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EDITORIAL

Dear readers!

This issue of the journal is devoted to several issues of corporate governance.

M. Adetunji Babatunde, Olawoye Olaniran made use of panel data regression analysis between 2002 and 2006 for a sample of 62 firms listed on the Nigerian Stock Exchange to examine the relationship between internal and external governance mechanisms and corporate firms' performance. The results have the implication that regulatory agencies should encourage firms to achieve a reasonable board size since overly large boards may be detrimental to the firm. Our results also show no significant evidence to support the idea that outside directors help promote firm performance. In addition, the study found that the measure of performance matter for analysis of corporate governance studies. We found in some cases different results from the use of Returns on Assets (ROA) and Tobin's Q as measures of firm performance.

Mª Belén Lozano, Pilar Murillo outline a first analysis of the choices taken by firms when contracting with the public administration, considering the existence of both legal and corrupt contracts and the sustituibility or not of both. We then show a financial model justifying the choice of a contract portfolio based on the uncertainty and risk involved. The conclusions allow us to both offer some performance directives in order to control the phenomenon of corruption, and to understand the persistence of corrupt contracts.

Loretta Baryeh, Peter DaDalt, Varda Yaari study a sample of 233 firms that conducted SEOs in the 1987-2004 period and either their directors and/or their senior officers traded in the firm's shares. We find that 15% have insider trading by directors only, and 85% by both directors and senior officers. The market discounts the insider trading at the issuance date (the discount increases in the volume of insiders sales), but it treats insider trading by directors as a favorable signal that reduces the discount. Our study then identifies two ways directors monitor opportunistic insider trading before SEO. One is to ban it, as evident by the fact that under our selection criteria, 791 firms conducted SEOs in the 1987-2004 period. The other is to trade too as a positive signal to the market.

Johan de Beer narrates the introduction of single stock futures to a market allows for a per company impact-assessment of futures trading activity. Thirty-eight South African companies were evaluated in terms of a possible price and volume effect due to the initial trading of their respective single stock futures contracts. An event study revealed that SSF trading had little impact on the underlying share prices while a normalised volume comparison pre to post SSF trading showed a general increase in spot market trading volumes.

Tom Mortimer considers the traditional approach to the 'state' Models of corporate governance, namely shareholder Model and stakeholder Model. It then considers the extent to which developments in a recent accession EU country, Poland, reflects either of these Models or adopts a hybrid approach. It then offers proposals for the future development of corporate governance within Poland.

CORPORATE OWNERSHIP & CONTROL

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THE EFFECTS OF INTERNAL AND EXTERNAL MECHANISM ON GOVERNANCE AND PERFORMANCE OF CORPORATE FIRMS IN NIGERIA

M. Adetunji Babatunde*, Olawoye Olaniran**

Abstract

There is a renewed interest on the need to strengthen mechanisms to ensure that managers and directors take measures to protect the interest of a firm's stakeholders. This study made use of panel data regression analysis between 2002 and 2006 for a sample of 62 firms listed on the Nigerian Stock Exchange to examine the relationship between internal and external governance mechanisms and corporate firms' performance. The results have the implication that regulatory agencies should encourage firms to achieve a reasonable board size since overly large boards may be detrimental to the firm. Our results also show no significant evidence to support the idea that outside directors help promote firm performance. In addition, the study found that the measure of performance matter for analysis of corporate governance studies. We found in some cases different results from the use of Returns on Assets (ROA) and Tobin's Q as measures of firm performance.

Keywords: Firms, Panel Data, Corporate Governance, Nigeria

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I. Introduction

It is possible to identify three levels of determinants of firms' performance. The first, relates to external factors that are beyond the control of the firms, and are generally economy-wide. Second, are factors that are internal and under the direct purview of the firms. These factors, which include managerial efficiency, governance structure, ownership structure etc affects the ability of the firms to cope with external factors. Finally, there are other factors such as size, leverage, and nature of the industry that affect firms' performance. However, corporate governance is considered to involve a set of complex indicators, which face substantial measurement error due to the complex nature of the interaction between governance variables (such as board size, board composition, return on assets etc) and firm performance indicators. Nevertheless, previous empirical studies have provided the nexus between corporate governance and firm performance. However, despite the volume of the empirical work, there is no consensus on the impact of corporate governance on firm performance. Consequently, this lack of consensus has produced a variety of ideas (or mechanisms) on how corporate governance influence firm performance.

In the case of Nigeria, poor management and weak internal control systems account for some of the lapses in the operation of some corporate organizations. In addition, technical mismanagement involving inadequate polices, lack of standard practices, poor lending, mismatching of assets and liabilities, weak and ineffective internal control systems as well as poor and lack of strategic planning has bee prevalent in the Nigerian corporate industry. Thus, the significance of this study is very high in an environment like Nigeria, which is characterized by growing calls for effective corporate governance, particularly for public limited liability companies. This call is understandable in view of the importance of effective governance at both microeconomic and macroeconomic levels. Understanding the effect of internal and external mechanisms and pattern of corporate governance among the Nigerian corporate firms will proved invaluable information to top policy makers and assist the government on the restructuring of the Nigerian corporate sector.

In the present changing economic environment, the corporate sector must brace up to the challenges of globalization where firms that cannot adapt to modern business culture may not survive. It is therefore important for firms to find out the best corporate practices in other parts of the world and how they can integrate these into their business culture to enhance their performance. Consequently, this study investigates the relationship between internal and external mechanisms on corporate governance and firm performance. It provides an analysis of the governance structure of Nigerian firms and their managerial characteristics and the extent to which the governance structure and internal/external monitors influence their performance. There is no doubt that the structure of ownership of a firm and its internal/external effect has important impact on the capability of the firm to respond to external factors impinging on its performance. In addition, despite the renewed interest in issues of corporate governance in the African continent, relevant empirical studies are still few and far in-between in Nigeria (except for the studies of Oyejide and Soibo, 2001; Sanda et al; 2005; Kajola;2008). However, these studies suffers from the weakness of excluding important mechanisms for addressing the corporate governance and firm performance relationship. This has limited the depth of our understanding of corporate governance. Thus, we believe that this study should improve our understanding of the relationship between corporate governance and firm performance in Nigeria.

