

# **COMPETITIVENESS IN THE MUTUAL FUNDS MARKET: EFFECTS OF ITS DEVELOPMENT OVER PROFITABILITY AND RISK OF SPANISH FINANCIAL INTERMEDIARIES.**

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## **1.- INTRODUCTION.**

The objective of this work is to analyze the effects that the development of mutual funds has been able to provoke over the risk of the financial entities, as well as contrasting whether the reduction of the intermediation margins can be compensated by means of the collection of other financial services, such as the commercialization of mutual funds. On the other hand, the concentration of this market in the principal financial groups and the evidence of economies of scale in their management, leaves some doubt over its perfect competitiveness, in favour of collusive hypothesis between the participant agents.

The structural changes that the financial sector is experiencing, and particularly the desintermediation process, have exercised a notable influence over the financial statements of the credit entities, who search for new alternatives of business in view of the fall of profitability over the recent years. In this sense, the competition starting in 1991 by the mutual funds as a channel for investors' savings have turned them into direct competitors of the traditional banking instruments, especially of the deposits. Nevertheless, their being linked primarily to credit entities stops such competition generating advantages and drawbacks for the deposit entities in terms of risk and profitability, questions that we analyze in this work.

## **2.-FINANCIAL COMPETITION IN VIEW OF DESINTERMEDIATION: MUTUAL FUNDS AND OTHER OFF-BALANCE SHEET OPERATIONS.**

The liberalization and deregulation processes of banking activities, the increase in competition, and the boom of desintermediation in favour of the direct relationship between the demanders of funds and the capital markets, has given rise to a fall in the profitability margins of the credit entities, who have been involved in the search for new activities to compensate the fall of the intermediation margin by means of the collection of commissions and earnings derived from other financial services. This change means, in some cases, an increase in these entities' risk levels that gives the monetary authorities cause for concern not only on account of how difficult it is to detect but also due to the speed with which it is happening, making a parallel adaptation of the solvency control mechanisms of the financial entities even more difficult.

One of the most outstanding characteristics of banking activity over the last few years is the increase in the so-called off-balance sheet operations, which respond in great part to financial innovations, and they are considered as a sign of the new composition of the banking business that has developed out of the desintermediation process<sup>1</sup>. The growth of these activities has been developed by both liabilities and assets. Thus, referring to the customers of liabilities, the phenomenon of mutual funds is presented as a clear example of the collection of resources by the banking entities with off-balance sheet instruments in detriment to the traditional banking deposit. In relation to the assets, we must firstly point out the commercialization of titularized assets which, since they do not have to meet the solvency coefficients, permit an increase in the financial leverage of the financial entities; secondly, we must emphasize the progressive employment of derivatives by the deposit entities from a double perspective:

a) As financial intermediaries in OTC markets (over the counter), responding to customer demand.

b) As users of the risk coverage mechanisms, in an environment where the uncertainty and volatility of the financial markets have acquired an important specific weight in determining banking entities' results.

In short, off-balance sheet operations occupy an increasing role in the banking activity and in the processes of financial innovation. These operations are not going to see their pace of incorporation into the financial markets drop because they help to diminish transaction costs and to minimize agency costs derived from the asymmetric information. Furthermore, from the perspective of the learning curve, the experience effect offers clear advantages when we try to improve

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<sup>1</sup> Off-balance sheet operations include all the activities or instruments, rights and duties that are not reflected in the financial institution balance sheet, making the evaluation of the capitalization levels more difficult as their less equity

mechanisms or innovative, but already existent, instruments, thereby adapting to increasing market requirements (Merton, 1995).

Referring to the influence of the collective investment over the structural changes that are happening in financial intermediation, we must point out that its rapid development has generated a current in financial literature that is beginning to consider the possibility that these institutions could become the "banks of the future" (Gorton and Pennacchi, 1995). In relation to the hypothesis that the advances in the information technology offer lower transaction costs, alter the traditional banking business and allow there to be a separation between loan services and purely transactional services, the cited authors contrast the theory that these institutions can compete with the financial intermediaries as creators of liquidity, though the monetary authorities are those that in last extreme regulate such competition and mark the tendency toward financial systems of universal character or toward specialized banking activity.

