PhD Thesis (abstract)

Universidad de Salamanca

Facultad de Economía y Empresa

Departamento de Administración y Economía de la Empresa

"IMPACT OF FINANCIAL INFORMATION QUALITY AND TRANSPARENCY ON MARKET EFFICIENCY: FROM A TRADITIONAL TO AN EXPERIMENTAL APPROACH"

PhD student

ILÍDIO LOPES E SILVA

PhD thesis directors

ESTHER B. DEL BRÍO GONZÁLEZ

JAVIER PEROTE PEÑA

Salamanca, June 2013

RESUMEN DE LA TESIS EN INGLÉS

IMPACT OF FINANCIAL INFORMATION QUALITY AND TRANSPARENCY ON MARKET EFFICIENCY: FROM A TRADITIONAL TO AN EXPERIMENTAL APPROACH.

> *"An integrated and efficient financial market requires market integrity. The smooth functioning of securities markets and public confidence in markets are prerequisites for economic growth and wealth. Market abuse harms the integrity of financial markets and public confidence in securities and derivatives."*
>
> Preamble of Directive 2003/6/CE of the European Parliament and of the Council of 28 January 2003, on insider dealing and market manipulation (market abuse)

I. Introduction and motivation of the PhD Dissertation

It is usually said that we are living in an information society because today any individual has access (via the social communication media, Internet, contact networks, etc.) to an immense amount of information. In such a globalized world as ours, information reaches everyone and everywhere very quickly.

However, the existence of larger volumes of information (i.e., the amount of information) is not exactly synonymous with information quality or transparency. If this is basically a fact of different facets of our life, in the context of financial markets it is a very obvious fact. Proof of this are the recent financial scandals that have involved large corporations which, in spite of their major exposure to their shareholders, investors, financial analysts, regulatory bodies, etc., were reporting financial information soon before these financial scandals occurred that was of no help in predicting them. It may seem a bit ironic but it could be said that, in these cases, even though we may live in an information society, investors have never been so uninformed.

Naturally these events caused an inevitable crisis of confidence of all the players in the corporations and markets in the information that the corporations report to the market and in the proper functioning of the markets. The current economic-financial crisis is also (and above all) a crisis of confidence, and to restore confidence in corporations and markets it is essential to ensure that the information reported to the market is relevant, high quality, timely and characterized by a high degree of transparency. Only in this way will it be possible to combat the information asymmetry existing in corporations and markets and help them to become more efficient. Only in this way will we be able to prevent those with access to insider information from obtaining abnormal benefits and taking advantage of the performance of investors that do not have access to this type of information.

In this context and as indicated by the title, the fundamental purpose of this thesis is to verify if the existence of greater information quality and transparency contributes to a greater efficiency of securities markets.

Thus the motivation of this thesis is threefold:

1. Investigate the figure of insider trading in the context of the Spanish securities market, verifying whether or not the market will be efficient from the perspective of strong form efficiency (in the scope of the Efficient Market Hypothesis).
2. Analyze the contribution that various factors may make in terms of influencing the quality and transparency of information and, consequently, the magnitude of insider trading practices (placing special emphasis on earnings management or information manipulation and on managerial compensation policies).
3. In addition to the “traditional” methodologies, also apply the experimental methodology to the study of this issue.

Each of these motivations is discussed in a little more detail below.

With regard to the first motivation, in recent years there have been frequent episodes in which insider trading practices have been suspected, bringing into question the functioning of securities markets and in particular their efficiency. Those episodes are not confined to the North American securities markets, but also affect other financial markets around the world.

In spite of the growing suspicions of the opportunistic use of insider information, there have been very few investigations in recent years that have ended in effective sanctions. This situation, besides drawing attention to the difficulty of effectively checking the undue use of insider information, requires that the regulatory bodies of securities markets be more concerned about the issue, and it underscores the need for undertaking more academic research work in this field.

As a result of a series of financial scandals during the period between 2000 and 2002 (Enron, MCI, WorldCom, Xerox, Parmalat, Vivendi Universal, Merck & Co., Adelphia, etc.), new laws and organizations have emerged for the purposing of boosting investor confidence and market valuation.

Therefore, one of the motivations of this work is to analyze whether the quality and transparency of public information (the traditional measure of Semi-Strong Form Efficiency) also affects the Strong Form Efficiency of securities markets by helping to reduce the information asymmetry. If so, we will expect that officers in possession of insider information will not be able to obtain above-average returns and that information transparency will thus diminish the asymmetry between public and insider information.

As for the second motivation of this thesis, we will therefore try with this work to empirically corroborate whether greater information transparency leads to less information asymmetry and a greater strong form efficiency of markets. In the model to be corroborated (which we will call information transparency and efficiency model), we will establish as dependent variable the abnormal returns on insider operations, and our main hypothesis will be:

H_0: The greater the transparency of information, the greater will the strong form efficiency of securities markets be.

To approach the concept of information quality and transparency, we have considered several factors which we can group as follows:

- Factors related to the characteristics of the insider operation (in particular the insider's delay in reporting the operation, the opacity in the way insider information is used and the level of multiple purchases);
- Factors related to the quality of the audited financial information (more specifically, analyzing whether or not there is earnings management through the use of accruals, the opinion of the audit report, the quality of the auditing process and the independence of the auditors' firm);
- Factors related to the scope of the financial information, in particular analyzing the company concern with satisfying the needs of its stakeholders;
- Factors related to the mechanisms of internal control, analyzing not only the role of the company's debt level and its ownership structure (in particular, the level of ownership concentration, the managerial ownership and the type of majority shareholder), but also the composition of the board of directors (analyzing its size, the degree of independence of the board, the figure of the CEO – Chief Executive Officer – and the intensity of inter-company relationships of the board members;

- Factors related to managerial compensation, in particular the effect that the design of a managerial remuneration based on the listed price evolution can have on the insider trading practice (only from the experimental perspective).

In the context of the third motivation for this thesis, in addition to using a "traditional" methodology to analyze the aforesaid explanatory factors of information quality and transparency (in particular the aspects related to the way the information is reported, to the quality and scope of the audited financial information and to the internal control mechanisms), we will use the experimental methodology to analyze the way in which managerial compensation can determine an eventual manipulation of the results and the insider trading practice. In our experiment, the way in which insiders receive and make use of asymmetric information is crucial, and also important is how different forms of transparency are introduced (treatments to be compared) and how the company stock-based compensation schemes affect these.

In short, we could say that this is a "broadband" thesis in terms of the topics it intends to discuss (encompassing subjects such as insider trading, earnings management, auditing process, corporate social responsibility, company debt policy, ownership structure, board of directors, ethics, managerial compensation), in terms of the theories to which it resorts to establish the hypotheses to be corroborated (agency theory, Efficient Market Hypothesis, signaling theory, stakeholder theory), in terms of the areas of knowledge it covers (finance, accounting, auditing, statistics, econometrics, law, psychology), in terms of the methodology it uses (event study, ARCH models, non-parametric statistical tests, panel data methods, GMM, hierarchical regression, experimental economics) and in terms of the eventual readers of the thesis (academics, professors, regulatory bodies, investors, etc.).