In addition, the studies are usually generalized for all the sectors of the economy. This may lead to making sweeping generalization that did not cut across the sectors. This study focuses on the manufacturing sectors that are quoted on the Nigerian Stock Exchange (NSE) to enhance the reliability of information obtained since they are required by law to publish their annual report and accounts.[1] The scope of the study shall cover a period of five years. This is between 2002 and 2006. The choice of the period and the firms included in the analysis were guided by data availability considerations. The rest of this study is divided into four sections. Section II discusses the background to the study while section III presents a brief review of related studies. The analytical framework is discussed in section IV while section V presents and discusses the empirical findings. Section V summarizes and concludes.

II. Structure and Performance of the Corporate Sector in Nigeria

The Nigerian stock exchange (NSE), the apex body on the Nigeria capital market was established in 1960 as the Lagos Stock Exchange. It later became the Nigeria Stock Exchange in 1977. At present there are six branches with each having a trading floor. The branch in Lagos was opened in 1961, Kaduna 1978, Port Harcourt 1980, Kano 1989, Onitsha February 1990; and Ibadan August 1990. The exchange which started with only 19 securities traded on its floors in 1961 has about 257 securities as at 2002 with a total market capitalization of approximately N763.9 billion. The total value of reading transaction on the exchange rose from N13.6 billion in 1998 to N59.0

[1] However, additional information was obtained from interviews conducted with the companies, the from Nigeria Stock Exchange (NSE Fact books. Banks and Insurance companies were excluded because the recapitalization policy effect have not really been captured in the Nigerian banking system. Also the debt structure of banks and insurance institutions are not comparable to the firms in other sectors. This is consistent with some other studies in the literature (Adenikinju, 2005).

billion in 2002. As at 2003, 180 companies were listed on the first tier market of the stock exchange and there were 19 listed on the second tier securities market (Adenikinju, 2005). There is an increase in all the parameter use to capture the performance summary of the Nigerian stock exchange from the year 2003-2006.

However, the Nigerian stock market is small illiquid and volatile. Although the number of listed securities is increasing, trading activity is still very thin due to the observed reluctance of institutional and individual investors to trade in the secondary market. Table 1 provides summary information on the performance of the capital market in Nigeria between 1998 and 2006.

The regulatory body of the Nigeria capital market is the security and Exchange Commission (SEC) which was established in 1979, almost 2 decades after the NSE was established. Furthermore, the first comprehensive legal document providing rules sand regulations for the conduct of operations in the stock exchange, the Securities and Investment Act No. 45 was promulgated in 1999. the implication of this is very clear "the stock exchange operated for almost two decades with a regulatory organ and for another two decades with a regulatory organ weakened by the absence of a comprehensive legal document to assist in the discharge of its regulatory system" (Sanda, et al 2003). Whilst, the SEC supervises the activities of the various entities that operate on the capital market, the statutory body that deals with incorporation is the Corporate Affairs Commission (CAS) through the provisions of the Corporate and Allied Matters Act No. 1 of 1990. The board picture of shareholding in Nigeria across the various sectors of the capital market is presented in Table2.

Table 1. NSE's Performance Summary (1998-2006)

Performance	1998	1999	2000	2001	2002	2003	2004	2005	2006
No of listed securities	264	269	260	261	257	263	262	268	267
Total Mkt. Capitalization (Nb)	263.3	299.9	478.6	662.9	783.9	840	865	941	986
Share Trade (in billions)	2.1	3.9	5.0	6.0	6.6	6.9	7.1	7.3	8.2
Value securities traded (Nb)	13.6	14.1	28.2	57.6	59.8	59.9	60.4	65.8	67.5
Daily avg. vol. of shares (mill)	8.4	15.6	19.9	24	26.4	28.2	29.4	30.1	31.0
Daily avg. val. Of shares (mill)	54.3	55.7	112.2	121.8	130.6	132.6	133.8	140.7	160.4

Source: IPG (2007): Confidence Restored: Nigeria (1998-2007)

Table 2. Ownership Structure of Nigerian Quoted Companies,1995-1998 (Percentages)

Sector	Dom.Inst	Forinst	Govt	Dom.Ind	For.Ind	Mgt	Staff	Cr
Agriculture	28.25	0	36.95	34.47	0.33	0.31	0	88.96
Airlines	0	0	0	84.88	0	15.12	0	99.62
Automobiles	3.4	44.3	30	22.30	4.0	0	0	89.57
Food, Beverage & Tobacco	20.34	36.88	4.66	32.71	1.29	3.28	0.85	69.29
Footwear	0	48.05	0	49.78	0	2.17	0	25.26
Healthcare	29.99	15.82	0	32.87	0	22.3	0	65.25
Industrial/Domestic Products	20.56	27.19	8.29	49.78	0	11.59	1.56	59.1
Breseries	5.55	30.18	12.26	32.77	0	8.23	0.18	69.62
Building Materials	32.32	15.95	27.75	43.74	0.22	0.04	0	61.71
Chemicals and Paint	25.1	10.33	0	23.71	0	5.26	0	71.71
Commercial Service	18.32	0	0	60.37	0	52.27	0	85.67
Computer & Office Equipment	40	8.8	0	29.7	32.2	10.3	0	58.57
Packaging	20.93	27.75	2.95	17.7	3.42	15.32	0	37.79
Conglomerates	2.26	40.04	0.28	29.19	8.95	1.13	0.2	60.65
Constriction	6.31	25.93	9.66	20.33	3.02	19.9	0.2	69
Petroleum (Marketing)	0.2	40	12.03	41.16	0	0.5	0	61.26
Machinery	8.87	60.5	0	36.49	0	2.81	0	61.26
Printing & office equipment	13	18.24	0	65.02	0	7.31	056	75
Textiles	13	36.06	5.3	25	8.74	11.84	0	49.02
Insurance	11.3	3	15.4	60.5	0.0	0.53	0	73.21
Average	17.31	26.42	7.76	37.37	1.51	9.36	0.34	63.45

