INTERNAL CONTROL OF DERIVATIVES USAGE BY SPANISH SAVINGS BANKS: AN EMPIRICAL SURVEY

CONTROL INTERNO DE LOS DERIVADOS EN LAS CAJAS DE AHORROS ESPAÑOLAS: UN ESTUDIO EMPÍRICO

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ABSTRACT

Global derivatives activity continues to expand although they have provided some of the most devastating financial disasters.

The debate on their regulation has always been present and is still unresolved. However, without undervaluing the importance of regulation and the usefulness of an adequate external control, a sound internal control system is essential to prevent new financial scandals.

First of all, this paper, through the review of existing recommendations, rules, regulation and academic literature, studies and analyses the need and importance of internal control in derivative usage for risk management. And secondly, through a questionnaire about established policies, procedures and internal controls, it provides evidence related to its usage and control by Spanish savings banks.

KEY WORDS: Derivatives, Internal Control, Risk Management, Financial Firms, Savings Banks.
JEL: M4, G21

RESUMEN

El uso de los derivados sigue en expansión a pesar de haber ocasionado alguno de los mayores escándalos financieros.

El debate sobre su regulación, todavía sin resolver, ha estado siempre presente. No obstante, y sin menospreciar la importancia de la regulación y la utilidad de un adecuado control externo, un buen sistema de control interno es esencial para prevenir nuevos desastres.

Este trabajo, en primer lugar, a través de la revisión de las recomendaciones, normas, regulación y literatura académica existente, estudia y analiza la necesidad e importancia del control interno en el uso de los derivados para la gestión del riesgo. Y en segundo lugar, a través de un cuestionario sobre las políticas, procedimientos y controles internos establecidos, aporta evidencia sobre el uso y control de los mismos por las cajas de ahorros españolas.

PALABRAS CLAVE: Derivados, Control Interno, Gestión del Riesgo, Entidades Financieras, Cajas de Ahorros.

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1 INTRODUCTION*

When used properly, derivatives are among useful tools for financial risk management, providing financial firms more business avenues while making it possible for a more flexible and efficient risk management. On the other hand, when used incorrectly they can turn into a new and dangerous source of risk, which could go as far as destroying the company that uses them, as occurred with the Barings Bank (1995), or cause substantial losses as in the well known cases of Daiwa (1995), AIB (2002), NAB (2004), more recently Société Générale (2007) and a long list of financial scandals. We have focused our research on these disasters linked to derivatives as financial firms consider the need to control them.

Irrespective of existing regulation and control procedures for use of derivatives, it is important that internal control mechanisms in a company derivative usage be explored to add missing knowledge literature.

Without undervaluing the importance of regulation and the usefulness of an adequate external control (Romano, 1998; Burns, 1998; Dood, 2000), which on occasions only add limitations to the market (Cooper, 1994; Schachter, 1994; Gibson and Zimmermann, 1994; Culp and Mackay, 1997; Siems, 1997; Miller, 1996; Malcolm, Sharma y Tanega, 1999), we believe that it is the internal control which can best assure the adequate use of these instruments.

In our view, only a flexible and sound internal control system allows adaptation to the dynamism of these instruments. The correct identification and setting up of adequate internal control are mechanisms that should be present in the development of new activities of financial firms particularly in transactions with derivatives to avoid new problems or losses such as those encountered in the past.

This paper follows two main objectives. First of all, to study and analyse the importance and the need of internal control in derivatives usage. For this purpose, we review the main recommendations, rules, norms, regulation issued and the academic literature related.

And secondly, to survey the usage and control of derivatives by Spanish savings banks. For this purpose, we sent a questionnaire which provides evidence related to policies, procedures and controls established.

The rest of the paper is as follows: section 2 briefly describes the position of Spanish savings banks as derivative end-users which have played an active role in the development of the country's banking industry; sections 3 and 4 review the numerous published reports

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on risk management and control of derivatives and the literature pertinent to the use and control of derivatives; and sections 5 and 6 describe the research design and summarises the survey results followed by further analysis and discussion, and some concluding remarks in section 7.

2 THE ROLE OF SAVINGS BANKS IN SPAIN

As derivatives are classified as off-balance sheet activities, its dramatic growth has not been registered on balance sheets of banks. However, it is generally accepted that not all banks use them and that this activity is highly concentrated[1].

We can expect a positive relationship between bank size and the use of derivatives as was found by Sinkey and Carter (2000). Their finding confirmed earlier research which documented the importance of the size of banks in relation to the use of futures (Koppenhaver, 1990), swaps (Kim and Koppenhaver, 1993), and interest-rate derivatives (Carter and Sinkey, 1998a, 1998b; Gunther and Siems, 1996). Even in studies of non-banking industry virtually all empirical research report a positive relation between company size and derivatives usage (Nance, Smith and Smithson, 1993; Mian, 1996; Berkman and Bradbury, 1996; Géczy, Minton and Schrand, 1997; Colquitt and Hoyt, 1997).

Unfortunately such detailed data are unavailable for Spain despite the development banking sector towards modernisation with savings banks in particular playing an active part. The Spanish savings banks with a history of almost two centuries form an important group of financial institutions with exceptional distinguishing features. They were founded with a clear regional objective of attending to the needs of families and businesses within their territories. At present, there are 46 savings banks in Spain. These firms are characterised in legal terms as a special form of private foundation[2]. Unlike other credit entities, the savings banks combine their financial function with intense social activity.

It has been a bit more than 30 years since the savings banks were equated with commercial banks in operating terms (RD 2290/1977), opening a new scenario in the Spanish banking system. This equalisation was an impetus for the savings banks, which had to make their financial objectives compatible with their social aims in keeping with their special character.

During this period, Spanish savings banks increased their competitiveness and their market share rose relative to commercial banks. They have gone from representing a quarter of the Spanish banking system to almost half and since 2003 they have even

(1) According to the Office of the Comptroller of the Currency (OCC, 2005), at the third quarter of 2005, five US commercial banks account for 96% of the total notional value of derivatives in the commercial banking system, with more than 99% held by the largest 25 banks.
(2) The Finance Act (2002) guarantees that civil society continues to play a significant role in governing bodies and thereby assures the maintenance of the savings bank model that has been so successful in Spain.

overcome commercial banks in total deposits. They have developed their traditional activities what along with an increasing diversification into financial services resulting in a significant commitment to the society. At the same time, they have more than adequate levels of profitability, efficiency and solvency despite being unable to issue shares. They have no difficulty in increasing their capital base to date and have always maintained higher BIS capital adequacy ratio than commercial banks.

This capital increasing trend may be observed in Table 1, which shows the development of the most representative off-balance sheet transactions of the banking systems as a whole (including the savings banks) and the savings banks between 1996-2002 when a more marked increase in such transactions occurred: particularly, the importance acquired by transactions with use of derivatives including futures. This has multiplied by 2.3 in the sector as a whole (exceeding €2 billion in 2002) and within the savings banks by 14.2 (€0.6 billion in 2002).

TABLE 1.- BANKING SYSTEM AND SAVINGS BANKS (1996-2002): OFF-BALANCE SHEET BUSINESS (EURO MILLIONS)

	1996	1997	1998	1999	2000	2001	2002
Banking System							
Guarantees	1,068	1,215	1,531	5,712	4,449	5,511	5,629
Loan commitments	101,949	115,712	130,558	153,916	170,117	200,496	217,052
Futures	962,463	1,125,350	1,129,627	1,478,866	1,686,038	2,203,552	2,212,156
Savings Banks							
Guarantees	302	393	514	756	974	1,125	1,528
Loan commitments	26,661	33,354	39,124	47,618	61,650	72,428	87,494
Futures	44,189	65,495	118,767	208,882	362,508	520,037	626,098

Source: Bank of Spain, European Central Bank, National Stock Market Commission, AEB and CECA

Along with competitive pressures faced by the banking sector, the savings banks have also had to contend with major regulatory challenges particularly those referring to the control of risks and, more specifically, the regulation of capital and reserves. However, their continuing willingness to improve their systems and attitude to the risks they face is remarkable.

Finally, we would like to point out that, although it would be a mistake to think that savings banks will go on increasing their share indefinitely, it is fairly reasonable to assume that within a decade savings banks will go on competing fiercely in the market despite greater cooperation than before, and with a management oriented towards improvements in efficiency, risk management, technological innovation and customer relations.

3 CONTROL OF DERIVATIVES AS A RISK MANAGEMENT INSTRUMENT

If used cautiously, derivatives assist in stabilising flows by reducing or eliminating the impact of market variables as shown in studies among others, Rahnema (1991), Nance, Smith and Smithson (1993), Bodnar *et al.* (1995, 1996, 1998 and 1999), Phillips (1995), Yanagida and Inui (1996), Downie, Mcmillan and Nosal (1996), Costa (1995), Alcarria (1995), Rubín (1996), Mian (1996), Berkman and Bradbury (1996), Tufano (1996), Venkatachalam (1996), Berkman, Bradbury and Magan (1997), Geczy *et al.* (1997), Grant and Marshall (1997), Goldberg *et al.* (1998), Guay (1999), Levich, Hayt and Ripston (1999) and De Ceuster, Laveren and Lodewyckx (2000).