The debate on the possible and effective substitution of financial intermediaries by collective investment societies which are under less strict regulations is based on the existence of externalities that traditionally have given rise to banking panics (Diamond and Dybig, 1983): thus, in the case of the separation between loan services and liquidity creation being motivated by how costly it is to apply the banking regulation, the dissociation would turn out to be inefficient, the alternative institutions would be equally prone to situations of panic and, therefore they would require a regulation similar to other financial intermediaries. There is a great deal of the financial literature<sup>2</sup> supporting this idea, given that the deviation of traditional financial activity toward off-balance sheet operations, whether it be the commercialization of mutual funds or another type of services (titularization of assets, OTC operations, etc.), allows financial intermediaries to generate a flow of earnings without having to respond with additional funds to the restrictions imposed by solvency regulation, albeit that the credit entities have to continue with their supervisory task because they are still exposed to credit risk in some of them.

Another alternative is that technological innovations make the separation between both activities and between institutions not only efficient but also less prone to panic situations, as proposed by Gorton and Pennacchi (1995). In this case, the presumed cause-effect relation between the increase in solvency regulation and in off-balance sheet operations is produced the other way round. In this sense, the progress in the information technology and in communications, the

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consumption allows them to maintain the compulsory solvency coefficients, decreasing the cost of capital and maintaining the profitability required by investors.

transformation of the banking business, etc. can be factors of development of off-balance sheet operations. The consequent appearance of new risks cause the regulators to feel that off-balance sheet operations increase, at least potentially, banking risk, thereby hardening the solvency regulation through new capital demands (Benveniste and Berger (1987), Koppenhaver (1989) Avery and Berger (1991), Jagtiani, Saunders and Udell (1995)).

Fear of banking panic has encouraged a line of work dedicated to the study and development of methodologies that analyze the incidence of off-balance sheet operations in banking risk, basically trying to minimize credit risk by making the entities face the possibility of having to offer financing in adverse circumstances. However, the results indicate that, generally, off-balance sheet operations reduce total risk but not reduce systematic risk, which indicates that these operations should not be a cause of concern for well spread-out stockholders. Therefore, while the regulators are worried about controlling the total risk and the probability of bankruptcy of the banking entities, the reduction of that total risk provided by off-balance sheet operations, penalizes the large banks that are precisely the ones that use them the most.

### **3.-CONSEQUENCES OF THE DEVELOPMENT OF MUTUAL FUNDS IN RISK AND PROFITABILITY OF SPANISH FINANCIAL ENTITIES.**

The net assets managed by mutual funds have grown with such intensity in Spain over the last few years that they have become direct competitors of the traditional banking instruments, especially of the deposits, as is shown in the evolution of these instruments with respect to the Spanish economy (Table 1). In this sense, the desintermediation phenomenon of bank saving has meant that, whilst in 1991 89.5% of savings was in the hands of banks and savings banks and mutual funds were channeling 10.5%, by the end of 1996 the deposits represented only 70.5% whilst 29.5% had been placed in the funds.

	1989	1990	1991	1992	1993	1994	1995	1996
Net assets (1)	0.87	1.16	3.87	6.28	10.27	11.24	12.19	18.70
Net assets/GNP	1.9%	2.3 %	7.1%	10.7%	16.9%	17.4%	17.5%	26.1%

<sup>2</sup> The thesis that financial entities emphasizes their participation in off-balance sheet operations by trying to respond to solvency restrictions is upheld, among others, by Giddy (1985) and Pavel and Phillis (1987).

Net assets/ family savings	1.6%	2.0%	6.0%	9.1%	13.4%	13.7%	13.8%	19.7%
Net assets/Credit entities deposits	2.1%	2.6%	7.9%	12.5%	18.8%	19.3%	18.9%	27.1%
Debt in funds	3.3%	4.8%	16.8%	24.9%	30.2%	32.1%	31.5%	45.5%
Fixed income/net assets	84.7%	89.3%	90.4%	95.5%	92.8%	92.5%	91.3%	91.1%
Net assets /capitaliz. Madrid Stock Ex.	-	6.8%	20.5%	35.6%	40.7%	46.5%	46.1%	58.8%

(1) Billions of pesetas.

Source: Inverco.