Source: Adenikinju and Ayorinde (2001)

Note: Dom.Inst = % of shares by domestic institutions; For.Inst = % of shares held by foreign institutions; Govt = % of shares held by the Government; Dom.Ind = % of shares held by domestic individuals; For.Ind = % shares held by foreign individuals; Mgt = % of shares held by management; Staff = % of shares held by staff of the firm; CR = concentration ratio (% of shares held by top 10 shareholders).

The information in Table 2 shoes that concentration varies across the sectors. But on the average it may be safe to conclude that concentration ratio is quite high. Most of the sectors have a concentration ratio that is above 50 percent. CR is highest in Airline (99%), Agriculture (88.%), Automobile (89.6%),Commercial Services (85.7%) and Chemical and Paints (72%). It is however low in Footwear (25%) and Printing and Office Equipment (49%). The mean value of CR for the entire corporate sector is 63.5 per cent. The concentration of shareholding could have positive or negative effect on firm performance. While it can help reduces agency problem, it can also lead to poor governance as a small group can exercise control over a firm and pursue the objectives of the insider at the cost of the outsiders, or small shareholder (Claessens et al, 1999).

Another feature of ownership structure shown in Table 2 is that foreign institutions were more

prominent than individuals in the foreign shareholdings. In other words, foreign institutions held the bulk of the shares by foreigners. Thus, in many cases, foreigners hold block minority shares that would have give them the leverage to control the firm. In addition, on the aggregate, institutions account for 43 per cent of shareholdings compared to 38.9 per cent for individuals. In other words, institutions are ahead of private individuals in term of total shareholdings. However, when we compare foreign institutions with foreign private individual, it is obvious from the table that foreign institutions' holding (26.4%) is several multiple of foreign private individuals. One explanation for this is that in a weak property rights environment, institutions are more able to exact protection over their investment compared to private individuals.

The above pattern is however different for Nigeria investors. Private individuals in Nigeria control more share than their local institutions counterpart. The former has 37 per cent compared to 17 per cent for domestic institutions. Perhaps, it should be mentioned the fact that in most cases foreigners (institutions) are the single largest shareholders accounting for 40 per cent of shareholding in many instances. This implies that by and large the bulk of Nigerian shareholder own minority shares in their own companies. It also suggests that foreign institutions come close to outright ownership of most of these companies. Again this could be explained by the fact that most of these companies have foreign origin. They stated out as subsidiaries of parent companies located in the western countries.

Internal Mechanisms for Good Governance

A well governed corporation needs to balance the roles of three groups of players: shareholders (and employees, if they have a governance role), boards of directors, and manages, while meeting all of its financial commitments and other obligations to a broad array of stakeholders. Shareholders provide (risk) capital in return for the opportunity to benefit from profits and increases in corporate value. Shareholder may have a range of rights and powers under law and regulation that can include the right to elect and remove directors and auditors and to appoint and approve or disapprove fundamental changes, such as mergers or changes in capital structure. The shareholders' interest is generally in maximizing the value of the firm's equity and distributions relative to risk over time.

The board of directors represents the interests of shareholders and may have obligation to other stakeholders under various statutory and voluntary provisions. An independent board of directors, the core internal governance mechanism, is the bridge between management and owners, other stakeholders, and the outside world. The board need to be independent particularly of management, and its members should be well-versed in the firm's line of business or in general business areas such as business law, accounting, marketing, finance, or production. The board should also be of reasonable size, and the terms of its directors should be fixed. Making the board more effective is at the centre of the corporate governance debate. Internal mechanisms of corporate governance work to check and balance the power of mangers, shareholders, directors and stakeholders. But while internal incentives are necessary for efficiency, they are not sufficient for good governance. In addition to these internal factors, corporations in market economics are also disciplined externally.

External mechanisms for good Governance

Formal legal and regulatory obligations are part of the external incentive structure designed to ensure that competing companies abide by common standards of fairness, transparency, accountability, and responsibility to protect shareholders, consumers, workers, the environment, and even competitors from abusive practices. A good legal and regulatory framework efficiently addresses the entry, operations, and exists of firms. Other external elements are developed by national and international bodies on best practices (quality of disclosure, accounting and auditing standards, labour rules, environment standards, industrial product standards, listing requirements) and other areas of practices that are qualitative them in law can lead to overregulation and can curb entrepreneurial spirit.

Both equity and debt markets impose substantial discipline on management. Equity markets continuously monitor and place an objective value on

corporations and, by extension, on their management. The day-to day performance of a company's shares on a stock exchange is a transparent reminder to managers and Owners of the company's perceived viability and value. This assessment permits shareholders to assess management performance and gives managers an incentive to minimize the costs of equity, since failure to do so will make them vulnerable to takeover. An active market for corporate control, fluctuations in stock prices and the influence of shareholders keep managers focused on efficiency and commercial success.