In the same way that they help in reducing or eliminating unwanted risks[3], they also contribute in creating other highly risky situations which should be carefully overseen. Some authors have even defined them as 'examples of capitalist casinos, lethal poison for an already chaotic financial market' (Burns[4], 1998). Both financial and non-financial firms have made significant profits thanks to these instruments, but they have also suffered losses[5], some of which were substantial and generally due to the inadequate use of the instruments. In short, as Ciborra (2006) argues for digital technologies, derivatives contribute to both the generation of new side effects and further reflexivity[6]. Managing risks thanks to derivatives also makes one vulnerable to events emerging from new risks.

Despite the various studies showing that derivatives usage can increase firm value (Nance, Smith and Smithson, 1993; Berkman and Bradbury, 1996; Goldberg et al., 1998) because they reduce contracting costs (Mayers and Smith, 1987), financial distress[7] costs (Mayers and Smith, 1982; Smith and Stultz, 1985; Froot Scharfstein and Stein, 1993), imperfect access to external capital markets (Froot, Scharfstein and Stein, 1993), agency costs (Mayers and Smith, 1987) and expected taxes (Smith and Stultz 1985; Mayers and Smith, 1987).

(3) Guay (1999) demonstrates empirically that the use of derivatives does not increase the volatility of the markets as proven by Jorion (1997), but rather it reduces the level of risk in the companies that use them.
Board *et al.* (1997) also show in their study that derivative markets do not imply per se, an increase in risk as claimed on many occasions, because they do not increase volatility, encourage speculation, reduce market liquidity, or automatically require a higher regulation than other tools to control its use.
(4) Multimillionaire investor Warren Buffet, known as the 'Oracle of Omaha' because of his opinions on financial markets, stated in a letter sent to his shareholders that derivatives were 'financial weapons of mass destruction' which constitutes a 'potentially lethal threat' for the economy. He added that the signatories of derivative contracts had 'enormous incentives to cheat in the accounting' because there is no real market for many of the products, created on the basis of 'imaginative premises'. *Expansion*, 7 March 2003.
(5) Miller (1996) argued that these losses do not represent a direct social loss but are only a wealth transfer between the counter-parties.
(6) By reflexivity Ciborra refers to the fact that every new technology or regulatory measure aimed at controlling risks such as the grid technologies, inevitably create new risks, which originate from regions beyond the control of the new powerful platforms.
(7) According to Sinkey and Carter (1997) the notion that risk management reduces the costs of financial distress may not apply to banking institutions. Owing to federal deposit guarantees, banks are not subject to the same market discipline as other firms, and as such, they may not benefit from hedging to the same extent as non-financial firms.

Triggered by early infamous disasters, some of which are included in Table 2, concerns on the impact and effects of increased usage have led to numerous debates and publications on risk and control management systems, risk measuring systems, problems related to accounting treatment and presentation and disclosure requirements on derivatives activity.

TABLE 2.- TOP DERIVATIVES SCANDALS

Company (date)	Financial instrument	Responsible	Risk	Total loss*
Bank Negara (1992-1993)	Forwards and currency options	Several traders	Market	3,000
Kashima Oil (1993)	Currency forwards	Treasury	Market Operational	1,450
Metallgesellchaft (1993)	Oil futures	Filial estadounidense: MGRM	Market Operational Liquidity	1,340
Showa Shell Sekiyu (1993)	Currency forwards	Treasury	Market Operational	1,050
Orange County (1994)	Mortgage backed securities	Robert Citron	Market Operational	1,640
Procter and Gamble (1994)	Currency and interest rate swaps	Treasury	Market Operational	157
Gibson Greetings (1994)	Caps and interest rate swap-option	Treasury	Market Operational	73
Barings Bank (1995)	Futures	Nick Leeson	Market Operational Liquidity	1,330
Daiwa (1995)	Interest rate derivatives	Toshihide Iguchi	Market Operational	1,100
Sumitomo Corporation (1996)	Commodity futures and options	Yasuo Hamanaka	Market Operational Liquidity	2,600
Long Term Capital Management (1998)	Interest rate swaps	John Meriwheter	Market Operational Liquidity	4,500
Soros Investment Management (2000)	Current positions and forwards	Stanley Druckenmiller	Market Credit Liquidity	2,000
Allied Irish Bank (2002)	Currency derivatives	John Rusnak	Market Operational Liquidity	700
National Australian Bank (2004)	Currency derivatives	Four traders	Market Operational Liquidity	280
Société Générale (2007)	Futures	A trader	Market Operational	7,350

Source: Adapted from Aragonés and Blanco (2000).
(*) US$ millions

Some of the problems in these cases may be attributed to transaction complexities or strategies pursued but there were other causes in the majority of cases that sparked off the scandals. We highlight the following four:

- Various departments (front, middle and back office functions) within the companies progressing at different speeds during the derivatives product life cycle. Meanwhile the front office in continuous evolution introduced new as well as combinations of instruments to respond to market needs, but their control was not updated.

- The lack of policies, procedures, reporting systems or the existence of an appropriate organising structure; in short, inadequate or inappropriate management.

- Mistakes or lack of internal control systems of companies.

- Inadequate knowledge or misunderstanding on risks associated with derivatives.

However, in recent years numerous reports on management and risk control of derivatives have been published (see Table 3). Two, in particular, have contributed towards its improvement, serving as an essential reference for the rest and leaving a mark on the other contributions made. They are:

- The well-known *Derivatives: Practices and principles*[8] by the Group of Thirty (G30) in July 1993 made 20 recommendations for both dealers and end-users on management and control of derivatives.

- *Risk management guidelines for derivatives* jointly drawn up by Basel Committee on Banking Supervision (BCBS) and IOSCO in 1994, and principally aimed at banking organisations.

The debate on regulation of derivatives or lack of it has always been present and it is still unresolved. There are many authors who oppose its regulation, believing and arguing that the disadvantages of an irregular or inappropriate regulation exceed the potential losses they may cause (Cooper, 1994; Schachter 1994; Gibson and Zimmermann, 1994; Culp and Mackay, 1997; Siems, 1997; Miller, 1996; Malcolm, Sharma and Tanega, 1999), or that at least, if there is regulation, to focus it on strengthening the internal mechanisms of control and risk management (Phillips, 1998).

(8) Founded in 1978, G30 is a non-profit organisation of senior executives, regulators and academics which seek to deepen understanding of international economic and financial issues through meetings and publications.

In the early 1990s, there was intensive debate in the United States and other countries on risks posed by the rapidly growing – and largely unregulated – OTC derivatives market. In mid-1992, G30 chair Paul Volker, approached JP Morgan chair Dennis Weatherstone to lead a study of derivatives industry practices resulting in the 68-page G30 report on derivatives. Most of its recommendations are applicable to the risks associated with other traded instruments. For this reason the report largely came to define the emerging field of financial risk management in the 1990s.

TABLE 3.- RISK MANAGEMENT AND CONTROL DOCUMENTS

	Body regulators	Document	Date
USA	Office of the Comptroller of the Currency (OCC)	*Circular on risk management for financial derivatives (BC-277)*	November 1993
		Q & A supplement	May 1994
		Examination manual on risk management of financial derivatives	October 1994
	Federal Reserve Board	*Examination memo on risk management and internal controls for trading activities of banking organisations*	December 1993
		Letter on evaluating the risk management and internal controls of securities and derivative contracts used in non-trading activities (SR-95-17)	March 1995
	Securities Exchange Commission (SEC) / Commodity Futures Trading Commission (CFTC)/Securities and Investments Board (SIB)	*OTC derivatives oversight*	February 1994
	Federal Deposit Insurance Corporation (FDICIA)	*Examination guidance for financial derivatives*	May 1994
	General Accounting Office (GAO)	*Report on financial derivatives*	May 1994
INTERNA-TIONAL	Basel Committee on Banking Supervision	*Risk management guidelines for derivatives*	July 1994
	International Organisation of Securities Commissions (IOSCO)	*Operational financial risk management control mechanisms for OTC derivatives activities of regulated securities firms*	July 1994
OTHERS	Office of Superintendent of Canadian (OFSC)	*Financial institutions' derivatives best practices*	May 1995
	Bank Negara Malaysia	*Statement on applications by commercial banks to offer or trade derivative instruments*	January 1995
	Bank of England	*Report of the Board of Banking Supervision Inquiry into the circumstances of the collapse of Barings Bank*	July 1995
	Hong Kong Monetary Authority	*Derivatives trading internal control review*	March 1995
		Guideline on risk management of derivatives and other traded instruments	March 1996
		Management, supervision and internal control guidelines for persons registered with or licensed by the securities and futures commission	May 1997

TABLE 3 (CONTINUATION).- RISK MANAGEMENT AND CONTROL DOCUMENTS

Trade associations and private bodies	Documents	Date
Group of Thirty (G30)	*Derivatives: Practices and principles*	July 1993
American Institute of Certified	*Financial instruments task force detailed questions about derivatives*	June 1994
Government Finance Officers Associations (GFOA)	*Recommended procedures for use of derivatives by state and local governments*	July 1994
Investment Company Institute (ICI)	*Memorandum on investments in derivatives by registered investment companies*	August 1994
Futures and Options Association (FOA)	*Managing derivatives risk: Guidelines for end-users of derivatives*	December 1995 Updated in August 2002
Association of Corporate Treasurers (ACT)	*Financial risk and internal control*	March 1993
	Guide to risk management and control of derivatives	1994
Derivatives Policy Group (DPG)	*Framework for voluntary oversight*	March 1995
Treasury Management Associations (TMA)	*Principles and practices for the oversight & management of financial risk*	March 1998
International Association of Insurance Supervisors (IAIS)	*Supervisory standard on derivatives (SS-3)*	October 1998

However, there are also those who consider that the solution to the problem of derivatives is greater regulation and external control (Romano, 1998; Burns, 1998; Dood, 2000), basing their argument on the clarity of communication as the key to avoiding global failure of the system.