**Table 1**  
***Evolution of the mutual funds***

The lesser availability of resources obtained via traditional operations to finance their asset operations, induces financial entities to look for new formulae to get funds, which could increase their risk if they opt for off-balance sheet operations, as they permit the entities to increase the volume of negotiation without consuming their own resources. In this sense, our first objective is to carry out an analysis that enables us to detect the structural changes that have been produced in the systematic risk of entities based on a sample of banks that are listed on the Stock Exchange.

The following step of our work consists in relating the fall of the entities' financial margin with the development of the mutual funds, explaining the variability of the intermediation margin on the basis of those factors which have become, as a result of this alternative investment boom, important determinants of the banking results, such as the increasing weight of the commissions over the ordinary margin. We will base our risk analysis on necessary competition of banks and savings banks to get outside resources that are essential for the concession of credits. Nevertheless, from the point of view of profitability, this new competitive alternative that is the funds has a beneficial effect on the accounting results<sup>3</sup>. In this sense, the net impact of the strategy of commercialization of mutual funds on the banking results depends on the including losses and generated earnings:

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<sup>3</sup> One out of three pesetas of earnings of the five biggest banking groups comes from mutual funds with data from December 1997: Santander, BBV, Argentaria, BCH and Popular total 97.000 millions of pesetas collected from the participants for the managing and deposit of the mutual funds.

- 1.- The loss of financial earnings caused by the transfer of banking liabilities toward mutual funds, and by the reduction of the plain desintermediation activity (direct placement of financial assets).
- 2.- The attainment of financial net earnings thanks to mutual funds via commissions and through investments of one's own funds, since an important part of its portfolio is invested in banking liabilities.

The need to incorporate the contamination effect (the amount in mutual funds that comes from banking liabilities) and the unavailability of data on the structure of such liabilities in terms of greater or lesser remunerations or costs, make it necessary to refer to simulated percentages to quantify the consequences of mutual funds over the banking groups (Withes, 1993 ;González Mosquera, 1995). In this sense, our second objective consists on contrasting with real data (without the need to refer to simulations) the effect caused by the mutual funds operation over the margin of banking intermediation.

Lastly, we want to leave the question of the future research into the collective investment sector open, where there may well be collusive hypotheses between the managerial institutions and the deposit institutions due to the concentration of a high percentage of the net assets of mutual funds in a few entities, which creates some doubt about the character of a perfectly competitive market.

To sum up, our objectives have led us to contrast the following hypotheses:

**Hypothesis 1:** *The competitive changes in the financial sector caused by the development of mutual funds and other off-balance sheet operations have not contributed to an increase in the systematic risk of the banking entities, with such an affirmation being based on the peculiar characteristics of the Spanish financial system, which have propitiated a different evolution to that undergone by other countries within the same environment.*

**Hypothesis 2:** *The variability of the intermediation margin can be compensated by means of the collection of commercialization of mutual funds services. This strategy has been followed since 1991 fundamentally by private banking.*

### **3.1. Sample and methodology.**

The financial entities that constitute the analyzed sample have been selected in accordance with the following conditions:

- 1°.- Continual participation in the mutual funds market during the period under study, 1992- 1996 and having been at least three years on that market before the considered sample period. According

to this criterion we have 23 banks and 30 savings banks that meet this prerequisite (table 2) and they have been used to contrast hypothesis 2.

2°.- Availability of the quotations of the entities of the sample that participate in the capital markets from 1990 to 1996, a period in which a possible structural change of the risk level will be examined (table 3), and which appears in our hypothesis 1. Although the size of the sample is small (12 entities) we consider it representative enough because of the high volume of business that they represented out of the total Spanish financial system, at least with reference to private financial entities.

3°.-Availability of data in relation to the managerial entities associated to each of the selected deposit entities, their mutual funds (FIM and FIAMM), the deposit and management commissions, their market share, volume of net assets, and the percentage of every fund invested in temporal acquisitions of assets.