III Review of Related Studies

The literature identifies several channels through which corporate governance effects growth and development. The first is the increased access to external financing by firms. This in turn can lead to larger investments, higher growth and greater employment creation. The second channel is a lowering of the cost of capital and associated higher firm valuation. This makes more investments attractive to investors, also leading to growth and more employment. The third channel is better operational performance though better allocation of resources and better management. This creates wealth more generally. Fourth, good corporate governance can be associated with a reduced risk of financial crises. This is particularly important, as financial crises. This is particularly important, as financial crises can have large economic and social costs. Fifth, good corporate governance can mean generally better relationships with all shareholders. This helps to improve social and labour relationships and aspects such as environmental protection. All these channels matter for growth, employment, poverty reduction and well being more generally. Empirical evidence, using various techniques, has documented these relationships at the level of the country, the sector and the individual firm and from the investor perspectives (Claessens, 2003).

There are two basic principles of corporate governance (Charkam, 1994). The first is that management must be bale to drive the enterprise forward from undue constraint caused by government interference, fear of litigation, or fear of displacement. Second, is that this freedom – to use managerial power or patronage – must be exercised within a framework of effective accountability. Essentially, corporate governance failures may come about for two broad reasons. One, management may operate the firm inefficiently, resulting in an overall decrease in firm profits, compared to the potential profitability of the firm. Two, while management may operate the firm efficiently and generate maximum profits, they may divert a proportion of those profits from shareholders via the consumption of excess perquisites, for example, through remuneration which is not related to performance. Hence, a system of corporate governance needs to consider both efficiency and stewardship dimensions of corporate management. Stewardship emphasizes issues concerning, for example, the misappropriation of funds by non-owner manager. Equally important, however, is the issues of how the structure and process of governance motivate entrepreneurial activities which increase the wealth of business (Short et al, 1998).

The relationship between corporate governance and performance is based on the principal agent approach. The agency relationship is defined as a contract under which one or more persons (the principal(s) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. The separation of ownership and control, which occurs as a result of the introduction of external investors, bring to fore the agency problem: managers are expected to represent the interests of the external owners of the enterprise; however, it is difficult for owners to ensure that managers do so. Shleifer and Vishny (1996) argue that managers and equity investors should be capable of entering into a binding contract, which would ensure that investors' interest are fully represented.

However, it is unlikely that it will be possible to specify contracts ex-ante that accommodates all possible future contingencies. If unforeseen circumstances arise, managers assume contingent control rights that proved them with the potential to operate against investors' best interests, by, for example, expropriating investors' funds or engaging in assets stripping. The discretionary control rights of managers are further increased by the existence of asymmetric information between themselves and external investors. Although it is precisely this insider knowledge that encourages investors to permit mangers to operate as their agent, this allows managers the freedom to conceal information from external investors.

Such action serves to increase the costs of monitoring and therefore enables managers to pursue their own goals rather than those of the shareholders, by entrenching their position or engaging in behaviour that is sub-optimal for the shareholder. The possibility of higher monitoring costs is particularly strong if there are a large number of dispersed external investors, because a free-rider problem emerges if there are large costs to monitoring which the benefits accruing to each individual are relatively small.

Metrick and Ishii (2002) identify four dimensions of corporate governance at the level of the firm that can help to minimize the agency probable: board of directors, ownership structure, executive incentive contracts, charter and bye law provisions.

(a) Board of Directors: This is often considered to be one of the major sources of monitoring firm's conducts and performance. It is responsible for hiring and firing executives, setting executive compensations and making key decisions in the life of the firm. The board of directs should in principle be

one of the major checks one the management. It is directly elected by the shareholders to act on their behalf. A high level of independence is important for it to perform its monitoring duties more effectively.

The standard view is that the board of directors is more independent as the number of outside directors' increases. Executive directors are not likely to self monitor effectively the performance of the CEO because their career is closely tied to the incumbent CEO (Jensen 1999). Several studies show that board membership is related to the degree of agency problems at a firm (see for example, Borokhovich, Parrino and Trans (1996), Weisbach (1988) and Rosenstein and Wyatt (1990). The larger the percentage of outside directors, the more likelihood of (i) an outside executive being appointed chief executive officer (CEO) (ii) a non-performing, CEO to be dismissed and (iii) significant positive share reactions. With respect to the size of the board and performance, Yermack (1996) provides evidence of a negative relationship between the size of the board and firm value. However, Hermalin and Weisbach (1999) found no significant relationship between board composition and performance while Yermack also shows that the percentage of outside directors does not significantly affect firm.

Jensen (1993) and Hermalin and Weisbach (1991) argue that CEOs often control the composition of the board and lessen its monitoring role. This is especially possible when a person combine the position of chairman and CEO, and the use of exclusively large boards which increases communication problems among board members. Yermack (1996) report a negative relationship between board size and firm value for large and small firm respectively.

(b) Ownership Structure: This is another method of mitigating agency problems. The free-rider problem is minimize and internal constrains on managerial discretion can probably be imposed if ownership is concentrated in the hands of a large block of shareholders irrespective of whether they are individuals, organizations or investment funds. In this event, the returns to monitoring will increase monitoring activity, which may also be subject to economies of scale.

Moreover, large shareholders will be more likely to be able to utilize their voting power to influence managerial behaviour, although, as Shleifer and Vishny (1996) note, this does require shareholding voting rights. This leads to the proposition that large shareholders will exercise more effective corporate governance; a finding that has been supported by a host of studies on developed market economies. For example, Franks and Mayer (1994), in a study of German Private Enterprises find that concentrated share ownership is associated with high rates of turnover of directors. In the study of Japan, Kaplan and Milton (1994) find that the existence of large shareholders raises the probability that managers of poorly performing firms will be replaced. La Porta et al (1999) posit that high concentration could minimize agency costs since it could serve as a substitute for legal protection. "Even without strong legal institutions, large investors have the means and the incentives to monitor managers, large investors have the means and the incentives to monitor managers, though they bear the cost of undiversified risk". However, the cost here is that large shareholders may use their control rights to expropriate minority interests.

