MULTIMARKET COMPETITION, FOOTHOLD STRATEGIES AND PERFORMANCE

Lucio Fuentelsaz, Jaime Gómez

lfuente@posta.unizar.es, jgvillas@posta.unizar.es

Universidad de Zaragoza

Department of Management and Marketing

Gran Vía 2 • 50005 Zaragoza (SPAIN)

Phone: +34 976 761000 / Fax: +34 976 761767

Abstract

Recent research in the multimarket contact literature suggests that firms could effectively use foothold strategies in order to reduce competition from rivals and increase performance. Nevertheless, the extant literature on multipoint competition does not offer definitive conclusions around the influence of multimarket contact on profitability. In spite of the proliferation of articles analysing the issue, several lines of research remain open. Our objective in this paper is to explore an up-to-date unnoticed possibility: that the impact of multimarket contact on performance is not linear. To achieve that aim we translate the arguments justifying the U-shaped inverted relationship between contact and entry rates to argue that the effect on performance should also take a U-shaped form. We test our hypothesis on a sample of banks operating in the Spanish banking sector and conclude that foothold strategies could have been useful in this context.

Keywords: multimarket competition, foothold strategies, banking sector, market structure, performance.

1. INTRODUCTION

The analysis of multimarket competition has received deep attention in market structure studies in recent years. Unlike traditional research, that usually considers markets as independent units, multimarket analysis takes into account that firms compete simultaneously in several product/markets and coordinate their decisions in order to maximize joint profits. Recent literature in this field has emphasised the study of the factors that determine entry decisions and the effect of market structure on firm behaviour and performance, both, from a theoretical and empirical points of view.

Theoretical arguments have pointed out that mutual forbearance does not crucially depend on the characteristics of the markets in which it takes place or the asymmetries between the firms involved in multimarket relationships, widening the scope and applicability of the theory. On the one hand, the mere existence of contacts can provide the necessary communication to overcome the myopic behaviour predicted by Nash equilibrium (Scott, 1982). On the other, when firm's objective functions are strictly concave (Spagnolo, 1999), the "irrelevance result" of Bernheim and Whinston (1990) disappears and multimarket contact is shown to facilitate collusion.

Interestingly, these developments in the theoretical front have been paralleled by empirical research. Apart from offering different insights on the causes of multimarket contact (Korn and Baum, 1999) and the consequences of multimarket competition on firm entry and exit (Baum and Korn, 1999), firm growth (Haveman y Nonnemarker, 2000) or the citation of patents of multimarket rivals (Scott, 2001), modern research tends to show more consistence on the use of mutual forbearance strategies by firms. An important conclusion from this stream of empirical efforts has been to conclude that the effect of multimarket contact on firm

performance is present independently of the causes or the purpose with which it was created (Gimeno, 2002).

Although there is no doubt that these papers offer convincing answers to relevant questions, suggesting that firms should control and manage multimarket contact and design mutual forbearance strategies in their benefit, it also raises new issues related to both the timing and the resources needed in its implementation. If, as suggested by the literature, firms do have performance benefits from low levels of multimarket contact and foothold strategies could be enough for multimarket competition to arise (Karnani and Wernerfelt, 1994), the volume of resources needed to obtain the benefits of mutual forbearance would be accessible to any firm. Thus, a small number of contacts could provide two given firms with incentives to collude without a high commitment of resources. Moreover, the linear relationship often found in the literature would suggest that, whatever the level of multimarket contact at which firms would mutually forbear, a firm could reach the desired level of contact with rivals progressively, without suffering from any risk.

Nevertheless, research on multimarket competition seems to suggest that foothold strategies might not be so effective at creating mutual forbearance conditions. Papers by Baum and Korn (1996) or Haveman and Nonnemaker (2000) which analyse the effects of multipoint competition in an entry setting, offer clear evidence that this relationship takes a U inverted shape and Stephan and Boeker (2001) present theoretical arguments that justify their results. The generalisation of the U inverted shape relationship found in entry studies would lead to an unexplored implication for the multimarket contact-performance relationship. For firms to be able to obtain the benefits of mutual forbearance they should first assume the risks of higher competition as contacts are built and rivals recognize the interdependences affecting them. Moreover, the possibility that the threshold level of contacts at which mutual

forbearance would start to operate could be high would require a high degree of commitment to the products/markets in which those firms overlap.