In their study of derivatives regulation, Culp and Mackay (1997) state that regulators and legislators' insufficient understanding of the nature of derivatives and risk management may cause an increase in regulatory risk, that is, inappropriate regulations risks.

On the other hand, Board *et al.* (1997) consider that as internal and external auditors are being converted into mechanisms for regulation, and that self-regulation and internal control are being reassessed favourably to the point of replacing regulation, this can only lead to reduced information in audit reports which would in turn lessen their value for the company and the regulators.

Legislation does not always work (Berry, Broadbent and Otley, 1995) but neither can the ethical dimension that surrounds the existence of regulation, or lack of it, be avoided. Regulation is necessary in many cases, not only to control but also to provide a framework of sanctions applicable to those who contravene the law.

Regulation and external control serve their purpose as long as they respect the organisations' culture and the environment where they are to operate. In recent years

various authorities and international bodies, given the deficiencies found and the results obtained, have drawn up several reports on the regulation and establishment of internal control. Some of these reports (see Table 4) have been hovering around financial firms awaiting the placement of a homogeneous system for the whole sector.

TABLE 4.- INTERNAL CONTROL DOCUMENTS

Trade associations and private bodies	Documents	Date
Committee of Sponsoring Organisations of the Treadway Commission	*Internal control - integrated framework COSO Report*	September 1992
	COSO enterprise risk management. Integrated framework	September 2004
Canadian Deposit Insurance Corporation	*Standards of sound business and financial practices: Internal control*	August 1993
Canadian Institute of Chartered Accountants (CICA)	*Guidance on control*	November 1995
	Guidance on assessing control. The CoCo principles	1997
Institute of Chartered Accountants in England and Wales (ICAEW)	*Internal control. Guidance for directors on the Combined Code (Turnbull Guide)*	September 1999
Body regulators	**Documents**	**Date**
Banco de España, Asociación Española de Banca (AEB) and Confederación Española de Cajas de Ahorros (CECA)	*Consideraciones sobre los Sistemas de Control Interno para la Actividad de Tesorería*	February 1997
Bank of England	*Banks internal controls and the section 39 process*	February 1997
European Monetary Institute (EMI)	*Internal control systems of credit institutions*	July 1997
International Organisation of Securities Commissions (IOSCO)	*Risk management and control guidance for securities and their supervision*	May 1998
Comisión Nacional del Mercado de Valores	*Circular1/1998 sobre Sistemas Internos de Control, Seguimiento y Evaluación Continuada de Riesgos*	June 1998
Basel Committee on Banking Supervision	*Framework for internal control systems in banking organisations*	September 1998
Office of the Comptroller of the Currency (OCC)	*Internal control. A guide for directors*	September 2000
Securities Exchange Commission (SEC)	*Section 404 - Sarbanes-Oxley Act*	2002

Malcolm, Sharma and Tanega (1999) state that these best practices, recommendations or regulations, although they would undoubtedly help, should not be a means to an end. Moreover, in spite of their possible advantages, the higher the level of regulation and external requirements, the higher will be the pressure withstood by company management, and this situation will always end with negative repercussions on the organisations.

Thus, the solution in the first place, apart from regulation and external control, is the existence of an efficient system of internal control in the organisation, drawn and

supervised by a capable and efficient internal audit, which can provide assurance services, ensure the correct functioning of this operation and guarantee the company management appropriate internal control.

In this sense, many national corporate governance reports include recommendations for internal control, and reporting on internal controls. Maijoor (2000) asserts that the most important joint development in Power's 1997 book, with the audit explosion, is the rise of internal control systems labelled as the internal control explosion. The concept of internal control is receiving increasing attention in public policy debates on auditing and corporate governance.

Undoubtedly, the existence of an effective and efficient internal control is an essential component in any financial firm's management. Because, as Spira and Page (2003) argue, the redefinition of internal control as risk management emphasises links to strategy formulation and characterises internal control as a support for enterprise. Having adequate systems of internal control helps the organisations achieve their objectives whilst avoiding unnecessary risks.

This can be seen in recent changes to the US internal control rules contained in the Sarbanes-Oxley Act 2002 or the UK internal control frameworks beginning with the Cadbury[9] Commission 1992 and more recently the Combined Code[10] in 1999, which advocate strong internal control systems to manage and control risks undertaken by the company.

In recent years, financial firms together with bank supervisors around the world, and particularly the Basel Committee for Banking Supervision (BCBS), which asked banks for stricter internal controls to avoid new scandals, have attached more importance to the existence of good internal control. This increasing interest is partly due to the demise or considerable losses suffered by various banks. An in-depth analysis of the problems[11] linked to those losses shows that a substantial part of the losses could have been avoided if the banks had had the proper controls, which could have averted or alerted them to the problems caused by those losses.

So that, we maintain that the problem does not reside so much in the complexity of the instruments which does exist, but in the capacity to manage and control both the instruments as such and the risks that their use entails. The systems of self-regulation and internal control are probably the best way to control them and are thus the centre of our research.

(9) Power (1997: 54-57) illustrates his argument on the rise of internal control with the case of the Cadbury Code which includes recommendations for the responsibilities of directors and auditors regarding internal control systems.
(10) The final component of the Combined Code was the guidance for directors reporting on internal control issued by the Turnbull committee in 1999.
(11) See Bank of England (1995) for the Banking Supervision Council's report on the circumstances that led to the bankruptcy of Barings.

However, as many of these authors have exposed, the concept of "internal control" has embedded many difficulties added.

Power (1997) observes that despite the increased public attention on internal controls, the concept is still vague, and there is much confusion in practice about what internal controls actually are. Maijoor (2000) explores[12] the difficulty of defining internal control and discusses the implications of this lack of clarity for the development of corporate governance policy and European financial auditing markets. And later on, Spira and Page (2003) discuss the difficulty of defining internal control, trace its role in the development of UK corporate governance policy and identify those groups who benefit from the redefinition of internal control as risk management.

Taking this into account, and with the aim of surveying the internal control of derivatives by Spanish savings banks, we analyse and study in depth all the documents and recommendations previously mentioned to know what could be considered as a "sound internal control" to prepare the questionnaire. The main results are summarised in the next section 6.

4 RELATED LITERATURE ON INTERNAL CONTROL OF DERIVATIVES

Although there is little empirical evidence on how financial firms use derivatives to manage their risks, in recent years researchers have achieved a better understanding about how these products work, why firms use or do not use them (proms and cons[13]), for what purposes (i.e. hedge or speculative reasons) and the sort of firms that use them (i.e. size[14]).

However, there are still few studies referred to the internal control of derivatives usage but those from an external auditing perspective which are mainly concerned with lower level controls related to specific cycles, processes and transactions.

Furthermore, Tufano (1996) states firms reveal little information and provide few details on their risk policies, which is why the majority of the studies carried out rely on the fourth source of information identified by Anthony (1990), i.e. the survey results and other complementary information that, at best, distinguish between the firms that use or do not use a specific type of derivative.

(12) He identifies three perspectives on internal control in academic literature – external audit, organization theory and economics – noting that the unclear boundaries of the concept of internal control appear to some extent in academic accounting literature

(13) Booth et al. (1984) found that smaller banks have a problem hiring and retaining skilled employees needed for an effective risk management program.

(14) Sinkey and Carter (2000) argue that as only a relatively small number of banks are in the position to be major dealers of risk management/derivatives products, the remaining banks are in the derivatives market primarily as end-users: to hedge against or speculate on the movement of economic variables.