<b>Banco Bilbao Vizcaya</b>	<b>Caja de Ahorros de Cataluña</b>
<b>Banco Central Hispanoamericano</b>	<b>Caja de Ahorros Municipal de Burgos</b>
<b>Banco Santander</b>	<b>Caixa d'Estalvis de Girona</b>
<b>Banco Zaragozano</b>	<b>Caja General de Ahorros de Granada</b>
<b>Banco Popular Español</b>	<b>Caja de Ahorros de la Rioja</b>
<b>Banco del Comercio</b>	<b>Caja de Madrid</b>
<b>Bankinter</b>	<b>Caja de Ahorros Layetana</b>
<b>Banco Atlántico</b>	<b>Caja de Ahorros de Murcia</b>
<b>Banco Luso Español</b>	<b>Caja de Asturias</b>
<b>Bankoa</b>	<b>Caja de Las Baleares</b>
<b>Banco Urquijo</b>	<b>Caja Municipal de Pamplona</b>

<b>Bancoval</b>	<b>Caja de Ahorros de Navarra</b>
<b>Banco Pastor</b>	<b>Caja de Ahorros de Sabadell</b>
<b>Banco Herrero</b>	<b>Caja Cantabria</b>
<b>Banca March</b>	<b>Caja de Segovia</b>
<b>Banco Banif Gestión Privada</b>	<b>Caja San Fernando de Sevilla y Jerez</b>
<b>Banca Catalana</b>	<b>Caixa d'Estavis Provincial de Tarragona</b>
<b>Banco Santander de Negocios</b>	<b>Bancaja</b>
<b>Banco Sabadell</b>	<b>Caixa d'Estalvis del Penedés</b>
<b>Banco de Inversión</b>	<b>Caixa</b>
<b>Banco Universal</b>	<b>Caja de Zaragoza, Aragón y Rioja</b>
<b>Banco Exterior</b>	<b>Caja de la Inmaculada de Aragón</b>
<b>Banco Directo</b>	<b>Caja de Ahorros del Mediterráneo</b>
<b>Unicaja</b>	<b>Bilbao Bizkaia Kutxa</b>
<b>Caja de Salamanca y Soria</b>	<b>Caja Vital</b>
<b>Caja Postal</b>	<b>Caja de Huelva y Sevilla</b>
<b>Caja de Guipuzcoa y San Sebastián.</b>	

*Table 2.*

*Relation of analyzed Banks and Savings Banks*

<b>Banco Atlántico</b>
<b>Banco Zaragozano</b>
<b>Banco Santander</b>
<b>Banco Popular</b>
<b>Banco Pastor</b>
<b>Banco Herrero</b>
<b>Banco Exterior</b>
<b>Banco Español de Crédito</b>
<b>Banco Central Hispano</b>
<b>Banco Bilbao Vizcaya</b>

<b>Banco Guipuzcoano</b>
<b>Banco Intercontinental (Bankinter)</b>

*Table 3.*

*Relation of entities that quote and operate with funds during 1987- 1996*

Referring to the methodology we used, in the analysis of the variability of risk in the banking sector, we carry out a contrastive study of the stability in the volatility of the different banks during the sample period under consideration. The "beta" which represents the systematic risk of the bank has first been estimated through Ordinary Least Squares applying both the Capital Asset Pricing Model (CAPM) and the Market Model, utilizing daily quotations, from January of 1990 to June of 1996.

CAPM	$(R_{jt}-R_f) = \beta_j (R_{mt}-R_f) + \varepsilon_{jt}$
Market Model	$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$

where  $R_{jt}$  is the daily profitability of the bank,  $R_{mt}$  the daily profitability of the index IBEX 35 and  $R_f$  the risk-free interest rate, considering as such Treasury Bonds with repurchase pact to a day. The possible existence of heteroskedasticity has led us to carry out the White Test to contrast the null hypothesis that the errors are both homoskedastic and independent of the regressors and that the linear specification of the model is correct. If we reject this hypothesis, we can conclude that there exists heteroskedasticity conditional on the independent variable and we need to correct it through Generalized Least Squares, estimating OLS in the model divided by the independent variable. If heteroskedasticity exists and it is not corrected, the stability test of the parameters can conclude that there has been a structural change although the main reason for this finding would be the wrong specification of the model and not the true existence of a structural change. This fact made us use the Market Model instead of the CAPM to estimate the "beta", since the correction could be more easily done. Then, to contrast a possible change in the systematic risk of the financial entities (measured through the "beta"), we carried out a Chow test which contrasts the null hypothesis of absence of structural change. It is usually used when there is certain information about a structural variation that occurs in a certain moment during the sample period, and it aims to contrast if that variation was sufficiently important to generate changes in the coefficients of the model,

considering as the sectioning point the second four month period of 1992 (a moment in which we consider a boom in the negotiation of mutual funds is produced).

