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# The economic impact of tender offers to target-companies in USA during the 20th century:
## A critical examination of related event studies.

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The aim of the present paper is to collect and assess the results from a number of empirical studies which evaluate the economic impact of tender offers to target-companies in USA. Tender offers have been a particularly favorable corporate event for shareholders in the field of mergers and acquisitions during the 20th century, since the corresponding abnormal returns are in substantially high levels. The results converge significantly as the event windows lengthen and remain constantly high through the years. The final outcome of a tender offer does not affect the results around the initial announcement, while the competition among bidder-companies increases the economic impact to target-companies' shareholders.

**JEL Classification codes:** G34; G14; N22

**Keywords:** tender offers, efficient market theory, cumulative abnormal returns, event window

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## 1. Introductory comments and the aim of the paper

The evaluation of mergers and acquisitions (M&As) constitutes a particularly popular trend in the international literature, especially as it provides useful decision making information. The findings of the particular field are of utmost importance to managers, executives, shareholders, investment companies, mutual funds, hedge funds, banks, special credit organizations, national authorities and other stakeholders' decision making processes.

The extensive volume of the literature appears to confirm the significance of the M&As phenomenon, while different and alternative approaches have been proposed by scholars in the field. For instance, the industrial organization field experts stress that the evaluation method of M&As consists of balance-sheet related changes in the dealing companies. On the other hand, the experts of finance base their suggestions on the neoclassic theory[1] and assess M&As through the study of the market value changes of the companies, caused during the initial public announcement of the *transaction.*

The second approach nowadays stands for the prevailing view in the field and its theoretical background derives from the theory of efficient markets (Fama *et al.,* 1969) according to which, share prices react immediately and entirely to any new relevant information. In particular, any publicized and announced piece of information creates future expectations, which in turn the market discounts at the time of the public announcement. The methodological approach applied in the international literature within the framework of the specific theory in order to evaluate the economic impact of M&As is the *event study.* The approach in question places its focus on the market returns of the dealing companies around the public announcement of M&As, which as a fact constitutes the new and unexpected event. More specifically, the focal objective of the event studies is to estimate the additional *(abnormal)* returns that result before[2], during and after the announcement day of M&As. The daily abnormal return of a share is calculated by deducting the returns of a benchmark from the actual return of that asset, which can be either a general market index or a market model[3]. The sum of daily abnormal returns for a selected time interval *(event window)* generates the corresponding *cumulative abnormal returns.*

It is equally important to notice that the theory of efficient markets, upon which the event study's application is based, does not explicitly determine the precise event window required for the 'immediate' and 'full' incorporation of the consequences stemming from any new and relevant information. Thus, the empirical studies evaluating the economic impact of M&As apply event windows varying from a few days to a few months around the announcement date[4]. In addition, the application of the event study methodology requires that certain *preconditions* are met, that in fact weaken the comparability scope of the empirical results. These preconditions relate to a number of factors, such as the country of origin of the selected companies, the size of the sample examined, the sample period, the duration of the event window, the type of the transaction *(merger or tender offer)* and the methodology used for the calculation of the abnormal returns.

In fact M&As are categorized taking into consideration the process approach of target-companies from bidder-companies. Thus, in the case of *mergers* two equally sized companies become one settling together the terms of the transaction, while in *friendly acquisitions* a company buys a smaller one with the agreement of the board of directors of the latter. Indeed, the economic impact of these two transactions converge considerably and therefore are not examined separately. Contrary to mergers and (friendly) acquisitions are *tender offers,* where bidder-companies make a directly offer to the shareholders of the target-companies through the

1 According to the neoclassic theory, the stock market is the most effective mechanism of distributing the available resources. As a result mergers and acquisitions are a process of efficient distribution of economic, business and human resources.

2 The objective of using event windows that begin days before the announcement date is to examine the cases of inside information and/or leakage of information.

3 For a more detailed information for the application of event studies look at Brown, S. and Warner, J. (1985; 1980).

4 According to Mitchell and Netter (1989) and Dann et al. (1977) the consequences of certain events can be incorporated in share prices in few minutes.

stock market, since the board of directors of the latter does not approve the initial offer made by the former. Likewise, in some tender offers the bidder-companies deal entirely with the target-companies' shareholders without informing or seeking for the board of directors' agreement.

Considering the various types of M&As, it is the intention of the present paper to record and evaluate the empirical results regarding the economic impact of tender offers to target-companies in the USA, published from numerous event studies. The specific country has been selected in accordance with the following criteria: the existence of a considerable number of recorded tender offers, a substantial market value of the transactions, sufficient availability of numerical data and finally the existence of a sufficient number of empirical studies from researchers and scholars. The extensive bulk of published empirical results for US target-companies allows for their classification and their comparative assessment, so as to reach generalized conclusions that could virtually and under certain conditions constitute an investment guide.

The primary purpose of the present study is to categorize the main findings of the studies that examine tender offers that took place during the 20th century in the USA and provide certain findings through a comparative analysis of the recorded studies. More specifically, this paper is structured as follows: in the second part we record the event studies that examine the economic impact of tender offers to target-companies in the USA. In the third part we assess the results of the event studies taking into examination the applied event windows and the diachronic development of the phenomenon. In the fourth part we compare the economic impact between mergers and tender offers, while in the last section, some preliminary conclusions of this critical comparative examination are presented along with some points for future research.

## 2. Empirical studies that examine the economic impact of tender offers to target-companies in USA

The empirical studies evaluating the economic impact of tender offers to target-companies in USA are recorded in Table 1. In the first column of the table the name(s) of the author(s) are reported and in parenthesis the year of publication of the study, in the second column is mentioned the sample period, in the third column the cumulative abnormal returns are recorded and in parenthesis the value of the statistical test (t-statistic) where this is available, in the fourth column the size of the sample used is presented and in parenthesis the percentage of target-companies with positive returns (in the studies where is available) and in the fifth column the duration of the event windows is presented on which the abnormal returns are calculated.

**TABLE 1**
**The economic impact of tender offers to US target-companies**

| Authors (1) | Sample Period (2) | Cumulative abnormal returns (3) | Sample size (4) | Event window (days) [months] (5) |
|---|---|---|---|---|
| Asquith et al. (1990) | 1973-83 | 27.36% (44.73) | 18 | (-1,0) |
| Bradley et al. (1988) | 1963-84 | Total 31.77%<br>One bidder 24.65%<br>Many bidders 45.50% | 236 (95%) | (-5,5)1<br>(-20,80) |
| Bradley et al. (1983) | 1963-80 | 35.55%<br>40.20% (23.93)<br>3.04%* (0.90)<br>1.78%* (0.37) | 112 | [0]<br>[-1,1]<br>[1,12]<br>[1,24] |
| Bradley et al. (1982) | 1963-80 | 31.80% (36.52) | 162 | (-10,10) |
| Bradley (1980) | 1962-77 | Completed 32.18% (26.68)<br>Uncompleted 47.26% (30.42) | 161<br>97 | (-20,20) |
| Davidson and Cheng (1997) | 1981-87 | 14.55% (39.61) | 74 | (-1,1) |
| Dodd and Ruback (1977) | 1958-76 | Completed<br>20.58 (25.81)<br>7.95%* (0.85)<br>-0.48%*(1.19)<br>Uncompleted<br>18.96% (12.41)<br>-3.25%* (0.90)<br>-0.05%* (0.11) | 136<br>36 | [0]<br>[1,12]<br>[13,60] |

| Authors (1) | Sample Period (2) | Cumulative abnormal returns (3) | Sample size (4) | Event window (days) [months] (5) |
|---|---|---|---|---|
| Frank and Harris (1989) | 1955-84 | Total 23.3% 34.9% One bidder 28.1% Many bidders 41.5% | 229 (90%) (86%) | [0] [-4,1] |
| Huang and Walkling (1989) | 1977-82 | 27.5% | 74 | (-1,0) |
| Jarrell and Poulsen (1987) | 1962-85 1960-69 1970-79 1980-85 | 28.99% 19% 35% 30% | 526 | (-20,10) |
| Kummer and Hoffmeister (1978) | 1956-74 | Completed 16.45 (15.16) Uncompleted 19.79% (11.6) -12.9% | 44 15 | [0] [0] [1,12] |
| Lang et al. (1989) | 1968-86 | 40.3% (16.91) | 87 | (-5,5) |
| Leeth and Borg (2000) | 1919-30 | 7.31%* (1.39) | 13 (69%) | [-1,end]2 |
| Schwert (2000) | 1975-96 | 32.5% | 763 | (-63,126) |
| Schwert (1996) | 1975-91 | 15.90% | 526 | (-42,-1) |
| Servaes (1991) | 1972-87 | 31.77% | 125 | (-1,end)3 |
| Smith and Kim (1994) | 1980-86 | Completed and Uncompleted 7.98% (7.87) 30.19% (49.37) 15.84% (77.06) -2.95% (-4.83) | 177 (63%) (96%) (91%) 41%) | (-60,-6) (-5,5)4 (-1,0) (6,60) |

[1, 2, 4] The event window ends five days after the last bid.

[3] The event window ends either the acceptance day or the delisted day. The abnormal returns that are denoted with * are not statistically significant.

The sample period for target-companies of tender offers, with the exception of the study of Leeth and Borg (2000), covers a period of roughly thirty-five years, beginning in the second half of 1950s. With regard to the size of the examined samples, it is observed that in most studies the samples include less than 240 observations. Exceptions are referred to in the studies of Schwert (2000; 1996) and Jarrell and Poulsen (1989), where the samples are compiled from 763, 526 and 526 observations respectively.

The relatively small number of empirical studies that examine the economic impact of tender offers, together with the various event windows applied by the researchers, render the comparative evaluation of the results and the subsequent formation of general conclusions rather difficult. Nevertheless, according to the overwhelming majority of the studies, the target-companies of tender offers record abnormal returns that are highly positive and statistically significant. In particular, the studies assessing the economic impact of tender offers from the end of the 1950s until the beginning of the 1990s reveal abnormal returns varying from 14.55% (Davidson and Cheng, 1997) to 47.26% (Bradley, 1980). Indeed, a noteworthy percentage of these studies records abnormal returns higher than 25%. Furthermore, it should be noted that in the studies of Smith and Kim (1994), Frank and Harris (1989) and Bradley *et al.* (1988) where target-companies examined had positive abnormal returns the corresponding percentages are above 90%.

What constitutes a unique exception from the above is the study of Leeth and Borg (2000), in which the recorded abnormal return is relatively low, without statistical significance, just above 7%. Therefore, it could, with some reservation, be stated that the results of that study represent a dramatically different economic environment and a comparatively conservative investment behavior.

It should be noted that the announcement of a tender offer does not directly imply its definite completion, since a cancellation might occur. The main reasons of uncompleted tender offers are changes of the initial (positive) picture of the target-company by the bidder, successful defensive tactics from the target-companies and the refusal from the public authorities to permit the completion of the tender offer (Pickering, 1983). Therefore, it is essential to examine the market reaction of eventually uncompleted tender offers equally to completed. In event windows that last many days or at the announcement month the abnormal returns for uncompleted tender offers the abnormal returns are found to be in high levels, varying from 19% and eventually reaching 47.3%. The market reaction for uncompleted tender offers presents a particular significance, since the abnormal returns emerging in long-run event windows after the initial announcement of uncompleted tender offers might not affect or decrease the primary profits, until a certain degree,. In any case, the stock market prices for targets do not return to the levels that existed before the initial announcement. More specifically, months after the announcement of uncompleted tender offers, Dodd and Ruback (1977) and Bradley *et al.* (1983) refer to abnormal returns without statistical significance, while Kummer and Hoffmeister (1978) record losses of -12.9%, that decrease the initial profits at 65%.

In some cases a target-company may capture the interest of two or more companies, which in turn compete for the acquisition of the former. Indeed, the competition among bidder-companies produces substantial profits for target-companies which are comparatively higher than in the case of one bidder-company. In particular, Frank and Harris (1989) and Bradley et al. (1988) record abnormal returns exceeding 40% for target-companies in the case of multiple bidders indicating additional profits of around 10%-15% than the tender offer of a bidder-company only.

## 3. Comparative assessment of the event studies Integrated Waste Management

### 3.1 Evaluation of the studies' results based on the duration of the event windows

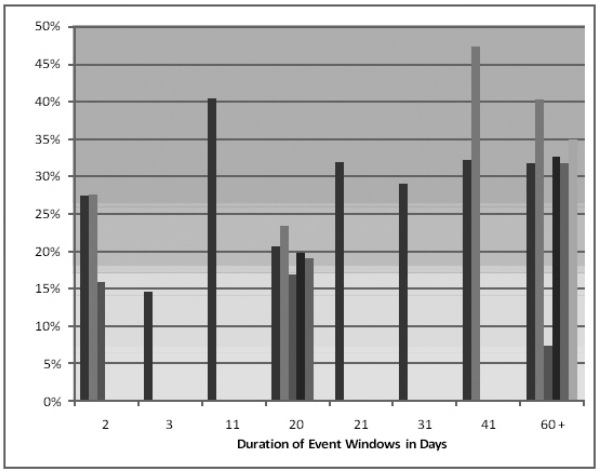
In the case of tender offers, the duration of the time period on which the abnormal returns are calculated comprises an important parameter. The following paragraphs try to detect and express the conclusions concerning the relation between the length of the event windows and the economic impact of tender offers to US target-companies.

Short-term event window with duration of two days (-1,0) is used in the studies of Asquith *et al.* (1990) and Huang and Walkling (1989) which cover similar sample periods, recording identical abnormal return in the order of 27%. On the contrary, in the study of Smith and Kim (1994), which applies the same event window and has overlapping sample period with the previous studies, the abnormal return is 40% decreased and amounts to 15.84%.

The discrepancies in the results are eliminated, when the duration of the event windows is extended to enough days around the announcement day of tender offers, since the empirical studies record considerable high and relatively consistent abnormal returns. More specifically, in the studies of Smith and Kim (1994), Jarrell and Poulsen (1989), Lang *et al.* (1989) and Bradley (1988; 1982; 1980) abnormal returns above 30% are recorded, while in certain cases where there are multiple bidders the returns exceed 45%.

In addition, in the studies of Frank and Harris (1989), Dodd and Ruback (1977) and Kummer and Hoffmeister (1978), where the sample periods have as starting point in the second half of 1950s and cover more than 18 years of business activity, the abnormal returns at the announcement month of tender offers vary from 16.45% to 23.3% for completed cases, while for uncompleted ones the returns are close to 19%. When the applied event windows are extended, covering few months before and after the announcement date, the abnormal returns present notable consistency, converging above the 30%, as it results from the studies of Schwert (2000), Servaes (1991), Frank and Harris (1989) and Bradley *et al.* (1988). Differing from the above results is the study of Leeth and Borg (2000), where the abnormal return amounts to 7% in a long-term event window. In general, the abnormal returns that are recorded for target-companies of tender offers in relation to the duration of the event windows are presented in Graph 1 below.

**GRAPH 1**[1]
**Abnormal returns based on the duration of the event windows (in days)**




[1] Regarding monthly event windows, it is supposed that each month has 20 trading days

### 3.2 Diachronic trend of abnormal returns of the examined studies

The evaluation of the diachronic development of the results of tender offers presents a concrete difficulty, which stems from the fact that most of the studies include more observations in the samples used, which are selected from extended periods of business activity. As a result, it is not possible to categorize the empirical studies into certain time periods. Despite that limitation, Table 2 below records the distribution of abnormal returns for three successive time intervals, which are the decades of 1980s, 1970s and the period that begins during 1960s and extends through the next decades.

**TABLE 2**
**Diachronic trend of the economic impact of tender offers**

| | *Sample Period* | | |
|---|---|---|---|
| | 1960–following decades | 1970 - 79 | 1980 - 89 |

| | | | |
|---|---|---|---|
| *Short-term event windows* | 40.3% | 27.4% - 27.5% | 14.6% - 27.5% |
| *Long-term event windows* | 16.9% - 47.3% | 31.8% - 35% | 30% - 32.5% |
| ***General Breadth of Returns*** | ***16.9% - 47.3%*** | ***27.4% - 35%*** | ***14.6% - 32.5%*** |

Examination of Table 4 data evidences that the abnormal returns in short-term event windows do not present a definite characteristic trend through the years. If the results of the first period are excluded for obvious reasons, then it is observed that the breadth of abnormal returns during the decade of 1980s has the same upper limit with the previous decade, but records a lower limit below than that of 1970s, a fact that could constitute an indication of increased uncertainty. In the same line, it is observed that the abnormal returns in long-term event windows for the decades of 1970s and 1980s remain almost identical. Furthermore, the abnormal returns that are recorded in both decades in long-term event windows are noticeably higher than the corresponding returns in short-term windows. In particular, during the 1970s and 1980s, the highest percentage of abnormal returns in short-term event windows is 27.5%, while the breadths of abnormal returns in long-term windows are 31.8% - 35% and 30% - 32.5% respectively.

## 2. Comparative evaluation of the economic impact between mergers and tender offers

In order to provide an unambiguous picture regarding the magnitude of the abnormal returns that derive from tender offers, we present the corresponding results from mergers to the following Table 3 and accordingly we compare the economic impact of the two different types of companies' consolidation. In fact, a number of the previously mentioned empirical studies that evaluate the economic impact of tender offers to US target-companies estimate, simultaneously, the economic impact of mergers to target-companies of the same business environment. In all the empirical studies where there is a comparative evaluation of the economic impact between mergers and tender offers, the latter record considerably higher abnormal returns. Particularly, in the studies of Schwert (2000; 1996), Davidson and Cheng (1997), Servaes (1991), Asquith *et al.* (1990), Frank and Harris (1989) and Huang and Walkling (1989), the target-companies in USA present higher profits when they accept a tender offer than a merger offer. These higher profits vary from 3% in the study of Davidson and Cheng, (1997) up to 20% in the study of Asquith et al., (1990). In addition, the differences in the abnormal returns between tender offers and mergers are increased as long as the event window is extended. Unique exception constitutes the study of Leeth and Borg (2000), in which mergers record higher abnormal returns (18.22%) than tender offers (7.31%).

Besides, taking into account the results of alternative empirical studies that examine solely tender offers or mergers, in overlapping sample periods and in similar event windows, the previous conclusion is once more confirmed. More specifically, comparing the results of Frank and Harris (1989), Kummer and Hoffmeister (1978) and Dodd and Ruback (1977) who evaluate tender offers with the corresponding results of Frank and Harris (1987) and Malatesta (1983) who estimate mergers, in common event window (the announcement month) and similar sample periods (from the second half of 1950s until many years afterwards), the former record abnormal returns that are approximately 6 percentage points higher than the latter.

Likewise, in event windows that last few days around the announcement day, the studies of Jarrell and Poulsen (1989), Lang et al. (1989) and Bradley et al. (1982; 1980) present abnormal returns that vary from 29% to 40.3% in the case of tender offers, while on the contrary the studies of Dennis and McConnell (1986), Eckbo (1983) and Asquith and Kim (1982) record noticeable lower returns between 13.74% and 25.03% for mergers. Consequently, taking into account the results of the entire empirical studies, we could argue that tender offers constitute by far the most beneficial event for target-companies in the USA in the field of mergers and acquisitions.

**TABLE 3**
**The economic impact of mergers to US target-companies**

| **Authors (1)** | **Sample Period (2)** | **Cumulative abnormal returns (3)** | **Sample size (4)** | **Event window (days) [months] (5)** |
|---|---|---|---|---|
| Asquith *et al.* (1990) | 1973-83 | 16.83% (70.39) | 139 | (-1,0) |

| Authors (1) | Sample Period (2) | Cumulative abnormal returns (3) | Sample size (4) | Event window (days) [months] (5) |
|---|---|---|---|---|
| Asquith and Kim (1982) | 1960-78 | 14.9% | 22 | (-10,10) |
| Davidson and Cheng (1997) | 1981-87 | 11.60% (20.51) | 145 | (-1,1) |
| Dennis and McConnell (1986) | 1962-80 | 16.67% (2.86)<br>8.56% (7.07)<br>4.06% (4.52) | 75 (71%) | (-19,0)<br>(-1,0)<br>(0) |
| Eckbo (1983) | 1963-78 | Unchallenged<br>14.08% (6.97)<br>6.24% (9.97)<br>3.13% (10.17)<br>Challenged<br>25.03% (12.61)<br>10.2% (15.22)<br>3.82% (7.99) | 57 (70%) (60%) (51%)<br>29 (90%) (72%) (57%) | (-20,10)<br>(-1,1)<br>(0) |
| Frank and Harris(1987) | 1955-85 | 14.7% | 1,210 (81%) | [0] |
| Leeth and Borg (2000) | 1919-30 | 18.22% (6.47) | 59 (75%) | [-1,end] |
| Malatesta (1983) | 1969-74 | 16.8% (17.57) | 83 | [0] |
| Schwert (2000) | 1975-96 | 22% (24.4)<br>12.4% (24.8)<br>9.6% (13.7) | 2,296 | (-63,126)<br>(-63,-1)<br>(0,126) |
| Schwert (1996) | 1975-91 | 13.40% | 647 | (-42,-1) |
| Servaes (1991) | 1972-87<br>1972-80<br>1981-87 | 21.89%<br>24.55%<br>22.80% | 577<br>338<br>366 | (-1,end) |

## 4. Conclusions and proposals for further research

The data presented and analyzed in the above sections of the paper demonstrate positive additional returns during the announcement date of corporate tender offers in the case of target-companies in USA which are relatively elevated than profits in mergers. Nevertheless, abnormal returns record a significant span between 14.6% and 47.3%, even if they are positive and statistically significant. The positive results for target-companies increase significantly in the case of more than one bidder-company, since the competition among bidder-companies results to increased abnormal returns for the latter.