Nevertheless, there is no consensus yet as to the impact of ownership concentration on performance. In some countries, such as Austria, the Netherlands and Spain, companies with dispersed ownership perform inadequately than those with concentrated shareholdings, while in others the reverse seems to be true (Gugler 2001). On the contrary, Holderness and Sheehan (1988) find little evidence that high ownership concentration directly affects performance. The composition of ownership may also matter for performance. Institutional investors have been very active in the firm level corporate governance.

Frydman et al (1997) examined the impact of private ownership on corporate performance in the transition economies. The study reports that private ownership dramatically improves the most essential aspects of corporate performance in the countries undergoing post-communist transition. Furthermore, the study also reports that outsider-owned firms perform better than insider-owned firms on most performance measures. Jensen and Meckling (1970) suggest that agency costs can be reduced through the concentration of ownership and control within one single owner-manager. However the possibility of interplay between incentive alignment effect and entrenchment effect suggest a non-monotonic relationship between managerial stock ownership and firm value.

(c) A third mechanism through which shareholders can induce managers to behave efficiently is incentive contracts which tile managers' compensations to measures of corporate performance. This can be accomplished through performance related bonuses, stock grants and stock options. However, executive incentives pay has been criticized as being manipulated or controlled by the executive themselves. Jensen and Murphy (1990) examine the link between pay and performance for CEOs in the U.S. They argue that the conflict of interests between the shareholders and CEO represent a classic example of principal-agency problem. Agency theory predicts that compensation policy will be designed to give manager incentives to select and implement actions that increase shareholders wealth".

(d) Finally corporate charter and bye law provisions are an important source of governance. Federal and State laws containing provisions that establish firm level rules for a variety of areas such as shareholders voting, managers and directors liability and takeovers. State laws that provide takeover

protection may increase agency costs (Bertrand and Mullainathan 1999).

Klapper and Love (2002) examine corporate governance and performance in a sample of firms in 14 countries, most of which are developing economies. They find that better corporate governance is associated with better performance in the form of Tobin's q and Returns on Asset (ROA) and that good governance seems to matter more when the legal environment of a county provides investors with weaker protections. John and Senbet (1998) provide a comprehensive review of the Stakeholders theory of corporate governance. The main issue raised in the theory is the presence of many parties with competing interests in the affairs of the firm. They also emphasized the role of non-market mechanisms such as the size of the board, committee structure as important to firm performance. Jensen (2001) critique the stakeholders theory for assuming a single-valued objective. He proposed an extension of the theory called an enlightened stakeholder theory. However, problems relating to empirical testing of the extension have limited its relevance (Sanda et al 2003).

Although the empirical works in the general areas of corporate governance have grown considerably, not much has been documented on the being industry in Nigeria. Lack of consensus on how toe resolve the agency problem has produced a variety of mechanisms on how to deal with it, such mechanisms include: striking a balance between outside and inside directions; promotion of insider (i.e. mangers and directors) shareholding; keeping the size of the board low; and encouraging ownership concentration.

Studies on corporate governance in Nigeria include Adenikinju and Ayorinde (2001), Oyejide and Soyibo (2001), Alshi (2002) and Sanda et al (2003), Sobodu and Akiode (1998) examined managerial efficiency in the banking industry. The study focused on the managerial efficiency of the banks using Data development Analysis (DEA) approach. Managerial efficiency is measured in operating expense to total assets. There are several problems associated with the measurement of banks' operational efficiency. First, there is the problem of identifying banks' inputs and outputs. Second, though not peculiar to banking, is the existence of several heterogeneous inputs and outputs that cannot be easily compared. Besides, rates of return, instead of operational efficiency, are most often used by investors to appraise the performance of their investments.

In the study by Adenikinju and Ayorinde (2001), the implication of ownership structure and control (governance) on the performance of publicly listed companies (excluding banks) in Nigeria was investigated. Banks were excluded because that is regarded as income in the banking sector is a liability in other sectors and vice versa. Also, the study by Oyejide and Soyibo (2001) reviews and analyses the practice and the standard of corporate governance in Nigeria. Their review of the legislations on corporate governance and the analysis of its standard between 1995 and 1998 show clearly that the institutions and the legal framework for effective corporate governance exists in Nigeria. However, compliance and/ or enforcement appear to be weak of non- the other hand, investigated the efficiency of corporate governance mechanism as a means of increasing firm financial performance between 1996 and 1999, in its analysis of 93 firms quoted on the Nigerian stock exchange, the study sampled 10 banks, a figure not reprehensive of the banking industry. Its findings show that small boards perform better than large boards, although it does not state what an optimal board size should be.

The conclusion of the literature reviewed that corporate governance has been variously defined by different authors, and the relationship between corporate governance and performance is board membership is related to the degree of agency problem at a firm. Good corporate governance can mean generally better relationships with all stakeholders. This helps to improve social and labour relationships and aspects such as environmental protection.

IV Analytical Framework

Corporate governance, as a concept, can be viewed from a narrow and broad perspective. The narrow view perceives corporate governance in terms of issues relating to shareholder protection, management control and the popular principal-agency problems of economic theory. In contrast, the broad perspective notes that issues of institutional, legal and capacity building and the rule of law are important to corporate governance. The theoretical framework upon which this study is based is the stakeholder theory, a modified version of the agency theory, which posits that in the presence of information asymmetry, the agent (in this case, the directors and managers) is likely to pursue interests that may hurt the principal or shareholder and other stakeholders (Ross, 1973; Fana, 1980; John and Senbet, 1998). Thus, corporate governance is a means by which various stakeholder exert control over a corporation by exercising certain rights as established in the existing legal and regulatory frameworks as well as corporate byelaws.