To contrast the second hypothesis we specify a multiple econometric model which explains the variability of the margin of intermediation (MI) through the total assets mean (ATM), the deposit commissions (COMDEP), and the management commissions (COMGES) and the net assets invested in mutual funds by the managerial institution associated to our deposit institutions, corrected by the temporal acquisitions of assets and the liquidity (in short, eliminating from the net assets of mutual funds what is returned to the balance of the credit entities, PT-ATA).

$$MI_{it} = \alpha_t + \beta_t ATM_{it} + \gamma_t COMDEP_{it} + \phi_t COMGES_{it} + \lambda_t (PT-ATA)_{it} + \varepsilon_{it}$$

Using the regression technique we firstly carried out a cross-section analysis for each of the five years under study, and then we placed the data in a single sample to apply the panel data methodology. This methodology presents a series of advantages over the traditional cross-section analysis as Hsiao showed in his work in 1985. Among the most important advantages we can mention: the increase in the number of observations, allowing us not only to obtain better estimates of the parameters but also to specify and to contrast more sophisticated models; the reduction of multicollinearity problems when the variables are divided in two dimensions; the measurement and identification of non observable effects in cross-section analysis and the decrease in the estimation bias.

The estimation through Ordinary Least Squares (OLS) of panel data gives us unbiased and consistent estimators of the parameters only when there is homogeneous behaviour of the individuals among themselves and throughout the whole time. When this is not the case, we are faced with individual and temporal effects that we have to model. Referring to the individual effects, we distinguish, as is customary, between fixed effects and random effects. The former are analyzed with the covariance model and the latter with the error components model.

In the covariance model or Within estimators, we use information related to the within variation of the considered variables. The estimators are consistent and unbiased when they do not consider the individual effects, but they are not those of minimum variance (Hsiao, 1985), as it is possible to increase their efficiency via the estimation of Generalized Least Squares (GLS), which considers information about the individual random effect and is solved through the error components model.

When the individual effect is independent of the regressors, the Between estimators<sup>4</sup> are consistent and unbiased and they should not differ from the estimators calculated in the covariance model. The F test will indicate if we can consider the results similar or not. When the Within and the Between estimators do not coincide, it is evidence of the existence of individual effects and, therefore we should consider the within or GLS estimators which will show us the dependent variables that determine the variation in the intermediation margin during the analyzed period. To summarise, when the within and the between estimators are not statistically the same, it means that the individuals are heterogeneous in their behaviour and that there are individual effects that should be modeled. When the individual effects are correlated with the regressors of the model, the estimation of GLS will be inconsistent and unbiased<sup>5</sup>, and if this is the case we can:

a) instrument the variables of the original model to eliminate such a relationship.

b) introduce the individual effects in an explicit way through new explanatory variables that incorporate individual effects.

Lastly, the application of the cluster technique permits us to segment the sum total of the entities of the sample into differentiated groups on the basis of the independent variables of the proposed model.

### **3.2. Empirical analysis and results.**

The analysis of the hypothesis of structural change in banks' systematic risk caused by the mutual funds shows the results we present in table 4., with there being significant data for the structural change in the following banks: Atlantico, Banesto, Bankinter, Herrero, Santander y Zaragoza.

Although we consider the second semester of 1991 as the date of the beginning of the mutual funds war, the fact that it is not an official or generalized date for all the entities, led us to consider as the sectioning point the second four month period of 1992. We also consider sectioning on the basis of a particular fact in a specific entity (Banesto, December 1993), and during the period 1993-1994 for all the banks of the sample because of the variation in interest rates and the change suffered in the profitability of mutual funds.

Therefore, and considering the banking sector as a whole, we cannot speak of a structural change in the level of systematic risk after the mutual funds war. These results are consistent with

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<sup>4</sup> The within estimators result from cross section analysis in which the values of the dependent and independent variables are the means of the variables in the period.

<sup>5</sup> Hausman test will show if the model is correctly specified and if the GLS estimators are consistent and unbiased.

other similar works (Freixas, 1996) and those which analyze the incidence of other important events in the evolution of the Spanish financial system, such as the 1992 regulation on solvency. On a risk level, and after the crisis suffered in the eighties, with the reinforcement of the regulations in 1985, the Spanish financial entities have had, in general, no problems in this sense.