The innovations contributed by this thesis include the following:

- Its contribution to the debate about the effectiveness of new laws and organizations whose purpose is to boost investor confidence and market valuation;
- The analysis of the interdependence between the insider trading figure and the earnings management practice;
- The emphasis on the importance of the role of the auditing process as a way to strengthen and assure quality of information;
- The use in the insider trading study of relatively novel variables with a considerable explanatory power (cases of corporate social responsibility, board of directors and age

of the CEO, the latter used as a proxy of ethical standards and the CEO's attitude towards risk, which entails an "incursion" into the field of Behavioral Finance);

- The very novel application of Experimental Economics to the field of insider trading studies, and particularly of note is the analysis of the contribution of managerial compensation);
- Its contribution to a closer approach to the so-called fields of "Rational" Finance and Experimental Economics, in an attempt to take advantage of the synergies between these two branches of knowledge.

Before concluding this section, we will briefly justify the study period used: 2000 to 2004. The choice to analyze the period from 2000 to 2004 has to do with the concurrence of a series of legal changes that could have distorted the results of the study in Spain if performed in a later period. The first is the change in Spanish accounting legislation enacted in 2005. As we know, the International Financial Reporting Standards (IFRS) were adopted in Spain in 2005. Consequently, including the year 2005 and subsequent years in the analysis period would have led to distorted conclusions, e.g. regarding the practice of earnings management. Differences in the results of certain corporations can be detected in these two periods (before and after enactment of the International Financial Reporting Standards) that were not due to the fact that the corporations had changed their behavior towards eventual earnings management, but rather to the fact that the accounting procedures had changed.

Similarly, including a time period entirely subsequent to 2005 (e.g. from 2005 to the present) would have caused us another important problem in two ways.

First of all, the basic variable for this study – insider trading – would have not been homogeneous in this period either because of the regulatory change regarding the use of insider information and market abuse that was implemented in Spain in late 2007 and early 2008 after Royal Decree 1362/2007 and Circular 2/2007 took effect. And at the same time, 2008-2009 marked the beginning of the economic and financial crisis that has so harshly attacked our economy and that could lead to corporate results that are not so much due to earnings management practices by corporations as to the economic situation. The behavior of officers has also been modified, as have the patterns of the last variable in play (managerial compensation). For instance, in this time period and as a result of the crisis, a downward revision of managerial compensation has occurred and this could also modify the behavior of officers and their perception of insider trading as a substitutive form of remuneration, as postulated by Manne (1966) who considered insider trading as a further form of managerial compensation when the basic salary has to be reduced for any reason.

For all these reasons, we have preferred to choose a period more removed in time that nevertheless enables us to draw more atemporal and generalized conclusions regarding this relationship, on which little evidence exists in the financial literature. Obviously another possible solution that could be addressed in future lines of research is to make a comparison to another country where the sum of these circumstances has not occurred. However, since the financial crisis has been a global crisis, this would only enable us to increase the sample by two more fiscal periods (up to 2007). In exchange, we would lose an important element: our knowledge of the Spanish market, our experience in identifying patterns of insider trading in Spain and also the "quality" of the data on insider trading in Spain, where the open market operations of officers systematically yield abnormal returns.

II. Proposed Hypotheses in the Traditional Approach

The hypotheses of the study in the traditional approach are summarized in the following table.

Tabla 1 - Hypotheses and expected signs in the traditional approach

Explanatory Factor	Hypothesis	Expected Relationship
Specific characteristics of an insider operation	H_1: Less delay by the insider in reporting its operations with shareholder equity, a greater degree of company information transparency and therefore less asymmetric information, resulting in less abnormal returns for insiders on their shareholder equity operations.	Positive
	H_2: Execution of an insider trading operation by a nominee contributes to the existence of less information transparency, resulting in greater abnormal returns for insiders.	Positive
	H_3: Execution of several purchase operations in the same event period by one or more officers of the same corporation seems to indicate a greater intensity of the informative signal, which is associated with the existence of greater information transparency but may also cause greater abnormal returns for the insiders; therefore it is considered an open question.	Empirical Question
Earnings Management	H_4: Earnings management or greater size of accruals or accrual adjustments, by contributing to less information transparency, is positively associated with the insider trading practice.	Positive

Explanatory Factor	Hypothesis	Expected Relationship
Auditing Process	H_5: A higher quality and reliability of the audited financial information, reflected in an audit report with a favorable opinion, increases the degree of company information transparency; therefore there is less asymmetric information, resulting in less abnormal returns for insiders in their operations.	Negative
	H_6: A higher quality of the auditing process, provided by an audit firm that belongs to the Big Four, means a lesser extent of insider trading practices.	Negative
	H_7: More auditor independence, measured as less provision of additional audit services, results in greater information transparency and therefore a lesser extent of insider trading practices.	Negative
Corporate Social Responsibility	H_8: Corporations with corporate social responsibility programs that publish their annual reports favor the degree of transparency of the company's information, as they extend it to all stakeholders; therefore there is less asymmetric information, resulting in less abnormal returns for insiders in their operations.	Negative
Debt	H_9: Indebtedness, as creditors demand timely access to financial information to make their loan decisions and require credible, opportune measures of financial performance, contributes to reducing the degree of information asymmetry, providing greater information transparency and presenting a negative relationship with the abnormal returns obtained by insiders.	Negative
Ownership Structure	H_{10}: Capital ownership by large shareholders, by permitting greater information asymmetry and, as such, less information transparency, is positively associated with a greater extent of insider trading practices.	Positive
	H_{11}: The existence of greater managerial ownership, by permitting officers to more easily obtain private profit, makes it less necessary to resort to insider trading to obtain additional private profit and thus a negative relationship exists between managerial ownership and the insider trading practice.	Negative
	H_{12}: There is a positive relationship between the type of majority shareholder and insider trading, when the shareholder is a bank.	Positive
Board of Directors	H_{13}: The size of the company board of directors is positively associated with the practice of insider trading by its insiders.	Positive
	H_{14}: The ratio of external (independent) directors on the board of directors is negatively associated with the practice of insider trading operations.	Negative
	H_{15}: An older CEO, who supposedly has a more ethical conduct and a more conservative attitude, which contributes to a higher quality of the financial information and less information asymmetry, is negatively associated with the insider trading practice.	Negative
	H_{16}: The greater the intensity of inter-company relationships, given by the presence on the company board of directors who also belong to the board of directors of other corporations, the greater will the information asymmetry be and, consequently, the lesser will the information transparency be, and this will lead to more insider trading practices.	Positive

III. Proposed Hypotheses in the Experimental Approach:

a. Hypotheses related to earnings management

H1: “Reported earnings are not related to real earnings”.

H2a: “Insiders report earnings figures lower than real when they expect to buy cheaper shares and report higher earnings figures when willing to sell more expensive shares.

H2b: “Insiders report higher earnings when having manipulated earnings in the prior period has reported them high returns”.

H3: “The existence of stock-based compensation schemes drive insiders to report lower earnings figures in the period after obtaining the bonus”.

b. Hypotheses related to the agent decision

H4: “In case of earnings management, agent decision is inversely related to reported earnings”.

H5: “In case of earnings management, agent decision is directly related to real earnings”.