In addition, an essential point to be taken into heed is the exceptionally high percentage of target-companies that present positive abnormal returns. As the majority of the empirical studies manifests, the percentages in question are found to be above 90%.

A significant outcome of the recorded event studies relates to the level of abnormal returns between completed and uncompleted tender offers. During the initial announcement date of tender offers the market employs the current available information without making an allowance for the final outcome of the prospect offer, since the results are almost similar for the target-companies that finally accept the offer with those that remain independent. Additionally, the empirical studies indicate that in the case of uncompleted tender offers in the USA the share prices of targets do not return to the pre-bid levels. In event windows varying from several months to two years after the date of the initial announcement of uncompleted tender offers the targets maintain significantly or entirely their primary profits.

The level of abnormal returns in tender offers is related to the length of the event windows and according to the event studies, higher returns are recorded in extended event windows. Moreover, the abnormal returns for target-companies in tender-offers appear to converge as the duration of the event windows is extended. Besides, the lower level in the breadth of abnormal returns that is recorded in long-term event windows is higher than the upper level of the corresponding breadth in short-term windows.

Investigating the diachronic trend of the phenomenon in the long-term event windows the results are similar, although in the 1980s there was an increased uncertainty about the results calculated in short-term windows. However, the sample periods in the majority of empirical studies refer to uninterrupted business activity, considering that the annual number of tender offers is quite limited.

The findings of the present study could serve as a starting point for further research in the field of tender offers. In particular, we find the positive results noted in US target-companies to be comparable with the results of other evaluation methods of M&As, especially to that of industrial organization field experts who are based on balance-sheet related changes. Moreover, the

results found could serve for the assessment of the results for targets-companies in developed, developing and emerging markets. Finally, the conclusions of that study could be the base of any critical evaluation of the economic impact that will be caused by present or future tender offers.

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# Corporate Ownership and Governance Structures:
## Basic Issues and Reform

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This survey paper analyzes the separation of corporate ownership and control, describes the different systems of corporate governance (insider vs. outsider system), identifies differences in the concentration and character of corporate ownership among OECD member-states and outlines the main theories used to explain them. It comments on the implications of these differences in terms of agency costs and highlights the mechanisms commonly used to mitigate the agency problems from separating ownership from control. A reference is made of the relationship between ownership structures and economic performance and the extent to which corporate governance structures in the different OECD member-states competitively converge with one another. Broad policy actions are proposed to improve the competitiveness of corporate governance systems with the ultimate purpose of safeguarding capital market integrity.

**JEL Classification codes:** G32, G34

**Keywords:** ownership and control, corporate governance structures, reform

## 1. Introduction

Corporate governance has been an object of intense reflection on the structure and control of publicly held companies. The problem of corporate control is dated back to Adam Smith and permeates the debate on corporate governance. The concept of 'corporate governance' is used to describe the system of rules and procedures employed in the conduct and control of listed companies, with the view of striking a proper balance between accountability and enterprise. The analysis of corporate governance aims at the optimization, within the new international environment, of corporate performance and the proper inclusion of interests of all those involved in the operation of the company: management, investors, creditors and employees.

Corporate governance has an internal and an external aspect of control: internal control is understood as the set of organizational rules within each listed company; external control, in turn, relates to the relationship of the company with external actors and the assessment of the performance of the company which is conducted through the normal function of market mechanisms. As Thomadakis (2001) points out, all these items have an impact on market integrity. Safeguarding of market integrity is the core target of modern economic policies.

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Ownership structures are crucial for the determination of control of publicly held companies. Different degrees of ownership concentration reflect the trade off between the diversification advantage of investing in many assets and the (private) benefits of control. Franks and Mayer (1995) argue that it is puzzling that the resolution of this trade off has taken such a variety of forms in different countries. Indeed, corporate ownership and governance structures differ among the OECD member-states. Some firms in the member-states are characterized by diffused ownership and managerial control, others by mostly concentrated ownership and still others by considerable stakeholder influence in the firm.

The diversification in ownership structures is seen as largely determined by legal, historical and evolutionary processes. Thus, an important question in modern corporate governance debates throughout the world is whether corporate structures in countries at a similar stage in their economic development will converge with one another (Bebchuk and Roe, 1998; Reinhard and Spindler, 1999). The question is most important in the diverse landscape characterizing European and Asian economies. On the one hand, the forces inducing convergence in corporate governance seem powerful: product and capital markets competition, discovery and dissemination of best practices, rapid information flows across boundaries. On the other hand, other powerful forces impede convergence, the most powerful impediments being rooted in path-dependence processes and other institutional factors.

Corporate ownership and governance structures largely depend on corporate and financial rules; hence, convergence of corporate structures depends considerably on the convergence of corporate and financial rules. Thus, for structural convergence to occur, the different countries' corporate and financial rules must converge. However, because of powerful path dependent and other institutional reasons corporate and financial rules in different countries might not converge. Even if state bureaucracy is efficient, a country's corporate and financial rules might be path dependent, as they depend both on the country's initial corporate governance structures, including tradition, interest group politics and foreign influences. The initial pattern of a country's corporate structures has created interest groups and accordingly determined their power to influence the pattern of evolution of corporate and financial rules. If a pattern of ownership and governance creates a group with positional advantage inside the firm and society, that group will often have the motivation and the means to preserve rules that favour it.

Consequently, the rules and regulations that a country will have in the future will depend on the type of corporate structures, rules and regulations that it began with. Once a country has rules that favour, for example, powerful professional managers over shareholders or other corporate constituencies, these managers will want to fight off a change in rules and often they will have the resources to do so. Similarly, a country whose rules favour, for example, concentrated shareholders will have a powerful interest group, namely the concentrated owners, who will want to fight off a change in rules. And similarly, a country whose rules favour stakeholder participation will not easily reverse course.

Moreover, depending on the initial corporate conditions, the efficiency of local structures is often path dependent: sunk adaptive costs, specialized socioeconomic formations and network externalities may impede structural change. Furthermore, even inefficient structures may tend to persist, owing to an insufficiently high level of transactions activity that could act as a catalyst for structural transformation. Thus, if higher transactions activity in a firm results in a reduction of the firm's controlling shareholder's wealth, then the controlling shareholder might impede the firm from further diffusing ownership, even if diffusion would be overall efficient for the firm. And management might impede their firm from moving to concentrated ownership even if moving there would be overall efficient. The question is whether the powerful forces of rapidly globalizing product and capital markets will succeed in inducing adequate structural change and convergence.

Thus globalization, competition and institutional structures reform put pressure on firms to change and adopt more efficient governance practices. But, equally, firms face powerful pressure to stay on their prior path, so the resultant speed and direction of change would then be an empirical question and, given the strength of the forces of persistence, it is doubted whether the result will be complete and rapid convergence, and a wide variety of different structures will tend to persist.

The issue of convergence of corporate ownership and governance structures is not only important at the state level but also at the level of investor and market

practitioners with respect to devising efficient investment strategies in the modern complex world. Indeed, traditionally share price returns and their variance have been explained by factors linked to the economic operations of the company, such as systematic risk, corporate size and P/E ratios (Fama and French, 1992) or by macroeconomic factors. In these models, the institutional environment, in terms of concentration and nature of voting rights, degree and composition of leverage, corporate and legal mechanisms to change control and corporate information disclosure, has rarely been included.

The purpose of the paper is to present an overall view as well as the discrepancies among the different corporate ownership and governance structures in the OECD states and provide guidance for efficient corporate governance reform. Within the OECD, the corporate governance landscape is particularly interesting because of its widely diverging nature and liquidity of the market for control rights. The paper is organized as follows. Section 2 discusses the main differences in ownership structures in the OECD member-States and the mechanisms for separating ownership from control. Section 3 presents the mechanism used for mediating the costs of separating ownership and control. Section 4 provides reference on the relationship between ownership structures and economic performance of firms. Section 5 analyzes the role of corporate rules, minority protection, and legal structures in the different OECD corporate governance frameworks. Section 6 focuses on key issues of corporate governance reform, i.e. as regards the direction for improvement of corporate and financial rules, and finally section 6 offers some conclusions.

## 2. Ownership concentration and voting power

### 2.1 The separation of ownership from control

The issue of separation of ownership and control is understood by reference to the owner-managed firm (see Adam Smith (1776), Book 5, Ch.1, Part 3, Art.1, and Berle and Means (1936) for initial references). In such a firm, the owner/manager possesses two principal attributes: first, s/he makes management decisions of the firm and, second, s/he has a claim on the profits of the firm. (These claims are sometimes called residual claims reflecting their accrual after all operational and fixed costs have been met). In a large publicly-held company, the shareholders own residual claims but do not exercise direct control over management decision-making. Correspondingly, managers have control but possess relatively small (if any) residual claims. The lack of control by shareholders is generally attributed to what is variously called free-rider, collective action, or coordination problems. Shareholders in a publicly-held corporation typically have limited legal rights to control the corporation. Shareholders do not have the right to engage in any day-to-day management of the corporation. Nor are they able to direct policy or to set executives compensation. And although shareholders have the right to elect directors, the management controls the voting (proxy) mechanism. In many countries, management may use corporate funds to solicit proxies while insurgents may use corporate funds only if successful. In spite of this, voting could be an effective instrument of control, at the absence of collective action problems. However, the existence of collective action problems greatly weakens and, in many cases, eliminates voting as an effective control mechanism. In order for a shareholder to oust incompetent management s/he faces significant expected costs. The expected return on such an investment to the shareholder, however, is a small fraction of the total return and, more importantly, small relative to the costs incurred. Thus shareholders typically have little incentive to engage in such challenges, even where the total expected gain of such an action is large relative to the costs.

The separation of ownership and control can benefit the corporation as a result of the interaction of three main factors. First, under certain conditions and for certain types of decisions, hierarchical decision-making may be more efficient than market allocation. Second, optimal firm size can be quite large, owing to economies of scale in both production and decision-making. Third, optimal investment strategy requires investors to be able to diversify their allocations in response to changing market conditions.

Under certain conditions, hierarchical decision-making may be more efficient than market transactions. Both hierarchical structures and market structures impose transaction costs. For some types of transactions, trading costs may be particularly high. If so, then hierarchical decision making may be more efficient (Coase, 1937; Williamson, 1979). An organizational form that

combines hierarchical organization and large size with diversified and liquid investment may possess informational, transactional and productive efficiency rendering it superior to other organizational forms. The separation of ownership and control permits the existence of an organization with these characteristics. In cases where the benefits outweigh the costs (including agency costs), efficient organizations will separate ownership from control, but this may take different forms (Knight, 1921; Arrow, 1974; Chandler, 1977; Fama and Jensen, 1983).

### 2.2 Insider vs. outsider corporate ownership economic systems

Drawing on the disperse ownership studies, some interesting features emerge from the comparison of corporate ownership structures in the OECD (La Porta et al., 1998b; Barca and Becht, 2000, 2001). Major differences in ownership concentration between some Continental European countries and the Anglo-American countries are highlighted in Tables 1 to 3. Differences in ownership structures can also be found among Asian economies (Claessens et al. 1999). Available evidence shows that ownership concentration is relatively higher in Continental Europe. In Table 1, large shareholders as a whole own more than 60 percent of the voting rights in joint stock companies in the former and only about 40 percent in the latter. On the other hand, large individual shareholders own on average higher voting rights in the Continental Europe than in the Anglo-American countries: the largest owner in the median UK listed company holds a stake of less than 15 percent and this stake is less than 5 percent in the US In contrast the largest shareholder (or group of large shareholders) controls 40 to 54 percent of the voting rights on the continent. About 85 percent of the listed non-financial companies in Continental Europe have a large shareholder, who holds a blocking stake, whilst in about 50 percent of the companies, the large shareholder owns an absolute majority. Becht and Mayer (2001) report that in most European companies there is a single voting block of shareholders that commands a majority of shares whilst, in contrast, in the UK and US the proportion is less than 3 percent.

More recent OECD evidence shows that the dispersion of ownership in the US and the UK is somewhat

**Table 1. Concentration of voting rights in selective OECD member-states**

| | Studies | Num. of companies in the sample | Disclosure Threshold | Total ownership concentration | | Largest shareholder | |
|---|---|---|---|---|---|---|---|
| | | | % | Mean | Median | mean | median |
| Austria | Gugler, Kalss, Stomper, Zechner | 50 listed (all) | 5 | 65.5 | 60.0 | 54.1 | 52.0 |
| Belgium | Becht et al | 150 listed (all) | 5 | 63.4 | 66.5 | 55.8 | 55.5 |
| France | Bloch and Kemp | 40 listed (CAC) | 5 | 52.0 | 30.0 | 29.4 | 20.0 |
| Germany | Becht and Boehmer | 374 listed (all) | 5 | < 65% | < 65% | n.a. | 52.1 |
| Italy | Bianchi, Bianco, Enriques | 216 listed (all) | 2 | 68.4 | 62.3 | 51.9 | 54.5 |
| Netherlands | De Jong, Kabir, Mara | 137 listed (all) | 5 | 62.5 | 69.8 | 42.8 | 43.5 |
| Spain | Crespi, Garcia-Cestona | 193 listed (all) | 5 | 65.1 | 63.2 | 40.1 | 34.2 |
| UK | Goergen et al. | 250 listed | 3 | 40.8 | 39.0 | 15.2 | 10.9 |
| US | Becht et al. | 1309 (NYSE) | 5 | 30% | n.a. | < 5% | < 5% |

Source: Barca and Becht (2000).

exaggerated. While the median largest voting block in these two countries is 10 per cent or less and 30 to 60 per cent in other countries (Table 2), there are also a number of companies with very concentrated voting power as shown in the maximum column and by the relatively large difference between the median and the mean. As in other countries these companies often reflect the dominance of a family holding. Much the same pattern emerges when considering the second and third largest voting blocks, with the UK rather more similar to Europe than to the US.The identity of the shareholders also differs widely in the OECD with financial institutions important in the countries reported with the exception of France (Table 3). The nature of the institution is also different with pension funds very important in the US and the UK The importance of banks in Japan

**Table 2. The predominance of voting blocks in selective OECD member-states**

| Country | Num. of cos | Largest voting block | | | | 2nd largest voting block | | | | 3rd largest voting block | | | | 4-10th largest voting block | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min | Med. | Mean | Max. | Min | Med. | Mean | Max. | Min | Med. | Mean | Max. | Min | Med. | Mean | Max. |
| | | | | | | | | | | | | | | | | | |
| Austria | 50 | 10.0 | 52.0 | 54.1 | 100.0 | 0.0 | 2.5 | 7.8 | 34.0 | 0.0 | 0.0 | 2.6 | 21.0 | 0.0 | 0.0 | 1.1 | 11.2 |
| Belgium | 140 | 8.4 | 56.0 | 55.9 | 99.8 | 0.0 | 6.3 | 10.3 | 44.3 | 0.0 | 4.7 | 4.5 | 18.3 | 0.0 | 4.7 | 4.7 | 18.3 |
| Germany | 372 | 0.0 | 57.0 | 49.6 | 100.0 | 0.0 | 0.0 | 2.9 | 45.2 | 0.0 | 0.0 | 0.6 | 32.0 | 0.0 | 0.0 | 0.5 | 24.0 |
| Spain | 193 | 5.0 | 34.5 | 40.1 | 98.0 | 0.0 | 8.9 | 10.5 | 36.1 | 0.0 | 1.8 | 3.5 | 24.3 | 0.0 | 0.36 | 3.3 | 22.7 |
| France | CAC40 | 0.0 | 20.0 | 29.4 | 72.7 | 0.0 | 5.9 | 6.4 | 19.7 | 0.0 | 3.4 | 3.0 | 8.5 | 0.0 | 0.0 | 0.5 | 7.1 |
| Italy | 214 | 2.1 | 54.5 | 52.3 | 100.0 | 0.0 | 5.0 | 7.7 | 34.0 | 0.0 | 2.7 | 3.5 | 26.4 | 0.0 | 0.0 | 5.1 | 45.4 |
| Nether-lands | 137 | 0.0 | 43.5 | 42.8 | 99.9 | 0.0 | 7.7 | 11.4 | 58.5 | 0.0 | 0.0 | 4.0 | 44.9 | 0.0 | 0.0 | 4.4 | 43.7 |
| Sweden | 304 | 1.6 | 34.9 | 37.6 | 93.4 | 0.6 | 8.7 | 11.2 | 41.2 | 0.2 | 4.8 | 5.6 | 27.9 | 0.0 | 1.3 | 1.8 | 15.5 |
| UK | 207 | 3.4 | 9.9 | 14.4 | 78.9 | 3.0 | 6.6 | 7.3 | 26.3 | 3.0 | 5.2 | 6.0 | 25.7 | | 3.9 | 4.1 | 10.1 |
| US: NYSE | 1309 | 0.0 | 5.4 | 8.5 | 92.9 | 0.0 | 0.0 | 3.7 | 40.1 | 0.0 | 0.0 | 1.8 | 25.0 | 0.0 | 0.0 | 0.9 | 15.6 |
| US: NASDAQ | 2831 | 0.0 | 8.6 | 13.0 | 99.5 | 0.0 | 0.0 | 5.7 | 48.8 | 0.0 | 0.0 | 3.0 | 24.1 | 0.0 | 0.0 | 1.6 | 22.1 |

Source: OECD Survey on Corporate Governance Developments. Nov. 2003. Barca and Becht (2001): The control of corporate Europe. Oxford University Press.

needs to be seen against the background that insurance companies are their major shareholders. With respect to the non-financial sector, individuals are dominant in the US but in most other countries, except the UK, it is other companies. This clearly reflects the operation of company groups in many countries.

Groups of companies are often associated with particular control devices such as pyramids and cross-shareholdings. The OECD notes that one study found that nearly 30 per cent of a large sample of European companies was in the third or lower down layers but that a third also showed no deviation of cash flow from voting rights. The lowest deviation for the average cash to voting rights ratio was in the UK while there were large deviations in Belgium, France and Germany, with a rather complex picture emerging for Italy.

The pattern of concentration ownership provides the basis for the descriptive distinction between an insider and an outsider system of corporate governance. High ownership concentration characterizes the insider system. In the latter, the corporate sector has controlling interests in itself because companies have grown to multi-branch financial conglomerates; the number of listed companies is small compared to the size of the

**Table 3. Ownership of common stock in selective OECD member-states (percent, at year end)**

| Ownership composition | USA (1996) | Japan (2001) | Germany (1996) | France (1994) | UK (1994) | Italy (1994) | Sweden (1996) | Australia (1996) | Korea (1996) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Financial sector, of which: | 46 | 40 | 30 | 8 | 68 | 8 | 30 | 37 | 26 |
| • Banks and financial institutions | 7 | 30 | 10 | 4 | 10 | 5 | 1 | 4 | 12 |
| • Insurance firms & pension funds | 28 | 10 | 12 | 2 | 50 | 3 | 14 | 25 | 6 |
| • Investment funds | 12 | 0 | 8 | 2 | 8 | 0 | 15 | 8 | 8 |
| Non-financial sector, of which: | 54 | 60 | 70 | 92 | 32 | 92 | 70 | 63 | 74 |
| • Non-financial enterprises | 0 | 22 | 42 | 58 | 1 | 25 | 11 | 11 | 21 |
| • Individuals | 49 | 20 | 15 | 19 | 21 | 50 | 19 | 20 | 34 |
| • Public authorities | 0 | 1 | 4 | 4 | 1 | 8 | 8 | 0 | 7 |
| • Foreign | 5 | 18 | 9 | 11 | 9 | 9 | 32 | 32 | 12 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Source: OECD Survey on Corporate Governance Developments. Nov. 2003.

economy; and the capital market is illiquid and therefore small because controlling blocks are held by a few dominant shareholders. Moreover, in spite of all the efforts made to simplify corporate structures, a large number of holdings or interlocked companies remains, which de facto deter any attempt by outsiders to control any of them (Renneboog, 2000). Thus, while corporate rules in an insider system usually offer the opportunity to participate in company earnings, outside investors have little hope to trade and acquire control.

In contrast, low ownership concentration characterizes the outsider system, which is dominant in the Anglo-American countries. In that system, the number of listed companies is large; the right to participate in company earnings is extended, as is the ability to acquire control of the company's equity capital. The outsider system is effectively market-oriented, that is, characterized by a liquid capital market with frequently traded ownership and control rights. Corporate structures are characterized by the existence of few corporate holdings or interlocked patterns of ownership. Finally, there are few major, controlling shareholdings and these are rarely associated with the corporate sector itself (Wymeersch, 1994, Franks and Mayer, 1995).

The relative efficiency in providing economic benefits and securing adequate accountability to shareholders and society has also been a major object of concern regarding the insider and outsider systems. As Allen and Gale (1995) argue, the former systems proved historically more efficient in diffusing risks over time, whilst the latter systems proved historically more efficient in diffusing risks across sectors or countries.