Furthermore, the analysis of the composition of the net assets of mutual funds, and especially those associated with banks and savings banks, indicates the investment of a small percentage in variable income assets and private fixed income assets, which does not respond to the objective of desintermediation of the credit activity through mutual funds, competing with the credit entities not only on the liabilities side but also on that of assets. In this sense, the Spanish credit entities have so far not seen their dominant position in the credit market seriously affected, which doesn't encourage taking on differentiated risks either.

<b>Chow Test. 2<sup>nd</sup> four month period of 1992.</b>	<b>Beta* Market M.</b>	<b>Beta* GLS</b>	<b>Chow Test**</b>
Banco Atlántico	0.3313 (3.9056)	0.686 (2.661)	13.762 (0.000)
Banesto	0.8065 (8.747)	No Heterosk	12.250 (0.000)
Bankinter	0.1294 (8.753)	No Heterosk	169.99 (0.000)
Banco Bilbao Vizcaya	0.838 (26.185)	1.102 (2.315)	3.246 (0.039)
Banco Central Hispano	0.0545 (1.966)	No Heterosk	3.363 (0.034)
Banco Exterior	0.1313 (9.193)	No Heterosk	2.784 (0.062)
Banco Guipuzcoano	0.0165 (1.446)	No Heterosk	5.9642 (0.0026)
Banco Herrero	0.22 (3.704)	No Heterosk	6.9489 (0.0009)
Banco Popular	0.6214 (0.000)	1.197 (2.510)	0.1153 (0.891)
Banco Pastor	0.271 (8.481)	No Heterosk	0.095 (0.909)
Banco Santander	0.717 (0.000)	No Heterosk	7.963 (0.0003)
Banco Zaragozano	0.458 (11.156)	0.468 (0.316)	7.9475 (0.0003)

\* Value in parenthesis: Student t.

\*\* Value in parenthesis: p.value

**Table 4**  
**Structural changes in systematic risk.**

On the other hand, the results of the analysis of the incidence of the development of the mutual funds on the profitability of the financial entities are represented in tables 5 and 6, where the high significance of the model is apparent, with values of  $R^2$  over 95 %, and the variables being more meaningful for the last years of the sample, which seems logical with respect to the more spectacular evolution of the funds in the last years under analysis.

The signs of the independent variables appear such as we expect them to, with a positive relation between the margin of intermediation and the mean of total assets, since the margin of intermediation, related with traditional financial activity and with efficient management, will get higher as ATM grows. In contrast, the margin of intermediation will fall as financial entities continue draining their traditional financial activity towards Off Balance Sheet Operations, such as mutual funds, where the earnings of the deposit entities derive from the commissions collected. Referring to the positive relation with the net assets corrected by the temporal acquisitions of assets, we observe financial earnings from the intermediation activity derived from the liabilities generated by the investments of their own mutual funds, since a great part of the portfolio of funds is materialized in banking liabilities<sup>6</sup>.

	<b>ATM</b>	<b>COMDEP</b>	<b>COMGES</b>	<b>PT-ATA</b>	<b>R<sup>2</sup></b>	<b>N° observ</b>	<b>DW</b>
<b>1992</b>	1.031439 (26.137)	-63.67054 (-4.074)	11.5339 (2.278)	-0.079795 (-0.689)	0.98454	36	1.91
<b>1993</b>	1.02441 (10.576)	-27.51285 (-1.667)	1.28533 (0.424)	0.039818 (1.021)	0.96218	35	2.25
<b>1994</b>	1.022775 (14.989)	-36.09836 (-3.254)	-5.199768 (-1.728)	1.160360 (5.328)	0.98448	31	2.26
<b>1995</b>	1.020246 (9.082)	-56.96803 (-3.390)	-5.303107 (-2.255)	0.034623 (0.720)	0.94960	34	2.01

<sup>6</sup> 95% of the institutional investment is materialized in fixed income.

