale economies and easier financial and liquidity availability: in order to represent the interactions between the market and bank we use the dimension described by the total number of branches of a bank (*dim*).

Other bank characteristics that affect the probability to open new branches are: the original geographical diversification of the bank, that we define using a dummy variable (*Ddiv*); the typology of the bank, in particular distinguishing between joint-stock companies and other (dummy *Dtype*). We use other two dummies to describe if in the previous period the bank has made merger activities (dummy *Dmerger*), and if in the previous period the bank was integrated in a group (dummy *Dacq*).

Individual banks may find easier to enter specific markets which are less distant from their own headquarter. In both the model we consider the change in rival bank branches in each local market (*bra*) and the logarithm of the distance between the central offices of the bank and each local market (*dist*); in the incumbent model we also consider the bank market share in each local market (*mks*).

Finally we add a dummy to control if an effect due to provinces belonging to South of Italy exists (dummy *Dsouth*).

Table 6 summarizes the explanatory variables and the expected signs.

Table 6. Explanatory variables definition and expected signs

Variable	Definition	Expected signs	
		N.e	Inc.
pop	Natural logarithm of population density for each province at t-1	+	+
dep	Natural log. of the level of per capita deposits for each province at t-1	+	+
av	Changes in per capita added value for each province from time t-1 to t	+	+
her	Herfindhal concentration index, lagged on 3 periods	?	-
ne	Number of branches opened by new entrants from t-1to t	+	+
dim	Bank size measured as total branches owned by a bank over the national number of bank branches at time t-1	+	+
Ddiv	Dummy = 1 if the bank operates at t-1 in several local markets	+	-
Dtype	Dummy=1 if the bank is a stock company (spa)	+	-
Dmerger	Dummy=1 if the bank has made merger activities from time t-1 to t	+	+
Dacq	Dummy=1 if the bank was integrated in a Group from time t-1 to t	-	+/-
dist	Natural logarithm of the distance (measured in km) between the headquarter of the bank and each local markets	-	-
bra	Change in rival bank branches in each local market from time t-1 to t	-	+
mks	Bank market share (in terms of branches) in each local market		+
Dsouth	Dummy=1 if the local market belongs to the South of Italy	+	-

Table 7. Logit analysis of entry: new entrant model

	2000	2001	2002	2003	2004	2005	2006	2007
pop	0.186* *(2.093)*	0.210** *(2.883)*	0.112 *(0.800)*	0.359** *(2.772)*	0.176 *(1.568)*	0.243* *(2.058)*	0.086 *(0.597)*	0.327* *(2.315)*
dep	1.575*** *(5.356)*	0.770** *(2.676)*	1.032** *(2.597)*	-0.120 *(-0.309)*	0.099 *(0.241)*	0.094 *(0.262)*	0.377 *(0.957)*	-0.674 *(-1.885)*
av	-3.255 *(-1.521)*	3.055 *(1.736)*	-0.354 *(-0.186)*	2.947 *(1.278)*	2.945 *(1.174)*	1.761 *(1.189)*	2.241 *(1.315)*	-0.749 *(-0.145)*
her	-0.099 *(-0.665)*	0.003 *(0.032)*	0.184 *(1.475)*	-0.189 *(-1.190)*	-0.315 *(-1.799)*	-0.161 *(-0.817)*	-0.390 *(-1.810)*	-0.108 *(-0.550)*
ne	0.296*** *(4.064)*	0.359*** *(5.181)*	0.612*** *(4.746)*	0.276* *(2.234)*	0.271* *(2.518)*	0.329** *(2.977)*	-0.042 *(-0.243)*	-0.094 *(-0.771)*
dim	0.569*** *(5.105)*	0.707*** *(7.653)*	0.738*** *(5.836)*	0.719*** *(6.502)*	0.486*** *(5.576)*	0.584*** *(5.757)*	0.576*** *(5.865)*	0.955*** *(4.494)*
Ddiv	1.123*** *(5.804)*	-0.104 *(-0.818)*	2.450*** *(6.186)*	2.161*** *(7.001)*	0.315 *(1.542)*	2.258*** *(7.235)*	3.573*** *(4.914)*	3.702*** *(5.096)*
Dtype	2.264*** *(10.699)*	2.569*** *(14.656)*	1.484*** *(6.014)*	1.071*** *(5.053)*	2.142*** *(8.579)*	2.214*** *(7.941)*	1.541*** *(6.208)*	1.317*** *(5.884)*
Dmerger	0.986*** *(4.796)*	1.188*** *(4.918)*	0.460 *(1.519)*	-0.728 *(-1.392)*	-0.445 *(-0.596)*		0.564 *(1.695)*	
Dacq	-1.402*** *(-4.864)*	-1.316*** *(-4.312)*	-0.383 *(-1.321)*	0.414 *(1.522)*	0.049 *(0.147)*	1.032** *(3.178)*	0.395 *(1.059)*	-0.386 *(-1.387)*
dist	-0.216*** *(-3.981)*	-0.472*** *(-11.686)*	-0.408*** *(-6.665)*	-0.332*** *(-5.516)*	-0.239*** *(-3.302)*	-0.148 *(-1.846)*	-0.168 *(-1.884)*	-0.458*** *(-7.949)*
bra	-2.026 *(-1.070)*	0.977 *(0.630)*	5.479 *(1.728)*	5.464 *(1.889)*	-3.063 *(-1.102)*	-2.834 *(-0.756)*	4.676 *(1.288)*	1.143 *(0.406)*
Dsouth	0.569* *(2.244)*	0.703** *(3.217)*	1.036** *(3.256)*	-0.236 *(-0.728)*	-0.013 *(-0.037)*	-0.726 *(-1.933)*	-0.543 *(-1.615)*	-0.839* *(-2.457)*
constant	-22.119*** (-8.499)	-13.566*** (-5.291)	-19.802*** (-5.652)	-8.288* (-2.366)	-8.122* (-2.142)	-11.031*** (-3.334)	-12.710*** (-3.647)	-2.671 (-0.849)
Log likelihood	-1365.029	-2029.650	-824.764	-979.481	-1133.491	-927.769	-795.124	-903.145
λ_{LR}	897.35	1368.981	543.222	774.247	482.497	556.306	351.286	445.209
Pseudo R^2	0.177	0.174	0.182	0.150	0.107	0.176	0.164	0.174
n.observ.	75326	73333	72370	70305	69380	69873	68754	69610
p<0.05 ** p<0.01 *** p<0.001								