Much of the debate regarding the understanding of the differences in ownership structures as well as their historical evolution largely sprang from two prominent theories of 'law and finance'. The first, proposed by Roe (1994), argues that in the US legislators responded to a populist agenda in the 1930's by limiting the power exercised by large financial conglomerates. This was accomplished by introducing legislation that restricted the control rights of large block holders. The second, associated with La Porta et al. (1998a), argues that concentrated ownership is a response to inadequate regulation. According to their view, in the absence of adequate protection, investors seek to protect their investments with the direct exercise of control through large share blocks. The intuition is that investors are not willing to provide equity to finance a firm unless they are confident of receiving a fair return from their investment. If shareholder protection is low, minority shareholders require a high return from their investment to be compensated for the high risk of expropriation by the controlling shareholders. Hence, external finance is costly and fewer companies go public. Moreover, the 'law and finance' theories make the immediate prediction that stock market development should be positively correlated with shareholder protection. Consistent with this prediction, La Porta, et al. (1997) find that in the '90s countries with stronger shareholder protection and common law are characterized by larger stock markets. Moreover, Shleifer and Wolfenzon (2002) argue that ownership concentration should characterize countries with low shareholder protection because of the inability of companies to sell equity to minority shareholders when investors are not well protected by the law. Bebchuk (1999) points to the fact that control is valuable in countries with low investor protection and therefore companies are closely held to make sure that control is not contestable. Wolfenzon (1999) argues that pyramidal groups are created in order to expropriate shareholders and this should happen more often in countries with lower investor protection. Bebchuk et al. (1999) suggest the same empirical prediction by highlighting that pyramidal and cross-holding structures allow a separation between ownership and control in a country in which control is very valuable.

Recently the understanding of the differences in and dynamics of ownership structures has been the object of research of the 'political economy' theory. The 'political economy' approach stresses that ownership structures and financial development is the outcome of socio-political processes and decisions. If compared with the 'law and finance' approach, this theory is very dynamic in nature, since changes in the political power of different constituencies can alter the disposition of a country towards financial development. As with any political decision, financial development is the outcome of ideology and the economic interests of voters and pressure groups. Rajan and Zingales (2002) argue that the stock market can be fostered or hampered by government action dependent upon the balance of power among interest pressure groups. Pagano and Volpin (2001) and Bias and Perotti (2002) argue that state intervention in the economy should be negatively correlated with fi-

nancial development, because the state acts as a substitute for financial markets. Finally, Perotti and von Thadden (2003) and Perotti and Volpin (2002) suggest that incumbent families may lobby the government to keep financial markets underdeveloped to preserve their power by preventing entry by potential competitors. One prediction of these political economy theories is that financial development should be negatively related to government ownership of companies.

The 'political economy' view predicts that ownership should be more concentrated and companies should be organized into groups in countries where the government has a big role in the economy (Pagano and Volpin, 2001). When the state has a great involvement in the economy, firms need political support to grow. Hence, to maximize their political clout, businessmen need to maximize the value of assets under their control. With concentrated ownership and pyramidal groups, both goals are attained. If the government has a more limited involvement in the economy, political connections are less important. Hence, pyramidal groups and concentrated ownership are less diffuse.

### 2.3Cash flow versus voting rights

OECD equity markets display both quantitative similarities and qualitative differences. Indeed, as shown in Tables 1 to 3, the nature of the main shareholders varies from country to country. Obviously, each category of shareholder has different incentives or abilities to exert control. For example, there is little evidence that institutional investors undertake any disciplinary actions against poorly performing management (Stapledon, 1996). In contrast, corporate shareholders might value dominant shareholding positions not only for the financial return of their investment but also for other potential benefits of control, especially when a customer or supplier relation exists with the target company (Barclay and Holderness, 1989).

The complexity of ownership structures also varies across OECD countries. Dispersed ownership structures in some states, concentrated ownership structures in others, and pyramidal ownership structures in which a shareholder is able to exercise control while maintaining only a small fraction of the equity cash flows, are observed (Barca and Becht, 2000; Bebchuk et al, 1999). The complexity of ownership structures determines the separation of ownership from control of corporations and the value of voting rights.

The value of voting rights and thus the private benefit from control varies between the small 'outside' shareholder and the majority 'inside' block holder. The value to a small outside shareholder is closely related to the chance that the voting right will become pivotal, for example, in a control contest (Zingales, 1995). On the other hand, the value to the majority 'inside' block holder is related to the superior cash flows s/he can generate for the firm, and to the private benefits s/he can extract (Grossman and Hart, 1988; Harris and Raviv, 1988). Recent analysis further proposes that separation of control from cash flow rights helps majority shareholders achieve higher bid prices for the firm (Burkart et al., 1998).

The separation of control from cash flow rights can occur through various mechanisms of varying importance. Many had already been identified by Berle and Means (1932) for US registered and listed corporations, but many are not available under US company law. Not all mechanisms are legal in all OECD member-States. For example, some devices leverage voting power at the level of the general assembly and/or the board (supervisory board). The importance of these devices differs between member-states and can be found in national corporate disclosure standards, company law provisions and corporate practices.

The legal and non-legal devices most commonly used for separating ownership from control in the OECD member-states include the following (Becht, 1997): (1) Majority voting for decision making introduces a separation of ownership from control. (2) Legal forms can be designed to induce a complete separation of ownership from control. For example the German Kommanditgesellschaft auf Aktien has some unlimited liability owners (Komplementire) who run the company. A second class of limited liability owners (Kommanditen) contribute equity capital but their control rights are very limited. (3) Corporate statutory provisions can contain control relevant statues. For example, they might automatically appoint certain members of the board. Many of the other instruments in this list are recorded in or enacted through the company statute. In most OECD countries, the majority needed to change the provisions of statute can be increased from the prescribed legal minimum. Hence, the voting block necessary to prevent statute changes can be very low. Hence, pure statutory provisions can contribute

significantly to separating ownership from control. (4) Multiple voting rights (dual-class stock and golden shares) can be, and are in fact, attached to stock issues by many OECD corporations. In order to exercise control, dual-class shares may be issued, but the maximum proportions of voting to non-voting shares as well of totally issued shares in each category are largely determined by corporate rules. For example, one type of stock gives one vote per unit of par value, a second type of stock gives l00 votes per unit of par value. In some countries the stock can be of the same type, but some shares the 'golden shares' have multiple voting power. (5) Non-voting stock can be issued by almost all OECD corporations. Although it is not necessary, non-voting stock is usually issued with special cash-flow rights. There are limits on the fraction of non-voting stock that can be issued as a fraction of total capital. (6) Voting caps impose a limit on the number of shares a shareholder can vote, irrespective of how many voting shares are held. Voting caps introduce an 'inverse separation' because they disperse control. (7) Voting rights that are not attached to equity (paid in capital) can be issued through a special type of ownership certificate in some OECD countries. For example, in Belgium parts beneficiaries can have voting rights and/or cash-flow rights attached. It is possible to issue such certificates, with attached voting rights, to someone who has not paid in any capital. There are limits on the fraction of parts beneficiaries in total capital. (8) Investment and pension fund absenteeism. In the US, mutual funds are a special type of mutual society owned by those who deposit funds. Depending on the governance procedures of the fund, there is a separation of ownership from control. If the funds do not vote at all, the separation is complete. In Europe investment funds are often owned by financial institutions. The investment contract or the law usually do not require these funds to ask their depositors for voting instructions. Either the funds claim to invest 'passively' (exert governance through buying and selling), or they claim to vote in the best interest of their clients. (9) Voting pacts among shareholders who can write contracts in which they agree to vote in an agreed way. (10) Pre-emption pacts can exist among shareholders who often sign (mutual) agreements to buy each other's shares in case one of the parties wants to sell them. (11) Option contracts (call-options or put-options) can be signed which have effects similar to those of pre-emption pacts. (12) Safekeeping-custody of shareholder shares through their deposit with a financial institution. The financial institution is often given the right to vote the shares (explicitly or by default). Although the financial institution might be required to ask its customers for voting instructions, few shareholders take advantage of this possibility. The German Depotstimmrecht is a well known example. (13) Collateral of shares and/or voting rights can be put up by shareholders, transferring the authority to exercise control. (14) Annuity contracts can be signed involving the selling by shareholders of their shares and/or voting rights. For example, the cash-flow rights are transferred and the seller receives a monthly payment until s/he dies. The voting rights are still exercised by the seller. Alternatively, the voting rights are sold. (15) Control and cash-flow contracts can be signed by companies in many countries. After the contract is signed the management of the controlled company responds to the management of the controlling company, not the owners of the company. Companies can also sign cash-flow contracts. (16) Foundations and associations (voting trusts) can exist within which company share placement occurs. The foundation keeps the voting shares and issues cash-flow ownership certificates that are held by the general public. Hence, although the company has issued no non-voting stock, it is governed as if it had issued 100% of non-voting stock. In many countries foundations and associations are not subject to any disclosure requirements. In Germany they are not even subject to Federal Law, but to the law of the Federal Regions (Linder). (17) Treasury shares can separate ownership from control because controlling stakes are leveraged. For example when a company owns 50% treasury shares, ownership of 25.01% of the voting stock provides for a simple majority. (18) Hierarchical groups (pyramidal groups) can be created. In corporate pyramids, a controlling minority shareholder holds a controlling stake in a holding company which, in turn, holds a controlling stake in various operating companies. This device is based on the idea that the separation of ownership from control introduced by majority voting and/or the devices listed above can be increased by chaining several companies. Each company brings in additional external capital while the agent who made a small investment initially (or no investment, in the case of the voting trust) retains control of

the complete chain. The longer the chain and/or the larger the number of companies that break with the 'one-share-one-vote' rule and/or the larger the break, the higher the degree of separation. The structure of the chain (pyramidal or double helix) is of little importance, the principle is always the same. The problem of such group structures is to keep control of all entities in the group that can become large very quickly. This problem is often overcome by chaining holding companies. In the extreme case these holding companies have no employees and they are run out of a post office box. Interlocking directorates are another way of minimising the chain size problem. (19) Cross-holdings of company shares can horizontally occur. In cross-ownership corporate structures, companies are linked by cross-holdings of shares that reinforce and entrench the power of those who exercise central control. Although a company might not hold or control treasury shares outright, cross-share holdings and 'loops' can have a similar effect. The loops can involve other devices listed here which give additional leverage to the separation effect. Cross-holding structures differ from pyramidal structures in that the voting rights used to control a group remain distributed over the entire group rather than concentrated in the hands of a single shareholder or company. (20) Influence can be exerted by outside entities on shareholders without controlling or owning any of the voting rights. For example, large customers and/or suppliers of factors and/or debt finance can use their influence to have representatives appointed to the company board (or supervisory board). Franchising contracts also fall within this category. (21) Co-determination in decision-making, characterizing economic systems where the role of worker councils or other constituents is strong, can give the company employees control rights without them owning any of the shares of the company. In the German case, 50% of the supervisory board members are appointed in this way (but the capital side has the casting vote). (22) The chairman of the board, who, in two-tier board systems, especially with co-determination of decisions, has the casting vote of the supervisory board and thus enjoys disproportional power. Being the chairman of the supervisory board provides considerable leverage for the other devices listed here. (23) Interlocking directorates can provide additional leverage to mutual control contracts and reinforce any of the other instruments listed here. (24) Voting costs can, especially when associated with the existence of a free-rider problem (for minority shareholders), lead to low attendance rates at general meetings. Since most decisions are taken (at the latest after calling a second meeting) on the basis of majorities that are calculated as a fraction of the votes present at the meeting, absenteeism can provide considerable leverage for attending block-holders, which grows with dispersion. The existence of these devices and structures can significantly distort the incentives of those who exercise control, thus putting pressure on regulatory and non-regulatory mechanisms of governance improvement. (25) Leverage. Depending on corporate financing decisions, cash flow rights are divided not only among shareholders, but between shareholders and debt holders. Thus, control may be separated from cash flow rights not only by allocating control rights to minority shareholders, but also by taking on substantial debt (high leverage). In this situation, controlling shareholders hold most or all the equity titles with the attached voting rights, but a large portion of cash flow rights must be paid out to debt holders. The latter can be typically seen as non-voting stakeholders and, in some respects, resemble minority shareholders. The fact that debt holders generally enjoy the fixed entitlement with priority over the claims of shareholders alters the nature of the agency problem, making it largely dependent on insolvency considerations.

The extent of corporate leverage and thus the relative strength of equity holders vs. the bondholders can be shown by corporate debt to equity ratios. The latter has been the object of considerable country or sector research, but aggregated cross-country data are not easily available. During the last two decades corporate debt to equity ratios in the industrialized world have shown considerable change, both in their value and as percent of GDP, as a result of the sharp increase in both equity and debt issues that followed the progressive capital markets liberation and the public issuance of sophisticated financial securities. Table 4 below presents aggregate values on the long-term private sector debt to equity ratios for selective OECD member-states for the period 1980-95. As can be seen from the table, the ratio is low in the UK and the US and high in Germany and Japan, indicating the important role of bondholders in the latter states.

## 2.4 Ownership structures

The great variety of devices and mechanisms for separating ownership and control is associated with a great variety of resulting ownership structures in the OECD member-states. Germany, for example, is characterized by complex share holdings around and within industrial

**Table 4. Long-term private debt: equity ratios in some OECD members, 1980-95 (%)**

| | 1993 | 1994 | 1995 | 1980-85 | 1986-90 | 1991-95 | 2001* | 2006* |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| US | 3.5 | 4.0 | 4.6 | 2.0 | 5.9 | 5.8 | 5,1 | 4.1 |
| UK | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | - | - |
| Germany | 21.1 | 13.1 | 18.3 | 22.5 | 11.0 | 17.7 | - | - |
| Japan | 44.1 | 31.3 | 50.2 | 10.1 | 6.1 | 46.2 | 156,0 | 101.7 |
| Korea | 9.0 | 4.7 | 5.4 | 7.5 | 1.6 | 6.4 | - | - |
| Greece | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | - | - |
| Mexico | 33.5 | 5.2 | 34.0 | 5.0 | 5.5 | 4.1 | - | - |
| Portugal | 0.7 | 0.7 | 0.6 | | 0.8 | 0.6 | - | - |
| Turkey | 0.1 | 0.0 | 0.0 | 0.5 | 0.5 | 0.1 | - | - |

Source: Aylward and Glen (1998)

Notes: The figures in the table are calculated from IFC data provided in tables A2 and A5. The countries presented in the table are the only OECD member-states included in the data set. Figures for 2001 and 2006 are from IMF: Global Stability Report 2008.

groups (Becht and Boehner, 2000). In Japan, company handbooks regularly report the proportion of equity held in 'floating shares', that is, shares that might be sold without the consultation of the firm in question. Rarely are over 40% of shares traded openly and for most firms less than 30% of shares are traded on a floating basis (Jackson 1997). Corporate ownership in both Germany and Japan is mostly in the hands of other non-financial firms, banks, and insurance firms. These owners are large institutions who often have overlapping and multiplex relations to the firm, such as banks that act as creditors and owners. Compared to the US, individual share ownership in Japan is small and the role of institutional investors such as pension funds is limited. As a result of this sectoral composition, corporate ownership is highly concentrated. However the differences between Germany and Japan are also particularly important and relate to the structure of the inter-corporate network.

The French system is characterized by ownership cascades of financial groups and cross-company share holdings (Bloch and Kremp, 2000). In Italy, long pyramids controlled by state or family-owned corporations are typical (Bianchi et al., 2000). More than a third of listed and non-listed Belgian companies are controlled by financial holdings companies (Becht et al., 2000), while in most Dutch listed companies the separation of ownership from control is almost absolute, as blocks of voting rights are not held by shareholders but by an Administration Office (De Jong et al., 2000). Finally, although state controlled ownership has decreased substantially in Spain since 1995, state holding companies still own a golden-share in strategic sectors (Crespi and Garcia, 2000). In Sweden, dual-class shares have been commonly used to exercise control. The Wallenberg group itself holds about 20 percent of the equity but 40 percent of the voting rights in the group's principal holding company, which controls listed companies. However this family is selectively increasing its stakes in some firms and divesting of its stake in others, apparently in order to attract foreign capital (Agnblad et al. 2000). In Austria the importance of ultimate family (dispersed ownership structure is one where no shareholder owns a stake in excess of 5%) ownership of large firms is relatively smaller than the importance of the state's and banks' equity holdings, in contrast to the German situation (Gugler et al., 2000). Together, state and banks' ultimate ownership equals 30% of the equity of the largest 5% of Austrian firms. In Korea, the proportion of Chaebol corporate structures in the national economy is very high and firms controlled by them occupy dominant positions in most industries. Owners of most Chaebols exercise complete control of them as well as their subsidiary firms, include few persons or a family and ownership succession remains within the owner's family. The degree of ownership concentration is high through stockholding by the owner and his/her family and cross-holding among Chaebols' member

firms (Lee, 2003). In Greece, corporate ownership is concentrated but equity is owned mainly by the financial and not industrial sector firms, whilst foreign ownership ranges from 20 to 35 percent of total equity (Mertzanis, 2003). In Turkey, corporate ownership in the manufacturing sector is concentrated and most firms are owned by relatively small number of owners, whilst foreign ownership is significant in the finance sector (Sarac, 2002). Ownership structures in eastern-European OECD member-states are characterized by a high proportion of foreign ownership (Hunya, 2000).

La Porta et al. (1998b) observe that pyramids and cross-holdings are the most common institutional mechanisms for exercising control in OECD member-states, whilst block-holders do not always exploit the private benefit potential from owing dual-class shares. The existence of similar devices for separating ownership from control is documented for non-OECD states, by Weidenbaum (1996) for China, by Solomon (1996) for Thailand, by Morais (1998) for India, by Hauser and Lauterbach (2004) for Israel, and Gregoric and Vespro (2003) for Slovenia.

These differences reflect different institutional development trajectories and different corporate and financial rules, and have important implications in terms of the one-share-one-vote principle. Ownership pyramids, for instance, manifested in financial conglomerates, allow power concentration with limited investment, since controlling a target company can be achieved via a number of subsidiaries and a chain of absolute majority of their voting rights. In financial conglomerates, with one intermediate holding, the ultimate shareholder retains absolute control while receiving only 25 percent (0.51*0.51) of the cash flow. Thus, cash flow rights are not the same as voting rights, since through control leverage one may detain control over a large number of entities while only investing small sums and being entitled to only a small portion of cash flows. Whereas legal restrictions have impeded the occurrence of ownership concentration in the UK, they are common practice in Continental European states.

As pointed out before, another way of amassing voting power is through voting pacts and proxy votes. For example, voting pacts are common in Germany (Chirinko and Elston, 1995) and German banks commonly use proxy votes of the shares deposited in their custody (Wenger and Kaserer, 1997). Moreover, the erosion of voting power can be attained by the imposition of voting caps. An extreme case is the Netherlands where under the prevailing 'structural governance regime', non-voting certificates are distributed to ordinary shareholders while the voting power is given to a foundation controlled by company insiders (De Jong et al, 2000). In Germany, Belgium, Spain or Greece, a decision by the board of directors can limit any percentage of voting power to e.g. 5 percent. Usually, the board of directors can install voting caps after prior concern of the annual general meeting, which may approve it for a certain period of time and under certain conditions. Whereas dual class shares are frequently used to separate ownership from control in Sweden (Agnblad et al, 1999), this has been actively discouraged in the UK by the LSE (Brennan and Franks, 1997).

Finally, since the take-over wave in the 1980s, several anti-takeover devices, such as poison pills including shelf registration of equity, issuing bonds cum warrants or convertible bonds, are frequently used to dilute the voting power of 'hostile' shareholders. With prior consent by the shareholders at an annual meeting, the board of directors can issue new equity, place it with 'friendly' shareholders and thus dilute the share stakes of other shareholders.

### 2.5 Separating ownership and control: agency costs

Adam Smith considered the separation of corporate ownership and control to be problematic in that corporate managers would lack the incentives to run the corporation in the interests of owner-shareholders and would thus operate the business inefficiently. Later, Jensen and Meckling (1976) characterized the separation of ownership and control as an 'agency' problem. In the agency approach, shareholders are modelled as principals and managers are modelled as agents, who maximize personal utility. The question is how to provide the agent with incentives to induce behavior beneficial to the principals. Agency analysis studies the costs of providing such incentives and the costs resulting from the extent to which agents' behavior will still deviate from the interests of the principal even in the presence of such incentives.

Thus, the costs of the separation of ownership and control are the usual principal-agent costs, on the basis of which both the insider and outsider corporate governance systems are characterized by weaknesses

and strengths: (see Table 5). Agency costs materialize broadly in the form of costly and/or inefficient monitoring, free-riding, reduced liquidity and portfolio diversification, higher cost of capital and limited takeover discipline and they are also important in choosing investment projects, selecting investment policy and deciding on control transfer, thus affecting overall financial development. Depending on the separation between cash flow and voting rights of shareholders, investment projects may be inefficiently (i.e. accrue lower overall market value) chosen because they accrue larger private benefits. Firms, operating under dispersed ownership structures, may be induced to inefficiently retain free cash flows even when they lack profitable investment opportunities or to inefficiently expand/contract, whilst those operating under concentrated ownership structures may induce controlling shareholders to extract private benefits from unprofitable projects. Also, transfer of control may take place either by controlling shareholders retaining voting advantages, or by non-controlling shareholders succeeding in participating on equal terms with controlling shareholders.

The Anglo-American system, characterized by high dispersion of voting and cash flow rights, leads to weak owners and strong managers and may induce free riding on control (Shleifer and Vishny, 1986a, 1997; Roe, 1994; Hart, 1995b, among others) and absenteeism in general meetings ('exit' instead of 'voice') (upper left segment of Table 5). As a single small shareholder only benefits from performance improvements in direct proportion to the cash flow rights, s/he may not find it profitable to monitor management while a large shareholder will necessarily feel differently. This situation may result in agency conflicts between management and shareholders. Law monitoring resulting from voting rights dispersion might be counterbalanced by increased bank monitoring (Edward and Fischer, 1994, 1998) or proxy contests. Still, the large free float allows investors to take advantage of portfolio diversification possibilities and introduces the discipline of the (hostile) take-over markets (Martin and McConnel, 1991; Franks and Myer, 1996). Opponents to this view (e.g. Fama 1980) argue that managers are effectively constrained from taking actions that do not maximize shareholder wea1th. In effect, it is assumed that existing disciplining mechanisms suffice to assure profit maximization despite the presence of a dispersed ownership structure. Among these are the board of directors, the threat of takeover, the managerial labour market, competition in the product market, or the financial structure of the firm. Depending on which effects dominate, control either resides with the managers or is transferred to the market (Becht and Mayer, 2001). Advantages of dispersed ownership include enhanced liquidity of stocks, better diversification opportunities, and presumably lower costs of equity capital.