<b>1996</b>	1.93645 (7.202)	-56.64880 (-4.984)	-4.931758 (-2.382)	0.367489 (3.956)	0.93645	36	1.89
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\* Significance level 95 % (value in parenthesis: Student t)

**Table 5.**  
**Results of the regression analysis for the banking entities\***

	<b>ATM</b>	<b>COMDEP</b>	<b>COMGES</b>	<b>PT-ATA</b>	<b>R<sup>2</sup></b>	<b>N° observ</b>	<b>DW</b>
<b>1992</b>	0.041513 (7.456)	-12.08466 (-2.466)	-87.0322 (-4.562)	3.253689 (5.365)	0.95724	34	1.72
<b>1993</b>	0,037680 (14.481)	-42.48969 (-3.526)	-35.94867 (-5.091)	1.623151 (5.948)	0.98322	36	2.02
<b>1994</b>	0.034857 (13.319)	-60.11720 (-4.327)	-40.41865 (-5.328)	0.689251 (6.683)	0.97766	36	2.24
<b>1995</b>	0.026361 (9.707)	-75.22289 (-4.286)	-16.12955 (-2.995)	0.635642 (4.659)	0.96500	36	2.28
<b>1996</b>	0.03004 (15.627)	-32.25906 (-3.230)	-27.04865 (-7.626)	0.449571 (8.859)	0.98617	36	1.91

\* Significance level 95 % (value in parenthesis: Student t)

**Table 6.**  
**Results of the regression analysis for Savings Banks\***

In an attempt to interpret our results more correctly, and above all, to determine the existence of unobservable heterogeneity within the members of our sample (especially any effect derived from the differentiation between a bank or a savings bank) we apply the panel data methodology.

The difference between Within and Between estimators as well as the F test make us reject the null hypothesis of the non-existence of individual effects. According, then, to the Hausman test

we reject the null hypothesis of absence of correlation between the latent effects and the variables, and therefore the only consistent estimator will be the Within estimator. We observe the same sign for all the parameters estimated for the total sample as we found in the single year regressions although the deposit commissions are no longer significant.

When we divide the sample in two groups differentiating between banks and savings banks, we observe a similar behaviour between the banks and the total sample of financial entities but, in contrast, savings banks show different results, since the significance of the variables related to the commercialization of mutual funds in the model has decreased. This empirical evidence seems obvious as the introduction of savings banks in the mutual funds market has been less than that of the banks.

**Dependent Variable: MI**

	<b>Total Sample</b> NI=53 T=5	<b>Banks</b> NI=23 T=5	<b>Savings Banks</b> NI=30 T=5
COMDEP	-5.009 (-0.0652)*	-12.739 (-1.159)*	4.8012 (0.5825)*
COMGES	-4.141 (-2.611)*	-9.439 (-3.746)*	1.168 (0.6253)*
ATM	0.00346 (1.991)*	0.00433 (1.918)*	0.00856 (4.816)*
PT-ATA	0.0914 (2.856)*	0.1830 (3.876)*	-0.0219 (-0.408)*
Adj. R <sup>2</sup>	0.9836	0.9873	0.9965
F test	22.051 (0.000)**	18.473 (0.000)**	48.606 (0.000)**
Hausman Test	212.10 (0.000)**	111.59 (0.000)**	143.17 (0.000)**

\* Student t, \*\* p-values

**Table 7.**  
***WITHIN (fixed effects) Estimates.***

The last step of this work is to break down the analyzed sample into groups of similar enterprises independently of their juridical character (bank or savings bank) on the basis of the variables we consider representative in the previously carried out analyses. The composition and number of these groups will be obtained by means of the application of the segmentation by typologies technique of the cluster analysis, which is an agglomerate procedure consistent in grouping cases in blocks that are homogeneous among themselves and heterogeneous with respect to the others, by means of processes of minimization of distances between punctuation in an Euclidean space defined by the variables to be studied. It is a static analysis, referring to a specific period of time, which offers no dependency relations other than that of belonging to one group or another on the basis of the registered punctuation in the variables that define the space over which the segmentation was done.

The results, in all the analyzed years, distinguish clearly between two groups in which the fundamental difference is the size of their members and the net assets of mutual funds of their managerial institutions: in 1994, 1995 and 1996 there is a group with 6 entities (Banco Bilbao Vizcaya, Banco Central Hispano, Banco Santander, Bankinter, Caja de Madrid y la Caixa) that manages 75 % of the net assets of mutual funds in Spain, with all the remaining financial entities staying in the other group. In 1992 and 1993, the concentration is higher, appearing a group with only 4 credit entities (Caixa, Banco Bilbao Vizcaya, Banco Central Hispano, and Banco Santander).