To sum up, both theory and empirical research confirm the importance of multimarket contact at determining performance, with independence of the causes originating it. Unfortunately, the functional form of this relationship is unkown raising interesting questions with important strategic implications. Having a linear influence on performance we would expect mutual forbearance to be reached even with a reduced number of contacts, making foothold strategies effective. However, in the case of an U-shaped relationship, it would be necessary to reach a minimum number of contacts to obtain the benefits of mutual forbearance; otherwise foothold strategies would increase competition and reduce firm profits.

In order to reduce the uncertainty associated with this matter, our objective in this paper is to examine to what extent the effect of multimarket contact depends on the number of previous contacts in which multimarket rivals are engaged. To this aim we test the multimarket contact-mutual forbearance hypotheses over a sample from the Spanish banking sector. Our data is especially well suited for our purposes because we have very detailed information about the location of bank branches. Given that competition in this industry is local (Kwast et al., 1997) the availability of disaggregated information on the interrelationships affecting firms that operate in different markets is important. Our results confirm the usefulness of foothold strategies in order to cope with competition.

2. MULTIPOINT COMPETITION AND MUTUAL FORBEARANCE

The main argument of the literature on multimarket competition is that when two firms compete simultaneously in several markets the recognition of their interdependencies conditions their competitive behavior. Edwards (1955) is the first to highlight this relationship

between market domain overlap and mutual forbearance. In his highly cited work he states: "*When one large conglomerate enterprise competes with another, the two are likely to encounter each other in a considerable number of markets. The multiplicity of their contact may blunt the edge of their competition.*" (as quoted by Scherer, 1980, p. 340.) Several arguments have been given to support this assertion in both the economics and management literatures. A revision of them follows.

When a firm adopts an aggressive behavior with a multimarket rival, retaliation is expected to occur not only in the market where that firm first initiated the competitive move but in any of the markets in which both firms overlap. Thus, the retaliation effect would be stronger than that in a one-market context (Porter, 1980). As a consequence, the attacker should balance the gain obtained from its actions against the risk of retaliation in all markets where it operates. Furthermore, under the assumption of asymmetries in the importance of the markets operated by firms, retaliation could take place in those markets in which potential losses for the aggressor were higher than those of the defender (Porter, 1980; Karnani and Wernerfelt, 1985). Therefore, the mutual recognition of the potential to damage the opponent would lead firms to cooperate or mutually forbear.

Bernheim and Whinston (1990) formalize some of these intuitions into a game theoretic framework in which they examine the effect of multimarket contact on the degree of cooperation when firms interact over an infinite number of periods. Their analysis characterizes the rivalry taking place between two firms, X and Y, in two markets, A and B. At every period each firm faces the decision of whether to collude in all the markets in which it simultaneously participates with its rival or to deviate from cooperation. If both firms (X and Y) collude they share monopoly profits in both markets. If one of the firms deviates in a given period (for example, firm X sets price just below the one corresponding to monopoly profits) it obtains all the static profits from that period. Nevertheless, this deviation from tacit

cooperation is punished in terms of future profitability, with both firms retreating to the Bertrand solution forever.

The model shows that when firms and markets are identical and there are constant returns to scale, the existence of multimarket contact does not have any effect as a facilitator of cooperation (the so-called "irrelevance result"). Nevertheless, when some of the initial assumptions are relaxed, multimarket contact influences the ability of firms to collude. Bernheim and Whinston demonstrate that when markets differ in the number of competitors, the degree in which actions are observed or the rate at which demand grows, firms have incentives to design strategic policies to redistribute market power among the products or markets in which they operate. In this way, profit maximization is achieved through the transference of enforcement power from the markets in which cooperation is easy to those in which more rivalry there exists. Interestingly, when firms differ in production costs (each firm is more efficient in a set of markets) the optimal behavior of rivals leads to the development of spheres of influence in which firms specialize. In this case, multimarket contact facilitates cooperation through the operation of two mechanisms: (1) the transference of sales towards the most efficient firm in each of the markets and (2) allowing the inefficient firm to obtain some profits in the market in which its production costs are higher (and therefore reducing the incentive of the inefficient firm to deviate from cooperation).