John and Senbet (1998) classify agency problems on the basis of conflicts among particular parties to the firm, such as conflicts between stockholders (principals) and management (agent) (managerial agency), between stockholders (agents) and bondholders (debt agency), between the private sector (agent) and the public sector (social agency), and even between the agents of the public sector (e.g regulations) and the rest of the society or taxpayers (political agency). They noted that agency problems detract from efficient operation of an enterprise. Departures from efficient investment strategies are detrimental to financial environment that fosters efficient corporate governance and efficient

contracting among parties with diverse interests, promotes efficient allocation of resources, and hence ultimately economic development.

The existence of agency problem is potentially harmful to the owners of the firm and may lead to inefficiency and wealth destruction in an economy. It is in the best interests of owners to resort to control mechanisms that move the operation of the firm toward full efficiency of the Fisherian principle. This approach that attempts to align the interest of managers and all stakeholders it known as the stakeholder theory. The stakeholder theory, as discussed by John and Senbet (1998), emphasizes the role of non-market mechanisms, citing as an example, the need to determine an optimal size of the board of directors especially in view of the tendency for board size to exhibit a negative correlation with firm performance. Other non-market mechanisms include the need to design a committee structure in a way that allows the setting up of specialized committees with different membership on separate critical areas of operations of the firm. Such a structure would allow, for example, the setting up of productivity-oriented committees and monitoring-oriented ones.

In an extension of the stakeholder theory, Jensen (2001) also recognizes the multiplicity of stakeholders. He agreed with John and Senbet that certain actions of management might have conflicting effects on various classes of stakeholders. This implies that the managers have multiplicity of objective functions to optimize, something that Jensen sees as an important weakness of the stakeholder theory "because it violates the proposition that a single-valued objective is a prerequisite for purposeful or rational behaviour by any organization" (Jensen 2001). In search of a single valued objective function that conforms to rationality, Jensen suggests a refinement of the stakeholder theory- the enlightened stakeholder theory. For him, the enlightened stakeholder theory offers at least two advantages.

First, unlike the earlier version with multiple objectives, the modified form of the theory proposes only one objective that managers should pursue: the maximization of long run value of the firm. If the interest of any major stakeholder were not protected the objective of long run value maximization would not be achieved. A second, related appeal of the enlightened stakeholder theory is that it offers a simple criterion to enable managers decide whether they are protecting the interests of all stakeholders: invest a dollar of the firm's resources as long as that will increase by, at least, one dollar the long term value of the firm. There is an important caveat, however – Jensen himself cautions that the criterion may be weakened by the presence of monopoly situation or externalities. Despite its appeal, Sanda et al (2003) note that the stakeholder theory of the variety proposed by Jensen has not been subjected to much empirical evaluation. At least two factors might have contributed to the gap between theory and evidence. The first concerns the prevalence of externalities and monopoly situation. The second is the problem of measurement. Jensen himself offers no clue on how to obtain an accurate measure of the long-term value of the firm, let alone offer an indication of how to assess the possible impact of an investment on that long term value.

Model specification

Following the studies carried out by Miyajima et al (2003), Fich and Shivdasani (2004), Magbagbeola (2005), Adenikinju (2005) and Sanda et al (2005), and based on the method of data collection and analysis, we discovered that there is similarity between their works and this study. Consequently, this forms the basis of the adoption of the analytical framework for this study. We therefore have:

$$TQ = \gamma_1 bs + \gamma_2 out + \gamma_3 drs + \gamma_4 blk + \gamma_5 aud + \gamma_6 debt + \gamma_7 size + u_t \quad \text{----------(1)}$$

$$ROA = \gamma_1 bs + \gamma_2 out + \gamma_3 drs + \gamma_4 blk + \gamma_5 aud + \gamma_6 debt + \gamma_7 size + u_t \quad \text{----------(2)}$$

The variable definitions are given in Table A1 in the appendix. Equations (1) and (2) are specified to capture the industrial fixed-effect and random effect while the time fixed-effect is ignored for two reasons. First, corporate governance indicators have been shows to be time invariant (Gompers et al, 2003; Core et al, 2005 and Johnson et al, 2008). Second, if at all there is a time effect in the case of Nigeria-especially due to the release of code of corporate governance by SEC-CAC in 2003 – our third objective, via the adopted methodology, would capture this effect adequately.

The data for this study were obtained from the Annual Reports of Statement of Accounts of Selected Companies and the Nigerian Stock Exchange (NSE) Factbook. The data covers the period 2002 – 2006 (5 financial years) for 62 manufacturing firms. Only firms with adequate data were included in the analysis. This period was chosen to encompasses the years before and after the release of the code of Corporate Governance in Nigeria by the Nigerian Stock Exchange (NSE) and the Corporate Affairs Commission (CAC) in 2003.

V Empirical Analysis

We start by examining the effects of internal control mechanisms (director shareholding, board size, ownership concentration, and outside directors, block holders, independence of audit, leverage and firm size) on firm performance. The results are presented in Table3, the table shown the results obtained by regressing the governance mechanisms on an important measure of firm performance, ROA. Both director shareholding and board size show no significant relationship with return on assets.