Table 8. Logit analysis of entry: incumbent model

	2000	2001	2002	2003	2004	2005	2006	2007
pop	0.293***	0.156*	0.146	0.154	0.306***	0.213**	0.056	0.304***
	(4.238)	*(2.172)*	*(1.675)*	*(1.709)*	*(3.439)*	*(2.783)*	*(0.774)*	*(4.283)*
dep	-0.213	-0.511*	0.073	-0.168	-0.427	0.081	-0.236	0.013
	(-0.857)	*(-2.121)*	*(0.294)*	*(-0.679)*	*(-1.719)*	*(0.370)*	*(-1.138)*	*(0.066)*
av	4.872**	1.163	-1.563	3.769*	1.060	1.983*	1.358	-0.552
	(2.591)	*(0.710)*	*(-1.092)*	*(2.507)*	*(0.376)*	*(2.077)*	*(1.463)*	*(-0.156)*
her	-0.143	-0.495***	0.096	0.038	-0.395*	-0.186	-0.189	0.089
	(-1.162)	*(-3.868)*	*(0.762)*	*(0.273)*	*(-2.266)*	*(-1.367)*	*(-1.665)*	*(0.704)*
ne	0.136*	0.234**	0.193*	0.230**	0.228**	0.018	0.482***	0.256***
	(2.375)	*(3.147)*	*(2.501)*	*(2.880)*	*(2.882)*	*(0.272)*	*(4.636)*	*(3.372)*
dim	0.044	-0.007	-0.069	-0.221***	-0.157***	-0.000	0.131***	0.177***
	(0.920)	*(-0.160)*	*(-1.494)*	*(-5.177)*	*(-3.544)*	*(-0.012)*	*(4.522)*	*(5.488)*
Ddiv	1.089***	0.669***	0.180	0.692***	0.212	0.044	0.524**	0.459*
	(6.043)	*(3.903)*	*(0.939)*	*(3.572)*	*(1.062)*	*(0.232)*	*(2.669)*	*(2.261)*
Dtype	-0.160	-0.163	-0.579***	-0.814***	-0.776***	-0.470***	-0.493***	-0.644***
	(-1.244)	*(-1.279)*	*(-4.182)*	*(-5.659)*	*(-5.683)*	*(-3.807)*	*(-4.089)*	*(-4.751)*
Dmerger	0.502**	0.967***	1.129***	0.104	-0.173	-0.148	-0.375*	-0.728*
	(3.109)	*(4.190)*	*(7.150)*	*(0.488)*	*(-0.660)*	*(-0.133)*	*(-2.063)*	*(-2.286)*
Dacq	-0.007	0.114	-0.280	-0.408	0.137	0.246	0.470	-0.631***
	(-0.050)	*(0.486)*	*(-1.740)*	*(-1.472)*	*(0.362)*	*(0.534)*	*(1.399)*	*(-4.014)*
mks	0.739***	1.113***	0.914***	0.732***	1.149***	1.031***	0.785***	0.749***
	(5.247)	*(7.808)*	*(6.117)*	*(5.038)*	*(7.325)*	*(7.373)*	*(5.421)*	*(4.720)*
dist	-0.129***	-0.058	-0.088**	-0.080*	-0.037	-0.062*	-0.087**	-0.126***
	(-4.299)	*(-1.931)*	*(-2.699)*	*(-2.519)*	*(-1.117)*	*(-2.077)*	*(-2.933)*	*(-4.115)*
bra	0.901	3.141	10.230***	6.750**	2.245	7.958**	3.086	4.057*
	(0.921)	*(1.803)*	*(5.486)*	*(2.991)*	*(0.961)*	*(3.219)*	*(1.347)*	*(1.964)*
Dsouth	-0.316	-0.241	0.045	-0.092	-0.599*	-0.044	0.049	-0.027
	(-1.507)	*(-1.175)*	*(0.222)*	*(-0.436)*	*(-2.456)*	*(-0.214)*	*(0.278)*	*(-0.143)*
constant	-1.856	1.597	-4.298	-2.160	0.520	-3.370	-0.611	-3.966*
	(-0.852)	*(0.752)*	*(-1.928)*	*(-0.967)*	*(0.233)*	*(-1.682)*	*(-0.327)*	*(-2.212)*
Log likelihood	-1334.172	-1340.704	-1240.141	-1119.554	-1146.969	-1395.420	-1473.908	-1366.388
λ_{LR}	142.708	148.716	174.292	183.677	151.767	138.306	148.804	207.684
Pseudo R^2	0.053	0.061	0.071	0.085	0.079	0.051	0.050	0.075
n.observ.	2851	2887	3026	3134	3338	3463	3552	3623
p<0.05** p<0.01*** p<0.001								