TABLE 5.- RELATED LITERATURE

Author (Date)	Publication	Data Resource	Sample (date)	Research area
Rahnema (1991)	*Utilisation of off-balance-sheet hedging instruments in European firms*	Survey (31.6% returns)	250 firms	Europe
Nance *et al.* (1993)	*On the determinants of corporate hedging*	Survey (36.3%)	535 – no financial firms (1986)	USA
Phillips (1995)	*1995 Derivatives practices and instruments survey*	Survey (18.9%)	3,480 TMA members (1994)	USA
Costa (1995)	*Estudio de las prácticas de utilización y contabilización de derivados en las firmas industriales y comerciales en España*	Two sets of questionnaires (35.54% and 26.11%)	121 financial intermediates 180 – no financial firms	Spain
Alcarria (1995)	*Estudio empírico: la posición de los profesionales contables y financieros (Tesis doctoral)*	Questionnaire (15.6% and 21.1%)	225 – no financial firms y 175 financial firms	Spain
Bodnar *et al.* (1996)	*Wharton survey of derivatives usage by US non-financial firms*	Survey (26.5%)	2,000 – no financial firms (1994)	USA
Yanagida & Inui (1996)	*Survey of derivatives usage among non financial Japanese firms*	Survey	No financial firms	Japan
Rubín (1996)	Estudio empírico sobre contabilización y control de derivados (PhD thesis)	Financial statements Questionnaire	47 banks & 35 savings banks 148 financial firms (1995)	Spain
Mian (1996)	Evidence on corporate hedging policy	Financial statements	3,022 firms (1992)	USA
Bodnar *et al.* (1996)	*1995 Wharton survey of derivatives usage by US non-financial firms*	Survey (14%)	2,500 – no financial firms (1995)	USA
Tufano (1996)	Who manages risk? An empirical examination of risk management practices in the gold mining industry	Gold industry database	48 firms (1990-1993)	USA
Downie *et al.*[*] (1996)	*The University of Waterloo survey of Canadian derivatives use and hedging activities*	Survey	No financial firms	Canada
Venkatachalam (1996)	Value relevance of banks' derivatives disclosures	Financial statements	99 financial firms (1993-1994)	USA
Geczy *et al.* (1997)	*Why firms use currency derivatives*	Financial statements	372 – no financial firms (1990)	USA
Berkman & Bradbury (1997)	*An international comparison of derivatives use*	Survey (answer 63.7%)	124 NZ Stock Exchange (1996)	New Zealand
Admed *et al* (1997)	*Evidence on interest rate risk management and derivatives usage by commercial banks*	Financial statements	152 financial firms (1994)	USA
Bodnar *et al.* (1998)	*1998 Wharton survey of derivatives usage by US non-financial firms*	Survey (answer 20.7%)	1,928 – no financial firms (1997)	USA
Levich *et al.* (1999)	*1998 Survey of derivatives and risk management practices by US institutional investors*	Survey (17.5%) (1998)	1,708 institutions	USA
Carter & Sinkey (1998a)	*The use of interest rate derivatives by end users: the case of large community banks*	Financial statements	Financial firms (1990-1993)	USA

(*) Smithson (Editor). Managing Financial Risk, Yearbook 1996, pp. 214-233.

TABLE 5 (CONTINUATION).- RELATED LITERATURE

Author (Date)	Publication	Data Resource	Sample (date)	Research area
Treasury Management Association (1999)	*1999 Survey of OTC derivatives use and risk management practices*	Survey (10.13%)	4,000 TMA members (1999)	USA
Bodnar & Gebhardt (1999)	*Derivatives usage in risk management by US and German non-financial firm: a comparative study*	Survey (29.2%) firms (1997)	368 – no financial	Germany
Guay (1999)	*The impact of derivatives on firm risk: An empirical examination of new derivatives users*	Financial statements	No financial firms (1990-1994)	USA
Whidbee & Wohar (1999)	Derivative activities and managerial incentives in the banking industry	Financial statements	175 financial firms (1991)	USA
Prevost *et al.* (2000)	Derivatives usage and financial risk management in large and small economies: a comparative analysis	Survey (46.4%)	334 – no financial firms (1998)	New Zealand
De Ceuster *et al.* (2000)	*A survey into the use of derivatives by large non-financial firms operating in Belgium*	Survey (21.9%)	334 – no financial firms (1997)	Belgium
Sinkey & Carter (2000)	Evidence on the financial characteristics of banks that do and do not use derivatives	Financial statements	Financial firms (1996)	USA
Matolcsy & Petty (2001)	Internal reporting of derivatives: Some Australian evidence	Survey (36.6%)	94 – no financial firms	Australia
Sheedy (2001)	*Corporate use of derivatives in Hong Kong and Singapore: a survey*	Survey (15% HK and 20% Singapore)	131 – no financial firms	Hong Kong Singapore
Marsden & Prevost (2005)	*Derivatives use, corporate governance and legislative change: an empirical analysis of New Zealand listed companies*	Financial statements	Listed firms (1994-1997)	New Zealand

Some of these surveys[15] (see Table 5) include questions to probe the level of centralised decision-making, frequency in communication with management or with the board of directors, or the frequency and mechanisms followed in the assessment of the derivatives portfolio. Few studies (none within the financial sector) specifically focus on the necessary internal control of derivatives that have been carried out.

In the literature reviewed there are just two studies that cover this issue in some depth. The first, Chorafas' work (1996) based on the author's long experience as consultant and risk manager and on his continuous relations with various firms, describes different reporting and control practices. The second study, that of Matolcsy and Petty[16] (2001), was based on the analysis of questionnaires sent to 93 of the top 100 firms[17] in Australia which provided information on the internal reporting and control of derivatives in non-financial firms.

(15) See Bodnar *et al.* (1995, 1996, 1998 and 1999), Phillips (1995), Yanagida and Inui (1996), Downie *et al.*(1996), Costa (1995), Alcarria (1995), Rubín (1996), Berkman and Bradbury (1996), Berkman *et al.*(1997), Grant and Marshall (1997), Levich *et al.* (1999) and De Ceuster *et al.* (2000).
(16) In their work they listed previous studies on the internal control of derivatives focusing on exchange risk management by multinationals (Collier and Davis, 1985; Collier *et al.*, 1990) and those that focus on the study of a particular company (Arnott, 1995; Adams, 1995).
(17) To find out more about the companies see http://www.group100.com.au.

Matolcsy and Petty (2001) were concerned about information available to management and internal control in terms of performances, reconciliation, confirmation and authorisation, segregation of duties and assessment of derivatives. The authors admitted that, although there was no 'theory' on internal controls and reporting of derivatives, the general points gathered and the high profile losses on derivatives trading in the past enabled them to form the following predictions (Matolcsy and Petty, 2001: 28):

- Companies would have well-established policies and procedures for trading derivatives.

- Companies would have appropriate reporting mechanisms to keep the board of directors informed about their derivative trading, and

- Companies would continuously monitor the exposure of their derivatives.

The study, based on the 34 valid responses from the 93 questionnaires sent, concluded with three fundamental results:

- About 80% of organisations had well-established accounting and administrative policies and procedures for reporting and the control of the use of derivatives.

- The frequency of reporting on derivatives to boards and the internal/external auditing of the use of derivatives was generally monthly – an interval that they consider to be inconsistent with the nature and risks associated with many, if not all, derivatives.

- Only 50% (or less) of the organisations had some well-established procedures for revaluing and assessing the risk associated with their use of derivatives and none of these were monitored continuously.

Our objective is to survey if these questions, and other derived from the recommendations and documents studied and commented in the previous section, are taken in account by Spanish savings banks when using derivatives.

5 RESEARCH DESIGN

As it was stated earlier, the second aim of this paper is to provide evidence of the usage and control of derivatives by Spanish savings banks through the established policies, procedures and controls. For this purpose we developed the survey described below.

5.1. Objectives and hypotheses

The objectives of our survey are:

- To determine if firms are using derivatives, to what purpose, and in the case of having suffered losses to study their causes;

- To find out if firms have a formal policy on the activity of derivatives and how it is established;

- To analyse the mechanisms firms have planned and established to control this activity.

Besides, within these objectives we want to confirm the following hypothesis:

H1a: Firms using derivatives for speculative purposes are those who have suffered more losses.
H1b: The losses suffered by using derivatives are due to the lack of control.
H2a: Firms using derivatives for speculative purposes have a formal policy in place to regulate the correct functioning of these instruments.
H2b: Those firms which have suffered losses by using derivatives have a formal policy in place to regulate the correct functioning of these instruments.
H3a: Firms using derivatives for speculative purposes have more mechanisms of control.
H3b: Those firms which have suffered losses by using derivatives have more mechanisms of control.

5.2. Data selection and methodology used

Our empirical research was focused on savings banks, and as stated earlier, currently represent half of the financial businesses in Spain. They have earned an undoubted legitimacy in the economic field, establishing themselves in a key position in the development and modernisation of the Spanish financial system, and contributing to both its efficiency and its stability.