Table 3. Panel Regression Result on Corporate Governance and Firm Performance

Fixed Effect				Random Effect			
TQ		ROA		TQ		ROA	
Variable	Coefficient	Variable	Coefficient	Variable	Coefficient	Variable	Coefficient
Constant	2.980** (2.585)	Constant	2.843*** (4.197)	Constant	6.583*** (3.510)	Constant	4.731 (0.008)
BS	0.142 (0.355)	BS	2.088* (1.832)	BS	0.275 (1.215)	BS	2.708 (2.117)
OUT	-0.001*** (3.270)	OUT	-0.015 (-0.921)	OUT	0.001 (0.218)	OUT	-0.052 (0.439)
DRS	-0.022*** (4.798)	DRS	-0.176** (-2.171)	DRS	-0.346** (1.980)	DRS	-0.322** (1.968)
BLK	0.045*** (4.798)	BLK	0.158*** (3.514)	BLK	0.041** (2.085)	BLK	0.102* (1.891)
AUD	-0.019*** (3.624)	AUD	-0.230*** (-6.656)	AUD	-0.007 (0.537)	AUD	-0.174 (0.548)
DEBT	0.0003 (0.480)	DEBT	0.080** (2.020)	DEBT	0.001 (0.155)	DEBT	-2.410 (0.009)
SIZE	-0.109** (1.960)	SIZE	-1.163** (-2.785)	SIZE	-0.316** (4.243)	SIZE	-0.201** (2.013)
R^2	0.826	R^2	0.578	R^2	0.621	R^2	0.668
AdjR^2	0.776	AdjR^2	0.558	AdjR^2	0.598	AdjR^2	0.551
DW	1.965	DW	1.84	DW	1.79	DW	1.70

Note: The fixed effect regression result contains White Heteroskedasticity-Consistent Standard Errors and Covariance; ***, **, * significance at 1%, 5%, and 10% level of significance.

From Table 3, there is a positive and significant relationship relationship between board size, block shareholders, leverage and firm size and the dependent variable Tobin's Q. For example, A 1% increase in B.S will lead to 0.14% increase in TQ while a 1% increase in BLK will lead to 0.05% increase in TQ. However, the empirical result in Table 3 reveals an inverse relationship between director's shareholdings, size, independence of the audit committee and the numbers of outside directors on board. A similar result however emerged when the return on asset (ROA) was used as the dependent variable as presented in Table 3. The result supports the existence of the positive relationship between board size, block holders, leverage and return on asset. However, there was a negative relationship between the number of outside directors on board, director's shareholdings, independence of the audit committee and the return on asset.

However, our result did not support Adenikinju and Ayorinde (2001), who found no significant relationship between firm performance and insider ownership in Nigeria. Perhaps, the conflicting results could be due to the differences in the methods used in measuring some of the variables as well as the sample size. For example, in computing directors shareholdings, we included only the shareholding of directors while they included those of directors and all other staff of the firms. Inadequate data did allow us to do this. The results of the random effects model is presented in Table 3. The result in Table 5 reveals a positive relationship between board size, number of outside directors, block holders, leverage and the Tobin's Q measure of firm performance. However, there is a negative effect of director's shareholding and independence of the audit committee and the Tobin's Q. However, using the return on asset as a measure of firm performance, we found a positive relationship between board size and block holders and the dependent variable. In addition, a negative relationship was reported in the case of number of outside directors, director's shareholding, independence of the audit committee, leverage and firm size and the return on asset.

Taking a synopsis of this result, both the fixed effect and random effect models reveals that there is a mixed result with result to the performance of some of the governance variables. Contrary to studies by Jensen (1993), Lipton and Lorsch (1992), Yemarck (1996), this study show that the larger the size of the board (BS), the better the Tobin's q. This explains the view that larger boards have better corporate performance because members have a range of expertise to help make better decisions, and that it is difficult for the chief executive officer (CEO) to influence the decision of the board. The board size is highly significant in explaining Tobin's q for firms in Nigeria.

Similar to the board size, the board composition (OUT) has a negative relationship with Tobin's q implying that when there are more external board members, performance of the firm tends to be worse. This contradicts the empirical study of Brickley and James (1987) that outside directors support the beneficial monitoring and advisory functions to firm shareholders. However, this is consistent with findings by Agrawal and Knoeber (1996) who suggest that boards expanded for political reasons often result in to many outsiders on the board, which does not help performance. It must rather be indicated that this variable is not significant.

Our results also show that leverage has significant positive influence on firm performance, indicating the tendency for firms with higher levels of debt as a proportion of equity to perform better, a finding that is consistent with the literature. We also found that the concentration ratio has negative impact on performance, therefore the directors shareholding can improve on their effort in order to exert positive impact on performance. These seemingly contradictory finding seems to suggest that concentration ratio is positively related to performance up to a point beyond which it has a negative impact. In other words, excessively high concentration may lead few shareholders to use their positions to benefit only themselves. The policy implication flowing from this finding is self evident. Firms must motivate their chief executive officers (CEOs) in order to encourage them to deliver good returns on the shareholders' investments. It is also imperative that the salary and other perks attached to the position of the CEO if tied to performance indices will be a useful tool in the hands of shareholders/stakeholders in ensuring greater overall company performance.

VI. Summary and Conclusion

There has been a renewed interest within academic circles as well as amongst policy makers in both government and industry on the need to strengthen mechanisms to ensure that managers and directors take measures to protect the interest of a firm's stakeholders. The events at Enron and other cases of spectacular failure have helped to bring to the limelight the important role that the strengthening of governance mechanisms could play to improve firm performance. This study made use of panel data regression analysis between 2002 and 2006 for a sample of 62 firms listed on the Nigerian Stock Exchange to examine the relationship between internal governance mechanisms and firm financial performance. The results have the implication that regulatory agencies should encourage firms to achieve a reasonable board size since overly large boards may be detrimental to the firm.