H6: “When outsider trust insiders do not manipulate information, real earnings will not be affecting reported earnings and thus will not affect agent decision”.

c. Hypotheses related to insiders & outsiders returns

H7a: “In case of earnings management, insiders returns are higher than outsiders returns (type of agent effect)”.

H7b: “Earnings management positively affects insiders returns”.

H7c: “Earnings management negatively affects outsiders returns”.

H8: “The existence of stock-based compensation schemes positively affect insiders returns (even without considering the bonus),(treatment effect)”.

d. Hypotheses related to the effects of managerial compensation on the relationship between earnings management and insider trading

H9: “The existence of stock-based compensation schemes positively affect firm value, thus, share prices raise more for T1 than for T0”.

H10: “In the absence of bonus compensation (T0), insiders report decreases/increases in earnings figures when willing to buy/sell shares so as to maximize capital gains. The existence of bonus compensation drives insiders to manipúlate earnings to maximise the bonus”.

H11: “Insiders returns are higher for T1 than T0”.

H12a: “In presence of bonus compensation, earnings management positively affects insiders returns”.

H12b: “In presence of bonus compensation, earnings management negatively affects outsiders returns”.

H12c: “In the absence of bonus compensation, earnings management diminishes both insiders and outsiders returns”.

The hypotheses of the study in the experimental approach and expected signs are summarized in the following table.

Table 2 – Hypotheses and expected signs in the experimental approach

Dependent Variable: Reported earnings (B*). MODEL 1			
HYPOTHESIS	**Affected Variables**	**Expected Coefficient**	**Expected Sign**
HYP 1:	B = Real earnings	$\gamma_1 = 0$	NOT SIGNIFICANT if there is manipulation. POSITIVE is there is no manipulation
HYP 2a:	Opinap = insider expectations of listed price	$\gamma_2 > 0$	POSITIVE, in case of manipulation
HYP 2b:	Profit_sinbonus: Insider returns in the preceding period	$\gamma_3 > 0$	POSITIVE. The greater the insider gain in a previous case of manipulation, the greater will the tendency be to continue manipulating
HYP 3:	Bonus in the preceding period	$\gamma_4 < 0$	NEGATIVE. If the insiders manipulate, a negative relationship is expected since the insiders, once the bonus is collected, will lower the share price so that when it rises again, coinciding with the period when the bonus is paid, the bonus will be higher.

Dependent Variable: decision. MODEL 2.			
HYPOTHESIS	**Affected Variables**	**Expected Coefficient**	**Expected Sign**
HYP 4:	B*= Reported earnings	$\delta_1 < 0$	NEGATIVE. Accounts for the fact that reported earnings have a positive effect on the share prices and, therefore, they should motivate sales instead of purchases.
HYP 5:	Binsider	$\delta_2 > 0$	POSITIVE. The real earnings have a negative impact on the prices only for insiders, as they are the only ones that know the real earnings
HYP 6:	Opinazout	$\delta_3 = 0$	NOT SIGNIFICANT. If the outsiders are confident that the reported earnings are reliable, then they expect that they will not have a significant influence on the share price and, therefore, they should not have an effect of the decision to buy or sell.
Dependent Variable: agent returns. MODEL 3			
HYPOTHESIS	**Affected Variables**	**Expected Coefficient**	**Expected Sign**
HYP 7a:	Type (type of agent, 1 insider; 0 outsider)	$\beta_1 > 0$ of Model 2; Wilcoxon Test	POSITIVE. The insiders obtain higher returns than the outsiders
HYP 7b:	Maniins	$\beta_2 > 0$	POSITIVE. Information manipulation positively affects the insider returns (they take advantage of the financial information to turn a profit in their operations).
HYP 7c:	Maniout	$\beta_3 < 0$	NEGATIVE. Information manipulation negatively affects the outsider returns (information manipulation generates a negative externality in the outsiders)
HYP 8:	Treatment	$\beta_4 > 0$	POSITIVE. Implies there is a treatment effect, with expectations that the insider returns will be higher for the treatment in which there is a bonus (even without accounting for the bonus)

HYPOTHESIS	Affected Variables	Corroboration	Expected Sign
HYP 9:	Share prices and their variations	Mann-Whitney	Prices in T1 greater than in T0
HYP 10:	Manipulation: difference between reported earnings-real earnings)	HYP. 1	*$\gamma_1 < 0$ in T0 but not significant in T1
HYP 11:	Returns (without including bonus)	Mann-Whitney * HYP.7a	Insider returns greater in T1 than in T0 *β_2 in T1 greater than β_2 in T0 in Model 3.
HYP 12a: (corroborates HYP11)	Maniins	Model 3	$\beta_2 > 0$ corroborated in T1
HYP 12b	Maniout	Model 3	$\beta_3 < 0$ corroborated in T1
HYP 12c	Maniins Maniout	Model 3	$\beta_2 = 0$ corroborated in T0 $\beta_3 = 0$ corroborated in T0

IV. Results of the Traditional Approach

The results of the regression model for information transparency are shown in Table Z below.

As we can see in Table Z, there are fifteen significant variables and, therefore, as they condition the information transparency in the company, they can explain the abnormal returns obtained by insiders in their market operations. Of these statistically significant variables, the noteworthy ones are KPMG, AUDIT_OPI, ratioDEBT, CP1, DIRECTOR_OWNS, BANK, INDEPENDENT_BOARD, CEO and INTERLOCK, which are significant at 1%. The remaining significant variables are ACCRUALS, ERNEST_Y and ADDIT_SERVI, with a significance level of 5%, and variables ITR, GRI and BOARD_SIZE with a 10% significance level. The variables TRANSAC_SIZE, ROE, IDELAY, NOMINEE, MULTI_PURCH and PWC are not significant at any of the considered significance levels.

Also of note in the results is the adjusted R^2 (0.4260) provided by the model which, although it seems low for a regression analysis, is nevertheless a very good value for studies related to the subject of insider trading. As Seyhun (1986, page 207) explains, an explanation also supported by Lin and Howe (1990), "one interpretation of the small coefficient of determination is that insider trading regulations deter insiders from trading freely on the basis of their insider information", thus distorting, in accordance with Del Brío (1999), the real effects of the different variables and making it impossible to more accurately describe the model.

To more easily visualize the results, we present below Table III, which shows the hypotheses and the results effectively corroborated in the model and, in parentheses, the level of significance of the respective variables used to corroborate the hypotheses. Since a hierarchical regression is used, we show the results for six different steps.