This study covers all the Spanish savings banks, 46 financial firms, which were classified by size, due to total deposits, into four groups[18] (see Table 6). And as in the majority of the studies mentioned earlier, we used questionnaires to collect the data.

According to the BCBS[19], an internal audit includes the examination and evaluation of the adequacy and effectiveness of the internal control systems. In practice[20], this scope is broad and covers such major areas as internal control systems.

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(18) However, we did not find statistical significance among the groups to indicate substantial differences in the extent of derivatives usage and control.
(19) In August 2001, BCBS issued its best practices paper, *Internal audit in banks and the supervisor's relationship with auditors*, highlighting the important work of internal auditors in banking organizations and the need for cooperation between supervisors and banks' internal and external auditors.
(20) As it can be observed in the survey carried out by BCBS in August 2002.

The questionnaires (see appendix) were posted in December 2002 to the internal auditing directors of the respective firms who were later contacted by email and telephone. Data collection was finalised by March 2003. Each questionnaire was accompanied by a cover letter outlining the study objectives, respondent confidentiality and the availability of survey results upon request. It contained 34 questions in three sections relating to the objectives outlined above. Each section contained a few detailed questions relating to the issues.

Block I. Derivatives Usage: Questions 1 to 11.

Block II. Derivatives Policies: Questions 12 to 20.

Block III. Derivatives Control: Questions 21 to 34.

Apart from voluntary identification the surveys were anonymous. The firms were only asked to specify which group they belonged to, that is, classification by size on the criteria we provided in an additional page. Only three firms specifically identified themselves, which confirms and reinforces the degree of uncommunicativeness and secrecy that have always characterised the financial system, based on the public's trust.

For statistical analysis we used the descriptive statistic for the summary of the univariate information. On some issues we were interested in going further, using statistical inference, estimating relations between two variables through correlation matrices and contingency tables which enabled us to determine both the independence condition and quantify the degree of association between the aforementioned variables through Pearson's coefficient. To ensure that the values and differences observed are in fact significant, we applied tests to contrast hypotheses, carrying out the Chi square statistic with the Yates correlation in those cases where the number of responses were not sufficiently large. In case of factors that could be linked to the size of the banks, we carried out Kruskal Wallis' test for contrast, and if the result was insignificant it would enable us to extend and apply other results obtained to the saving banks sector.

The responses received[21] (see Table 6) provide a satisfactory level of replies, taking into account, firstly, the average number replies in such studies, secondly that the information requested is considered to be privileged and part of internal policy and thus confidential and in third place, the resistance in accepting losses from derivatives.

(21) We would like to thank to our survey respondents for their cooperation in facilitating this research.

TABLE 6.- DISTRIBUTION OF THE POPULATION AND DATA FROM THE SAMPLE

	GROUP A (Up €10,000 million)*	GROUP B (€10,000-4,000 million)*	GROUP C (€4,000-2,000 million)*	GROUP D (Less€2,000 million)*	
Sent	10	12	12	12	46
Received	7	9	7	11	34
	70%	75%	58%	92%	74%
Sample 34 firms	E= ± 8,8% NC= 95% Z= 1,96 p=q=0,5				

(*) Total deposits.

6 SURVEY RESULTS

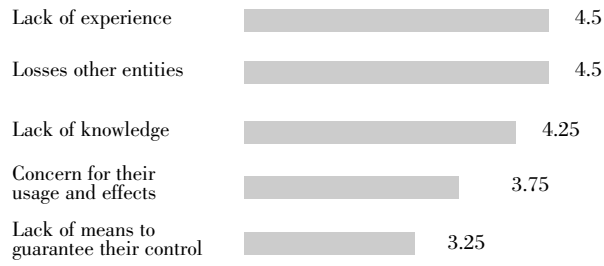
This section presents the empirical results of our investigation following the structure of the questionnaire and the outlined objectives.

6.1. Derivatives usage

We posed the following questions: Does your firm use derivatives? If not, why is that so?; For what purpose does your firm use derivatives?; Has your firm incurred losses as a consequence of its use?; and, If your firm has had losses, why has it occurred?

As we pointed out, virtually all reviewed empirical research reports a positive relation between company size and derivatives usage, because size is positively associated with economies of scale that reduce the direct costs of derivatives usage. However, 88% of savings banks surveyed use derivatives[22]. Only four – all from smallest group D – state that they had not used these instruments in their firms for the prominent reasons listed in Figure 1. This result is somewhat higher than the estimate (61.5%) by Rubín (1996) for all the financial firms corroborating the increased use of derivatives in the recent years and thus providing greater interest for the conclusions in our study.

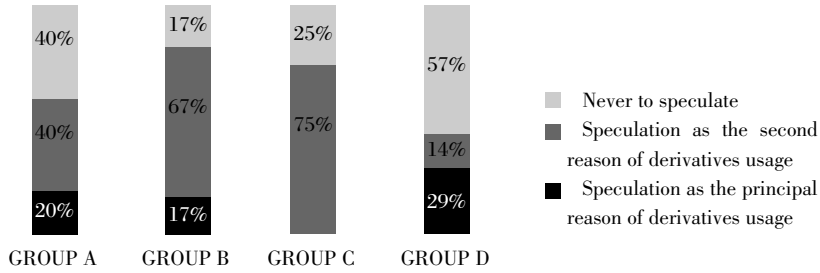
FIGURE 1.- REASONS FOR NOT USING DERIVATIVES (VALUATION 1 TO 5)



(22) As derivatives are classified as off-balance sheet activities this activity is not registered on a bank's balance sheet and details are difficult to extract for research purposes such as ours. Nevertheless, experience has shown that even those who invested in small quantities suffered great losses in the 1990s.

Other important factor linked to the usage of these instruments is their purpose. All the firms polled assert to use derivatives primarily to hedge their positions. However, on occasions (46%) they also recognise to use derivatives for speculative purposes as principal or second objective (see Figure 2).

FIGURE 2.- USING DERIVATIVES TO SPECULATE



In this sense, there is a significant relationship (Pearson's Chi-squared with the correction of Yates $\alpha = 0.020$) between the firms that suffered losses and those that speculate in derivatives although the losses were not significant in all the cases.

These results confirm our hypothesis H1a although it is important to avoid the association between a speculative use of derivatives and an incorrect or inadequate management, if there is a correct control in place.

Regarding the losses, while derivatives are not risk-free, only 63% of firms admits to have suffered losses from derivatives and only two of them consider losses to be significant. This result confirms our view that those who did not respond to our questionnaire probably suffered serious losses[23].

Equally or more important than admission of losses and their extent or seriousness is the ability to identify the cause or causes, since awareness would allow, if not their eradication, then at least their reduction to more acceptable levels. However, what is clear is that those affected do not attribute the main reasons for their loss to the complexity of the instruments, the firm's inadequate knowledge, or the lack of regulation. This result, when we apply the Kruskal-Wallis test, could be generalised to apply to the sector under study.

Table 7 shows a strong correlation between three of these causes thus revealing the link between the complexities, inadequate knowledge and lack of control of the instruments.

(23) For example in 1995 Caja Granada (the savings bank of Granada) lost 6.685 million pesetas which led to their creating an Internal Audit Department (see *Expansion*, 21 and 28 June 1995).

TABLE 7.- CORRELATIONS AMONG CAUSES OF LOSSES

		Misunderstanding	Complexity
Misunderstanding	Corr. Pearson		
	Sig. (bilateral)		
Complexity	Corr. Pearson	**0.864****	
	Sig. (bilateral)	**0.001**	
Lack of control	Corr. Pearson	**0.884****	**0.877****
	Sig. (bilateral)	**0.002**	**0.001**

** Correlation significant at 0.01 level (bilateral).

Two other results should be noted. Firstly, the majority of firms look for external causes for their loss – those responsible outside the firm or adverse market movements. Secondly, 70% do not attach importance to the lack of control as a cause either because they are confident that all the necessary controls are in place or they do not see this as a significant factor.

Likewise, in spite of the risks and losses associated with derivatives, the sector as a whole not only continued using them as indicated in 46.7% of the cases but there was a slight increase of its use for 43.3% of case and 6.7% stated a heavy increase.

So, we have to reject H1b. Firms do not link the losses incurred to the complexity, inadequate knowledge or the lack of control of derivatives as posed in our hypothesis. Rather, the firms tend to look for external reasons for their losses by blaming the unpredictability of markets for their adverse results.

6.2. Derivatives policies and procedures

The key questions which we considered were the following: Does the firm have a set policy with respect to the use of derivatives?; If those policies exist, how are they brought in?; and, Is there adequate internal communication on this activity?

In spite of the losses and risks caused by derivatives, 43% of savings banks that usually use these instruments do not have a formal policy for regulating and defining these procedures within the firm. And it was precisely from 1996, as a result of the huge financial disasters, that its use was undertaken and many firms considered the need to bring in documented policies to define the use of derivatives.