Concentration of ownership and voting rights, on the other hand, stimulates corporate governance actions against under-performing management (lower right segment of Table 5). Major shareholders have the incentives and the power to monitor managers, since cash flow and control interests are concentrated and aligned. A large fraction of the benefits of monitoring can be appropriated, and concentrated voting rights provide shareholders the necessary power to influence the decision-making process. Pyramidal and cross-holdings structures are very common here. However, there are also disadvantages associated with concentrated ownership and voting power: Firstly, concentrated ownership reduces the possibilities for diversification and the liquidity of stocks due to the low free float and hostile takeovers are virtually ruled out. From a social viewpoint, undiversified risk-averse owners may undertake investment projects that are suboptimally risky and yield suboptimal returns. Secondly, concentrating voting power raises the likelihood that large block-holders or majority owners may collude with management to exploit small shareholders. This may raise the cost of equity capital for these firms as rational minority shareholders demand a discount on shares. In this case, controlling shareholders may be entrenched but internalize most of the value effects of their decisions through their shareholdings.

The upper right and lower left segments of Table 5 present the other combinations of concentrations of ownership and voting rights which can be attained by some of the instruments described above to amass or dilute voting power. For example, when shareholder coalitions or proxy votes are allowed, the supervisory power of a block of shareholders vis-à-vis management increases, but the agency conflicts shift from shareholder-management towards large versus minority shareholders. The segments capture moreover the cases where small controlling shareholders hold a small

fraction of the cash flow rights in their firms, and as this fraction declines, they may externalize progressively more of their costs due to moral hazard, thus raising agency costs, dependent of course on the prevailing constraints on their decision-making. By concentrating voting power but not ownership, some degree of liquidity and risk-sharing opportunities can be preserved, and, at the same time, direct monitoring is possible. However, since controlling block-holders have a disproportionate stake in the companies' profits, they are even more likely than large shareholders to seek other forms of compensation. The block-holder bears a fraction of the costs of rent-seeking activities but receives full benefits. Potential problems arise from a conflict of interests between controlling block-holders and minority shareholders. This problem may be particularly severe in the case of small shareholders of listed companies that belong to pyramidal groups. For example, they can be expropriated by block-holders who control the whole group through intra-group transfers (Barca 1997; Zingales 1994).

Taking now the issue of leveraged structures, agency costs depend positively on the probability of insolvency of the debt issuing firms (Jensen, 1986). The higher the probability of insolvency the higher the difficulty of shareholders to internalize all costs and benefits of their decisions. Indeed, depending on the significance of insolvency risk and the priority of private shareholder benefits over debt claims, the controlling shareholders in leveraged firms may be induced to choosing

**Table 5. Ownership and voting power: structure and consequences**

| | *Dispersed ownership and dispersed voting power* | *Dispersed ownership and concentrated voting power* | *Concentrated ownership and dispersed voting power* | *Concentrated ownership and concentrated voting power* |
|---|---|---|---|---|
| *Where to be found* | Anglo-American countries | Countries where a stakeholder can collect proxy votes and shareholder coalitions are allowed | Any company with voting right restrictions | Continental Europe, Japan, any company after takeover |
| *Advantages* | • Portfolio diversification and liquidity<br>• Take-over possibility | • Monitoring of management<br>• Portfolio diversification and liquidity | • Protection of minority rights | |
| *Disadvantages* | • Insufficient managerial monitoring<br>• Free riding problem | • Violation of one-share-one-vote<br>• Reduced take over possibility | • Violation of one-share-one-vote<br>• Law monitoring incentives,<br>• Law portfolio diversification possibilities and low liquidity<br>• Higher cost of capital<br>• Reduced take over possibilities | • Low portfolio diversification possibilities and low liquidity<br>• Reduced take over possibilities |
| *Agency conflicts* | Management vs. shareholders | Controlling block holders vs. small shareholders | Management vs. shareholders | Controlling block holders vs. small shareholders |

Source: European Corporate Governance Institute studies

risky projects and higher leverage. As regards dividends and share buy-back, leveraged corporate structures induce, due to insolvency risk, higher distribution rates to shareholders, thus discouraging corporate growth. Transfer of control is also affected by the extent of corporate leverage. In concentrated ownership structures, a controlling shareholder may, depending on the prevailing legal regime, refuse an efficient sale or accept an inefficient one, but in leveraged structures the same controlling shareholder will always deal with a higher-valuing purchaser, since potential purchases of equity can extract the same value from creditors by leveraging.

In leveraged structures, agency costs depend also on the relative contractual safeguards between shareholders and debt holders. The shareholders control over the leveraged firm is contingent on satisfying the conditions and promises contained in the contract be-

tween shareholders and debt holders, thus constraining their ability to take private control benefits. Moreover, given their enforcement rights, debt holders generally contract a richer set of protections than minority shareholders do.

The extent of ownership concentration affects shareholders' incentives to make efficient decisions on investment selection, firm size and control transfer. Bebchuk et al (1999) argue that agency costs associated with concentrated ownership firms increase as the fraction of equity cash flow rights held by their controlling shareholders declines. Moreover, although agency costs of concentrated ownership structures resemble in some respects those of debt structures, they are not limited by the contractual protections and incentive characteristics that constrain the opportunism of controlling shareholders in leveraged firms. Thus, concentrated ownership agency costs can be larger than those of highly leveraged firms.

The factors that determine the choice of post-IPO ownership structure by controlling shareholders are likely to include transaction costs, legal restrictions (i.e., on the use of multiple voting shares or dual-class equity, or on pyramids), political and reputational constraints (encourage more opaque structures of cross-ownership) and other social influences. A first important question, that can be explored empirically, is whether controlling shareholders actually exploit this potential of determining desired ownership structures. Moreover, given the magnitude of the potential agency costs associated with concentrated ownership structures, a second important question arises which concerns the actual costs associated with these firms in so doing. These costs turn on how far legal protections and reputational considerations limit the opportunism of concentrated ownership controlling shareholders: for example, the extent to which agency costs are reduced by borrowing heavily from sophisticated monitors such as banks. The magnitude of concentrated ownership agency costs bears importantly on explaining the incidence of concentrated ownership structures. But estimating these costs will not be easy. In effect, we must assess the values of the identical firm in a concentrated ownership and a single owner structure.

The large size of potential agency costs under concentrated ownership structures needs an explanation. Within the 'law and finance' approach, we can identify two broad views. The first view has been to search for countervailing efficiency benefits associated with concentrated ownership structures that offset their agency costs ( Jensen and Meckling, 1976). Such factors, if they could be identified, might naturally explain the existence of concentrated ownership structures. One thing that makes this approach difficult is that concentrated ownership structures are common with lax corporate rules, even though the agency costs of such structures tend to be larger in such countries. This implies that, to be able to explain the observed patterns of ownership, the considered line of research would have to identify some countervailing efficiency benefits that are likely to be large in countries with lax rules.

The second view is based on the idea that even when concentrated ownership structures do not have redeeming efficiency benefits, they might nonetheless arise when private benefits of control are large (Bebchuk, l998; Wolfenzon, l999). This decision by the initial owner of a company who takes it public on which structure to choose is shown to depend heavily on the size of private benefits of control. When these benefits are large and thus control is valuable enough- invites attempts to seize control. In such circumstances, an initial owner might choose to maintain a lock on control to prevent rivals from attempting to seize it merely to gain the private benefits of control. Furthermore, when private benefits of control are large, choosing a controlling shareholder structure would enable the company's initial shareholders to capture a larger fraction of the surplus from value-producing transfers of control. Both results suggest that, in countries in which lax legal rules allow large private benefits of control, controlling shareholders will choose to retain a lock on control when taking their companies public. And if these founders prefer to hold just a limited fraction of the cash flow rights to avoid risk or conserve funds, they will look to concentrated ownership structures to lock in their control.

Consequently, in countries in which private benefits of control are large, controlling shareholders will be more likely to raise additional capital by selling cash flow rights with no or disproportionately small voting rights, that is, by creating a concentrated ownership structure, even if this structure would impose larger tax and agency costs. The reason is that, while the controlling shareholders will fully bear the reduction of private benefits from forgoing their lock on control, the effi-

ciency gains from eschewing a concentrated ownership structure would be partly shared by the existing public investors.

The two explanations described above are rather complementary in that they both stress the role of significant private benefits for the shaping of concentrated ownership structures. This conclusion seems consistent with the findings of La Porta, de-Silanes and Shleifer (l998b), who observe that concentrated ownership structures are more common in countries where the legal protection of investors, as measured by their index, is low.

However, agency analysis proved to be an imperfect fit for the study of the separation of ownership and control. Stiglitz (1989) argued that the problem addressed by the principal-agent literature is 'how one individual, the principal, can design a compensation system, which motivates another individual, his agent, to act in the principal's interest'. Embodied in this statement are two concepts that are at odds with current analyses of the separation of the ownership and control. First, modern analyses do not all take as its ideal the notion that the shareholder should have the ability to monitor or control management. Indeed, policies that encourage shareholder control may undermine the benefits of the separation of ownership and control outlined above. Instead, much modern analysis has focused on how actors other than shareholders may effectively monitor and constrain managerial behavior. These include other stakeholders (i.e. bondholders/creditors), lawyers (in the prosecution of derivative and class action suits), regulatory authorities, market participants (i.e. potential acquires), and the State. Second, and perhaps more importantly, many modern analyses do not assume that it is always socially optimal and therefore desirable for managers to act in the best interests of their current principals. Berle and Means (1932) suggested treating shareholders as just another set of investors who have no necessary claims to control: *"On the one hand, the owners of passive property, by surrendering control and responsibility over the active property, have surrendered the right that the corporation should be operated in their sole interest. Neither the claims of ownership nor those of control can stand against the paramount interests of the community."*

The question thus becomes considerably one of determining socially desirable policies for the governance of the corporation. The goals of such policies could include encouraging the efficient flow of investment funds into production and the efficient production and distribution of goods and services. This, in turn, requires a consideration of shareholder protection and looks to policies that provide managers with optimal incentives. Under this approach, managers could have duties toward shareholders, but not exactly the same duties that would be suggested by the agency approach. Such an approach could also include considerations of social justice and could require duties towards other constituencies. Consider, for example, the argument by Easterbrook and Fischel (1982) that managerial resistance to takeovers is socially counterproductive. Under a strict agency approach, management should resist takeovers in situations where resistance and subsequent bargaining would lead to a higher premium for the corporation's shareholders. They argue that even if resistance does produce a higher premium for the shareholders the result is socially inefficient, for gains to the target company's shareholders are offset by losses to the acquire company's shareholders. In addition there are deadweight losses stemming from bargaining breakdowns, dilution of managerial incentives for good management and discouragement of search.

Thus, according to this approach, the analysis of the costs of the separation of ownership and control should be a multi-step process involving the articulation of societal goals, the manner in which managerial behavior affects those goals, and the evaluation of institutional arrangements affecting managerial behavior and at what cost. Broadly speaking, there are two reasons why managerial behavior might not conform to the ideal one. The first is that managers might not have the incentives to do so. This is sometimes called the *moral hazard* problem. The second is that managers may not have the ability to do so (that is, managers may be incompetent). This is sometimes called the *adverse selection* problem (Ayres and Crampton, 1994; Smith, 1996).

It seems therefore important to examine the role of limiting economic, legal and political factors on the operation of the various mechanisms for separating ownership from control. A better understanding of the factors determining the choice of ownership structures requires a proper use and combination of the 'law and finance' approach and the 'political economy' approach.

## 3. Mechanisms for mitigating the costs of the separation of ownership and control

The separation of ownership and control gives rise to costs in that managers may act in ways that are inefficient or socially sub-optimal. A number of mechanisms have been suggested with the expectation of providing managers an incentive to better align their behavior to the interests of shareholder/owners and weeding out incompetence. Many (but not all) of these mechanisms rely on actors other than the shareholders. These mechanisms involve business failure, the market for corporate control, the establishment of managerial/director duties, internal corporate governance oversight, direct managerial financial incentives, and shareholder empowerment. A brief account of some of the issues and analyses that have arisen in the literature surrounding each mechanism is provided below.

### 3.1 Corporate failure

Even at the absence of any other mechanism, business failure is expected to eliminate incompetent managers and thus to mitigate problems of adverse selection and perhaps constrain moral hazard. However, at the absence of additional mechanisms to control moral hazard, a market that depends solely on business failure might simply eliminate certain types of otherwise efficient organizations and thus ultimately prove socially inefficient. If managers are unable to credibly commit to behavior that benefits residual claimants (shareholders/owners), these claimants may be unwilling to make investments in organizations in which they lack direct control. As Akerlof (1970) demonstrated, asymmetric information can result in the wholesale elimination of markets. In other words, at the absence of other control mechanisms, large publicly-owned corporations might not be viable.

### 3.2 Empowerment of shareholders

Another important mechanism for mitigating the costs associated with the separation of ownership and control is the increase of the power of shareholders over management. Shareholder empowerment as a mechanism for managerial control has a different emphasis from the previously discussed mechanisms in that those mechanisms relied on actors other than shareholders to restrain management. Those mechanisms sought to maintain the advantages of the separation of ownership and control while mitigating the costs. By contrast, shareholder empowerment reduces the extent of separation and gives shareholders more say in management. Thus some of the critiques of these proposals point to the compromising of centralized management and the reduction of the benefits that flow there from (Boyer, 1993).

Shareholder empowerment proposals seek to give shareholders a greater voice in management by endowing them with greater rights to manage and by reducing the costs of involvement. An important area of this research notes the increasing prominence of institutional investors in the securities markets and evaluates the costs and benefits of legal changes that would encourage greater activism by institutional investors.

The extensive use of proxy voting regulation gives incumbent management a tremendous advantage over challengers to their authority. Very few matters are required to be put to the vote of shareholders. Managers can finance proxy battles out of the corporate funds while challengers must incur the high costs themselves unless they ultimately prove successful. In addition, corporations have the ability to restrict voting rights in certain classes of shares (Seligman, 1986). This practice, combined with collective action problems, discourages challenges even where the total benefit of the challenge to the corporation is great compared to the costs. Some proposals for corporate governance reform would alter proxy rules to put more decisions in the hands of shareholders (that is, to provide for binding shareholder resolutions) and to change the cost structure to making challenges significantly cheaper, for example, by putting some of the resources of the corporation into the hands of shareholder challengers (Bernstein and Fischer, 1940; Caplin, 1953; Eisenberg, 1970; Dent, 1989; Goforth, 1994; Smith, 1996). Evaluation of such proposals must trade the gains of greater managerial accountability against both the costs of increased use of corporate funds for such purposes and the cost of decentralization of management decision-making.

Equity securities are held increasingly by institutions, i.e., pension funds, insurance funds and collective investment funds. Although any individual fund holds a small percentage of the shares of any given corporation, the holdings are significant enough to encourage some monitoring. In addition, a small number of funds could control enough of a corporation to possess significant voting power if their actions are coordinated

(Gilson and Kraakman, 1991, 1993a; Black, 1992a, 1992b; and Maug, 1997). Laws are introduced to discourage collusion among collective investment funds to exercise voting control. Some proposals have suggested reducing these barriers to cooperation in order to allow funds to exert control over management and thus to reduce the separation of ownership and control and thereby reduce the costs associated with it (Gilson and Roe, 1993).

Sceptics of institutional monitoring point to a number of costs associated with institutional investor oversight (Garten, 1992; Romano, 1993; Calio and Zahralddin, 1994; Bainbridge, 1993a, 1995; Fisch, 1994; Utset, 1995). Fund managers are themselves agents whose interests are not aligned with their own investors. In addition, managers represent only some of the shareholders, or some dominant shareholders may act on a non-rational basis (i.e. the church, or the State). Control and access to information may lead to insider trading and other abuses vis-à-vis other shareholders. Although fund managers may have incentives to cooperate with other fund managers in order to exercise control, they are also in competition. Strategic behavior may result in inefficient control. Some managers, particularly managers of government pension funds, may be susceptible to political influence. Debates over institutional investor voice involve assessing these costs.

### 3.3Specification and enforcement of director and managerial duties

The establishment of managerial duties legislatively, administratively, judicially, or contractually, and subsequently the establishment of a mechanism for enforcing compliance can mitigate the costs associated with the separation of ownership and control (Brudney, 1966). Enforcement can be exercised either through private rights of action or through government regulation.

In the former enforcement regime, lawyers are provided incentives, in the form of fees in derivative or class action suits, to prosecute cases in which directors and managers violate their duties. Without the provision of lawyers' fees, individual shareholders have little incentive to prosecute such cases themselves since they would bear all of the costs but receive a very small fraction of the benefit. The provision of lawyers' fees solves this problem by creating large incentives for lawyers to prosecute these cases. In effect, such a system provides private agents the incentive to enforce specified managerial duties (Romano, 1991). This system represents one in which someone other than shareholders themselves (the shareholder is just a nominal presence) provides the enforcement mechanism. A number of duties are enforceable in this manner, such as the duties of care and loyalty. In the latter enforcement regime, the government authorities exercise direct enforcement of managerial duties. A number of duties are enforceable in this manner, including many duties created through securities regulation.

Many duties are enforceable through both private and public enforcement. However, for these enforcement mechanisms to be effective, a number of prior questions must be properly answered: What is the optimal set of managerial duties? Should they be broad or narrow? To whom should duties be owed? Should duties be mandatory (state-imposed) or optional (contained in corporate charter provisions)? Should enforcement be private (through derivative and class action suits) or public? Is enforcement effective? Who should be liable: managers, the corporation, or both? As to private enforcement, what sort of incentives and disincentives should lawyers be offered to bring such suits? To what extent should managers be able to immunize themselves through insurance and indemnification? The answer to these questions must take into consideration the institutional characteristics of the different countries, the history and origins of the duties and the suitability of the process of producing duties.

There can be different rationales for different enforcement regimes, showing which duties are best privately enforced and which are best publicly enforced (Calabresi and Melamed, 1972; Cooter, 1984; Boston University Law Review, 1996). Private enforcement can best be exercised by providing certain optimal incentives to sue of either corporate or non-corporate nature (Shavell, 1982) and, with respect to corporate law, by making use of derivative actions which in turn are effective only under certain conditions (Kraakman, Park and Shavell, 1994) and conditional upon the manner in which liability is shared among organizations, natural persons, or both (Arlen, 1994; Arlen and Kraakman, 1997).

Another important issue is whether duties should be mandatory or optional. Under an optional (opt-out) enforcement regime, the law would provide a standard set of duties that would be optimal for a large number of

corporations. Thus, the adoption of managerial duties by a corporation is similar to any other managerial decision (Winter, 1977; Carlton and Fischel, 1983; Easterbrook and Fischel, 1982; Macey, 1984; Easterbrook, 1984a). However, individual corporations would be allowed to opt out of these duties through provisions in the corporate charter, or proper public justification ('comply or explain').

Under this regime, the corporation is seen as a nexus of voluntary contracts designed to minimize agency costs (Coase, 1937; Alchian and Demsetz, 1972; Jensen and Meckling, 1976; Klein, 1982; Cheung, 1983; Williamson, 1984; Butler, 1989; Butler and Ribstein, 1990; Easterbrook and Fischel, 1991). Proponents of the opt-out regime point out that the same set of provisions is unlikely to be optimal for every corporation. They also assert that the existence of relatively efficient securities markets will create incentives for corporations to adopt efficient provisions, safeguarding them against share price drops and takeovers.

Under a mandatory enforcement regime, managerial duties point to market failure, especially with respect to transparency and (financial and non-financial) information disclosure. Given that efficient markets depend on the availability of information, no proper and/or adequate information may be available without an established duty to disclose it. Efficient charter provisions, including efficient disclosure provisions, are unlikely to be produced and voluntarily disclosed if the market for securities is inefficient. Efficient disclosure provisions are unlikely to be produced in an inefficient market. A similar argument is made for provisions (such as anti-takeover provisions) that insulate management from the market. Again, efficient takeover provisions are unlikely to be produced in an inefficient market and an efficient market is unlikely to develop at the absence of efficient take-over provisions. Thus, mandatory disclosure provisions are considered necessary.

Proponents of the mandatory enforcement regime argue that, even if markets are relatively efficient, market forces may still provide inadequate incentives (Bebchuk, 1989; Brudney, 1985; Coffee, 1988). For example, Bebchuk (1989) argues that a charter amendment that redistributes corporate funds to management would affect the probability of a takeover only marginally given that such transfers are probably small relative to corporate assets though large relative to individual assets. Proponents also argue that managerial duties are characterized by a public-goods nature, so any change in those duties could have a large negative impact on the corporation. However, the impact on individual shareholders could be small due to small individual share holdings and thus it would not be worth the cost of resistance. For example, a relaxation of the duty of loyalty could result in large benefits for managers by allowing them to expropriate a portion of corporate wealth. Since the change is small to individual shareholders, such shareholders would not bother to resist. Share price could fall in accordance with the amount expropriated by managers. Such an expropriation could not be remedied through the market for corporate control since corporate wealth has already been removed from the corporation. Furthermore, the lack of sophistication of shareholders can exacerbate the negative impact. For example, if the change in a corporate charter is relatively complex, the unsophisticated shareholder would then have to invest more heavily in order to understand, and therefore may resist such a change. Finally, proponents of mandatory enforcement regime argue that the adoption of an opt-out enforcement regime, even if opt-out duties did result in efficiency, would have to be supplemented by a mandatory enforcement regime in order to accomplish other societal goals, such as distributive justice.