Table III – Regression Model of Strong Form Efficiency and Information Transparency

Variables	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
LTR	.0009317 (0.48)	.0003919 (0.20)	.0007572 (0.32)	.0010006 (0.41)	-.0020865 (-0.94)	.0048401 (1.84)**
TRANSAC_SIZE	-.0003623 (-0.44)	-.0006212 (-0.76)	-.0000889 (-0.11)	-.000142 (-0.17)	.0003774 (0.52)	.0003142 (0.44)
ROE	.0456946 (2.67)***	.0271659 (1.55)	.0215105 (1.08)	.0213377 (1.07)	.01426 (0.70)	.0006971 (0.03)
LDELAY		-.0024532 (-1.19)	-.0037942 (-1.64)	-.0039622 (-1.70)*	-.0015439 (-0.76)	-.0023731 (-1.20)
NOMINEE		-.0054071 (-0.96)	.0016129 (0.26)	.0011424 (0.18)	.0019717 (0.37)	.0011731 (0.23)
MULTI_PURCH		-.0235736 (-4.04)***	-.0230554 (-4.00)***	-.0231355 (-4.01)***	-.0065851 (-1.26)	-.0080892 (-1.56)
ACCRUALS			.083939 (2.26)**	.0815077 (2.18)**	.0403213 (1.22)	.084564 (2.40)**
ERNEST_Y			-.0114917 (-0.98)	-.0119691 (-1.02)	-.0033364 (-0.33)	-.0338181 (-2.57)**
PWC			.0224921 (2.51)**	.0212974 (2.32)**	.0030206 (0.38)	-.0003966 (-0.05)
KPMG			-.0182304 (-1.90)*	-.0187348 (-1.94)	-.035324 (-3.75)***	-.0345101 (-3.55)***
AUDIT_OPI			.0163046 (2.32)**	.0164376 (2.34)**	.0266721 (4.35)***	.0306682 (5.04)***
ADDIT_SERVI			.0000133 (0.83)	.0000142 (0.88)	.0000295 (2.11)**	.0000294 (2.11)**
GRI				-.0123129 (-0.61)	-.0001775 (-0.01)	-.0380121 (-1.92)*
RatioDEBT					-.091503 (-3.58)***	-.1159115 (-4.03)***
CP1					.0007476 (5.34)***	.0008839 (6.31)***
DIRECTOR_OWNS					-.0488124 (-2.56)**	-.0618461 (-2.92)***
BANK					.0426311 (7.68)***	.0346099 (6.01)***
BOARD_SIZE						-.0019317 (-1.91)*
INDEPENT_BOARD						-.0939301 (-2.73)***
CEO						-.0020528 (-2.93)***
INTERLOCK						.0411729 (3.95)***
R^2	0.0400	0.1012	0.1820	0.1831	0.4240	0.4670
ΔR^2		0.0612	0,0808	0.0011	0.2409	0.043
R^2 Adjusted	0.0301	0.0825	0.1472	0.1453	0.3886	0.4260
ΔR^2 Adjusted		0.0524	0.0647	-0.0019	0.2433	0,0374

These results enable us to draw very interesting conclusions regarding the impact that the studied variables have on information transparency and, as such, to explain the abnormal returns obtained by insiders in their market operations.

One interesting result is that a positive (as expected) and significant relationship is obtained between earnings management and the abnormal return of insiders. In fact, along the lines of studies by, for example, Beneish and Vargus (2002), Bikki and Judy (2007) and Sawicki and Shrestha (2010), who obtain empirical evidence about the positive relationship between earnings management and the insider trading practice, that relationship is also confirmed in our study. This result thus seems to suggest that officers manipulate the company earnings to maximize the returns obtained on operations they execute in the market, a situation that can cast doubt on both the integrity and ethical behavior of the officers (in addition to manipulating results, which in itself could be considered as ethically reprehensible, the officers also financially benefit from this practice by executing market transactions with their own company's equity).

In the context of the auditing process, one very interesting result has to do with the variable that measures the quality of the auditing process based on the company engaging one of the 4 most well known audit firms in the sample period; this is assumed to be a relevant variable but its significance specifically depends on the selected audit firm. In fact, the results show that in the corporations that select KPMG (significant variable at 1%) or Ernst&Young (significant variable at 5%) as the audit firm, the abnormal returns obtained by the insiders are lower, whereas a preference for Deloitte and PriceWaterhouseCoopers does not seem to be relevant for purposes of limiting insider trading practices.

Continuing in the context of the auditing process, one very interesting result has been the obtainment of a positive relationship (with the variable Trabaj_comple significant at 5%) between the auditor's independence, measured by less provision of additional audit services, and the abnormal returns of the insiders; this corroborates the relationship we expected, since the execution of additional work that complements the audit implies a lower degree of independence of the audit firm in relation to the client company, which is a driver for the execution of insider trading operations. In fact, while there are theoretical models that suggest that the additional services provided by the audit firm weaken their independence (Parkash and Venable, 1993), the empirical literature has not been able to find clear evidence of a relationship between additional services and independence of the auditors (Barkess and Simmet, 1994). In our work, the results obtained underline the importance of measures advocated by laws such as the Sarbanes-Oxley Act of 2002 or the November 2002 reform of the Spanish Accounts Auditing Act, as they place greater restrictions on the provision of additional services by audit firms.

With regard to the corporate social responsibility factor, the selected variable (GRI) has turned out to be significant at the 10% level, confirming the expected relationship (negative) between the degree of information transparency that is provided to the company stakeholders and the abnormal returns of its insiders. This result proves that the GRI is a credible entity in the sense of providing relevant, transparent information to all agents connected to the company. Furthermore, it is also worth mentioning that in the sample period (from 2000 to 2004), the use of the GRI model by Spanish corporations to publish their corporate sustainability reports was still not a very frequent practice. In 2002, there were 6 Spanish corporations that followed the GRI model, 13 corporations in 2003 and 37 corporations in 2004. A sign that the Spanish market and organizations attach greater importance to the issue of corporate social responsibility and, in particular, to the GRI is that, in 2012, 146 Spanish organizations have published their corporate sustainability reports in accordance with the GRI model. Our result with respect to corporate social responsibility is another sign that, together with other empirical studies (e.g., those of Hoje and Yongtae, 2008 and Jinhua et al, 2012), underscores the importance of the social responsibility commitment of corporations for purposes of reducing the level of information asymmetry on the market, thus contributing to greater information quality and transparency among all the company stakeholders and the different market players.

In the context of the hypotheses related to internal control mechanisms, we can confirm the existence of a negative relationship (with the variable ratioDEBT significant at 1%) between the company indebtedness and the abnormal returns of insiders. Our result thus underlines the advantages that a greater degree of indebtedness in the company capital structure can offer in the sense of motivating creditors to monitor the financial information reporting process and committing corporations to greater information transparency.

Another very interesting result has been the confirmation of the expected relationship (positive), with the variable CP1 significant at 1%, between the concentration of company ownership (measured by the percentage of company shares held by the five largest shareholders) and the abnormal returns of insiders. This result provides empirical evidence for the *expropriation hypothesis*, in accordance with which the existence of a more concentrated ownership, by permitting the large shareholders not only to exercise greater control over the officers but also to use their position to serve their own interests (and the officers') at the expense of the minority shareholders, contributes to the existence of a greater information asymmetry and enables them to obtain abnormal returns on the operations they execute in the market. However, this result goes against the empirical evidence obtained by other studies, e.g. those of Fidrmuc et al (2006), Del Brío and Perote (2007), Rozanov (2008), Del Brío, Miguel and Tobar (2011) and Huang et al (2012). Another interesting fact has been the confirmation of the negative relationship between managerial ownership and the returns of insiders, with the variable PROP_DTVA statistically significant at 1%, which agrees with the empirical evidence provided by works such as Fidrmuc et al (2006) and Betzer and Theissen (2009). This result provides evidence in favor of the greater alignment of interests achieved using managerial ownership as a control mechanism. We should also indicate that no results supporting the *entrenchment hypothesis* were obtained because, even though the square of managerial ownership in the model was included in previous estimates, it did not turn out to be significant, thus indicating that the relationship is linear.