Bernheim and Whinston's work has been followed by generalizations that have widen the relevance of the theory of multipoint competition. Drawing on the framework proposed by these authors, Spagnolo (1999) provides an additional reason why multimarket contact should lead to mutual forbearance. He begins arguing that the separation between ownership and control, the application of non-linear taxes and the imperfections in the capital markets tend to make firms' objective functions strictly concave. That is, firms static evaluation of own performance in terms of utility is marginally decreasing. Spagnolo shows that when firm's

objective functions are strictly concave, the "irrelevance result" of Bernheim and Whinston disappears and multimarket contact is always a facilitator of collusion. A strictly concave objective function has the effect of making the repeated strategic interactions interdependent. That is, the evaluation of profitability in a given market depends on the total amount of profits and losses accumulated in the other markets. This is the reason why, in such circumstances (and relatively to the case in which the evaluation of profitability in any market is independent), firms would tend to favor the evenly distributed stream of returns on time provided by collusion rather than the large amount of accumulated short run profits originated from deviation.

Similarly, other researchers have highlighted the higher familiarity among firms that compete in overlapped markets to explain mutual forbearance. For example, Scott (1993, 2001) maintains that the "irrelevance result" of Bernheim and Whinston only proofs that multimarket contact does not affect the set of Nash equilibria and not that it has any effect on mutual forbearance, even in the case where firms and markets are identical. Boeker *et al.* (1997) argue that multimarket contact allows firms to convey strategic information about their expected behavior with the aim of making cooperation easier. Independently of the purpose of the firms, the higher the number of markets where firms simultaneously compete, the better the information they disseminate about their resources and strategies, facilitating collusive behavior.

The theory of multipoint competition has been tested in a variety of settings, including banks (Heggestad and Rhoades,1978; Roadhes and Heggestad, 1985; Mester, 1987; Pillof, 1999; Barros, 1999; Haveman and Nonnemaker, 2000), hotels (Fernández and Marín, 1998), manufacturing firms (Scott, 1982), telephone companies (Parker and Röller, 1997; Busse, 2000), software firms (Young et *al.*, 2000), airlines (Evans and Kessides, 1994; Baum and Korn, 1996, 1999; Gimeno, 1999; Gimeno and Woo, 1996, 1999) or cement companies (Jans

and Rosembaum, 1997). In spite of the fact that the previous theoretical arguments point to the significance of multimarket contact at explaining competition and suggest the wide applicability of the theory to different markets, empirical research on the link between multipoint competition and firm rivalry has failed to provide conclusive results (Gimeno, 1999; Scott, 2001). Although the last papers published tend to show a positive link between the multiplicity of contacts and the cooperative behavior of firms, in earlier papers this influence was found to be negative and, in some cases, the relationship has been proved to be insignificant.[1] Gimeno (1999) argues that at least some of the differences may be explained in terms of the methodology used to perform the analysis. Whereas the earliest papers rely on the application of econometric techniques over cross sectional settings, later research is more longitudinally based.

An additional reason justifying the inconclusive empirical results may be the existence of moderators that influence the relationship between multimarket contact and mutual forbearance and that are not taken into account in some studies. The existence of facilitators of the relationship between multimarket contact and mutual forbearance is, in fact, suggested by Bernheim and Whinston game theoretical model. As mentioned before, they show as the effect of multimarket contact depends on various characteristics related to the set of markets in which contact takes place and the firms involved. In fact, their model relies on the existence of asymmetries between firms or markets to justify the significance of multimarket contact. In the same vein, Gimeno and Woo (1999) point out that mutual forbearance is more likely in those cases in which the industry provides firms with wide possibilities to share

[1] Papers that find a positive link between multimarket contact and forbearance include Heggestad and Rhoades (1978), Scott (1982, 1991), Feinberg (1985), Martinez (1990), Hughes and Oughton (1993), Barnett (1993), Evans and Kessides (1994), Gimeno and Woo (1996, 1999), Baum and Korn (1996, 1999), Parker and Röller (1997), Jans and Rosenbaum (1997) and Pilloff (1999), Fernandez and Marín (1998) and Busse (2000). Nevertheless, the relationship is found to be negative in Strickland (1976), Whitehead (1978), Roadhes and Heggestad (1985), Alexander (1985), Mester (1987) and Sandler (1988).