### 3.4 Internal corporate governance structures and oversight

The structure and procedures of the board of directors is an important mechanism for mitigating the costs associated with the separation of ownership and control. In this respect, important questions are: What should be the goal of the board? What is the best board structure and composition? How should the board members be selected? Who should be on the board of directors? Who should the board represent? How should the board members be compensated?

Boards of directors are typically elected by shareholders. In Europe and elsewhere, there has been some experience with boards representing other constituencies, such as labour. In addition, large shareholdings by banks in countries such as Germany and Japan have provided oversight by lenders (Aoki, 1984; Jensen and Meckling, 1979; Summers, 1980, and Williamson, 1984). Boards, however chosen, have responsibilities either narrowly to shareholders which are the maxi-

mization of shareholder value subject only to legal and ethical constraints (Friedman, 1970), or broadly to the society as a whole, to other constituencies, and not just to shareholders (Dodd, 1932; Turnbull, 1997b; Post, Preston and Sacks, 2002; among others). Proponents of 'other-constituency' statutes view their establishment as providing boards with the right to consider other constituencies, such as labour, or the environment. Opponents view these statutes as merely providing cover for managerial entrenchment.

Extensive consideration has been given to the role of boards in active management and oversight of corporations. The separation of roles between the chairman of the board (oversight) and the chief executive officer (management) is an essential issue here, followed by the examination of the board composition between outside or independent non-executive directors (oversight) and inside or executive directors (management). Boards are typically composed of inside and outside directors. Inside directors manage the day-to-day operations of the corporation. Outside directors provide oversight and advice. Ideally, monitoring by outside directors could mitigate problems of moral hazard and adverse selection (Weisbach, 1988). The reward structure for inside and outside directors differ markedly. For example, in the takeover context, both inside and outside directors stand to lose their jobs. However, whereas for the insider directors this loss is potentially great, including loss of a large income, important responsibilities, prestige and the like, for the outside director this involves the loss of a very part-time job and salary. Thus the outside director has diminished incentives to oppose the takeover for personal reasons.

Although outside directors may be more likely to act in the interests of the corporation, the position of outside directors is weakened, however, by the fact that such directors are typically chosen by inside directors and that their continued employment depends on getting along with the insiders. In addition, inside directors and outside directors often find their positions reversed with respect to other corporations. There is thus an incentive for mutual back-scratching. In addition, insider directors typically control the flow of information. This has led some commentators to be sceptical over the efficacy of this mechanism.

In general, best practices in proposed corporate governance reform designed to increase the independence and influence of outside directors often include one or more of the following proposals: (a) increase in the number of outside directors relative to inside directors (most proposals specify that outside directors should be in the majority); (b) remove inside directors from the process of nominating new directors; (c) remove inside directors from the process of setting directorial compensation; (d) set a mandatory retirement age or term limits for directors; (e) prohibit interlocking directorship (where inside directors of one company are outside directors of another and vice versa, and (f) require that directors own stock in the company (Mace, 1971; Jensen, 1993; Lin, 1996).

### 3.5Alignment of direct managerial financial incentives to shareholders interests

The provision of greater incentives to managers to maximize share value can be accomplished through their compensation package, inclusive of derivative financial instruments, and particularly warrants or stock options (Jensen and Murphy, 1990a; Gilson, 1992; Milgrom and Roberts, 1992). To the extent that share price maximization is desirable, this mechanism may reduce the costs associated with the separation of ownership and control. However, compensatory incentive mechanisms address primarily the problem of moral hazard, not that of adverse selection. The compensation mechanism could be combined with corporate governance structures in order to create even stronger incentives. For example, in a governance structure where outside directors constitute a majority and in which outside directors were compensated exclusively through warrants/options, then outside directors would have small adverse incentives (since their salary is small) and significant correct incentives since their compensation would depend almost exclusive on share price performance. One should however note that warrants/options create asymmetric incentives. That is, they pay if share price is above the exercise price. However, the payoffs are the same (that is, zero) for all prices below the exercise price. Thus warrants/options could create incentives for inefficient risk-taking. Nevertheless, since cash compensation creates incentives for inefficiently risk-averse behavior, it is not clear what the net effect of providing warrants/options as management compensation would be.

### 3.6Enhancement of transparency and informa-

**tion disclosure**

The provision of information is crucial for corporate market valuation and its timeliness, relevance, and reliability are essential for fair pricing and smooth market operation. Disclosure of information involves the releasing and communicating of financial and non-financial corporate information to users. "Relevant" information refers to timely disclosure of material information on activities and events, including linkages between them and their financial impact on corporate activities to allow the users to make informed investment and credit decisions. "Reliable" information refers to disclosure of truthful material information with its associated risks and opportunities.

Disclosure may be voluntary or mandatory, that is it can be a part of self-regulation, or enshrined in statutory legislation. Proponents of voluntary disclosure argue that if disclosure is good, i.e. in the interest of the provider, it should be done voluntarily. Regulation is in this case not necessary. Even if the provider only reveals the good news, lack of disclosure will be seen as bad news, and regulation is redundant. Proponents of mandatory disclosure argue that full voluntary disclosure rarely occurs in reality because of the costs associated with producing and disseminating information, the proprietary costs of having to reveal information to competitors and the possible impact on future investment opportunities of the firm. Moreover, regulation is unavoidably required on what precisely must be disclosed, when and in what format. Information users need to be in a position to distinguish between information provided on regulatory grounds and other forms of information provided for marketing purposes.

The rationale for mandatory disclosure of information is based upon the existence of information asymmetry between the disclosing party and the information user (Copeland & Galai, 1983; Glosten & Milgrom, 1985). Policy concerns can arise on different grounds, such as the need for equity, allocative efficiency, and participation or performance in modern stakeholder societies. Proponents of mandatory disclosure argue that corporate disclosure is at the heart of efficient capital markets. Companies engage in mandatory and voluntary communication to the public. This communication has essentially three beneficial effects. First, disclosure mitigates information asymmetry between the firm and the information user. Typically, the company has superior information concerning activities and events and their associated risks. It possesses more accurate information on the investment opportunities than does the ordinary investor and/or creditor. Second, disclosure mitigates incentive problems between the firm and the user given the firm's propensity to overstate its profits and understate its losses. It increases the level of credibility of financial information and decreases the problem of mis-valuation (Kreps, 1990). Third, by solving information and incentive problems, disclosure facilitates informed decision-making on capital allocation.

Opponents of disclosure argue that it represents rather a retreat of the authorities from the regulatory field while providing the appearance of public intervention, but with little substantive impact. Disclosure also requires a certain level of economic and societal development, and the full and active participation of all parties in the process. The flow of information can be so immense that it requires a vigilant attitude on behalf of the information user. Disclosure-based regulation is, in this sense, a more elaborate form of regulation, which requires more advanced enforcement skills from the regulators relative to more traditional forms of regulation.

In general, a wide consensus exists in corporate disclosure research on information asymmetries and incentive problems. By mitigating the effects thereof, corporate disclosure might enhance investors' decision-making capacity, and thus mitigate the agency costs of the separation of ownership and control. However, it is not possible to single out the precise nature and magnitude of capital market effects of disclosure, nor more specifically its impact on improved performance. Thus the role of disclosure in capital markets should not be overemphasized and therefore costly and unjustified regulation should be avoided.

Disclosure policy is a complement to other forms of regulation, whereas in other cases, mandatory disclosure is applied independently of other forms of regulatory intervention. In each case, the goal is to redress the information asymmetry (Weil, 2002). The use of disclosure in securities market regulation is based on the same information asymmetry between issuers and investors. Issuers wish to receive the highest price possible for their securities, and want to disclose as little information as possible, or only the good news, whereas the opposite applies for investors. Given asymmetric

information on the one hand, and the risk of managerial misappropriation on the other, mandatory disclosure regulation can facilitate more informed investment decision-making by differentiating between efficient and inefficient firms if the markets fail to do so. Moreover, regulation will allow investors to distinguish between high-performance firms and low-performance firms. This prevents investment from resembling the "lemons" market where both good and bad companies on average get the same pricing (Akerlof, 1970). Thus, any appropriate regulatory intervention in the market process can decrease asymmetric information and increase social welfare. In order to ensure equity and efficiency in securities markets, regulation must ensure that a sufficient amount of credible information is delivered equally to investors, and that issuers receive a correct price for their securities.

The implementation and enforcement of an effective disclosure regime depends upon a complex set of institutions. Government bodies, self-regulatory organizations and "reputational intermediaries" play a role (Black, 2000). Accounting firms, investment banks, law firms and stock exchanges put their name at stake when participating in the dissemination of information regarding securities issuers and listed enterprises. They will suffer a loss of reputation if they support a bad security on the market. Collective investment and pension funds, which provide market demand for securities, and the financial press play a role too. Legal rules make individuals and intermediaries liable for faulty information.

Financial information depends on the use of accounting rules. The latter and the assessment of their application by auditors are a central part of a financial information disclosure regime. The regulatory authorities monitor the transparency and level of detail of accounting standards, which are set by the accounting profession operating under a self-regulatory organisation (i.e. IASB, FASB) being oversought by regulatory authorities at the local and international level.

Non-financial information is much less standardised but plays a vital role in disclosure. Information regarding a company's activity, prospects, new products, compliance with environmental and governance standards plays an increasingly important role in disclosure.

Disclosure also applies to the operation of organised securities markets, although not in the same way. Regulated markets are requested to publish all quotes and price information regarding publicly traded securities as soon as they become available. This should render markets fair and efficient. However, disagreement exists on the precedence of the two principles. Fair markets require immediate publication of all trades, although efficient markets may require exceptions for transactions involving large blocks of shares. Regulation overtly focusing on the first principle may provoke some degree of fragmentation, whereas the use of regulatory exceptions (such as for block trades) may increase market efficiency.

More recently, disclosure has also received increased prominence in the regulation of financial institutions. Public disclosure of key information on a bank's risk profile and level of capitalization is one of the three pillars of the proposal for a new Basel Capital Accord, which establishes a capital adequacy framework for internationally active banks. It is based on the view that markets can play a useful role in assessing the risks of financial institutions, above all when reliance is placed on the internal models approach of the New Accord. The national regulators will be expected to enforce required disclosures through the use of supervisory responses or penalties where necessary. Institutions will need to prepare a policy on public disclosure that complies with the Basel requirements.

Notable differences exist among jurisdictions and organizations in disclosure standards. They pose a different set of questions to whether a disclosure regime can be set up via regulatory competition among national regulators and self-regulatory organizations, or whether it should be established through an international agreement.

A broad literature exists about the appropriateness of regulatory competition in disclosure standards for listed companies. Romano (2001) argues that issuers should have a broader choice of regulatory regimes. At present, the US employs a territoriality-based system, i.e. foreign firms issuing securities on the US market need to follow US rules, which severely restricts competition. More competition would allow for much faster regulatory correction, would foster innovation and would be better tailored to the differing needs of issuers and investors. Romano refutes the criticism that more regulatory competition would lead to a race to the bottom; on the contrary, she argues that more is-

suer choice would induce more disclosure and encourage countries with bad disclosure regimes to introduce reforms (see Boot et al., 2001, as applied to firms and exchanges). Moreover, Romano finds no evidence that the US regime has increased social welfare; on the contrary, in fact, she finds it has decreased it, as there is no clear indication of externalities.

Although agreeing with some of Romano's basic assumptions, Fox (2001) argues the opposite, i.e. that competition between disclosure regimes would reduce social welfare, because each issuer would select a regime requiring a level of disclosure that is less than is socially optimal. Issuer choice would lead to a significant market failure arising from the fact that each issuer's private costs of disclosure would be greater than the social costs of such disclosure. The agency costs for the manager would be higher under issuer choice than under mandatory disclosure. Fox thus pleads for retaining the US mandatory disclosure regime, although he would let it be determined by the home country of the issuer, i.e. it would not apply to foreign issuers on the US market (Fox, 1997). The reason is not investor protection, but rather efficiency, since each issuer would be regulated by the country that benefits most from getting disclosure right. Some form of regulatory competition between jurisdictions would be possible, but not at the full issuer's choice.

Whether the structure of regulation facilitates a creative "race to the top", in which companies improve their disclosure standards over time, or a destructive "race to the bottom", in which companies seek the minimum level and lowest quality disclosure possible has been a topic of debate for some time (Romano, 1993, 2001; Fischel, 1982; Choi & Guzman, 1998; Winter, 1979; Easterbrook & Fischel, 1991; Cary, 1974). Black (2000) argues that that the real competition is between complex national systems and not only between disclosure regimes. Regulatory competition should lead to continuous improvement in disclosure practices rather than downgrade them in the EU. Giving an issuer a choice of securities law in general and a choice of disclosure regime in particular in the EU will facilitate competition among national regulators and exchanges to promote a superior system of disclosure regulation. Jurisdictional competition will increase the number of possible alternatives to meet a diverse range of needs in disclosure regulation. Firms will choose the place of their incorporation or relocate, thus revealing the choice of disclosure regime, which approximates their preferences. Local disclosure regulations will be either "fit" or "selected out". If disclosure is taken exogenously, i.e. it is assumed that disclosure simply exists without looking into its rationale, then competition between and among national regulators and exchanges in the EU will drive the "race-to-the-top" and lead to the best outcome in the production of disclosure regulation (Weingast, 1995). However, if disclosure is endogenized, i.e. one considers why disclosure exists in the first place and what its rationale is, then it is clear that decentralization of disclosure regulation and jurisdictional competition will not achieve the best outcome in disclosure regulation. They will simply reinforce the possibility of cooperation and competition and will thereby continuously drive the race-to-the-top in response to changes in exogenous and endogenous environments.

Opponents of decentralization in the EU argue that markets may not facilitate investment decision-making by properly differentiating between efficient and inefficient firms and preventing the resources from ending up in the "lemons" market (Akerlof, 1970). In the US, the SEC has monopolistic power to set disclosure regulation which effectively fixes the price of disclosure regulation and inflicts dead-weight social losses, as is the case with every monopoly (Macey, 2002).

### 3.7 The market for corporate control

It is claimed that if a market for corporate control is allowed to function, management will be forced to take action to maximize share value or risk a takeover and the resultant loss of job. The proper functioning of such a market reduces the costs of the separation of ownership and control because, even though shareholders do not exercise direct control, managers will be forced by market pressures to act so as to maximize share price. In addition, incompetent managers will be removed through the takeover process. In this manner, the market for corporate control mitigates both moral hazard and adverse selection problems (Manne, 1965; Butler, 1989; Easterbrook and Fischel, 1991; Romano, 1992; Macey and Miller, 1995).

Two important variants of this mechanism are related to dividend policy and capital structure. It is argued that a corporate policy of paying steady dividends, in spite of adverse tax consequences, signals to the market that the corporation will not squander free cash flows (East-

erbrook, 1984a). The market recognizes this signal and raises stock price, whereas corporations that did not engage in this practice would suffer from lower stock price and be subject to a takeover. It is also argued that capital structure can provide the same sorts of signals ( Jensen, 1986). A capital structure that is weighted towards debt creates an obligation on the part of management to pay out future cash flows. Again this reflects a commitment by management not to squander future cash flows. This commitment is valued by the market and is reflected by higher share prices. Corporations that do not make this commitment would suffer from lower stock price have depressed share prices and be subject to a takeover. The takeover of corporations in leveraged transactions may represent the market for corporate control operating to impose these debt constraints.

The effectiveness of the market takeover mechanism in reducing the costs of the separation of ownership and control relies on the notion that managerial performance affects stock price and this, in turn, depends on the extent of market efficiency. Evidence seems to suggest that capital markets are semi-strong form efficient in the sense that it is not possible to make abnormal returns through either technical or fundamental analysis (Brealey and Myers, 1991).

For the market for corporate control to operate as an effective mechanism for mitigating the costs of the separation of ownership and control, both managerial incompetence and misbehavior must be correlated with takeover activity, and for this to occur managerial incompetence or misbehavior must be correlated with stock price. However, this may not happen for various reasons. First, even if stock prices reflect fundamental values, the determinants of these values contain a large random element (that is, random events unrelated to managerial performance are a significant factor) that weakens the correlation between managerial performance and stock price, or, noise traders may randomly cause stock prices to diverge from fundamental values (Black, 1986; Stout, 1988). Second, takeovers are the result not only of managerial incompetence or misbehavior but also of synergies, the accumulation of market power, expropriation (of creditors or of the government, via taxation, or of labour), of empire-building, and so on (Kaplan, 1989; Lee, 1992; Ippolito and James, 1992; Romano, 1992), all of which weaken the correlation between managerial performance and takeover activity. Third, if managerial performance is not observable, or is systematically mis-observed or myopic due to informational asymmetry, then the market is unable to correctly correlate managerial performance and stock price (see Fudenberg and Tirole, 1986, on 'signal jamming').

## 4. Governance and ownership structure and economic performance of firms

A most important question in corporate governance analysis is the relationship between ownership structures and economic performance of firms. Indeed, the extent of separation of ownership and control and the associated monitoring efficiency are important determining factors for the profit-maximisation behavior of firms. The evidence on this relation however is rather inconclusive, even though available research seems to highlight a profitability-enhancing role of owner control (see Short (1994) and Gugler (2001) for an overview).

Indeed, some studies found that owner-controlled firms outperform manager-control firms. As Gugler (2001, p. 14) points out, the studies analyse mostly the US and the UK experience and use as dependent variables proxies for corporate performance (net income to net worth ratio, rate of return on equity, Tobin's Q) or for the riskiness of returns (variance and skewness of profitability). The studies make use of a rather arbitrary classification between manager-controlled and owner-control firms, on the basis of a specific percentage ownership criterion for a single block of voting stock or other concentration measures. Firms are usually classified as manager-controlled if there is no single block of equity/voting power that exceeds 5 to 10 percent. Moreover, no explicit differentiation is made between ownership and voting rights, implicitly assuming that the 'one-share-one-vote' principle prevails. More recent studies focused less on the distinction between manager-controlled and owner-control firms and more on ownership concentration and managerial and board ownership. Obviously, further detailed country analysis is needed to address the relationship between ownership structures and economic performance of firms, taking into consideration special methodological and interpretational issues such as arbitrariness of classification, the extent of omitted variables, industry effects,

reverse causality, or simultaneity between control devices.

## 5. Corporate governance, financial markets and corporate rules

It was shown that the different insider and outsider corporate governance systems across countries are associated with different mechanism for separating ownership and control. The (agency) costs of separation are mitigated by the use of various mechanisms, of internal or external, optional or mandatory nature.

It was also shown that it is difficult to explain different corporate governance systems on the basis of conventional 'law and finance' theories, in separate or combined form. Indeed, neither principal-agent theory (Jensen and Mechling, 1976; Milgrom and Roberts, 1992), nor the transaction costs theory (Coase, 1937; Williamson, 1983), nor the implicit contract theory (Grossman and Hart, 1982, 1986; Hart and Moore, 1988, 1990; Hart 1995a), nor the vertical integration theory (Alchian and Demsetz, 1972), nor finally the hybrid models that has emerged from those theories, can adequately explain why two governance systems (Continental European and Anglo-American) have emerged or, in a more refined way, why Continental European, Asian and Anglo-American countries differ in terms of corporate ownership and governance structures. It is evident that the historic evolution of regulation and the working out of path-dependent processes have shaped ownership structures, capital markets and corporate governance systems.

Within the 'law and finance' approach, the methodology used for measuring control and explain differences in ownership structures is based on the association of (dispersed) ownership with (strong) regulation. Thus, the difference in ownership concentrations in the UK and the US and their sphere of influence (Commonwealth) on the one hand and Continental Europe and its sphere of influence (former colonies) on the other is attributed to weak regulation in Continental Europe and strong regulation in the UK and US. La Porta et al (1998a) distinguish between the common law systems of the UK and US and the civil law systems in Continental Europe. They show that common law systems are characterized by strong minority investor and creditor protection and adhere to the one-share-one-vote rule, whilst civil law systems are characterized by weak protection.

According to this 'law and finance' literature, differences in legal structures are deeply rooted in a long history. One would therefore expect differences in investor protection also to have a long history. But this is not the case. At the beginning of the century, the UK was devoid of anti-director rights provisions and protection of small investors. According to the La Porta et al (ibid.) measure of anti-director rights, the UK only scored one out of a possible maximum of six between 1900 and 1946 – on a par with Germany in the early 1990s. However, Franks et al (1998) show there are considerable differences in corporate control mechanisms and capital market activity in the Anglo-American and Continental European countries that render the views of La Porta et al (ibid.) in need of further qualification. The fact that corporate control mechanisms may be enhanced, besides corporate rules, by financial regulations should also be emphasized at this point. But legal distinction can explain differences in corporate governance systems and the degree of capital market development. In common law countries, the ratio of external capital to GDP is higher, as are the ratio of corporate debt to GDP and the number of listed domestic firms and initial public offerings as a proportion of the corporate population. Whether or not the institutional environment has a momentous impact on economic activity has been explored by a number of authors. In particular, Carlin and Mayer (1998) investigate the relation between economic growth, R&D investment and fixed income formation, on the one hand, and the presence of bank-firm relations, development of security markets, degree of ownership concentration and the legal system on the other. For a sample of companies in 20 countries, they find little influence of banking activity and ownership concentration on economic growth, but they find that legal protection of investors and development of securities markets matter.