Still in the context of the ownership structure, the expected relationship (positive) between the existence of a bank as majority shareholder of the company and the abnormal returns of insiders has also been confirmed, with the variable BANCO significant at 1% and thus confirming the empirical evidence of works such as Tobar, Del Brío and Miguel (2011). As we have already remarked in the study hypothesis explanation (Chapter V), this result may be due, on one hand, to the fact that banks are more concerned with their own liquidity than with the role of monitoring the officers of corporations where they have capital interests (Coffee, 1991). Moreover, the dual role of banks as lender and shareholder in certain corporations facilitates access to information in a more opportune (and we should also say opportunist) way, thus enabling them to obtain significant abnormal returns.

Bearing in mind the results obtained, we can safely say that the ownership structure factor is of great importance when explaining the abnormal returns obtained by insiders, since all the variables used in this context have confirmed the expected relationship and have proved to be clearly significant.

With regard to the board of directors, and more specifically to its contribution to providing an environment of greater information transparency in the company, we should say that the size of the board of directors has an influence contrary to that expected, since the variable TAM_CONS is positive and statistically significant at 10%. In fact, we would expect that a larger board of directors would exacerbate the problems of coordination (in terms of the different experiences of the board members and their time availabilities) and of efficiency. Consequently, this result would contradict the empirical evidence of works such as Rozanov (2008) and Huang et al (2012), which provide evidence of a positive relationship between the size of the board of directors and the abnormal returns of insiders. One of the possible explanations is that, as we have seen in the descriptive statistics, the board size in the sample corporations was larger than the maximum of 12 directors recommended in our codes of good governance, a reason why large boards were functioning inefficiently. Nevertheless, in order to better clarify this situation, it would be interesting (in future research work) to more thoroughly analyze the composition of the board of directors and relate its composition to the ownership structure of the company, and more specifically analyze the eventual relationships between the directors and the main shareholders of the company, i.e. If the members of the company board of directors act as true "representatives" of the main company shareholders. In this situation, a smaller board of directors (with less diversity of opinions and viewpoints) could be an incentive for the existence of greater information asymmetries, and there would be no incentives for greater information transparency, in particular in relation to the minority shareholders that would find it harder to have "representatives" on the board of directors that defend their objectives and interests.

In relation to the independence of the board of directors, measured with the variable Cons_Ind (percentage of external board members on the board of directors), this variable has turned out to be significant at 1%, thus confirming the expected relationship (negative) between the independence of the board of directors and the abnormal returns obtained by insiders. In fact, this result seems to be in line with the idea that external directors, who are probably more independent than internal directors (who tend to have closer professional and personal relationships with the CEO and to protect their own private benefits), tend to more effectively perform the function of monitoring officers that should be executed by a board.

Another interesting result, especially because it involves a variable that is not usually used in insider trading studies, has to do with the age of the CEO. On applying the information transparency model, the CEO age variable has turned out to be significant at 1%, thus confirming its expected relationship (negative) with the abnormal returns obtained by insiders. This is an interesting result because we have used the CEO age as an implicit way of measuring the ethical behavior and attitude of officers towards risk. In other words, the older the CEO, the more concerned the CEO will be with ethical behavior standards and the more conservative will his/her attitude towards company management, which is compatible with a scenario of less information asymmetries and more information transparency. Therefore, as a confirmation of this hypothesis, we will say that an older CEO reduces the likelihood that insiders will execute market operations based on insider information, a result in line with works such as Huang et al (2012), which also obtain empirical evidence that having an older CEO directly affects the quality of financial information reporting (measured by these authors as the company's ability to achieve or exceed the earnings forecasts of financial analysts and the existence of financial readjustments).

Whereas the CEO age variable is a relatively novel variable in insider trading studies, the use of this variable in the field of Finance is not entirely new. For instance, Beber and Fabbri (2012), in their very interesting work, underline the importance of including variables of a personal (or behavioral) nature to analyze the decision making processes of company and market agents. In this work, the authors investigate the role of the CEO's personal beliefs and traits in the management of corporate risks, and they construct an empirical measure of the speculation obtained as the variation of possession of derivative instruments that is not explained by the fundamental analysis. This measure of speculation is used to verify whether certain personal attributes of the CEO, and more specifically a younger CEO, such as less professional experience and holding a MBA (attributes that are usually related to a CEO feeling overconfident), lead to greater speculation. After controlling for the degree of risk of the business environment, the authors conclude that the personal attributes of the CEO increase the explanatory power of the speculation proxy by around 50% with respect to the variables related to the company and the sector. In fact, the corporations with newer CEOs who hold an MBA and have less experience obtain higher values for their speculation measurement.

The work mentioned above is just one of the many possible examples of the importance that the study of personal attributes and behavior can have in the field of Finance, which explains the fast development of this area of research (Behavioral Finance) in recent years. Precisely because the importance of this area of research has been recognized, we have introduced the CEO age variable in our information transparency model and we have developed the second part of this thesis in accordance with an experimental approach. Obviously this thesis represents only a small contribution to the development of this branch of Finance, and we realize there is potential for more future research in the field of Behavioral Finance and Experimental Economics in general, but also in the subject of insider trading in particular.

Since it is undeniable that the practice of insider trading operations has an unquestionable moral and ethical component, this would also be a good line of future research that is a bit outside the scope of this work but that is already being developed in the university department sponsoring this thesis (Business Administration and Economics Department of the University of Salamanca).

Another interesting result has been obtained for the variable INTERLOCK, which measures the intensity of the inter-company relationships, i.e. to what extent do the members of the company board of directors have more or less experience in performing functions on boards of directors of other corporations. This variable has turned out to be significant at 1%, thus confirming its expected positive relationship with the abnormal returns of insiders. Since the use of this variable, at least to our knowledge, is very novel in insider trading studies, there are not many references of works available to compare their empirical evidence with our result, which is in line with Tobar, Del Brío and Miguel (2011) who have obtained a positive, significant relationship for this variable in the context of UK corporations. Therefore, with this result, we can argue that the experience gained by the members of a company's board of directors from performing functions on the board of other corporations, and especially the network of contacts, know-how and influence that this situation entails, contributes to increasing the degree of information asymmetry between them and the other players in the company and market, which makes it possible to more easily obtain abnormal returns in the operations they execute on the securities market.

As we have mentioned previously with regard to the ownership structure, the company board of directors can also strongly influence the explanation of insider trading practices, since all the variables (with the exception of the board of directors size) have been clearly significant, thus confirming the expected relationships.

Regarding the variables that have to do with the specific characteristics of the insider operation (also widely used in other insider trading studies) – the time it takes the insider to report the operation (delay), opacity in the way insider information is used (Interposed) and the level of multiple purchases (MULTI_PURCH) – they have all been non-significant and therefore Hypotheses 1, 2 and 3, respectively, cannot be accepted.

Moreover, of all the control variables used (company size – FIRMSIZE, operation size – TRANSAC_SIZE and ROE – return on equity), only the variable TAME has been significant with a 10% significance level. In the case of company size, the empirical evidence does not clearly indicate what its contribution is to explaining insider trading practices, and there are studies that find negative evidence (in the case of Finnerty, 1976b; Agrawal and Mandelker, 1990; Pope et al, 1990; Madura and Wiant, 1995; Tobar, Del Brío and Miguel, 2011, etc.), other studies such as ours in which this relationship is positive and studies, e.g. Del Brío (1999), in which this variable does not turn out to be significant.