resources among market units. Therefore, the exclusion of variables controlling for scope economies could lead to an overestimation of the effects of multimarket contact.[2]

Jayachandran *et al.* (1999) propose the existence of four moderators of the relationship between multimarket contact and competitive intensity: three competitive factors (spheres of influence, resource similarity and organizational structure of rivals) and a market factor (seller concentration). These four moderators would reinforce the relationship between multipoint competition and mutual forbearance. Therefore, simultaneous integration of these factors should moderate both the capacity of firms to dissuade multimarket competitors and the degree of familiarity with rivals' strategies, determining the influence of multimarket contact on competitive intensity.

Finally, an important paper within this literature is the one by Gimeno (2002). This author examines a critical issue for research on multipoint competition: whether the effect of multimarket contact on performance is dependent on the existence of intentionality in its creation. Given the predominance of random effects at increasing market overlap (Korn and Baum, 1999) a reasonable argument would suggest that, at least when the causes of multimarket contact were justified in that terms, it should motivate no effect on firm results (Gimeno, 1999). Firms encountering rivals in multiple markets by reasons different from the purposeful creation of multimarket competition could not even be *conscious* of the established relationships, a pre-requisite for action (or inaction) to be considered (Chen, 1999). Interestingly, the analysis performed reveals that the marginal effect of the multimarket contact variable is not dependent on whether it occurs at, above or below random levels.

[2] Gimeno and Woo (1999) point out the relevance of the theory of multimarket contact in those settings in which important possibilities to share resources there exist (as it is the case in airlines, packaged foods and telecommunication industries) and under conditions of related diversification or geographic expansion.

3. SAMPLE, METHOD AND EMPIRICAL TESTS

Empirical model and hypotheses

As mentioned in the introduction our main objective is to clarify to what extent foothold strategies could be effectively used in order to deter rivals from engaging in competitive behaviour. The previous discussion illustrates the importance of testing the mutual forbearance hypothesis, given both the conflicting results and its persisting effect on firm performance, with independence of the causes explaining multimarket contact. Nevertheless, up to now we have not underlined the different arguments leading to different conclusions in relation to their effectiveness. In this section we accomplish this task.

The empirical model we use for testing for the multimarket contact-mutual forbearance hypothesis is borrowed from the industrial economics literature and takes the following from:

$$\Pi_i = F(MS_i; B_i; M_i) \qquad (1)$$

where Π_i, the performance of firm i, is a function of the structure of the market in which firm i competes (MS_i), the characteristics of firm i (B_i) and the economic conditions in the markets in which it is present (M_i). In the traditional structure-conduct-performance paradigm, market structure (MS_i) is usually measured through the use of a concentration index (Herfindalh or CR_n, for example). Nevertheless, the mutual forbearance hypothesis suggests that firms coordinate their behaviour across markets, what makes performance not only depend on local market structure, but also on the links that the firm builds with multimarket competitors. Hence, traditional measures of market structure should be complemented by an evaluation of the importance of interfirm links, transforming expression (1) into:

$$\Pi_i = F(MS_i(H_i; MMKC_i); B_i; M_i)$$

where H_i is a firm specific measure of concentration for firm i and $MMKC_i$ is a measure of multimarket contact.

Several papers in the literature suggest that a plausible specification for MS_i should consider the interaction between concentration and multimarket contact. For example, Mester (1987), in her analysis of the banking industry, finds that the interaction between both variables has a negative effect on the results in banking markets and, therefore, an increase of multimarket contact reduces profits (benefiting consumers). In a similar study, Scott (1982) reports a 3% increase in expected profits when both contact and concentration are high. Finally, Jayachandran et *al.* (1999) also propose that seller concentration should moderate the relationship between multimarket contact and performance.