#### **4.-CONCLUSIONS**

The study of the influence of the development of the mutual funds over the profitability and risk of financial entities is really new in a financial system such as the Spanish one, where the desintermediation process has been developed in such a way that a great part of mutual funds are linked to banks or savings banks, and which has been named as vinculated desintermediation.

The impossibility of carrying out a joint analysis of risk and profitability via, for example structural equation models, due to the little available data about systematic risk on the Spanish market, has led us to a differentiated analysis of these characteristics. The results reflect little incidence of the increase in competitiveness over the Spanish banks' systematic risk, and an ever-increasing influence of the commissions deriving from the commercialization of mutual funds, in the determination of the financial and ordinary margins.

With reference to the grouping, the results obtained from the cluster analysis, which in terms of net assets and size could be obvious are in fact not so when we are studying a market that is not yet considered totally consolidated in terms of management despite its spectacular development in volume of business. Future investigations about collective investment should analyze the competitiveness of the mutual funds sector and the relations between the participant agents. The degree of concentration and the existence of economies of scale in their management put forward some doubt about their efficient behaviour for the participants in mutual funds or whether indeed it responds to collusive hypotheses which must on all accounts be contrasted.

## **5.-BIBLIOGRAPHY.**

ALVAREZ, J.(1994): “Análisis de los fondos de inversión de renta fija en España”. CEMFI, Working Paper nº 9422.

ANG, J.S.; WUH LIN, J. (1995): “Estimating economies of scale and scope of financial products under near “ideal” conditions: The case of Mutual Funds”. Working paper, Florida State University.

AVERY, R.; BERGER, A.(1991): “Loan commitments and bank risk exposure”. *Journal of Banking and Finance*, vol.15. pp. 173-192.

BENVENISTE, M.; BERGER, A.(1987): “Securitization with recourse”. *Journal of Banking and Finance*, vol.11. pp. 403-424.

COMISION NACIONAL DEL MERCADO DE VALORES: “Informe sobre instituciones de inversión colectiva”. Quarterly publication. Several numbers.

CONTRERAS, C.(1991): “Las entidades de crédito ante la popularización de la inversión colectiva” en *Papeles de Economía Española* (Suplementos sobre el Sistema Financiero), nº 35.

GIDDI, Y. (1985): “ Regulation of Off-Balance Sheet Banking”. *The Search for Financial Stability: The Past Fifty Years*. *Federal Reserve Bank of San Francisco*. pp. 165-177.

FREIXAS, X. (1996): *Los límites de la competencia en España*. Fundación BBV.

GALLO, J; APILADO, V; KOLARI, J. (1996): “Commercial bank mutual fund activities: implications for bank risk and profitability”. *Journal of Banking and Finance*, vol.20. pp.1775-1791.

- GARCIA VAQUERO, V. (1994): “Evolución y perspectivas de los fondos de inversión”, *Boletín Económico del Banco de España*, March.
- GONZALEZ, L.M. (1995): “Los fondos de inversión y sus implicaciones para las entidades de crédito”. *Boletín Económico del Banco de España*, July-August.
- GORTON, G ; PENNACCHI, G. (1995): “Money Market Funds and Finance Companies: Are they banks of the future?”, en *Structural change in banking*. Edited Klausner, M ; White, L. New York University Salomon Center.
- HSIAO, C (1986): *Analysis of Panel Data*. Cambridge University Press.
- JAGTIANI, J; SAUNDERS, A; UDELL, G.(1995): “The effect of bank capital requirements on bank off-balance sheet financial innovations”. *Journal of Banking and Finance*.Vol. 19. pp. 647-658.
- KOPPENHAVER, G. (1987): “ The effects of Regulation on Bank Participation in the Guarantee Market”. *Federal Reserve Bank of Chicago*.
- MERTON, R. (1995): “Financial innovation and the management and regulation of financial institutions”. *Journal of Banking and Finance*, vol.19, núm.3-4.pp. 461-482.
- PAVEL, C.; PHILLIPS, D. (1987): “Why commercial banks sell loans:an empirical analysis”.*Federal Reserve Bank Chicago: Economic Perspectives* (May/June).pp.3-14.