V. RESULTS OF THE EXPERIMENTAL APPROACH:

To make these estimates, the panel data methodology has been used, with GLS estimation with random effects, in which we will corroborate the aforesaid basic hypotheses. There are 3.200 observations for the estimated models for the total sample (4 individuals in each of the 10 markets and trading during 40 periods for each of the two treatments), and 1.600 observations for the subsamples corresponding to each one of the treatments (1.600 observations for T0 and 1.600 observations for T1).

We present the results in three blocks:

(a) The insiders' decision to manipulate (analyze whether the insiders decide what earnings to release based on the true value of the company earnings or else try to affect the price of the shares and their returns);

(b) The agents' decision to invest (buy and sell shares), analyzing whether this is guided by the earnings (reported, real or expectations about prices or about the earnings themselves), by the prices or by other variables, e.g. distribution of dividends. Logically, in this decision, a distinction must be made between the behavior of the insiders or type 1 agents versus the outsiders or type 2 agents that do not possess insider information;

(c) The effect of all these decisions on the returns obtained by insiders and outsiders and the differences between them.

At the same time, in each section we will try to shed some light on the effect of managerial compensation by analyzing the results of the estimate of each Model for T0 and T1. When necessary, the results of the non-parametric comparisons that have been made will also be provided in order to better understand the impact on these three variables of the company's stock-based managerial compensation schemes.

Model 1. Dependent variable: reported earnings

Model 1: $\textit{Reported earnings}_{it} = \gamma_0 + \gamma_1.\textit{real earnings}_t + \gamma_2.\textit{expectations}_{it} + \gamma_3\textit{return}_{it-1} + \gamma_4.\textit{bonus}_{it-1} + \gamma_5.\textit{dividend}_{it-1} + \eta_i + \varepsilon_{it}$						
Variables	**All treatments**		**Treatment 0**		**Treatment 1**	
	Coefficient	Z-stat	Coefficient	Z-stat	Coefficient	Z-stat
Real earnings	-.0190996	-0.54	-.0882066	-1.73*	.0429379	0.86
Expectations	13.39044	12.73***	15.8414	10.93***	10.87339	6.94***
Renturn	.0086843	3.31***	.010535	1.89*	.0105044	3.50***
Bonus	-.0840574	-1.36	------	------	-.1198706	-1.60
Dividend	1.204874	0.83	-.7531367	-0.42	3.574179	1.45
R^2	*within*	0.1786	*within*	0.2413	*within*	0.1250
	between	0.3727	*between*	0.3891	*between*	0.4666
	overall	0.2021	*overall*	0.2566	*overall*	0.1541
Breusch and Pagan LM		73.87***		24.84***		41.39***

* 10% significance; ** 5% significance; *** 1% significance.

The earnings reported by insiders do not seem to be related to the real earnings, i.e. the insiders manipulate the published information on the company earnings (HYP. 1). However, both the assumptions of the insiders about what the prices will do (variable Opinap; HYP. 2a) and the returns obtained by the insiders in the preceding period (HYP. 2b) do seem to have a positive influence on the reported earnings ($\gamma_2 > 0$ and $\gamma_3 > 0$). Both relationships indicate that the reason why insiders manipulate earnings is to affect the prices (HYP. 2a) and increase the returns obtained in their insider trading operations and other related remunerations (HYP. 2b).

The evidence in favor of HYP.3 – that in the period after collecting a bonus the insiders try to report negative earnings ($\gamma_4 < 0$) to lower the share prices and thus increase the next bonus – is weak for the total sample, but it increases for treatment T1. However, there is no corroboration that collecting dividends has an impact on the amount of the reported earnings and, consequently, on earnings management ($\gamma_5 = 0$).

Model 2. Dependent variable: Buy-sell decision

Model 2 : $decision_{it} = \delta_0 + \delta_1.reported\ earnings_{it} + \delta_2.binsider_{it} + \delta_3.opinazout_{it} + \delta_4.var\_price_{it-1} + \delta_5.expectations\_price_{it} + \delta_6.dividend_{it} + \delta_7.type_{it} + \alpha_j + \eta_i + \varepsilon_{it}$						
Variables	**All treatments**		**Treatment 0**		**Treatment 1**	
	Coefficient	Z-stat	Coefficient	Z-stat	Coefficient	Z-stat
Reported earnings	-.0084827	-3.16***	-.0075698	-1.98**	-.0099402	-2.36**
Binsider	.01283	2.26**	.0119767	1.42	.011162	1.43
Opinazout	.1006002	1.09	.0988311	0.74	.0434898	0.32
Var_price	-1.26772	-3.17***	-1.814336	-3.11***	-.7852321	-1.41
Expectations_price	-.5089981	-6.04***	-.7739589	-6.44***	-.2796426	-2.26**
Dividend	-.2071782	-2.08**	-.2214314	-1.56	-.1848622	-1.30
Type	.1475005	1.42	-.1572047	-1.01	.3729284	2.61***
Pseudo R^2		0.0249		0.0450		0.0211
LR		96.85		88.60		40.27

* 10% significance; ** 5% significance; *** 1% significance.

First of all, HYP.4 is fulfilled because the reported earnings negatively influence the purchases ($\delta_1 < 0$), since in the framework of our experiment the share prices rise, and HYP.5 is fulfilled because the real earnings positively affect the insider purchases ($\delta_2 > 0$) (remember that only they know the real earnings), since in the experiment they result in lowered share prices. On the other hand, it is also seen that if the outsiders trust the truthfulness of the published information (opinazout), this does not noticeably affect the share price and, consequently, the purchases, thus confirming HYP.6 ($\delta_3 = 0$). Furthermore, the estimates confirm that agent investments are primarily guided by prices, such that rising prices in the preceding period act as a disincentive for purchases ($\delta_4 < 0$), and if the agents think that the high price at which they purchased has lowered, this acts as an incentive for purchases ($\delta_5 < 0$).

Model 3. Dependent variable: insider earnings

Model 3: $\textit{Insider earnings}_{it} = \beta_0 + \beta_1.\textit{type}_{it} + \beta_2.\textit{maniins}_{it} + \beta_3.\textit{manioutt}_{it} + \beta_4.\textit{treatment}_{it} + \beta_5.\textit{price}_{it} + \beta_6.\textit{dividend\_bonus}_{it} + \alpha_j + \eta_i + \varepsilon_{it}$						
Variables	**All treatments**		**Treatment 0**		**Treatment 1**	
	Coefficient	Z-stat	Coefficient	Z-stat	Coefficient	Z-stat
Type	61.4716	6.98***	16.35083	1.91*	107.6427	7.86***
maniins	.2447197	1.63	-.1260288	-1.03	.5450628	2.06**
maniout	-.2546271	-2.93***	-.0877282	-1.23	-.4862178	-3.16***
Treatment	23.11113	3.22***	------	------	------	------
Price	9.185343	137.16***	8.586173	146.05***	9.680141	85.27***
dividend_bonus	1.058819	7.06***	.7927805	6.31***	1.257154	4.84***
R^2	*within*	0.8650	*Within*	0.9346	*within*	0.8353
	between	0.6967	*Between*	0.8249	*between*	0.7461
	overall	0.8096	*Overall*	0.9063	*overall*	0.8061
Breusch and Pagan LM	14659.60***		6763.07***		5200.01***	

* 10% significance; ** 5% significance; *** 1% significance.