There are no significant differences among the four groups in the study sample in this regard. Apart from those in group A, where almost all have an established policy, with the rest of the groups the firms that have a defined policy and those that do not are about even.

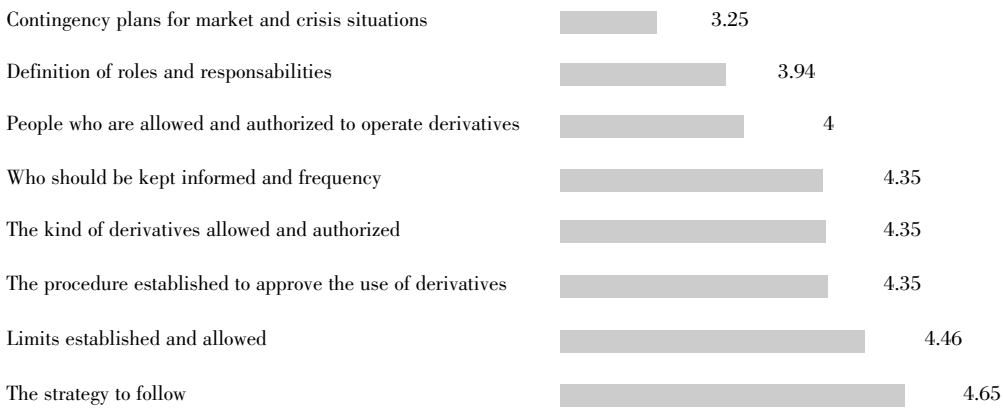
In relation to our hypothesis H2a, there is no significant relation among those which had experienced losses using derivatives and those which have a formal policy in place. So, we cannot confirm H2a.

However, there is a significant relationship (Pearson's Chi-squared with the correction of Yates α= 0,08) among those which use derivatives to speculate and those which have a formal policy, so we can confirm our hypothesis H2b. (78,57% of respondents who use derivatives to speculate had the policy established).

Besides this, some of the main findings regarding the policies and procedures defined by the savings banks surveyed are the followings.

Firstly, all the staff of the firms in 94% of cases are aware of them. Secondly, there is written evidence of them in 87% of cases. Thirdly, they include and attach importance to most of the fundamental aspects that – in our opinion and those of the recommendations and best practices published – are to strengthen management and the control of derivatives activity (see Figure 3).

FIGURE 3.- HIGHEST EVALUATED (1 TO 5) ASPECTS INCLUDED IN THE POLICIES



The majority of studies conducted among non-financial firms merely asked if a company had a policy on derivatives activity and how frequently the Board of Directors was informed about it.

We were also interested in finding out who is in charge of preparing, revising and updating these policies (see Figure 4), who approves them (see Figure 5) and finally, how often were these functions carried out (see Figure 6).

FIGURE 4.- WHO ELABORATES, REVISES AND UPDATES THE POLICIES?

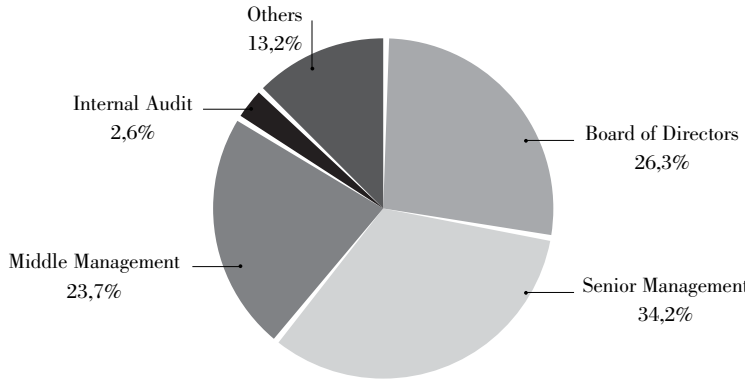
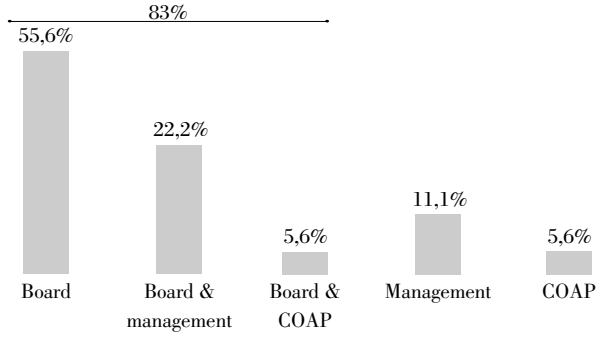
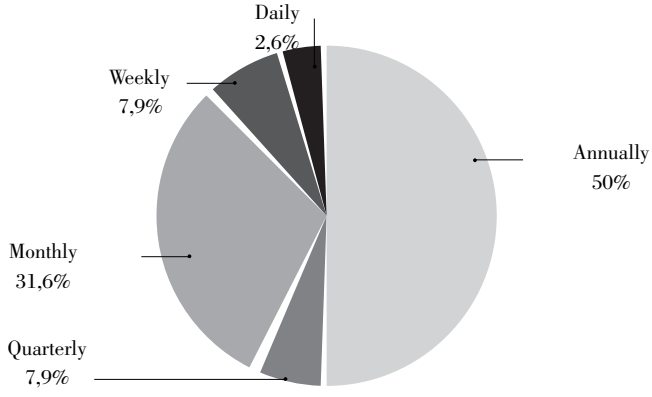


FIGURE 5.- WHO APPROVES THE POLICY?



Note: COAP is the Committee of Assets and Liabilities

FIGURE 6.- FREQUENCY IN WHICH POLICIES ARE ELABORATED AND UPDATED



Further, those firms that do have a defined policy include in it recommendations from the best practices for the activity which were drawn up by management and approved by the Board.

Regardless of whether a written policy on the use of derivatives does exist in the firm, there is no doubt that internal reporting on this activity is a fundamental feature which guarantees its correct use and control. For this reason we were interested in finding on the use of derivatives in the organisation who was informed and how often. On this issue we found that:

- It is management (35.4%) followed by the Board (21.5%) who received information about the development of the activity.

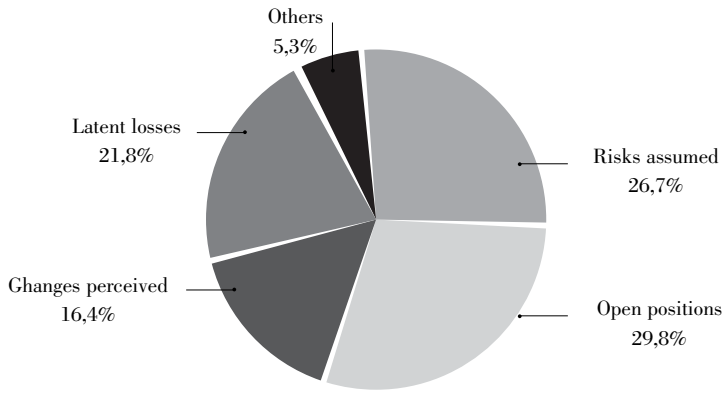
- The internal audit department also receives information (13.9%) about the situation on derivatives.

- For the majority, the information is transmitted in the following frequency: monthly (41.8%), weekly (22.8%), and daily 21.5%. These figures are a little higher than those observed by Matolcsy and Petty (2001) in non-financial firms where the information was often transmitted monthly.

- By cross-checking the information it is clear that while communication with the Board ranges from monthly to annually, information transmitted to management is more frequent, in most cases weekly or even daily.

With regard to the levels of responsibility being informed, the two aspects for which most information is transmitted (see Figure 7) are on the positions taken and the risks assumed.

FIGURE 7.- TYPE OF INFORMATION GIVEN ON DERIVATIVES



So, as it is recommended by different authorities and international bodies, management is in most cases the first to be informed about the situation of derivatives, although in our opinion, frequency should be daily or weekly for a greater percentage.

6.3. Derivatives control

The third part of the survey was directed at finding out the mechanisms of established or planned controls in the firms and we raised were the following key questions: Is there control on derivatives activity?; What is it like? What is controlled and who carries it out?; and, What role does the internal and external audit play?

Among savings banks 70% have a specific department for risk control. Although its name and level of dependence varies from firm to firm, it shares the same functions and its presence is more common in larger savings banks with greater resources as Pearson's Chi-square coefficient with Yates correction (α= 0.022) corroborates.

Surprisingly, despite of the risks and difficulties inherent in these instruments, this does not indicate that firms exert more control over them as one would have expected, since 48% affirm that they do not conduct a more thorough control compared to other instruments.

In relation to our hypothesis H3a, there is no significant relation among those which had experienced losses using derivatives and those which have a department for risk control or carry out a more thorough control over derivatives compared to other instruments. So, we cannot confirm H3a.

However, we found that there is a significant relationship (Pearson's Chi-squared with the correction of Yates a = 0,01) among those which use derivatives to speculate and those which carry out a more thorough control over derivatives compared to other instruments, so we can confirm our hypothesis H3b.