Tables 7 and 8 illustrate new entrant banks and incumbents respectively, and present the results of our estimates, the LR test statistic for the null hypothesis that all the parameters in the model are zeros and the pseudo R^2 (see Greene, 2000).

The constant term of the model reflects the effects of all the variables neglected. In our case the negative value of the constant implies that banks would reduce their branches, given 0 the value of all the other variables. Moreover we verified the stability of the model in the whole period and in two sub-periods, aggregating years. The Chow test rejects the null hypothesis on the stability of the parameters, both for the whole period and sub periods.

In Tab. 7 we show the results for new entrant banks: on the demand side, the dimension of the population in the area (*pop*) positively affects the choice to open a new branch in 2000, 2001, 2003, 2005 and 2007, while the level of per-capita deposit in a province (*dep*) is significant with the expected signs just in the period 1999-2002. This result suggests that banks have given, since the beginning of our analysis until the end, less importance to demand factors for the choice to open new branches.

On the market structure side, it is interesting to note that the index of Herfindhal (*her*) is not significant. At least since Baumol (1982) and Baumol et al. (1983) the theory of contestable markets has been a central issue in the economic debate. Such a theory holds that there are markets served by a small number of firms, which are nevertheless characterized by competitive equilibria because of the existence of potential short-term entrants. As a consequence, the presence of a monopoly or a high concentrated market may not reduce welfare and may not prove that the firm is exploiting its market power. Our result seems to confirm that banking market is at least partially contestable, since entrants are not affected by the concentration of the market to open new branches.

On the contrary an important role seems to be played by the choice of previous entry in the market (*ne*): this variable has a stable positive relation on the probability to enter into the market from 2000 to 2006; in other words banks seem to imitate the entering choice of other banks.

The dimension of the banks (*dim*), the capacity of a bank to operate in different markets (*Ddiv*), and an eventual merger (*Dmerger*) are all stable variables with a significant effect on the probability to enter into a market. Note that in year 2005 and 2007 the variable *Dmerger* predicts failure perfectly, since there were no banks with new branches involved in mergers at time t-1.