A key question to approach to our objective that arises at this point relates to the functional form for MS_i. Following the original mutual forbearance hypothesis and considering the interaction terms proposed in these papers, the marginal effect of multimarket contact on performance should be positive and continuously increase with concentration. That is, the effect of multimarket contact on profitability should operate from low levels of the multimarket contact variable and be most important when the linked markets are concentrated and collusion is easy to achieve. Therefore, market structure may be represented as

$$MS_i = \beta H_i + \delta MMKC_i + \gamma H_i MMKC_i ,$$

where β, δ and γ are parameters to be estimated. According to our discussion, we would expect the marginal effect of multimarket contact on performance, $\partial \Pi_i / \partial MMKC_i = \delta + \gamma H_i$, to increase with concentration. Thus our first hypothesis may be enunciated as follows:

H1: multimarket contact has a linear, positive impact on performance (the marginal effect of multimarket contact should increase with concentration)

As we have seen, hypothesis *H1* is derived from the specification most frequently tested in the multimarket literature. Nevertheless, recent theoretical and empirical papers suggest an alternative functional form capturing the impact of market structure on performance that has apparently remained unexplored. In a departure from the linear direct effect proposed by hypothesis one, several papers analysing the impact of multimarket contact on entry rates (Baum and Korn, 1999; Haveman and Nonnemaker, 2000; Stephan and Boeker, 2001) argue in favor of a U-inverted relationship between multimarket contact and mutual forbearance. This line of research suggests that for low levels of multimarket contact, firms entering new markets should find a response from incumbents, initiating an escalation of competition and tit-for-tat entries in each others market (Baum and Korn, 1999). This increase in market domain overlap would progressively lead to recognition of the interdependences among competitors and, ultimately, to mutual forbearance.

A generalization of these arguments for all the range of competitive actions should lead us to think that the relationship between multimarket contact and profitability should also show a U shape. For low levels of multimarket contact, an increase in the degree of overlap should imply higher rivalry and a reduction in profits, and the opposite should be found for medium to high values of the variable. Therefore, foothold strategies would not be effective at inducing collusive behavior, given that firms would suffer from an intensification of competition from rivals. In terms of our specification for the effect of market structure on performance, the quadratic influence could be represented as

$$MS_i = \beta H_i + \delta MMKC_i + \gamma H_i MMKC_i + \rho MMKC_i^2$$

where β, δ, γ, and ρ are, as before, parameters to be estimated. Given the proposed moderation effect, the marginal effect of multimarket contact on performance,

$\partial \Pi_i / \partial MMKC_i = \delta + \gamma H_i + 2\rho MMKC_i$, increases as concentration rises, as explained above. This leads us to enunciate an alternative hypothesis to *H1*:

H2: multimarket contact shows a U-shaped influence on performance (the marginal effect of multimarket contact should increase with concentration)

Sample and variables

The sample we use to perform the empirical analysis belongs to the Spanish banking sector. The multilocal-multibusiness nature of banking activities provides the ideal setting to test the consequences of multimarket contact. Banks offer their services through an extensive use of a network of branches in which they sell different types of products, ranging from deposits to life insurance policies. Therefore, the presence of firms that compete simultaneously in several product and/or geographical markets provides the basis for mutual tolerance to arise. In the last two decades deregulation has intensified this confluence in activities and locations in all the developed banking markets (including the USA and many European countries). The effect of the elimination of restrictions has been twofold: (1) a considerable number of banks have decided to operate in new markets, with the subsequent increase in the number of branches and, therefore, creating a higher potential for multimarket competition at the geographical level and (2) with banks commercialising similar sets of products and services, universal banking is becoming more common in the majority of the developed countries, what opens the grounds for higher competition. A further reason that justifies the selection of the banking industry is the strong potential to share resources, which increases the probability of finding mutual forbearance effects (Gimeno y Woo, 1999).

These are the reasons why some papers have attempted to disentangle the performance effects of multimarket contact in this sector. Nevertheless, the results of these efforts do not

offer a more conclusive picture than the one depicted in the previous section. The empirical literature offers examples of papers rejecting (Roadhes and Heggestad, 1985; Mester, 1987) and accepting (Heggestad and Rhoades, 1978; Martinez, 1990; Pilloff, 1999) the mutual forbearance hypothesis.

Following the previous discussion and the objective we pursue in this paper, our dependent variable should capture the profitability of every firm. We measure performance as gross income (net interest income plus net non-interest income) divided by total assets. Given the specification presented by equation (1), to estimate our empirical model we also need information on the structure of the market, the characteristics of banking firms and aggregate economic conditions. Data on the first dimension, (MS_i), is extracted from the "Annuals of commercial banks, savings banks and credit unions", which identifies the location of every branch at the zip code level. Although zip codes are not defined for economic purposes, alternative classification schemes (for example the province) offer market definitions considerably larger than the one that is expected to be relevant from the point of view of competition. Given the available evidence, which shows that households satisfy their financial needs locally (Kwast, Starr-McCluer and Wolken, 1997), the use of this information should be important to capture local market structures and the superstructures defined by multimarket contacts.