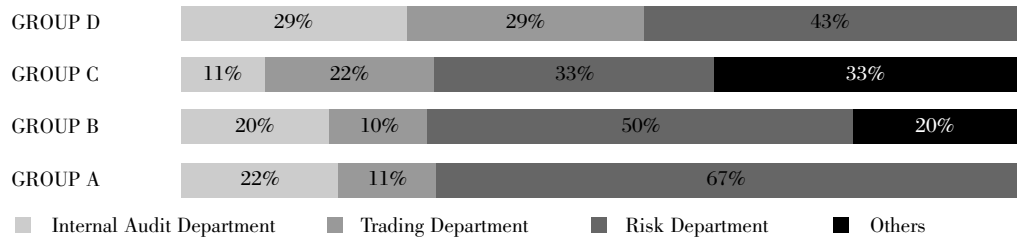
Besides these contrasts, other findings about derivatives control in Spanish savings banks that we would like to point out are the followings.

What does have a greater acceptance as confirmed by Rubín (1996: 347) is that the limits should always be established by the firm itself (85.3%) according to its knowledge or resources, and not by an external regulator.

As best practices establish, the first basic rule of a sound internal control system is an adequate segregation of duties and the absence of this segregation was the direct cause of many financial disasters referred to above. For this reason the high number of savings banks (31,57% of respondents) with a specific derivatives trading department to control

the activity attracted our attention. Rubín (1996) noted this and that it was higher in savings banks than other banks. Our survey though with a lower figure confirm her finding. When we further analysed this by size (see Figure 8) we found that in the larger savings banks derivative trading was either controlled by the risks department or delegated to the auditing department and in smaller firms (29%) it was done by the internal audit department or the derivatives trading department itself.

FIGURE 8.- WHO CONTROLS DERIVATIVE ACTIVITIES?



Similarly, another aspect dealt with in the surveys and one of the conclusions which stood out most in Matolcsy and Petty (2001)'s study was the low frequency on valuation of the portfolios. In our study we have been able to prove that in the savings banks this valuation is done either daily (43.1%) or monthly (37.3%) and the information is communicated to the intermediate managers (41.2%) and particularly to the department or area in charge of risk control (31.4%) included under the heading 'others'.

On the other hand, firms could manage the counter-party credit risk of their derivatives activities by setting a minimum credit rating for each derivative transaction. In Bodnar's studies (1995, 1996, 1998 and 1999), particularly the 1998 survey, 25% of non-financial firms demanded a credit rating of AA or higher for maturities less than a year, increasing to 40% for maturities greater than 12 months. In our case, the levels are higher: 33.3% for maturities less than a year and 45.8% for those ranging between 1 and 5 years. However, what is surprising is the high percentage of firms that have no set policy on counter-party credit ratings which could increase their risk unnecessarily (see Figure 9).

Lastly, we wanted to assess which type of control or procedures firms have planned and established within their organisations to ensure this activity works well.

Figure 10 shows the average valuations given by the firms. We can conclude that the most important thing for them is to ensure that no unauthorised operation is undertaken. But should they occur there are the necessary mechanisms for a prompt detection of any irregularity and the application of appropriate measures.

FIGURE 9.- COUNTER-PARTY RATING

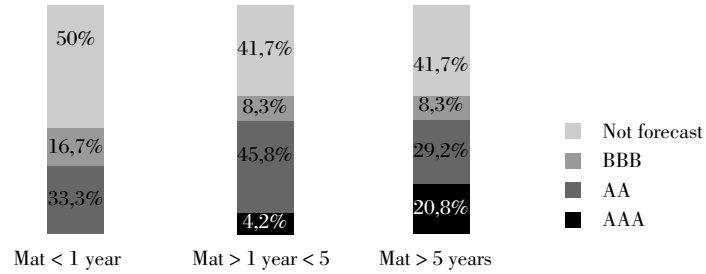


FIGURE 10.- IMPORTANCE OF THE EXISTENCE OF CONTROLS FOR THE FOLLOWING PURPOSES (VALUATION 1 TO 5)

Firms proclaim that almost all of controls are included in their organisations. However, some express the need to reinforce them, since the size of the firm and the reduced dimension of the operations carried out sometimes prevent them from maintaining the correct segregation of duties between those who deal and those who supervise, over and above the valuations obtained being high.

Finally, in relation to the audit role, in spite of the fact that in some firms the internal audit department carries out the main role, that is, being directly in charge of risk control or supervising the department of the corresponding risk control, in the majority it basically takes on the role of supervision. Thus 79.35% of the answers state that within the audit

programme they include the revision of the derivatives activity. And the frequency with which this revision is done varies considerably, depending on the function carried out in each firm, but nearly 40% do it continuously whilst external auditors limit themselves to doing one annual revision in 82.8% of the cases studied.

The internal audit together with the Audit Committee, where there is one, check the use and exposure of derivatives, although this is not particularly common. Only 30% of firms stated that its Committee checked the activity and, also, they do it with less frequency, normally once in six months (42.9%) or a year (42.9%).

7 CONCLUDING REMARKS

Derivatives are one of the most widespread instruments for risk management amongst financial firms as revealed in the savings banks polled. The use of these instruments continues to increase either purely as a means of hedging or to obtain higher revenue, widening its exposure to risk. However, the enormous losses suffered by the firms as a consequence of wrong usage and the duality of risk (Ciborra, 2004) have not only questioned its usefulness but has spurred an interest in necessary control.

The aim of this paper was twofold. Firstly, to study and analyse the importance and need of internal control in derivatives usage. Although the debate about its regulation and control is still open, we believe that a sound internal control could avoid new debacles without adding other restrictions to the market. So, we reviewed the main issued recommendations, rules, norms, regulation and the academic literature related to internal control of derivatives.

Secondly, we aimed to survey the usage and control of derivatives by Spanish savings banks. So, after our review, we prepared and sent a questionnaire which provided us the following evidence.

Regarding their usage, the lack of experience and adequate knowledge as well as the incurred losses are the three main constraints on its use by the savings banks studied. However, the firms which use them do not relate the incurred losses to the complexity or difficulty of derivatives or the lack of or mistakes in control. If anything, they consider that there is sufficient control and attribute losses to adverse market movements.

Although the losses were not significant, there is a positive relationship between the firms that suffered losses and those that speculate in derivatives, what, in any case, does mean that there is an association between a speculative use of derivatives and an incorrect or inadequate management.

Referred to the policies and procedures, many of them, although they had suffered losses, do not have a formal policy that regulates or establishes how it should be carried out within the firm. We confirmed that there is a significant relation among those who use derivatives to speculate and those who have a formal policy in place, but we could not confirm that there is a relation among those who had suffered losses using them.

Besides, in the savings banks studied, it is often the senior management together with the Board of Directors who are responsible for drawing up, revising and updating the policy as well as the strategies to be pursued in the activity. These are drawn according to suggested best practices and cover reporting, disclosures and communication with the staff involved. Internal reporting, as far as this operation is concerned, is a key element for its control. Both the Board of Directors and senior management are informed of the risks and positions taken as well as any other information necessary for appropriate decisions. However the frequency with which they receive all information is not always adequate.

Finally, referred to their control, despite the complexity and the risks associated with these instruments, we could not confirm that the studied firms have greater measures of control in the case of having suffered losses. However, we confirmed that there is a significant relation among those which use derivatives for speculative reasons and those who conduct a more thorough control compared to other instruments.

Most of the savings banks state that they have nearly all the adequate controls planned and included in their organisation. Some admit the need to strengthen their control mechanisms but are hampered by their limited size. Others do not link the huge financial disasters to an inadequate internal control system that lack segregation of duties, reporting, and monitoring amongst other things. In addition, as a reinforcement and support mechanism for control, the internal audit carries out a fundamental role in the savings banks, supervising and in many of them even controlling the activity of derivatives itself.

At last, although the segregation of duties has been one of the main causes identified in the related scandals, there are still many aspects that should be overseen by a risk control department rather than a derivatives trading department that has to control its own activity. Similarly, a high percentage of those polled have not planned the solvency demanded from its counter-parties, thus increasing the risks of the operation.

We conclude with two comments on our study relating to restricted access to more detailed information on investments in derivatives as until now there is no legal obligation to disclose such investments. But it is likely that those firms without a formal control policy have a lower rate of derivatives usage or that they use them mainly to hedge their positions.

If this is the case, then the absence of such policies would be less important. However, we should bear in mind that this market is undergoing rapid growth and an increased efficiency would require the use of these instruments for various purposes with all the mechanism in place.

Additionally, since we lack detailed information about the derivatives market, we cannot be fully certain about the relative weight of the savings banks in this market. However, although the concentration of derivatives activities in the larger commercial banks is well known, we believe that the outstanding role of savings banks in Spain, which are under the same regulation system as the commercial banks, validate the general interest of the survey results.