A seemingly logical implication of the discussion above is that it would be difficult to develop a set of corporate governance regulations applicable to all OECD member-states without undertaking the difficult task of concomitantly dismantling the existing country-specific mechanisms that currently provide shareholder protection. Indeed, several attempts made in that direction had to be withdrawn, and this has been especially

the case in Europe (see, for example, the difficulty in implementing the takeover bid Directive).

## 6. Corporate governance and institutional reform

It is evident that the sound development and international competitiveness of OECD member-state corporations requires that corporate governance practices to become efficient and credible and that a certain degree of convergence among corporate structures is achieved, brought about by proper changes in corporate rules and financial regulation.

Crucial in the process is the dynamics of ownership. There is however a question of whether and how ownership structures should be regulated so as to establish competitive corporate governance practices. Inefficient ownership structures, especially overtly concentrated ones, have come under increasing political and market pressure in recent years for discouraging financial development. Many countries passed legislation on board behavior and duties, corporate group related transactions and subsidiary relations and enhanced disclosure of cross-holding or pyramid linkages. This reform effort has been especially strong in the OECD member-states. Indeed, the OECD (2003, p. 4) states that: *"In response to both short term pressures and longer term considerations, member countries have been active in taking policy initiatives. First, a number have been involved in reviewing their company law and in even more countries legal changes have tightened audit functions, increased transparency and improved the role of shareholders. Second, nearly all member countries have now introduced national principles for governance based in great measure on the Principles. The balance between legal changes, regulation and self-regulation/voluntary arrangements has varied quite widely. Taken as a whole, it is clear that attention has shifted toward implementation and enforcement of measures to meet the outcomes advocated by the Principles.'* Non-OECD states have also been pushing reform.

The continuing investigation of agency costs and inefficiency characteristics of ownership and governance structures has led to worldwide pressures for their change. However, this requires a number of important considerations: First, the case for public regulation is made if the agency costs of inefficient structures are large, strong evidence exists of a divergence between private and social benefits of control and insufficient private self-regulatory practices exist to account for and contain such costs. In this case the main issue is how to regulate: for example, by direct legal prohibitions such as the imposition of a one-share one-vote rule and a ban on pyramiding, or by indirect tax policies to discourage pyramids and increased disclosure of related party transactions. Second, there is a need to better understand the origin and power of observable significant constraints on the agency costs associated with concentrated ownership structures and suggest important offsetting efficiencies. In this respect, the 'political economy' approach may be of considerable value. It is a fact that no great similarity is currently found among OECD member-states as regards existing practices. However, it is also a fact that reform efforts are increasingly geared towards the adoption of common steps and practices. Third, within the modern international environment, there is a need to deal with the problem of regulatory competition. The optimal development and efficiency of regulatory mechanisms may be seriously impeded through the process of state (within a country, such as the US) or country (within a union, such as the EU) competition for corporate charters, or regulatory statues. This problem has become known as the 'race-to-the-bottom' thesis. This has led to different policy views as to whether national/state or union-wide/federal chartering or regulating of corporations is the best practice (Cary, 1974; Dodd and Leftwich, 1980; Romano, 1985, 1994; Hovenkamp, 1988; Macey and Miller, 1987; Bebchuk, 1992; Bratton, 1994; Ayres, 1995). The former argue that jurisdictions or countries that compete for charters will offer efficient corporate rules, whilst the latter argue that the development of a union-wide/federal corporate law is a better policy. Yet other views have applied public choice theory tools to explain the development of corporate law as the result of the interest group interaction.

As pointed out in the introduction, efficient corporate governance practices are essentially about safeguarding overall market integrity, in the form of higher corporate efficiency and accountability. However, any effort at reform must take into consideration the new international financial environment. The globalization of securities markets imposes additional constraints on the organization and function of emerging capital markets. Financial liquidity moves quickly in large sums between markets. International and domestic institutional

investors, and even retail investors, as well as issuers of securities evaluate markets and compare market opportunities across countries. In this very competitive international context a lapse in the level and perception of market integrity may prove very costly for a smaller or emerging market, as it may drain it of liquidity and thus spark a capital outflow and a drying up of the supply of securities. Thus, it is in the present global environment that a level playing field is required both in terms of arrangements that safeguard market integrity and, specifically, in terms of corporate governance arrangements for publicly traded companies.

In particular, the European Union (EU) has achieved a great deal in terms of addressing shareholder protection, disclosure, and board structures and responsibilities, since the adoption of the directives, regulations and recommendations included in its initial *Financial Services Action Plan* (1999), and the ongoing projects outlined in its subsequent *Action Plan for Modernizing European Company Law and Enhancing Corporate Governance in the EU* (2003). Both actions plans are aiming at the updating of company law and corporate governance standards to deal effectively with the impact of financial scandals, the cross-border operation of firms and markets, the rapid development of new technologies, and the integration of European financial markets.

## 7. Conclusions

This paper analyzed the separation of ownership (cash flow rights) from control (voting rights) and described two broad systems of corporate governance in the OECD, which are found mainly in Continental European states (insider system) and the Anglo-American states (outsider system). Differences in the concentration and nature of corporate ownership between both systems are highlighted. For example, in a typical Continental European or Asian country, (majority) control is held by one shareholder or a small group of interlocked shareholders, whereas Anglo-American companies are predominantly widely held. Explanations for these differences have been proposed by the 'law and finance' theories and the political economy theories. These differences are associated with varying conflicts of interests and have important consequences in terms of agency costs and investment efficiency. These costs are mitigated by the implementation of internal (firm level) and external (regulation) mechanisms such as shareholder empowerment, specification and enforcement of director and managerial duties and functions, corporate disclosure, establishment of internal corporate governance structures and oversight, alignment of direct managerial financial incentives to shareholders interests and the market for corporate control.

The corporate governance systems in the OECD member-states have been undergoing considerable reform in terms of statutes and regulations. An important question in this respect is whether corporate governance structures in the different OECD member-states will eventually converge to one another. Even though the ultimate objective of corporate governance reform must be to contribute to the optimization, within the new international environment, of corporate performance and to properly favour all those whose interests are involved in the work of the company, convergence can be encouraged by proper amendments in corporate and financial structures and rules. However, as the conclusions of empirical research increasingly show and, most importantly, as the recommendations by the corporate governance committees set up in the OECD member-states have emphasized, efficient corporate structures will come about if governments and other competent capital market authorities expend all necessary effort to implant the importance of competitive governance reform into corporate minds. Such an endeavour is required for modern listed corporations in order to survive in the new global competitive environment.

Consistent implementation of competitive governance reforms is required in order to enhance markets integrity and render national economies internationally competitive. Corporate minds must be willingly receptive and adopt proper corporate governance practices. It will not pay-off OECD member-states and their corporations to keep old-fashioned mentalities and stick to inefficient previous practices. Instead, they should be proactive to stand in line with global standards and trends in order to effectively compete worldwide. It should be recognized that this is the only way to maximize corporate values and thus serve shareholder interests. Government initiatives in promoting and guaranteeing shareholder rights as well as high transparency levels must be undertaken.

As institutional funds and pension funds are increasingly asserting their role in the OECD capital markets,

fund managers get in a position to supervise corporate management. As such, they should take an active participation in supervising corporate management, i.e. by way of nominating or discharging managers in cooperation with outside directors.

Directors, internal committees and controlling shareholders should all have legal responsibilities as regards the efficiency of overall corporate management structures so that their systematic and efficient operation is ensured. Otherwise, moral hazards may be in place. Related corporate and financial rules need be further reformed such that responsible persons shall take on their corresponding legal liabilities. It must also be noted, and this is nowadays an issue of rising importance in the western world with increasing derivatives transactions, that the conditions for exercising derivative suits must be properly set.

Private organizations representing shareholders interests should be further encouraged to actively watch the actions of corporate management. Their activity, which should be motivated by economic justice and proper business ethics, has indeed been growing. Such organizations have played important and positive roles in raising concerns toward the improvement of prevailing corporate governance structures. It should be noted, however, that for an eventual success of those activities, shareholders and their organizations should undertake strong action in claiming and defending their rights by themselves.

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# Can Greek Mutual Fund Managers Outguess the Market Persistently?

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This paper investigates the performance of Greek equity funds in the period 08/01/2005 - 08/23/2007 finding that funds deliver average daily percentage returns that move in line or are inferior to the return of benchmarks, being in parallel less risky than indexes. Also discovered that the funds do not produce significant abnormal risk-adjusted returns implying lack of stock picking skills by managers. Further research provides evidence for negative market timing performance related to the active management applied by managers, which probably contributes to the failure of funds to achieve significant abnormal returns to compensate expenses. The results also indicate short-run performance persistence over one-to four-quarter holding periods after a specific quarter (maximum total holding period equal to 15 months).

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## 1. Introduction

The performance of actively managed mutual funds and the ability of managers to produce above-normal returns have been thoroughly examined by the literature. Blake, Elton and Gruber (1993), Malkiel (1995), Gruber (1996) find that the actively managed portfolios, on average, do not produce better returns than the market indexes or the passively managed index funds. The authors connect the inability of managers to "beat the market" with the increased expenses incurred by the active management. In contrast, Ippolito (1989) alleges that the fee- and expense-free risk-adjusted returns of mutual funds are comparable to returns delivered by index funds while the portfolio management fees do not affect funds' performance. However, the findings of Ippolito are subject to the benchmark employed and experienced extended critique by the literature. In general, the inability of active mutual funds to generate persistent superior returns along with the low expenses of indexing contributed to the massive growth of indexing and to the boosting of the passive investing products, like index funds or ETFs.

Two significant elements that affect the performance of active mutual funds are the security selection and the market timing ability of managers. The selection ability implies that the manager can predict the future return of individual securities and picks these that could perform better. The timing ability indicates that the manager increases successfully the portfolio's exposure to the market index prior to market accessions and decreases exposure before the market recessions.

The findings of the literature that concern the selectivity skills of managers are mixed. Carhart (1997) finds no significant evidence for skilled or informed portfolio managers. However, Jensen (1969) and Elton, Gruber, Das and Hlavka (1992) find limited evidence that managers who apply stock selection strategies can produce positive superior returns over long-run periods. Also, the literature accentuates the existence of selection ability over short-run periods, whose length does not usually exceed the one year. Goetzmann and Ibbotson (1994), Grinblatt, Titman and Wermers (1995), Wermers (1999) reveal some evidence for successful security selection which partially explains the short-run persistence of mutual funds' performance.

Considering the ability of managers to time the market, the records of the literature are as mixed as the findings about the stock selection ability. Treynor and Mazuy (1966), Henriksson and Merton (1981), Chang and Lewellen (1984), Henriksson (1984), Graham and Harvey (1996) report restricted on inexistent significant market timing ability. The main characteristic of these studies is that returns are considered monthly or annually. The usage of more frequent return data could lead in different inferences about the managers' market timing ability according to Bollen and Busse (2001) and Chance and Hemler (2001). Indeed, these authors adopt daily return data and demonstrate that the mutual fund managers exhibit significant timing abilities.

Beyond the above-normal average returns that are achieved or not by mutual funds and the ability of managers to perform successful stock selection or market timing strategies, the literature focus on the short-run or long-run persistence of mutual funds' performance. A number of studies show that although mutual funds deliver negative abnormal returns, relative performance persists. Hendricks, Patel and Zeckhauser (1993) find that the relative performance of no-load, growth-oriented mutual funds persists in the one-year evaluation period. Jegadeesh and Titman (1993) reveal a momentum effect in the return of mutual funds, which is expressed through strategies that buy the stocks that have performed well in the past and sell stocks that have performed poorly in the past. According to the authors, these strategies derive material positive returns over three- to twelve-month holding periods. Carhart (1997) confirms that the superior returns of top funds are subject to the momentum effect of Jegadeesh and Titman (1993). The embedment of a momentum factor in Carhart's model drives performance persistence to largely dissipates. The only significant persistence not explained is concentrated in strong under performance by the worst-performed mutual funds, whose under performance is driven by the persistence of expenses.

This paper investigates the issues of mutual funds' above-normal returns, the stock selection and market timing abilities of portfolio managers and the persistence of performance using data from Greek equity mutual funds during the period 08/01/2005 - 08/23/2007. In particular, we split Greek equity funds in three groups whose benchmarks are the General Index of Athens Stock Exchange (ASE), the ASE/FTSE

20 Index and the ASE/FTSE 40 Index, respectively. The Greek mutual fund industry is relevantly young developed after financial de-regulation in 1989 and it has not been totally examined. Especially the selection and timing skills of Greek mutual fund managers have not been examined thoroughly. Using data for Greek equity funds, the paper searches for the similarities or dissimilarities of Greek mutual fund industry to the developed U.S. and European markets.

Our results show that the average daily percentage returns of the funds that respectively follow ASE/General Index and ASE/FTSE 20 Index move in line with the average return of the benchmarks while the average return of the funds that follow ASE/FTSE 40 Index is inferior to benchmark's return. However, funds are less risky than the indexes in return's standard deviation terms.

By regression analysis, we reveal that the average Greek equity fund does not produce material abnormal return. This pattern is evidenced by the lack of a significant number of positive alphas. The majority of alphas are either insignificant or significantly negative. The regression analysis also demonstrates that funds are more conservative in comparison to market indexes since the average beta of the three fund groups is smaller than unity. This conservativeness protects funds in a bear market but constrains them in a bull market.

Apart from the regression analysis of abnormal returns, we evaluate the funds' performance against the performance of benchmarks by applying a rating of funds and indexes according to total return, Sharpe ratio, Treynor ratio and Jensen's alpha. The rating per total return shows that the average fund of each one of the first two groups delivers slightly better percentage return than the indexes do. In contrast, the total return of the average fund in the third group is poorer than benchmark's return. Considering the rating of performances per Sharpe ratio, Treynor ratio and Jensen's alpha, the results indicate that the average fund of each groups is inferior to the benchmark. The results do not change significantly when we rate all funds and market indexes concernedly. However, there are individual funds traced to three fund groups that are ranked better than indexes. Compounding the risk-adjusted performance and risk of funds and indexes with the rating ratios, we suggest that the occasional superiority of some funds against the indexes is probably due to either the increased risk of indexes or the increased performance of funds.

Considering the stock picking and market timing abilities of Greek mutual fund managers, the results indicate lack of such skills. In particular, by using funds' alpha as an indicator of managers' stock picking ability we ascertain that the managers are not able to generate above-average returns by picking stocks that outperform the risk-adjusted performance of benchmark. Further, the results show that the managers are not able to time the market since the majority of gamma coefficients of the applied market timing models are significantly negative. Such an inability probably contributes to the failure of funds to deliver material abnormal risk-adjusted returns.

In order to evaluate the persistence in fund performance, we split the two-year studying period in 8 quarters and we estimate four alternative performance measures, that are, the average daily return of each quarter, the risk-adjusted return expressed by Jensen's alpha and two alternative types of daily abnormal return resulted from managers' timing performance. Consequently, we apply a single-factor cross-sectional regression among the performances of successive quarters using beta as an indicator of persistence's significance. The results indicate persistence over one- to four-quarter holding periods after a specific quarter (total holding period equal to 6-to-15 months). The maximum interval of persistence relates to risk-adjusted return, while the minimum time of persistence concerns all performance measures.

The remainder of this paper is organized as follows. In Section 2 we develop the methodology used in explaining and rating the various types of risk-adjusted return, evaluating the selection and timing skills of managers along with the persistence of Greek equity funds' performance. Section 3 describes the data used in this study and provides the descriptive statistics of the sample. The empirical findings are presented in Section 4 and the summary and conclusions are discussed in Section 5.

## 2. Methodology

### 2.1 Risk-Adjusted Performance

To analyze the managerial skill to achieve superior returns by picking stocks that could outperform the index we use the risk-adjusted return in Jensen's model:

$$R_{p,i}-R_f = \alpha_{p,i} + \beta_{p,i}(R_m-R_f) + \varepsilon_{p,i} \qquad (1)$$

where, $\mathbf{R_{p,i}}$ denotes the daily portfolio's return for the sample's equity mutual fund **i.** $\mathbf{R_m}$ represents the return of the market portfolio and $\mathbf{R_f}$ is the risk-free rate, expressed by the 1 year Euribor divided to the square root of 365. The coefficient $\boldsymbol{\alpha_{p,i}}$ (Jensen's alpha) is used to determine the excess return of the fund **i** and reflects the risk-adjusted return of the fund, measuring in parallel the stock selection ability of fund managers, which could help funds to provide investors with returns irrespective of the market return. If the market is efficient and the portfolio of fund **i** is properly priced, the expected alpha should not be different than zero. Positive and significant alphas indicate that the manager adds value while negative and significant alphas indicate that the manager fails to well diversify the portfolio he manages or that he picks stocks that are overpriced. The coefficient **βi** measures the part of the fund's **i** statistical variance that cannot be mitigated by the diversification provided by the mutual fund portfolio, because it is correlated with the return of the other stocks that are included in portfolio. Beta stands for the systematic risk of fund **i** and evaluates the degree of fund's sensitivity to the movements of benchmark. $\boldsymbol{\varepsilon_i}$ represents the residuals of regression equation (1).

In Greece, the portfolio's exposure on the market index is affected by a tough legislation that strictly defines the investment limits in individual securities, companies, and the types of securities allowed. Investment limitations imposed by the legislation aim to protect investors from insufficient diversification and over-exposure on one issuer, which could result in increased risk taking beyond that expected of the type of equity funds. In addition, derivatives are used only for hedging purposes and there is a strict prohibition for undertaking positions in commodities. These limitations weaken the managers' stock picking performance and they are also blamed as to hurt the ability of managers to efficiently time the market.

## 2.2 Rating Performance

Except the calculation of average daily returns and the regression analysis of abnormal returns, we evaluate fund performance against the performance of benchmarks by applying a rating of funds and indexes. We first perform the rating considering the individual groups of the funds and we then rate all funds and benchmarks concertedly.

We first rate funds by their total percentage returns. We calculate total return by subtracting the return on the first day of the period from the return on the last day of the period and dividing to return on the first trading day. The calculation of percentage return leans on the net asset prices of funds which are net of administrative expenses. Furthermore, we assume that the dividends that are received by funds (if any) are re-invested on the ex-dividend day. The total return of indexes is also calculated.

The second criterion of funds and indexes rating is the Sharpe ratio, which is estimated via the following equation (2):

$$S_{p,i} = \frac{\overline{R}_{p,i} - \overline{R}_f}{\sigma_{p,i}} \qquad (2)$$

where, $\overline{R}_{p,i}$ denotes the average daily portfolio's return for the equity fund ***i*** and $\overline{R}_f$ is the average daily risk-free rate, expressed by the 1 year Euribor divided to the square root of 365. $\boldsymbol{\sigma_{p,i}}$ is the standard deviation of fund's ***i*** return used as a measurement of the fund' s risk. The Sharpe ratio is estimated by the division of fund's ***i*** excess return to the risk of fund's ***i*** and is used to characterize how well the return of the fund ***i*** compensates the investor for the per unit risk taken. The higher the Sharpe ratio, the better is the performance of fund.

Additionally to Sharpe ratio, we estimate the Treynor ratio which is expressed by the next formula (3):

$$T_{p,i} = \frac{\overline{R}_{p,i} - \overline{R}_f}{\beta_{p,i}} \qquad (3)$$

where, $\overline{R}_{p,i}$ and $\overline{R}_f$ are defined as above and $\beta_{p,i}$ is the systematic risk of fund ***i***. Similarly to Sharpe ratio, the higher the Treynor ratio, the better is the performance of fund.

The last criterion used to rate the performance of funds is the Jensen's alpha which derives from regression equation (1). Positive (negative) and significant values of alpha are connected with value-added (non value-added) management and thereby funds with such alphas should be placed at the top (bottom) of funds' rating.

After rating funds and indexes performance, we check for the consistency of ratings among the four individual criterions, through the following single cross-sectional regression model (4):

$$Rating_i = \alpha + \beta Rating_j + u \qquad (4)$$

where, the terms i and j denote the couple of ratings that are regressed. Statistically significant estimations for beta coefficient that reaches unity indicate high consistency among the regressed performance ratings.

### 2.3 Testing Market Timing Ability

The market timing ability of managers implies the efficient increase or decrease of the portfolio's weight on equities prior to market accessions or decreases, respectively. However, the manager's market timing ability is affected by the investing objective of the fund, which probably obliges a manager to keep the same maximum or minimum portion of equities in his portfolio. In this case, the manager tries to time the market just by adjusting the equity synthesis of the portfolio, substituting the overpriced stocks by undervalued stocks. The successful market timing is also affected by the restricted or unrestricted usage of leverage and derivative products.

To test the market timing ability of Greek mutual fund managers we use two alternative regression models described in Bollen and Busse (2001) and (2004). The first one was developed by Treynor and Mazuy (1966; hereafter referred to as TM) and is expressed by the following equation (5):

$$R_{p,i} - R_f = \alpha_{p,i} + \beta_{p,i}(R_m - R_f) + \gamma_{p,i}(R_m - R_f)^2 + \varepsilon_{p,i} \quad (5)$$

where, $R_{p,i}$, $R_m$ and $R_f$ are defined as above and $\gamma_{p,i}$ measures timing ability. If the manager increases (decreases) efficiently the portfolio's exposure to market index prior to market accessions (recessions), $\gamma_{p,i}$ will be positive resulted from a convex function of portfolio's return with respect to market return.