In relation to the results of Model 3, it is clear that, to explain the returns of the subjects, there is a clearly significant type effect (insiders versus outsiders) and treatment effect (T1 versus T0), thus corroborating HYP.7a and HYP.8. If we analyze the former effect in relation to the impact that manipulation has on the subjects' returns, it can be concluded that manipulation generates positive effects ($\beta_2 > 0$) for insiders (at the 10% confidence level) – HYP.7b – and negative effects ($\beta_4 < 0$) for outsiders (HYP.7c). In this equation, we include the price ($\beta_5 > 0$) and the remuneration obtained from dividends or bonuses received ($\beta_6 > 0$) as control variables that positively affect the returns.

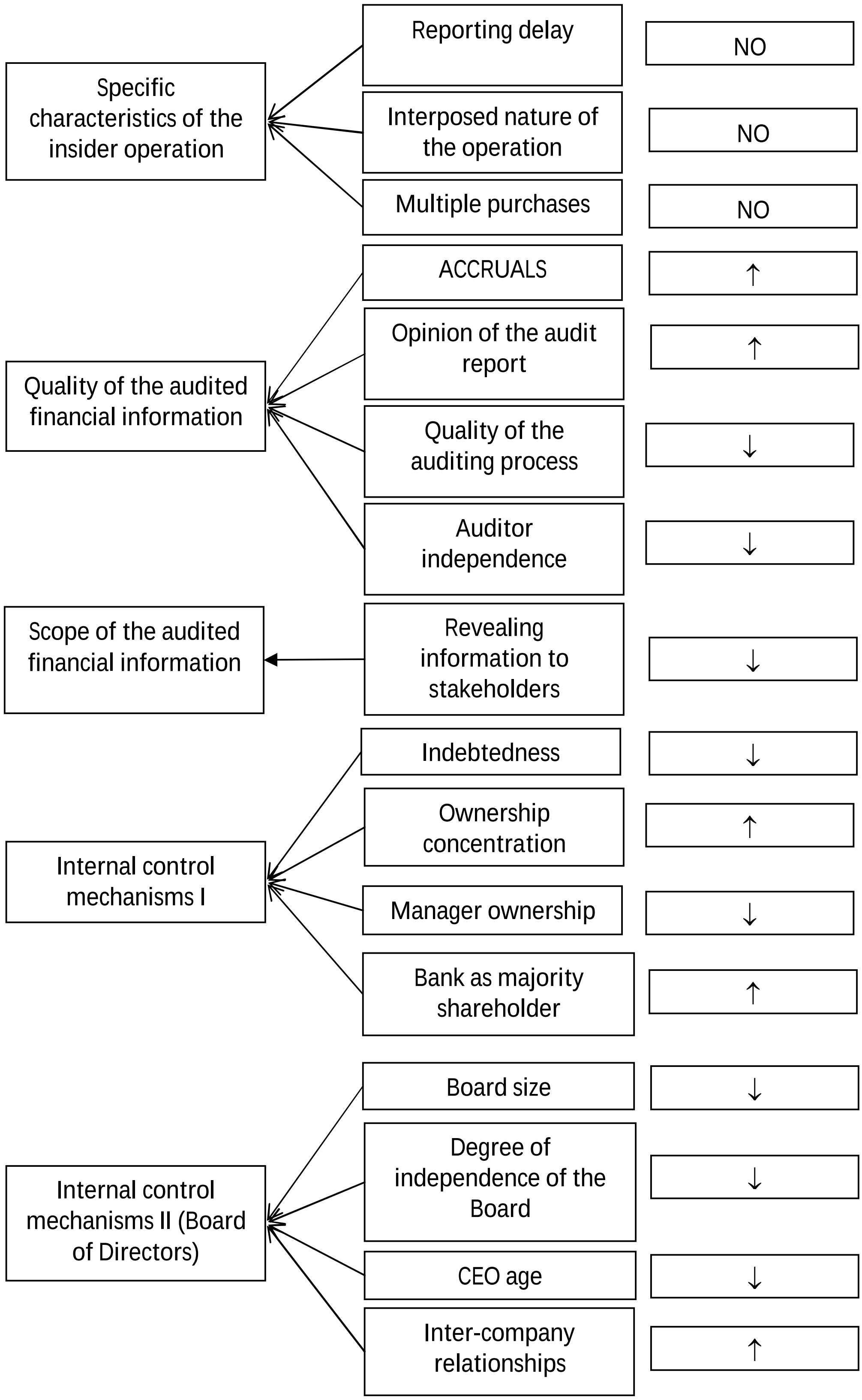
From the analysis of these data, differentiated by treatment, we can draw a conclusion about the fulfillment of HYP.11 and HYP.12 related to the effects of managerial compensation in the relationship between manipulation and insider trading.

There are clear differences in the relationship between insider and outsider manipulation and returns in the absence or presence of stock-based managerial compensation schemes – HYP. 12(a-c). Company stock-based managerial compensation creates clear incentives for manipulation, with clear directives regarding the goal pursued (maximize the bonus), whereas in the absence of managerial compensation insiders basically manipulate to earn capital gains with their operations, and it is more costly for them to increase their returns since this depends on two decisions (earnings management and share purchases) which should be properly coordinated.

VI. CONCLUSIONS AND IMPLICATIONS OF THE OVERALL STUDY

The Figure 1 shows the conclusions about the informational transparency model.

Figure 1 – Conclusions regarding the information transparency model



Generally speaking, the results of our information transparency model underline the importance of including in future insider trading studies, in addition to the variables related to the specific characteristics of the insider operation and the normally used control variables, other variables related to the quality of the audited information, with the scope of the audited information and with the internal control mechanisms, and in particular with the degree of company indebtedness, ownership structure and board of directors. As the results of our information transparency model show, the aforesaid points, by influencing the existing degree of information asymmetry in the company and market, have repercussions on the quality and transparency of the information that reaches the various company and market agents.

With regard to the auditing process, it is undeniable that the recent financial scandals have greatly weakened the image of the audit firms. As Garcia Benau and Vico Martinez (2003) say, many users of financial information no longer believe in the idea that the auditors' work is in the public interest and there is no need to subject them to extreme regulation. The events that have occurred in the recent past have caused a loss of confidence and led to calls (and this is corroborated by the results of our information transparency model) for a strict regulatory framework in order to reduce as much as possible the probability of lack of independence. It is not by chance, for example, that in Royal Legislative Decree 1/2011 of July 1, whereby the revised text of the Spanish Accounts Auditing Act is approved, article 12 enshrines the general principle of independence and the duty to adopt safeguard measures and article 13 indicates the causes of incompatibility of account auditors that do not guarantee sufficient independence on discharging their functions.