The results on the functional distance (*dist*) are very interesting: this variable measure the distance in km between the corporate headquarters of a bank and the branch. According to our results, the impact on the *p* is constantly negative: i.e. the closer banks are to the original ones the more they enter new markets. An explanation might be consistent with the hypothesis that distance increases the asymmetric information between lender and borrower: entrant in a distant market is not perfectly able to distinguish the type of borrower he faces. Moreover opening a branch in a distant market may increase the cost for the bank.

The variable *bra* which describes the reaction of a bank to the choices of incumbents, is not significant. Such an information, joint with the significant of variable *ne*, may induce us to believe that for new entrants the strategies of similar firms are more relevant than the strategies of incumbents.

Interesting as well is the result on the dummy *Dsouth*, the variable that indicates the southern markets. In the first years of our analysis it has significant and positive values, i.e. new entry banks consider entering markets of the South profitable. On the contrary from 2003 to 2007 the sign becomes negative, but only in 2007 it is also significant. The reason of this apparent contradiction can be seen in the drain of financial resources in the South in the first years of deregulation: from 2003 the forces that see in the South an area with minor profitability and bigger risks prevail.

Figure 1 compares the probability of an individual bank to open a branch in the South and in the rest of Italy in the years of our analysis, holding all other variables at their mean: it is evident that in the first years of the century the probability to enter the southern markets was higher.

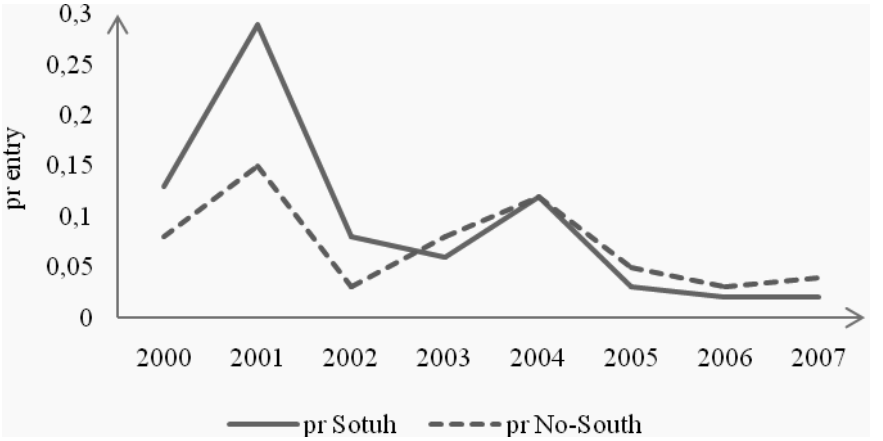

Figure1: Comparison of entry probability in the South of Italy and the rest of the country

In Table 8 we solve our model for incumbents, and the results obtained mainly confirm those of new entrant banks. It is interesting to note that dimension (*dim*) is not significant on the decision of an incumbent to enter into a market, as showed in De Juan (2002) for the Spanish market. With respect to the new entry the variable *bra*, which describes the reaction of a bank to the choice of other banks to open new branches, is significant and positive in four years, i.e. if competitors open new branches, the probability an incumbent reacts opening as well increases.

It is important to note that, in the case of incumbents, the most important variable is the market share the bank controls (*mks*), which cannot be present in the case of entrants: this may mean that an incumbent prefers to consolidate its share in a market rather than enter in new provinces.

Even in the case of incumbents the functional distance (*dist*) is significant and negative.

4. Conclusion

This study identifies some of the determinants of the entry into the Italian banking market, differentiating between new entrants and incumbents.

On the demand side a central role in the decision to enter into a market is given by the growth rate of the population. On the supply side our results seems to show that, surprisingly, there is no relevant effect of the concentration on the entry deterrence, this result might confirm the Chicago School approach of contestable markets. More relevantly, a sort of imitation effect seems to exist: opening new branches depends on the choices made by competitors in the previous years. Moreover we show that incumbents prefer to localize into the provinces where they operate, in order to take advantage of returns to scale and create barriers to entry, and that the number of new entries in one period is positively correlated with the number of entries in the previous period.

The results presented above show that there is a relation between entry in a market and functional distance from the bank main office, in other words banks concentrate their branches in the provinces where they have a strong presence. *Ceteris paribus* closeness of the entrants to the market makes entry easier, i.e. smaller banks with local roots, cannot be considered global competitors of bigger financial groups.

The relevance of these results for antitrust policy in banking is considerable: our results give evidence that past entry can be seen as a signal for competition, while market concentration should not be considered in antitrust decisions.

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