The second model applied for testing the market timing ability was developed by Henriksson and Merton (1981; hereafter referred to as HM). According to the HM model, the manager allocates funds among money and equity instruments based on forecasts of the market's future return. The portfolio's β in HM model is allowed to alternate between two aimed levels respecting the magnitude of market's return. HM model is expressed by the next equation (6):

$$R_{p,i} - R_f = \alpha_{p,i} + \beta_{p,i}(R_m - R_f) + \gamma_{p,i} I_i (R_m - R_f) + \varepsilon_{p,i} \quad (6)$$

where, $I_i$ is an indicator function for fund i that equals one if the market's excess return $(R_m - R_f)$ is positive and zero otherwise. The coefficient $\gamma_{p,i}$ measures the difference in the target betas and is positive for the manager who is a successful market timer.

Bollen and Busse (2001) suggest that the daily tests on market timing are more powerful than monthly tests and that mutual funds exhibit more significant timing efficiency in daily tests than in monthly tests. In our paper, we evaluate the market timing skills of Greek mutual fund managers using daily data and expecting statistically significant estimations for $\gamma$ coefficients of models (5) and (6). 2.4 Testing Performance Persistence

### 2.4 Testing Performance Persistence

The last researching issue of the paper concerns the short-term persistence of Greek equity funds' performance. We investigate persistence based on the methodology of Bollen and Busse (2004). In specific, we first split the almost two-year studying period in 8 quarters and we estimate four alternative performance measures. The first performance measure is the average daily raw return of each quarter. The second performance measure is the risk-adjusted return of fund i (Jensen's alpha) in each quarter derived from the application of regression (1). The third and fourth performance measures lean on market timing models (5) and (6) and are estimated in average terms via the following equation:

$$R_{p,i} - R_f = \alpha_{p,i} + \gamma_{p,i} f(R_m - R_f) \quad (7)$$

as the average daily abnormal return resulted from managers' market timing activity. $R_{p,i}$, $R_m$ and $R_f$ are defined as above and $\alpha_{p,i}$ and $\gamma_{p,i}$ are estimated from timing models (5) and (6). Further, $f(R_m - R_f) = (R_m - R_f)^2$ for TM, and $f(R_m - R_f) = I_i (R_m - R_f)$ for HM. According to Bollen and Busse (2004), the coefficient $\alpha_{p,i}$ in equation (7) represents the cost of implementing the time strategy.

After the estimation of the four alternative performance measures, we evaluate performance persistence by comparing each quarterly performance to the subsequent quarterly performance. Afterwards, we assess

the statistical significance of performance persistence by applying the following cross-sectional regression model among the performances of successive quarters:

$$\text{Performance}_t = \alpha + \beta\text{Performance}_{t-1} + u \quad (8)$$

where, Performance expresses every one of the four different return measures. Funds are jointly considered irrespectively of fund groups. A positive and significant β would indicate that the performance in a past quarter predicts the performance in the following quarter.

## 3. Data and Descriptive Statistics

We study the performance of Greek equity mutual funds using daily data for 44 domestic equity funds during the period 08/01/2005 - 08/23/2007. Currently, a number of 61 domestic equity funds are available for investors, from which, 28 follow the General Index of Athens Stock Exchange (ASE), 8 follow the ASE/FTSE 20 Index, which is comprised by stocks with high capitalization, 8 follow the ASE/FTSE 40 Index of stocks with medium capitalization. In addition, 11 funds follow mixed benchmarks derived from various combinations of ASE's main broad and sector indexes while the benchmark of the rest 6 funds could not be ascertained. We choose to include in the sample only the funds that follow the three major broad indexes of ASE. These funds amount to 44 and were collected irrespectively of the size of assets under management and the magnitude of trading volume. We do not include in the sample the rest 17 domestic equity funds due to lack of trading data of their benchmarks.

We consider the daily returns of funds, which are calculated in share's net value terms being free of administrative expenses. The website of Greek Institutional Investors Association provides us with the daily net asset prices of funds. We also calculate the raw returns of the indexes using daily closing prices found in the Greek economic newspaper "Naftemporiki". The usage of daily data results in 518 available return observations.

Table 1 provides descriptive statistics for the returns of funds and benchmarks. Statistics are presented individually for each one of the three fund groups. Considering mean return, the results indicate that the funds in the first group, which follow ASE/General Index, on average, do not provide investors with additional raw returns with respect to the raw return of benchmark. Specifically, the average mean return of the funds equals 8 basis points (b.p.). This is also the mean return of ASE/General Index. Considering median returns, the average median return of funds included in the first group is 16 b.p. while the median raw return of the index is equal to 15 b.p. A relevant pattern applies to return of funds in the second and third group. In specific, the average mean (median) return of second and third fund group is 7 b.p. (14 b.p.) and 13 b.p. (21 b.p.), respectively. The corresponding return values for ASE/FTSE 20 Index and ASE/FTSE 40 Index are 7 b.p. (12 b.p.) and 16 b.p. (23 b.p.), respectively. From the magnitude of mean and median returns, we infer that, on average, Greek equity funds deliver approximately the same or inferior returns than the market indexes. However, there is a number of individual funds detected in all the available groups in Table 1 that derive better raw mean or median returns than the indexes do.

Going further in Table 1, we check for the risk imposed on investors by funds and indexes. Risk is defined as the standard deviation of funds' and indexes' daily returns. According to the findings in Table 1, all funds are less risky than indexes. In particular, the average standard deviation of first group's funds is 97 b.p. while the corresponding risk value of the benchmark is 106 b.p. Similarly, the risk of the funds in the second and third group is 100 b.p. and 107 b.p., respectively while the risk of benchmarks is 111 b.p. and 121 b.p., respectively. The results establish a risk disadvantage of indexes against the funds but this risk "superiority" probably drives indexes to perform better than funds.

The last two columns of the table report the estimations of two alternative risk-to-return ratios. These ratios are estimated by diving the standard deviation of returns by the mean and median percentage daily return, respectively, and measure the risk per unit of return. The risk-to-mean return ratio of the average fund in the first group is 12.24 while the relevant ratio of ASE/General Index is 13.25. Similarly, the average risk-to-median return ratio of funds in the this group is 6.18. The corresponding average values of risk-to-mean return and risk-to-median return ratios of funds in the second group are 14.01 and 7.07 while the ratios of ASE/FTSE Index are 15.86 and 9.25. Lastly, the average values of the ratios for the funds in the third group are 8.32 and 5.25. ASE/FTSE Index's ratios are 7.56 and 5.26. Overall, the results indicate that indexes achieve one unit of return by loading investors with

greater risk comparing with the risk induced by funds for the same unit of return.

## 4. Empirical Results

### 4.1 Regression Results in Explaining Risk-Adjusted Performance

The estimations of regression model (1) for risk-adjusted performance are presented individually for each fund group in Table 2. Included in the table are the value of Jensen's alpha which stands for risk-adjusted return, the beta coefficient of each fund, t-statistics which check for the statistical significance of estimations, R-square which evaluates the explanatory power of the applied model, and the number of observations.

The average alpha of funds that follow the ASE/General Index equals minus 1 b.p. and stands too close to zero. Totally, there are 17 statistically significant alphas at all acceptable levels (1%, 5% and 10%), from which, only one is positive and equals 3 b.p. The average alpha estimate for the funds which follow ASE/FTSE 20 Index and ASE/FTSE 40 Index, are minus 1 and 3 b.p., respectively. There 3 and 5 significant alphas for funds in the second and third group correspondingly which are all negative.

Results suggest that the fund's performance follows closely the performance of the benchmarks failed to deliver abnormal returns. In fact, since the alpha estimate of the benchmark is a priori zero, we ascertain that Greek equity funds, on average, perform worse than indexes. These findings agree to the relevant findings of the literature about U.S. mutual funds [see, Blake, Elton and Gruber (1993), Malkiel (1995), Gruber (1996)]. Interpreting results as an indicator of market's efficiency, we perceive that Greek mutual fund market is probably efficient enough offering managers no significant opportunities for gaining irregular returns. Perceiving results as an indicator of the selection skills of managers, the majority of significantly negative alpha estimates show that Greek equity mutual fund managers either fail to diversify properly the portfolios they manage or fail to add value for investors by detecting and picking stocks that are undervalued. However, we should point out that the tough Greek legislation may hurts the selectivity performance of managers by constraining the maximum investment limits. If a winning stock's participation to the market index exceeds the maximum limits imposed by legislation, then there is gap among index and fund portfolio which partially explains underperformance.

Considering beta estimates, the beta of the average fund in the first group is 0.90 while the market's beta is equal to unity by definition. Individual betas are all statistically significant at the 1% level while there is no beta estimate which to exceed unity. This is also the case for the funds in the second and the third group. The average beta for funds that follow ASE/FTSE 20 Index and ASE/FTSE 40 Index, is 0.88 and 0.84, respectively.

The results indicate that Greek equity funds are more conservative than benchmarks, even though, funds are lengthily invested in the securities of the index portfolios. This pattern leads funds to be less sensitive to the movements of the market, protecting them in a bear market but constraining them in a bull market. This means that funds' return declines less than benchmarks' return when the market goes down but funds' return ascends slowly in comparison to indexes' return when the market moves upwards.

Finally, according to Table 2 the average R-square values for the funds in the three groups equal 0.96, 0.95 and 0.91, respectively. The values of R-square are judged to be high reflecting the power of model (1) in explaining the risk-adjusted performance of Greek equity funds.

### 4.2 Results in Rating Performance

In this section we present the rating of funds' and indexes' performance according to total return, Sharpe ratio, Treynor ratio and Jensen's alpha. Table 3 presents fund rating with respect of each individual fund group.

The average percentage total return of funds included in first group is 48.37 while total return of ASE/General Index is slightly inferior, being equal to 46.71. The index is placed on thirteenth position showing that the majority of funds perform worse than index. The same inference derives when we rank funds by the rest of ratios. The average Sharpe, Treynor and Jensen ratios for funds in the first group are -0.11, -0.12 and -0.01, respectively, while the corresponding measurements for the benchmark are -0.10, -0.10 and 0.00, being slightly better than the average funds' ratios. The index is placed

to sixth position according to Sharpe and Treynor ratios and to the fifth position according to Jensen's alpha.[1]

The average total return of funds in the second group is 42.17 and the relevant return of benchmark is 39.87. This result shows that funds invested in stocks of high capitalization deliver on average better raw returns than index, driving index to be placed to the fifth rank. However, this inference is rejected when we consider the Sharpe, Treynor and Jensen ratios. In particular, the corresponding ratios for the average fund of the group are -0.11, -0.13 and 0.00, being a little better than the ratios of the funds. According to Sharpe and Treynor ratios, ASE/FTSE 20 Index receives the third better rank while, under the Jensen rating, it takes the second better rank.

The rating of funds in the third group slightly deviates from the relevant rating in the first two groups. In specific, the average total percentage return of funds is 92.61, being significantly lower than the ASE/FTSE Index's return which equals 123.60. The return of index is thereby postured on the top of ranking. Going further, we see that the gap among the average Sharpe, Treynor and Jensen ratios of funds and index is bigger than the corresponding gaps in the first two fund groups. The average Sharpe ratio of funds is -0.05 while the relevant ratio for the benchmark is -0.02. Similarly, the average Treynor and Jensen ratios of funds are -0.07 and -0.03, respectively, while the relevant values for the index are -0.02 and 0.00.

Table 4 presents the results of performance rating when we rank all funds and indexes together irrespectively of individual groups. The results indicate that the ASE/FTSE 40 Index performs better than all funds and other indexes. This inference is confirmed by the first three criterions but not by the Jensen's alpha. However, as we noticed in the previous section, there is only one positive and significant alpha and we thereby suggest that the average fund performs at the most equally or worse than the ASE/FTSE 40 Index. Furthermore, the average total return of funds is 55.13 exceeding total returns of ASE/General Index and ASE/FTSE 20 Index. In addition, the average Sharpe, Treynor and Jensen ratio of funds are -0.10, -0.11 and -0.02, being equal or inferior to the relevant ratios of the benchmarks. Overall, the performance's rating confirms the finding in previous section about the inexistent or insignificant abnormal risk-adjusted return provided by the majority of Greek equity funds in comparison to index returns.

Table 5 reports the estimations of regression equation (4), which evaluates the consistency of ratings among the four alternative ranking methods. Model (4) is applied using the results of Table 3, which regard the performance rating in each individual fund group, and using the results of Table 4, which relate to the performance rating of all funds together. The model's beta estimate is used as the indicator of consistency.

The regression's results for the funds of first group show that the ratings under the four criterions are highly consistent to each other. All beta estimates are positive and significant at the 1% level. The minimum beta estimate relates to the combination of total return and Jensen rating. The maximum beta coefficient is 0.99 and concerns the combination of Sharpe and Treynor ratios. The estimations are analogous in the second and third group but the results are less powerful when we regress the ratings of all funds together. In specific, the results signal high consistency among total return and Sharpe rating, total return and Treynor rating and Sharpe and Treynor rating, implying that Jensen rating abstains significantly from the other ratings. We attribute this discrepancy to the sum of 19 alpha estimates derived from model (1) which are insignificant. This insignificance obviously harms the consistency of performance rating.

### 4.3 Regression Results in Testing Market Timing

This section discusses the estimations of models (5) and (6), which evaluate the market timing skills of Greek mutual fund managers. Table 6 presents the results of TM model (5) individually for each fund group. Presented in the table are values of alpha, beta and gamma coefficients, the values of t-statistics which check the statistical significance of estimates, the values of R-square which measures the explanatory power of the model, and the number of daily observations. The market timing performance of managers is appreciated via the gamma coefficient.

1 We use the performance's rating according to Jensen's alpha just for informational purposes. However, we do not base strongly our evaluations on this criterion since a substantial number of individual alphas are statistically insignificant (19 from a sample of 44 alphas).

The average gamma of funds in the first group is negative and equal to -0.01. In addition, the majority of gamma estimates are negative and statistical significant at all acceptable levels (1%, 5% and 10%). Specifically, 17 gamma estimates are negative and significant. Further, there are only two positive gammas which are insignificant. The results of TM model for the funds that follow the ASE/FTSE 20 Index and ASE/FTSE 40 Index, respectively, resemble the results of first group. In specific, the average gamma is negative and equals -0.02. 6 of 8 gamma estimates are negative and significant. The average gamma of the third group is zero and there are only three significant estimations which are negative.

The estimates of HM model (6) are presented in Table 7. Similarly to Table 6, Table 7 displays alpha, beta and gamma estimates, the values of t-statistics, the values of R-square and the number of observations. Again, gamma measures the timing skills of managers.

The average gamma estimation for the funds that follow ASE/FTSE General Index is -0.07 and the majority of individual gammas (24 estimations) are negative and statistically significant. Similarly, the average gamma for the funds in the second and third group are -0.10 and -0.05, respectively, while the majority of single gammas are significantly negative (6 estimations for the second group and 5 estimations for the third group). It is noticeable that the average gammas of HM model are inferior to the average gamma of TM model. In specific, the average gamma of HM model of first group is smaller than the relevant estimation of TM model by six b.p. Similarly, the average HM gammas of the second and third group are inferior to their respective TM gamma estimates by 8 and 5 b.p., respectively. This finding is expectable since Bollen and Busse (2001) also report significant differences among and the average TM and HM market timing coefficients.

The results of both TM and HM models reveal that Greek fund managers are rather unable to time the market adequately. The negative gammas indicate that, on average, managers fail to increase efficiently the exposure of equity fund portfolios to the market index prior to marker accessions and to decrease exposure prior to market declines. Our results agree to Treynor and Mazuy (1966), Henriksson and Merton (1981), Chang and Lewellen (1984), Henriksson (1984), Graham and Harvey (1996), who all report restricted on inexistent market timing ability of managers. The main element of these studies is that returns are considered monthly or annually while, in our study, returns are considered daily. Therefore, our findings are more comparable to the results of Bollen and Busse (2001) and Chance and Hemler (2001). These authors apply daily tests on the market timing efficiency of mutual funds and show that managers possess material market timing skills. However, this inference does not apply to Greek managers according to our results.

The power of our results is confirmed by the average values of R-square of all fund groups resulted by both market timing models. The average R-square is 0.94 (not clearly reported in Tables 6 and 7). Though, we should point out that Bollen and Busse (2001) suggest a more conservative interpretation of such results due to two potential sources of spurious timing coefficients. According to authors, the first source relates to the cash-flow hypothesis, under which, gammas are might biased downwards, even to negative levels, because when market accesses, investors increase subscriptions to mutual funds, resulting in a temporarily higher cash position and a lower level of fund's systematic risk. This suggestion has been proven empirically by Edelen (1999), who shows that cash rebalances in mutual fund portfolios can completely explain the negative monthly market timing estimations. However, we are not able to examine this potential effect due to lack of daily cash flow data about Greek equity funds.

The second source of spurious timing estimates relates to the stock holdings of mutual fund portfolio. In particular, market timing models potentially lead to spurious timing estimations when the funds hold stocks with payoffs that are more option-like than the market index. According to Bollen and Busse (2001), when the average stock holding in an equity fund is more option-like than the average stock in the market portfolio, the market timing models result in positive gamma estimates and negative estimates of the models' alpha. Yet, this is not the case in our study, since the majority of gammas estimates are negative and significant. Additionally, the average intercept of TM model's estimations in Table 6 is -0.01 (not clearly reported in the table) but the significant alphas are either positive or negative. The same pattern applies to results of HM regression model. The average gamma is clearly not positive, being equal to -0.07 (not reported in Table 7).

### 4.4 Results in Testing Performance Persistence

The short-term persistence in performance of Greek equity funds is discussed in this section. We evaluate persistence quarterly using four alternative performance measures, that are, average daily raw return of fund i in each quarter, the risk-adjusted return expressed by Jensen's alpha, and two types of daily abnormal return due to managers' market timing activity (TM and HM abnormal returns).

Table 8 reports the average performance of funds in each individual quarter. Daily performance is presented in average terms for the three distinct fund groups. The average daily return of all funds in each quarter is also presented in the table. Finally, return calculations are presented for each individual performance measurement.

Considering daily raw return, the average return of all funds is positive during the first three quarters, is negative in the fourth quarter, is positive during the next three quarters and is negative in the last quarter. The same fluctuation of return applies to all single fund groups. Basing on return's sign and not on its magnitude, we suggest that fund performance persists over three quarters and reverses after these three quarters.

The average quarterly estimates of Jensen's alpha are basically negative or zero. In specific, average risk-adjusted return of all funds is negative in the first quarter and after the third quarter, while abnormal return equals zero during the second and third quarter. These results indicate that the average fund persistently underperforms market index in a maximum interval of 15 months (four quarter holding periods after a specific quarter). This inference could be interpreted as lack of selectivity skills by managers and agrees to findings by Hendricks, Patel and Zeckhauser (1993), Jegadeesh and Titman (1993), among others, who find performance persistence partially related to managers' selection activity.

Similarly to risk-adjusted return, the average TM abnormal return of all funds is negative or zero. TM return fluctuates similarly to risk-adjusted return, excepting that it is zero in the fifth quarter, while the average risk-adjusted return in this quarter is negative. The results do not change significantly when we assess the HM abnormal return excepting the fact that the return of third quarter is positive and that the return of the fifth quarter is negative instead of zero in comparison to the relevant TM return. Results reflect persistence in TM and HM abnormal returns in a maximum time interval of 9 months for TM return and 12 months for HM return. The results are consistent to the findings of Bollen and Busse (2004), who also report persistent negative abnormal returns driven by constant levels of large expenses, which are subtracted daily from the total asset value of funds. Carhart (1997) also reports persistence for the worst-performed funds driven by expenses.

Table 9 reports the results of regression model (8) which evaluates the statistical significance of performance persistence. Results are presented individually for each performance measure. The beta estimates for average daily raw returns are positive but insignificant for the combination of the first two quarters but is significantly positive when we regress returns of the second and third quarter. Contrarily, beta is significantly negative in the next two combinations and significantly positive for the last three combinations starting from the regression among the fifth and sixth quarter. These betas establish persistence in average daily raw returns over one-to-three quarter holding periods after a specific quarter.

Considering Jensen's alpha, results reflect statistically significant performance persistence over one-to-three quarters (maximum holding period equal to 12 months). Similarly to regression results of average daily raw return, beta estimates for risk-adjusted return are basically positive and significant. The maximum range of positive and significant betas covers the last four quarters starting from the combination of fifth and sixth quarter. These estimates indicate persistence of risk-adjusted in a maximum period of 12 months. However, there is a negative and significant beta estimate for the combination of third and fourth quarter which shows that performance reverses at the end of third quarter.

The statistical significance of beta estimations for TM and HM abnormal returns are similar to the risk-adjusted return's betas. Beta estimates of TM return are positive and significant for the second and third quarter and for the last three quarters. Beta is negative and significant for the combination of third and fourth quarter. Beta estimates for HM return are positive and significant for the second and third quarter and for the last four quarters while other periods' beta are insignificant. The results reflect maximum performance persistence

over three quarter holding periods after a specific quarter (total holding period equal to 12 months).

## 5. Summary and Conclusions

The literature has shown great interest in investigating the performance of mutual fund managers in US, European and Asian markets considering the abilities of managers to beat the market by applying efficient selection and market timing strategies. The literature also investigates the performance persistence attributing its existence to the skills of managers or to other factors, like expenses. This paper searches performance patterns of Greek domestic equity fund managers filling the respective literature's gap and allowing comparisons of the Greek mutual fund market with developed ones.