These causes of incompatibility include: holding a managerial or administrative post and performing jobs or internal oversight in the audited entity; direct or indirect financial interest in the audited entity; provision of valuation services to the audited entity that lead to an appraisal of significant amounts, measured in relative terms, in the financial statements or other accounting documents of that entity; provision of internal auditing services to the audited entity; simultaneous provision of legal services to the audited entity; receipt of fees by way of provision to the audited entity of auditing services other than the audit itself and provision to the audited entity of design and implementation services of financial information technology systems, used to generate the data included in the financial statements of the audited entity.

The results of our information transparency model also point to the fundamental importance of the internal control mechanisms in terms of assuring greater information quality and transparency. In view of an eventual disinterest by the officers in reporting quality information and assuring the transparency of the company (which could make it hard for them to obtain abnormal returns in their insider trading operations), it is essential to implement mechanisms that make it possible to:

- obligate the officers to timely report accounting and financial information;
- hire more reliable audit firms and have an independent audit committee;
- appoint external (and independent) board members with recognized financial expertise;
- maintain or promote the existence of active investors that function as supervisors of the officers (in particular by representing minority shareholders);
- subject the officers to the control of creditors by increasing financing (within certain limits) through the debt;
- and provide incentive structures to the officers that will mitigate agency problems between shareholders and officers.

In the specific case of Spain, progress has clearly been made in recent years in the implementation of international corporate governance practices (Cadbury Report in 1992, OECD Corporate Governance Principles in 1999 and 2004, Sarbanes-Oxley Act in 2002, etc.) in listed Spanish corporations by publication of good governance codes (Olivencia Code in 1998, Aldama Code in 2003 and Conthe Code or Unified Code of Good Governance in 2006). For instance, there are recommendations in the Conthe Code that are positive, although that perhaps could have gone further, such as: the existence of between 5 and 15 members on the board of directors, with the external directors – controlling and independent – representing a majority versus the executive directors; the creation of one or two Committees in charge of payment and appointment functions and composed of a minimum of three external directors and whose chairpersons are independent directors; a maximum limit of 12 years for holding the post of director (although this only applies to the independent directors); the obligation of the directors to devote to their board functions the time and effort necessary to effectively discharge their duties, recommending to companies that they require their directors to report on their remaining professional obligations and considering that it would be advisable to limit the number of boards on which their directors could sit; etc.

Furthermore, the fact that adoption by corporations of the recommendations of the Spanish codes of good governance is voluntary perhaps has prevented the attainment of an environment of greater information transparency, such that, for example, the practice of earnings management and insider trading is obviated. We believe that the securities market regulatory bodies (in the case of Spain, the CNMV) could take more effective measures to encourage better enforcement by companies of the good governance practices, since in the last few years the publication of codes of good governance, not only in Spain but also worldwide, does not seem to have had the desired effects, given the occurrence of major financial scandals after their publication.

Bearing in mind the results obtained with the variables used in the context of ownership structure, it would be advisable for companies to implement internal control mechanisms in order to prevent an excessive concentration of ownership (and the power it entails). In particular, the existence of a bank as main shareholder of the company, considering its dual roles as shareholder and creditor, could double its power and allow it to implement eventual illicit practices, e.g. insider trading. In addition to the power that an excessive concentration of ownership bestows on the majority shareholders, this could also mean less power for the minority shareholders. As a result, it is not by chance that securities market regulatory bodies in general (and the CNMV in particular) are increasingly concerned about the minority shareholders of listed companies and implement measures to safeguard their interests.

The use of shares or stock options as a way to remunerate officers should also be considered with caution because, while managerial ownership can provide a way to align the interests of officers with those of shareholders, the existence of too much managerial ownership could create incentives for an entrenchment effect. Because of the lack of good data, we have not been able to include in this part of the analysis a variable that represents managerial compensation which would enable us to form a more well-documented opinion about this relationship, although in the next part of the thesis (heading …) we have tried to remedy this situation by including the compensation variable in an experimental setting so that we can jointly analyze decisions about earnings management and insider trading in light of the corporate compensation policy.

In the experimental approach, among the main conclusions we highlight the following:

- As in the context of 'traditional' approach, we conclude that there is indeed a benefits manipulation policy revealed by the insiders.

- If there is financial information manipulation, the insiders purchasing decisions are inversely related to revealed benefits and positively related to the real benefits.

- If outsiders are confident that the insiders do not manipulate the financial information disclosed then the benefits do not affect the share prices and, consequently, their purchasing decisions, which seems to prove that agents behave rationally.

- The agents' investments are driven primarily by prices, because if they were up in the previous period they discouraged to buy, and if agents believe the price they can buy is lower, encourage purchases.

- Agents are more aware of obtaining capital gains in its operations than in the dividend payment.

- If there is financial information manipulation, the insiders' profitability is greater than then outsiders' profitability, which presupposes the existence of an "agent type" effect; also the agents' profitability is higher in the treatment with bonus than in the treatament whithout bonus, which presupposes the existence of a "treatment effect". Moreover, manipulation of financial information generated positive effects on insiders' profitability and generates negative effects on outsiders' profitability.

- The existence of a stock-based compensation policy has indeed a high impact on the relationship between financial information manipulation and the agents' profitability. More specifically, we can say that the compensation policy set according to the firms stock prices creates clear incentives for manipulation, specifically in order to maximize the bonus, in the absence of directive compensation based on the evolution of the firms stock prices, the insiders manipulate financial information in order to get capital gains.

We believe that the current economic-financial crisis is also (and perhaps above all) a crisis of confidence in corporations and securities markets. Recovering that confidence will inevitably require that corporate information be more credible and that all the agents involved in the financial reporting process be subject to scrutiny: officers, board of directors members, auditors, regulatory bodies, investors, social communication media, etc. As Garcia Benau and Vico Martinez (2003) say, all these agents have a certain responsibility and all of them face new challenges in view of the significant repercussions that the financial scandals are still having on the economy, although they should all have the same ultimate goal: recover lost confidence.

Antonia Garcia Benau and Antonio Vico said that back in 2003, but they very well could have said it today. The financial crisis has served even more to increase investor distrust and perhaps this work, in spite of its apparently less current data, can help us to understand the situation before the crash of our financial markets and our economy as a whole. An excessive assumption of risk by poorly aligned officers, abusive compensation systems that encourage short-termism and earnings management to the detriment of the quality of information, officers who merely seek insider returns, which also amounts to an expropriation of shareholder wealth, through practices of abusive use of insider information and the ultimate expropriation by the majority shareholders – and all of this favored in many cases by a lack of a responsible performance of the audit function and of proper oversight – have all contributed to the current crisis. Finding a solution to the crisis by reviewing all these variables is seemingly easy, provided there is a will to change and to do things in a way that combines ethics and efficiency. What may be harder today is to get the corporations that have failed as a result of this crisis back on their feet again. This is a crisis that has been particularly cruel to small and medium-size enterprises that have often had nothing to do with the problems described here but that have suffered from the crisis because it has affected the very essence of corporate survival: the sources of financing. Worldwide liquidity problems and the failure of financial markets as guarantors of financing for large enterprises created an environment in which the worst financial restrictions have been endured by the smallest, and behind them the domestic economies. Therefore, the need for strong, reliable, transparent and efficient financial markets should be a concern for all investors, and also for all economic agents, in any nation, in any government and in any economy.