APPENDIX

SURVEY ON INTERNAL CONTROL
UNIVERSITY OF CANTABRIA
BUSINESS ADMINISTRATION DEPARTMENT

WHICH GROUP DOES YOUR FIRM BELONG TO? (See explanation sheet attacht) A ☐ B ☐ C ☐ D ☐

I. USE OF DERIVATIVES

If the answer is *yes*, go to question 7

1. Is the use of derivatives allowed in your firm? Yes [30] No [4]

2. Have you planned to use them in the future? Near future? Yes [0] No [1] N/C [5]

3. Was it allowed in the past? Yes [0] No [6]

4. What was the purpose of its use?

	Main purpose	Secondary	Never used with that purpose
Hedging	☐	☐	☐
Speculation	☐	☐	☐

5. Assess which of the following causes was more important when deciding not to use or stop using derivatives.

(Assess on a scale from 1 to 5: 1= least important, 5= most important)

[1,75] Risk exposure toyour firm is low
[4,75] Risk exposure is managed by other means
[1,00] Losses suffered in the past with these instruments in your company
[4,50] Losses suffered and/or observed in the past in other firms
[4,25] Lack of knowledge or understanding about these instruments
[4,50] Lack of experience with derivatives
[3,25] Lack of means to guarantee its control and adequate supervision
[3,75] Concern about its use and possible effects
[1,75] Concern about the obligation to reveal information on its use
[1,50] Noticeable increase of the risks linked with its use
[3,00] Concern about how supervisors, shareholders, regulators and others perceive these instruments
[ ] Other: . . . . . .

6. If one of the causes were the losses, assess the extent to which those losses influenced the following aspects

(Assess on a scale from 1 to 5: 1= least important, 5= most important)

☐ Lack of knowledge about the instruments and their consequences
☐ Complexity of the instruments
☐ Lack of control in its use, which allowed
  ☐ Non- authorised activities to take place
  ☐ Lack of limits on the activity
  ☐ Non-authorised personnel to work
  ☐ The limits stablished were exceeded without having knowledge of it
☐ Mistake in the hedging
☐ Adverse movements in the market
☐ Mistake with counterparty
☐ Lack of regulation
☐ Other causes: . . . . . .

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From question 1

7. What is the purpose of use them?

	Main purpose	Secondary	Never used with that purpose
Hedging	[30]	[0]	[0]
Speculation	[4]	[10]	[6]

8. Has your firm suffered losses due to the use of derivatives? Yes [19] No [11] I do not know [0]

9. How would you classify those losses? Low [13] Moderate [5] Serious [0] Very serious [2]

10. Assess which is/are the causes that allowed or produced these losses

(Assess on a scale from 1 to 5: 1= least important, 5= most important)

[1,70] Lack of knowledge about the instruments and their consequences
[2,18] Complexity of the tools
[2,00] Lack of control in its use, which allowed:

- [1,42] Non-authorized activities to take place
- [2,12] No limits set on the activities
- [1,42] Exceeding the limits established without having knowledge of it
- [1,42] Actions from non-authorised staff
- [ ] Other ……………………………………………………………

[3,56] Adverse movements in the market
[2,08] Mistake in the hedging
[1,63] Mistake with counterparty
[1,60] Lack of regulation
[ ] Other causes ……………………………………………………………

11. How do you expect your derivatives usage to change over the next year?

Decrease a lot [0] Decrease slightly [1] No change [14] Increase slightly [13] Increase a lot [2]

II. POLICIES ON DERIVATIVES

12. Does your firm have a written policy covering the use of derivatives? Yes [17] No [13]

Since when? ………………

If your answer is no, go to question 19

13. Assess the importance of the following aspects that are included and dealt with in those policies

(Assess on a scale from 0 to 5: 0= Not included in the policies, 1= least important, 5= most important)

[4,65] Strategy to be pursued or aim with which the different types of derivatives are authorised
[4,35] Type of derivatives that are allowed or authorised (OTC, regulators,...)
[4,00] The people who can or are authorised to carry out transactions with derivatives
[4,35] The process established to approve or use derivatives
[3,25] Contingency plans for markets or crisis situations
[3,94] Description of functions or responsabilities
[4,46] Limits established and allowed:

- [4,14] For type of risk (market, credit, operational, legal, etc.)
- [3,68] For type of instruments
- [4,00] For volume of negotiation
- [3,43] For maturities
- [4,25] For counterparty
- [ ] Other: ……………………………………………………………

[4,35] The person or people who should be informed and the periodicity of the reports
[ ] Other: ……………………………………………………………

14. Who is in charge of drawing up, checking and updating the policies? And, how frequently is it done?

	Annually	Quarterly	Monthly	Weekly	Daily
Board of directors	8	1	1	0	0
Senior Management	6	1	6	0	0
Middle management	3	1	2	2	1
Internal Audit	0	0	1	0	0
Other: who? ………………	2	0	2	1	0

15. Who approves and authorises these policies?

Board of Directors [14] Senior management [6] Other: who? . . . . . [2]

16. Is there an internal control manual of Treasury's activities? Yes [15] No [2] N/A [0]

17. Do the staff involved in derivatives activity know about this policy? Yes [15] No [1]

18. Is there any evidence to suggest that it has been handed in to those involved involved? Yes [14] No [2]

From question 12

19. Who, and how frequently are they informed about derivatives activity?

	Annually	Quarterly	Monthly	Weekly	Daily
Board of Directors	[3]	[4]	[10]	[0]	[0]
Senior Management	[0]	[0]	[10]	[12]	[6]
Middle Management	[0]	[0]	[4]	[2]	[8]
Internal Audit	[3]	[0]	[5]	[2]	[1]
Other: who?	[1]	[0]	[4]	[2]	[2]

20. What aspects are they informed about?

	Risks accepted	Position taken	Changes perceived	P&G Latent	Other, which?
Board of Directors	[14]	[14]	[7]	[11]	[2]
Senior Management	[23]	[25]	[15]	[18]	[3]
Middle Management	[8]	[11]	[6]	[8]	[2]
Internal Audit	[9]	[10]	[5]	[7]	[1]
Other: who?	[6]	[7]	[4]	[5]	[4]

III. DERIVATIVES CONTROL

21. Does your firm have a risk control department? Yes [21] No [9]

22. What is it called? What are its functions? And, Who is responsible for it?

. . . . . .

. . . . . .

. . . . . .

23. Do you carry out a more thorough control over derivatives compared to other instruments? Yes [13] No [12]

24. Who do you think should set the limits of derivatives operations?

Bank of Spain [3] The firm itself [29] Other: who? . . . . . [2]

25. Who is responsible for derivatives control in your firm?

Department of Internal Audit. [7] Audit Committee [0] Derivatives Trading Department [6] Risks Control Department [17]

How is it carried out? Other: who? . . . . . [5]

. . . . . .

. . . . . .

26. What is the lowest rated counterparty with which you will enter a derivative transaction?

	AAA	AA	BBB	Less than BBB	Not set Policy
Maturities less than a year	[0]	[8]	[4]	[0]	[12]
Maturities between 1 and 5 years	[1]	[11]	[2]	[0]	[10]
Maturities beyond 5 years	[5]	[7]	[2]	[0]	[10]

27. Who assesses your derivatives portfolio? And, how frequently is it done?

	Annually	Quarterly	Monthly	Weekly	Daily
Board of Directors	1	0	1	0	0
Senior Management	1	1	4	1	0
Middle Management	1	1	9	1	9
Internal Audit	1	0	3	0	1
Other: who?	0	1	2	1	12

28. State and assess, if there are controls and procedures that guarantee...

(Assess on a scale from 1 to 5: 1= least important, 5= most important)

	Yes	No	Importance
■ Only decissions made and authorised operations are carried out	29	1	4,92
■ Non-authorised operations are detected quickly to take the appropriate measures	27	2	4,87
■ The limits establisheds are respected with and those exceeded are authorised and supervised	28	2	4,67
■ Valuations are checked	28	1	4,00
■ The necessary reconciliation between those who operate and those who register the operations	30	0	4,16
■ Operations are confirmed independently	27	1	4,09
■ Functions of front/back office are adequately separated	28	1	4,17
■ Norms and regulations are being respected	28	0	4,28
■ Only work with authorised brokers	28	1	4,04
■ Other:			

29. Do internal auditors within the program check the usage and situation of derivative? Yes 23 No 6

30. If you answered *yes* to question 29, how frequently are they checked? Continually 9 Six-monthly 6 Annually 8

31. Does the Audit Committee check derivatives usage and risk exposure? Yes 7 No 16

32. If you answered *yes* to question 31, how frequently are they checked?

Continually 1 Six-monthly 3 Annually 3 N/A 0

33. How frequently do External Auditors whitin the program check derivatives usage and risk exposure?

Continually 0 Six-monthly 2 Annually 24 N/A 3

34. Is there any internal Code of Conduct? Yes 24 No 4

If you wish to add any comment, observation or suggestion to this study, we would be pleased to include themt in the results

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