Therefore, the two market structure measures are calculated using the number of branches in every zip code. First, a firm specific concentration measure, H_i, was developed weighting local market Herfindahl indexes by the importance of each market for firm *i*. The expression for H_i (core markets rivalry) takes the following form:

$$H_i = \sum_{j \in m} H_j \frac{O_{ij}}{O_i}$$

where *j* represents a market (zip code) from the set of markets, *m*, in which firm *i* is present, H_j is the Herfindahl index in market *j* and O_{ij} and O_i are, respectively, the number of branches of firm *i* in zip code *j* and the total number of branches of firm *i*.

Similarly, our measure of multimarket contact for firm *i* also uses the local information available. For every bank we average the number of contacts that it has with its *k* competitors in the following way:

$$Multimarket\ contact_i = \frac{\sum_j \sum_k \left(E_{ij} \times E_{kj}\right)}{k}$$

In this expression, *j* is a market from *m* (the market domain of firm *i*), and E_{im} (E_{km}) are dummies that equals 1 if firm *i* (*k*) operates in that market.

The confluence of activities mentioned before advises us to include all the three types of intermediaries competing in the Spanish banking sector, namely, commercial banks, savings banks and credit unions. Their basic characteristics (B_i) are extracted from public data sources, mainly provided by the three associations grouping them: AEB for Banks, CECA for Savings Banks and UNACC in the case of Credit Unions. From these datasets, we extract information on the **size** of every bank (in logarithms). The well documented differences in origins and objectives between commercial banks, savings banks and credit unions are also expected to have an influence on profitability. Therefore, we also include two dummy variables representing the two first groups of intermediaries (with credit unions remaining as the reference group).

Finally, aggregate economic conditions in the local markets in which banks perform their activities (M_i) are calculated from "Anuario Económico de España" edited by Fundación La Caixa, which includes several variables capturing that information at the town level. To approximate aggregate economic conditions we must assess the characteristics of

the population serviced by a bank. We achieve this by weighting every economic variable selected by the relative importance of the firm in the town and by total population. For example, to assess the **intensity of demand** we use a measure of disposable income in the market domain of firm *i*, R_i. This is calculated using the following expression:

$$R_i = \frac{\sum_{j \in m} R_j C_j P_j}{\sum_{j \in m} C_j P_j}$$

where *j* represents a market (town) from the set of markets, *m*, in which firm *i* is present, R_j, represents average available income, C_j is market share of firm *i* in town *j* and P_j stands for total population. In addition to disposable income, we also introduce a control for **economic activity**. The information on this variable is also provided by "Fundación La Caixa" that obtains this index from tax records and includes business and professional activities. Both variables are expected to have a positive influence on performance: the higher the market income/economic activity, the higher the profitability of the firms that operate in that market.

The empirical analysis we perform refers to year 2002. In order to avoid endogeneity we take one lag in all the independent variables in order to minimize this possible bias. Therefore, our sample includes the total number of financial intermediaries that operate in Spain during 2001 and 2002 with only two requirements: (1) they must have at least two branches (it is impossible for banks with only one branch to have multimarket contact) and (2) they can not have their headquarters in a EU country different from Spain (given that, in this case, they are not forced to elaborate their financial statements disaggregated by country and thus we do not have this information on them[3]). After imposing these two minimum conditions that only eliminate several small entities with scarce importance within the

[3] We must take into account that most of the main European banks that operate in Spain (Deutsche Bank, Barclays, etc.) are considered as Spanish banks, given that they have created Spanish-based limited companies.

financial system, our total sample includes 163 banks (96,8% of the total assets), whose type and distribution by town and zip code can be seen in Table 1.