At first, considering average daily raw return we find that equity funds deliver average daily percentage returns that are similar or are inferior to return of benchmarks, being in parallel less risky than the indexes. Considering risk-adjusted performance expressed by Jensen's alpha we find no evidence that Greek fund managers achieve above-average returns with respect to the return of benchmarks. In fact, the average alpha of all equity funds is negative and equal to -0.02 while the majority of individual alphas of the sample are negative and significant. This finding may suggests that the Greek mutual fund market is efficiently enough providing managers with no significant opportunities for gaining abnormal returns. Results may also be interpreted as an indicator for the lack of selection skills by managers. This indicator shows that managers fail to detect and select the stocks that are undervalued. However, we should keep in mind that the tough Greek legislation may restricts the selection performance of managers. Funds are also found to be more conservative in comparison to indexes since their betas are smaller than unity.

By rating funds and indexes according to Sharpe and Treynor ratios and risk-adjusted performance, we find that, on average, funds do not perform significantly better than indexes, even though, funds that invest in stocks included in the ASE/General Index and in the ASE/FTSE 20 Index seem to perform slightly better than indexes in total raw return terms. This finding does not apply for the funds that invest in stocks of medium capitalization.

Considering the market timing abilities of Greek managers, the results indicate that managers are not able to time the market efficiently. The majority of market timing coefficients (gamma estimates) are significantly negative while the average gamma for the TM and HM model is -0.01 and -0.07, respectively. The lack of efficient market timing may contributes to the failure of funds to achieve significant abnormal returns.

At last, considering persistence the results indicate persistence over one- to four-quarter holding periods in fund performance after a specific quarter (total interval of persistence equal to 6-to-15 months). The maximum interval of persistence concerns risk-adjusted return, while the minimum time of persistence concerns all performance measures, that are, the average daily return, the average TM daily abnormal return and the average HM daily abnormal return.

Overall, our empirical results about performance of Greek domestic equity funds are similar to the relevant results of the literature about the funds' performance in the developed counterparts in the US, Europe and elsewhere. In particular, we do not find evidence for significant risk-adjusted performance, which is also the case in the studies of the literature which cover the developed fund markets. Further, our findings suggest lack of material selection and market timing skills agreeing to the findings of the literature about corresponding lack of selection and timing abilities of managers in the developed mutual fund industries [e.g. Carhart (1997)]. Finally, we find evidence for persistence in the negative risk-adjusted and TM and HM abnormal return which is probably driven by expenses [explanation suggested by Carhart (1997) and Bollen and Busse (2004)] or from the lack of informed or skilled market timing managers. Our findings support the existing literature on mutual fund performance and managerial behavior with a different set of data in a market with different operating characteristics.

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# Contradictory answers of questionnaires

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The questions of the questionnaires on public opinion, market research, civilians' attitudes etc. are formulated in high percentage as nominal variables and evaluation scales (Likert scales).

Cases that an answer in one question excludes some possible answers of other questions are not rare.

After initially locating the questions that present mutually excluded answers, we aim to suggest a simple and automated way, a trap, with which we may "catch" not only whether there are questions that were answered in a contradictory way but from how many respondents they come from.

Thereby the validity of the answers (data), with regard to the contradiction, is secured.

**JEL Classification codes:** C00, M00

**Keywords:** contradictory answers, nominal variables, burt table

## Introduction

Several problems are apparent within the surveys using questionnaires, which are considered to be among the most important and more usual methods to gather primary (warm) data in issues that refer mainly to the social sciences.

The difficulty of understanding the questions, the respondents' indifference, errors, even the intentionally misleading answers are some of the causes that produce problems in the reliability of the data and finally in the conclusions gained from their analysis.

The non responded questions (Hansen, M. H. (1946), Gilley, O. W. (1991)), the outliers data and the rare answers (Le Roux, (1999), Moschidis, (2009), Wiseman, F. (1984), Yu, J. (1983)), create problems at the questionnaires treatment. There are known ways though, of dealing with those problems.

In this paper we suggest an automated way of determining the contradictory answers.

We refer to questions that their answers are measured in categorical or ordinal scales. Not rarely, in such questions is, for an answer in one of them to exclude

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logically some possible answers in other questions. So, contradictory answers are located in the mutually excluded answers of questions.

To be more explicit, we present the example of a questionnaire, which includes among others the following questions:

**Question 1:** (E1) Which of the following languages do you know at a satisfactory level?

| English | German | French | Spanish | Russian |
|---|---|---|---|---|

**Question 2:** (E2) In which of the following languages would you like to be examined?

| English | German | French | Spanish | Russian |
|---|---|---|---|---|

A respondent declares in E1 that he/she does not speak fluently German, but in question E2 he/she declares that he/she wants to be examined in German.
The answers given in the questions E1 and E2 are contradictory, as the answer in E1, excludes the given answer in E2.

## Presentation of the method

Let's suppose two questions $E_1$ and $E_2$ of a questionnaire that their answers are measured respectively with the nominal scales X and Ψ, where the variable X takes $\alpha_1, \alpha_2, \ldots, \alpha_p$ possible answers and the Ψ takes $\beta_1, \beta_2, \ldots \beta_q$. Every respondent chooses only one answer from the X and Ψ. We suppose for easiness that the answers $\alpha_1$ and $\beta_1$ of the questions X and Ψ are respectively contradictory.
We code the answers of all n respondents $(i_1, i_2, \ldots, i_n)$ in a logical table (0-1), e.g. in a table where for each question, the selected from the respondent answer is defined 1 and the rest are defined 0. Consequently, the logic table A, for the variables X and Ψ, takes the form:

**Table 1: The table (0-1) of the variables X,Ψ**

A=

| | X1 | | | | Ψ1 | | | |
|---|---|---|---|---|---|---|---|---|
| i1 | $X_{11}$ | $X_{12}$ | ... | $X_{1p}$ | $y_{11}$ | $y_{12}$ | ... | $y_{1p}$ |
| i2 | $X_{21}$ | $X_{22}$ | ... | $X_{2p}$ | $y_{21}$ | $y_{22}$ | ... | $y_{2p}$ |
| ... | ... | ... | ... | ... | ... | ... | ... | ... |
| in | $X_{n1}$ | $X_{n2}$ | ... | $X_{np}$ | $y_{n1}$ | $y_{n2}$ | ... | $y_{np}$ |

Where X1 is the logical table of the answers given by the (n) individuals in the variable X and Ψ1 in the variable Ψ.

The row i of the table A consists of two sets of numbers. The first set, that refers to question X, contains the numbers $x_{i1}, x_{i2}, \ldots x_{ip}$, from which exactly one is equal to unit and the rest are equal to zero. In the second set, that refers to question Ψ, the numbers $y_{i1}, y_{i2}, \ldots y_{iq}$ are included, where also one number is equal to 1 and the rest to 0.

We are interested in examining if there are any individuals and how many they are those who chose simultaneously the contradictory answers $\alpha_1$ and $\beta_1$. If for the individual i it is $x_{i1}=1$ and simultaneously $y_{i1}=1$ we already have an individual who answered contradictory the questions X and Ψ and we can write $x_{i1}\cdot y_{i1}=1\cdot 1=1$. While if for the individual j it is $x_{j1}=0$ or $y_{j1}=0$, then the individual did not answer in a contradictory way and we can write $x_{i1}\cdot y_{i1}=0$. Consequently the number $\alpha_{11}$ of the individuals, who answered in a contradictory way in the questions X and Ψ is:

$$\alpha_{11}=1+0+\ldots = x_{11}\cdot y_{11}+x_{21}\cdot y_{21}+\ldots+x_{n1}\cdot y_{n1}=$$

$$=[x_{11}\, x_{21} \ldots x_{n1}]\cdot\begin{bmatrix} y_{11} \\ y_{21} \\ \vdots \\ y_{n1} \end{bmatrix}\cdot \text{(Moschidis, 2003)}$$

If $\alpha_{11}=0$, then there is none individual who answered in a contradictory way in the questions X and Ψ, otherwise if $0<\alpha_{11}\leq n$ then there are $\alpha_{11}$ individuals who answered in a contradictory way.

Generally, if we symbolize with $\alpha_{ij}$ the number of the individuals who have chosen simultaneously the answers $\alpha_i$ and $\beta_j$ then it is:

$$\alpha_{ij}=[x_{1i}\, x_{2i} \ldots x_{ni}]\cdot\begin{bmatrix} y_{1j} \\ y_{2j} \\ \vdots \\ y_{nj} \end{bmatrix}\cdot$$

Consequently for the contingency table K(X1,Ψ1), p×q, it is:

$$\underset{pxq}{K(X1,\Psi 1)}=\begin{bmatrix} \alpha_{11} & \alpha_{12} & \cdots & \alpha_{1q} \\ \alpha_{21} & \alpha_{22} & \cdots & \alpha_{2q} \\ \cdots & \cdots & \cdots & \cdots \\ \alpha_{p1} & \alpha_{p2} & \cdots & \alpha_{pq} \end{bmatrix}=\underset{pxn,\ nxq}{X1'\cdot\Psi 1}$$

where X1 ′ the transposed table of the table $X1 = \begin{bmatrix} X_{11} & X_{12} & \cdots & X_{1p} \\ \cdots & \cdots & \cdots & \cdots \\ X_{n1} & X_{n2} & \cdots & X_{np} \end{bmatrix}$.

With the symbolism K(E1,E2) we mean afterwards the contingency table K(X1,Ψ1).

Lets consider henceforth the table K(X1,Ψ1) e.g. the contingency table of X and Ψ then the number $\alpha_{ml}$ gives the number of the individuals, who have chosen simultaneously the answer $\alpha_m$ and $\beta_l$ and if these answers are contradictory we have the information asked.

Afterwards, to be more explicit we give the example

**Table 2: Example of logical table 0-1.**

**A =**

| | $\alpha_1$ | $\alpha_2$ | $\beta_1$ | $\beta_2$ | $\beta_3$ |
|---|---|---|---|---|---|
| $i_1$ | 1 | 0 | 0 | 0 | 1 |
| $i_2$ | 1 | 0 | 0 | 0 | 1 |
| $i_3$ | 0 | 1 | 0 | 1 | 0 |
| $i_4$ | 0 | 1 | 0 | 0 | 1 |
| $i_5$ | 1 | 0 | 1 | 0 | 0 |
| $i_6$ | 1 | 0 | 0 | 0 | 1 |
| $i_7$ | 0 | 1 | 0 | 1 | 0 |
| $i_8$ | 1 | 0 | 1 | 0 | 0 |
| $i_9$ | 1 | 0 | 1 | 0 | 0 |
| $i_{10}$ | 0 | 1 | 0 | 1 | 0 |

Where A the logical table of 10 individuals in two questions X and Ψ with 2 and 3 possible answers respectively.

Knowing that the answers $\alpha_1$ and $\beta_2$ are mutually excluded we calculate the contingency table $K(X_1,\Psi_1)$

It is $K(X_1,\Psi_1) = X1' \cdot \Psi1 = \begin{pmatrix} 3 & 0 & 3 \\ 0 & 3 & 1 \end{pmatrix}$

The number $\alpha_{12}$=0 certifies that there were no contradictory answers.

Also, if we suppose that the answers $\alpha_2$ and $\beta_3$ are mutually excluded as well, then from the number $\alpha_{23}$=1, we see that one of the ten respondents answered contradictory.

Afterwards we examine the contradiction in all the questions $E_1, E_2, \ldots, E_s$ of the questionnaire.

We create initially the logical table A for all the questions $E_1, E_2, \ldots, E_s$, the same way we did for the two questions.

Followingly we calculate the table A′ · A = B, where A′ the transposed of the table A. Table B (table Burt) is a table of tables, the table of all contingency tables $K(E_i, E_j)$ of the questions $E_i, E_j$ per two, e.g.

$$B = \begin{pmatrix} K(E_1,E_1) & K(E_1,E_2) \ldots\ldots K(E_1,E_s) \\ K(E_2,E_1) & K(E_2,E_2) \ldots\ldots K(E_2,E_s) \\ \cdots & \cdots \\ K(E_s,E_1) & K(E_s,E_2) \ldots\ldots K(E_s,E_s) \end{pmatrix}$$

which is symmetric.

Consequently if we want to examine the contradiction in the questions i.e. $E_2$ and $E_3$ we focus our attention in the contingency table $K(E_2, E_3)$.

An example follows.

Suppose that A is the logical table of 10 individuals in three questions X, Ψ, Z of the questionnaire with 2, 3 and 5 possible answers respectively.

The logical table (0-1) A is:

**Table 3: Example of the logical table 0-1.**

**A=**

| | X1 | X2 | Ψ1 | Ψ2 | Ψ3 | Z1 | Z2 | Z3 | Z4 | Z5 |
|---|---|---|---|---|---|---|---|---|---|---|
| $\alpha_1$ | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| $\alpha_2$ | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| $\alpha_3$ | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| $\alpha_4$ | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| $\alpha_5$ | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| $\alpha_6$ | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| $\alpha_7$ | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| $\alpha_8$ | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| $\alpha_9$ | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| $\alpha_{10}$ | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |

**The table Burt of the table A is the table:**
**B=A′.A , e.g.**

**B=**

| | X1 | X2 | Ψ1 | Ψ2 | Ψ3 | Z1 | Z2 | Z3 | Z4 | Z5 |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 6 | 0 | 3 | 0 | 3 | 1 | 1 | 1 | 2 | 1 |
| X2 | 0 | 4 | 0 | 3 | 1 | 1 | 2 | 1 | 0 | 0 |
| Ψ1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Ψ2 | 0 | 3 | 0 | 3 | 0 | 1 | 1 | 1 | 0 | 0 |
| Ψ3 | 3 | 1 | 0 | 0 | 4 | 1 | 2 | 0 | 1 | 0 |
| Z1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 |
| Z2 | 1 | 2 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 |
| Z3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| Z4 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 |
| Z5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Given that the questions Ψ and Z include the contradictory answers $\Psi_1$ and $Z_2$ we consider the contingency

table $K(\Psi, Z) = \begin{pmatrix} 0 & 0 & 1 & 1 & 1 \\ 1 & 1 & 1 & 0 & 0 \\ 1 & 2 & 0 & 1 & 0 \end{pmatrix}$, as the number

$\alpha_{12}=0$ results that no respondent answered in a contradictory manner in the questions Ψ and Z.

We go on in the exactly same way for the other pairs of questions that include contradictory answers.

## Concluding

The control of the answers' contradiction of all the questions of a questionnaire, which are formulated as nominal or ordinal variables, is made with the following steps ($B_j$).

$B_1$: We create the logical table A of all the answers that are formulated in nominal variables

$B_2$: We create the table $B=A' \cdot A$, where $A'$ the transposed of the table A, of all contingency tables $K(E_i, E_j)$ of the questions (variables) $E_i$, $E_j$ per two. (Table B is known as Burt's table).

$B_3$: We choose from table B every contingency table $K(E_i, E_j)$ where the questions $E_i$ and $E_j$ are susceptible of contradictory answers. Supposing that the answer m of the question $E_i$ and l of the question $E_j$ are contradictory, we check the number $K_{ml}$ (of the m row and l column) of the contingency table $K(E_i, E_j)$. The number $K_{ml}$ has to be zero so that no contradictory answers exist.

The description of the suggested methodology hopefully ensures the validity of the data with regard to contradiction.

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derivatives.gr

- The first Hellenic site dedicated to financial derivatives.
- The biggest organized investment community in Greece.
- Derivative Online Tools
- Forum

**Derivatives.gr started its activities in June of 2000. It is the first Hellenic internet site dedicated to the derivative products.**

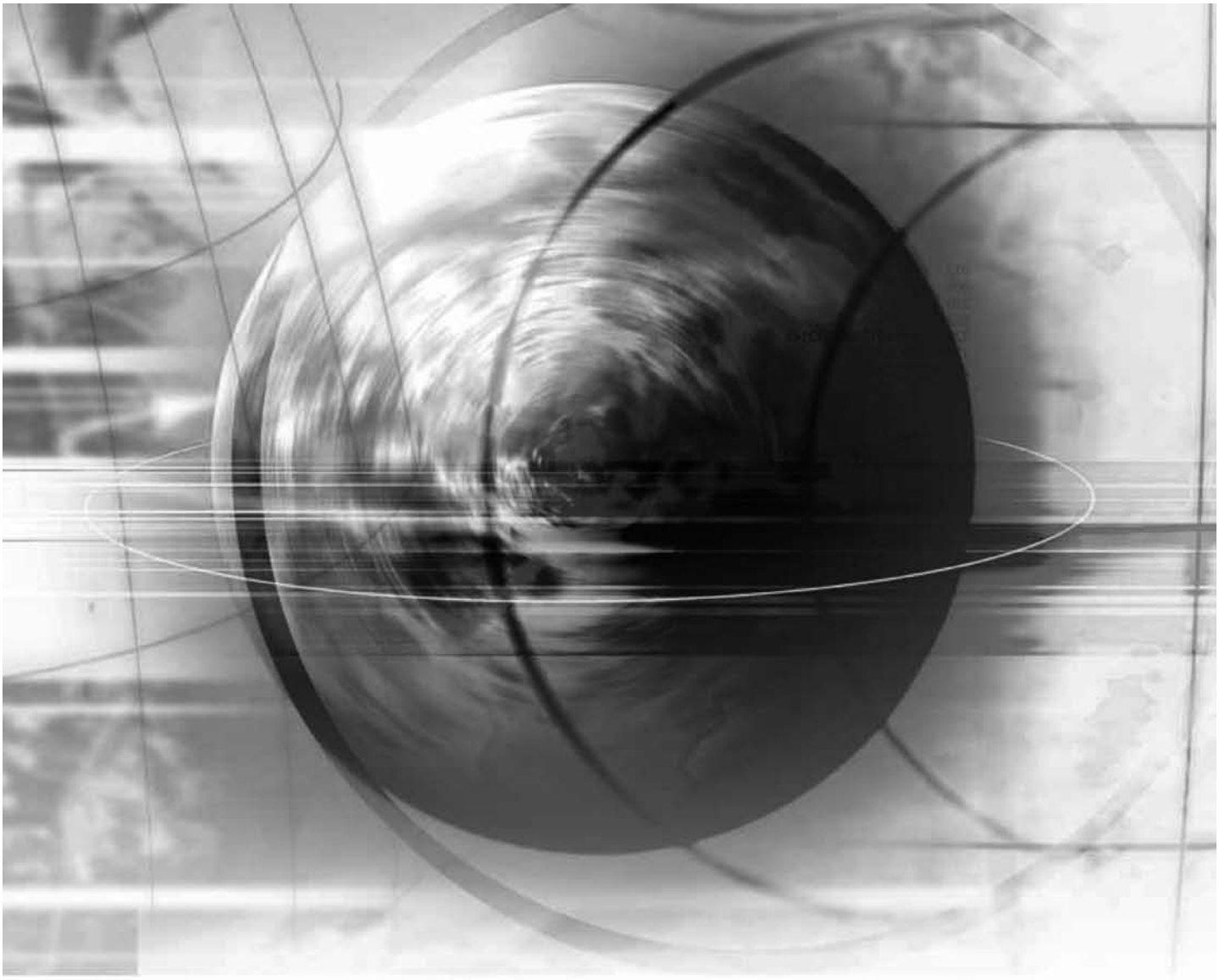
**With the introduction of derivative products in August 1999 in the Greek market, investors came to face a totally new investment vehicle that hides opportunities as well as increased risks.**

**Derivatives.gr is an independent company and does not belong under the umbrella of any financial institution. You can always trust Derivatives.gr for credential cooperation and analysis of the markets.**

Digital Weekly Magazine

The successful service of the weekly digital update, characterizes the differentiation points that Derivatives.gr provides to its members. With more than 100 weekly issues circulated until today, Derivatives.gr succeeded to provide an update and analysis of the markets worldwide. DWM reaches more than 4,000 members every Sunday night.

**It is a free service only to members of the investment community of Derivatives.gr**



# SPECIALIZED FINANCIAL TRANSLATIONS

## SFiT - Specialized Financial Translation Services

SFiT (Specialized Financial Translations) is an expert in the provision of integrated services in the area of specialized financial translations for more than 10 years. Through several years of experience, with responsibility and reliability, we have developed lasting relations with our customers, providing high quality services. We collaborate with experts, financial analysts, and specialist translators with graduate level education and academic experience. At SFiT, we cater to your actual translation needs and offer you solutions for the efficient promotion of your company.

Our experience stems from long-term collaboration with companies listed on the Stock Exchange. Our services relate to translations and editing of a broad range of texts, such as:

- Annual Reports,
- Press Releases,
- Financial Statements,
- Notes on Financial Accounts,
- Advertising Promotion, etc
- Annual Bulletins,
- Company Profiles,
- Certified Auditor - Accountant Reports,
- Business Correspondence.

Our company maintains a relation of mutual respect with its corporate clients, meeting the strictest confidentiality requirements for data and information.

## Why is Specialized Financial Translation Important for your Company?

Today companies, striving to expand their business activities abroad, seek to establish an international presence. Pursuing this logic, they communicate closely and regularly with customers, suppliers, collaborating companies, as well as interested investors from abroad.
Consequently, market requirements as well as the necessity for companies to put forward a competitive new face, make financial translation an essential tool to better publicize their corporate identity to collaborating suppliers, potential customers, as well as foreign investors.

## Training Seminars

Our company, independently or in collaboration with prestigious Greek institutions, undertakes the training of the executive staff of companies in various areas of specialized financial translations, in order to provide interested companies with useful expertise for their day-to-day operations.

## Potential Customers

- Companies listed on the Stock Exchange
- Industries, Commercial Companies, Construction Companies
- Food Industries & Companies
- Telecommunications Companies
- Public Corporations
- Private Customers
- Translations of Corporate Websites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