Our sample is highly heterogeneous. It includes 163 banks with more than 38,000 branches and 1,16 trillion euros in assets, representing a wide range of institutions, towns and zip codes. The three types of intermediaries operate all along the country. Their activities span over more than 8,000 Spanish towns from which 3,166 have more than 1.000 inhabitants (many of the remaining 5,000 towns are small villages with only 100 or 200 inhabitants and no banking facilities). Nevertheless, it is interesting to highlight that savings banks are present in more towns or zip codes that the other two groups. The main reason for this difference is that commercial banks mainly operate in urban and well populated towns while credit unions concentrate their activity in rural areas. Savings banks spread their network throughout both, rural and urban communities.

Table 1. Sample distribution

	Commercial Banks	Savings Banks	Credit Unions	Total
Total number of branches	14,679	19,487	4,051	38,217
Total number of firms	55	46	62	163
Total assets (sample) (billion €)	626	492	48	1,166
Total assets (population) (billon €)	663	492	49	1,204
% Sample / Population	94,4%	100,0%	98,0%	96,8%
Number of zip codes	3,256	5,310	3,006	5,848
Number of towns	2,347	4,152	2,464	4,549

4. RESULTS

Table 2 shows the results of the estimation of several regression models that evaluate the effect of multimarket contact on performance. Column 1 presents the coefficients of a simple model in which all the control variables and the traditional measure of market structure are included. Columns 2 and 3 attempt to improve our understanding of mutual forbearance

with the introduction of the linear effect of multimarket contact and its interaction with market concentration, as posited by hypothesis 1. Similarly, columns 4 and 5 present models which capture the quadratic structure necessary to test hypothesis 2.

Before discussing the estimations, it seems convenient to select the model that best fits our data. To this aim, the bottom of Table 2 presents F-test based goodness of fit comparisons of the different nested models. From the analysis of the F statistics we can conclude that the estimation that best captures the reality of our data is the one represented by Model 4. Although the introduction of the multimarket contact variable in its linear form (Models 2 and 3) significantly improves the explanation of bank's performance, the quadratic structure of Models 4 and 5 is preferred in terms of the F statistic. Similarly, given the non-significance of the F-test that compares Models 4 and 5, the first conclusion that we may reach is that Model 4 is the one that best fits our data and, therefore, should be the base of our discussion.

Surprisingly, our results do not offer support for any of our hypotheses. Although multimarket contact does have a quadratic influence on performance (apparently supporting *H2*) the sign of the coefficients is the opposite of that expected. Interestingly, and confirming the idea underlying foothold strategies, all the firms in our sample start to benefit from multipoint competition as they build their first multimarket contact relationships. Nevertheless, very high levels of multimarket contact have a negative impact on the performance of banks.

Table 2. Relationship between multimarket contact and mutual forbearance

Explanatory variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Intercept	0.067***	0.087***	0.090***	0.102***	0.102***
	(6.8)	(7.0)	(7.2)	(8.0)	(8.0)
Size	-0.002***	-0.004***	-0.004***	-0.006***	-0.006***
	(-3.2)	(-4.1)	(-4.3)	(-5.3)	(-5.3)
Core markets rivalry	0.001	0.006	-0.005	0.007	0.002
	(0.1)	(0.6)	(-0.4)	(0.7)	(0.2)
Multimarket contact	---	0.0003**	0.0000	0.0011***	0.0099**
		(2.6)	(0.0)	(4.2)	(2.5)
Core markets rivalry x multimarket contact	---	---	0.0017	---	0.0008
			(1.3)		(0.6)
Multimarket contact squared/1000	---	---	---	-0.009***	-0.009***
				(-3.4)	(-2.9)
Intensity of demand	-0.0006	-0.0004	-0.0002	0.0000	0.0000
	(-0.9)	(-0.5)	(-0.3)	(0.0)	(0.1)
Economic activity	0.0000	0.0000	0.000	0.0000	0.0000
	(-1.2)	(-1.0)	(-1.3)	(-0.5)	(-0.6)
Banks (dummy)	0.005	0.006**	0.007**	0.007**	0.007**
	(1.5)	(2.0)	(2.3)	(2.3)	(2.3)
Savings banks (dummy)	0.002	0.004	0.004	0.004	0.004
	(0.6)	(1.3)	(1.3)	(1.3)	(1.3)
R-Squared		0.13	0.14	0.19	0.19
F test vs. (1)	---	6.65**	4.19**	9.36***	6.33***
F test vs. (2)	---	---	1.71	11.61***	5.96***
F test vs. (3)	---	---	---	---	10.11***
F test vs. (4)	---	---	---	---	0.35
Number of observations	163	163	163	163	163

***, **, * Coefficient statistically significant at 1%, 5% and 10% levels respectively, t-ratios in parenthesis.

Apart from the effect of multimarket contact, it is important to highlight the non-significance of concentration at explaining performance in the Spanish banking, even if the measure used is finer grained than in other analysis, as it is the case here. This confirms the results of Carbó, López and Rodríguez, 2003 who, in a slightly different context, propose alternative approaches to the evaluation of competition in the Spanish banking sector. Among the control variables, bank size is shown to have a negative effect on performance, also mirroring the estimations of Carbó et al. (2003), whereas the measures of intensity of demand and economic activity do not present any influence on bank profitability. Finally, it is interesting to underlie that only the dummy variable representing the groups of banks had a significant (and positive) impact on the results of these intermediaries. Thus, after controlling for the different effects that can affect profitability, commercial banks have, on average, higher profits that savings banks or credit unions.

5. PRELIMINARY CONCLUSIONS

Our results show the importance of taking into account the structures of relationships created by the presence of multimarket ties between firms. As we have seen multimarket contact had a significant influence on the performance of Spanish financial intermediaries. Nevertheless, the structure that best captures its influence takes a U-inverted shape. In terms of the question we posited at the beginning of the paper, foothold strategies do not only seem to be effective but they also reinforce themselves up to a maximum level.

The evidence presented in this paper raises a need of conciliating our initial reasoning and our results. Baum and Korn (1996) or Haveman and Nonnemaker (2000) argued that the inverted U-shape impact of multimarket contact could be explained in the following way: the initial presence in rivals markets would initiate an escalation of competition and tit-for-tat entries in each others markets up to a point in which firms would recognise their interdependences and mutual forbearance would ensure. Extrapolated to the multimarket contact-performance relationship this pattern of actions and reactions led us to argue in favour of a U-shaped impact on profitability. Nevertheless, the fact that multimarket contact has a positive influence on performance from low levels of multimarket contact seem to suggest an alternative explanation: multimarket contact has an important effect on mutual forbearance from the very first moment at which relationships start to be built and only the recognition that further engagement in multimarket relationships would harm performance deters firms from a continuous process of entry in each others markets. Therefore, the reduction of performance shown for high levels of multimarket ties could be the signal to stop the process of creating mutual interdependences.

In spite of these comments, our results should be taken with caution. First, given that multimarket contact is importantly explained by random factors (Korn and Baum, 1999), the

positive influence on performance could well be the consequence of reasons different from coordination among competing firms. Second, although we did control for traditional market structure measures through the use of concentration we did not take into account other moderators of the relationship. Given the existence of differences on the endowments of resources among the entities in our sample, strategic or resource similarity should be a clear candidate to be included among the explanatory variables (Gimeno and Woo, 1996; Jayachandran et al., 1999). An additional effort should also be taken in order to consider differences in integrating mechanisms and reward and control systems that facilitate or impede coordination (Golden and Ma, 2003). Finally, our empirical analysis should be longitudinally widened in order to avoid the impact of temporal shocks in our assessment.

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Appendix A. Descriptive statistics

	Mean	Min.	Max.	St. Dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Size	13,97	9,72	19,08	1,89	1,00	0,05	0,76	0,15	0,48	0,03	-0,02
2. Core markets concentration	0,22	0,00	0,55	0,13	0,05	1,00	0,01	-0,55	0,29	-0,47	-0,50
3. Multimarket contact	11,95	1,00	83,92	14,24	0,76	0,01	1,00	0,08	0,24	-0,08	-0,10
4. Banks(dummy)	0,34	0,00	1,00	0,47	0,15	-0,55	0,08	1,00	-0,45	0,26	0,54
5. Savings banks(dummy)	0,28	0,00	1,00	0,45	0,48	0,29	0,24	-0,45	1,00	0,00	-0,18
6. Intensity of demand	5,99	2,20	9,50	1,57	0,03	-0,47	-0,08	0,26	0,00	1,00	0,47
7. Economic activity	1328,96	12,00	9639,00	2013,00	-0,02	-0,50	-0,10	0,54	-0,18	0,47	1,00