The results of the study point to the need for a reasonable number of individuals and/or corporate bodies with more than a typical share of equity of the firm as this will encourage them to undertake the monitoring process. Unlike the findings in developed countries, our results show no significant evidence to

support the idea that outside directors help promote firm performance. This suggests the need for the regulatory authorities to reassess the procedures for the appointment of outside directors in order to remove the influence of CEOs from the appointment process. In addition, the study found that the measure of performance matter for analysis of corporate governance studies. We found in some cases different results from the use of Returns on Assets (ROA) and Tobin's Q as measures of firm performance. Furthermore, we also found the type of governance environment a firm operates also has implications for its overall performance, as well as on the directional and quantitative impact of managerial characteristics on firm performance.

In spite of the findings in this study, there are many issues in corporate governance in Nigeria that remain unresolved. The dearth and poor quality of data continue to be a major constraint in a comprehensive study of corporate governance in Nigeria. It is common knowledge that there are some margins of error in Nigeria statistics. However, it should be noted that the main general trends and findings that have been disclosed in this study are so pronounced that potential data biases have to be very large indeed to reverse them. Nevertheless, data on some specific variables that would have made the study more interesting were unavailable. A number of points could be classified by further work, which could give greater specificity to policy guidelines. The sample itself was determined by data availability, not by a probability criterion.

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Appendix

Table A1: Variables Definitions

	Variable	Definitions	Measurement
Dependent variables	TQ	Tobin's Q	Market Value of common equity plus book value of liabilities, divided by the book value of total assets
	ROA	Returns on Assets	Net profit as percent of total assets
Independent variables	BS	Board Size	Number of executive directors
	OUT	Number of outside directors on board	Proportion of outside directors sitting on boards
	DRS	Director's Shareholding	Percent of total shares owned by the directors
	BLK	Block Holders	Percent of shares held by the largest shareholders
	AUD	Independence of the Audit Committee	Percent of independent members of audit committee
	DEBT	Leverage	The ratio of debt to share capital
	SIZE	Firm size	Total Assets owned

PUBLIC CONTRACTING AND CORRUPTION: A MICROECONOMIC ANALYSIS OF MANAGERIAL BEHAVIOR

Mª BELÉN LOZANO, PILAR MURILLO***

Abstract

In this work, a first microeconomic approach is developed concerning the role firms play in the public contracting process and the problem of managerial corruption in this context. We thus outline a first analysis of the choices taken by firms when contracting with the public administration, considering the existence of both legal and corrupt contracts and the sustituibility or not of both. We then show a financial model justifying the choice of a contract portfolio based on the uncertainty and risk involved. The conclusions allow us to both offer some performance directives in order to control the phenomenon of corruption, and to understand the persistence of corrupt contracts.

Keywords: public contracts, managerial behavior, bribes, microeconomic

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Introduction

According to Robertson and y Watson (2004), corruption is one of the country-level influences on market entry, investment and other decisions fundamental to strategic management at the international level. Furthermore, the use of bribes or not in a contracting process is a strategic decision that the firm and especially the management must take into account.

Much has been said about the corruption phenomenon and public contracts; however, we still do not know what role a firm plays when a contract is made with the government and a corruption process develops in this managerial context. Public contracts make up a very significant part of the Gross National Product generated by each country. For that reason, it can be supposed that the firms belonging to a certain industry have an important desire to compete for the awarding of projects offered by the government. Thus, competition for public contracts is considered, in principle, as a mechanism that reinforces competitiveness in the market among the firms of an industry, both bidders and non-bidders[2].

When a contract is made, there are potential conflicts of interest among the agents engaged in the contractual relationship. As occurs in the private context, in this public context the origin of the problem can also be located in the differences of interests among the parties. Once a deal has been reached and the partners commit to a relationship, each one trusts the other, although with some reservations, assuming the probability that the other will not respond in the expected way either because he may act dishonestly or because he can only commit to the contract in a limited way.

If we pose this possibility in which contract performance is questioned, we can move ahead a step in the research process by thinking about the topic of corruption and the firm. Thus, in this research paper we develop a first approach about the role that firms play in the process of public contracting from a microeconomic perspective, and we analyze the existence of both corrupt and legal deals[3]. Also, we will try to understand why managerial corruption is justified on many occasions in this context.

We therefore show a first analysis in which the firm's choices when bidding for a public procurement are explained considering both legal and corrupt contracts and the perfect substitution or not between them. It is thus a first approach to how we can get closer to (desirable) legal contracting by modifying

[2] Competition in public contracts awarding is a necessary condition for allowing economics operators to enter the public sector. Thanks to competition, a minimum level of efficiency in contracting can be achieved.

[3] Hereinafter, in order to simplify the argument, when we say corrupt contracts (deals) we are referring to an illicit agreement in which a bribe has been paid.

the choices of the individuals. In a second step, taking into account the risk of breach of contract, we include in our analyses the profitability-risk binomial and analyze contract portfolios and the choice of different contract types as a function of the uncertainty and the risk they entail. This allows us to justify the persistence problem in the enforceability of corrupt contracts.

In order to develop this work, we subsequently study the characteristics of legal contracts and corrupt deals and we explain why some voices justify managerial corruption in this context. In the third section we discuss the reason for corrupt contracts, which leads us to a cost-profit analysis of the problem. Next, the analysis of this topic from a micro-economic perspective offers a first explanation about the problem of public contracts in the managerial context. The last section sets out the conclusions of the paper.

Legal contracts and corrupt agreements

Both legal and corrupt contracts can be made between firms and the government. The legal contract, as its own name indicates, is made within an established legal framework and it entails an agreement between two parties where one is the entity that offers the public contract and the other one is the bidder firm. The World Trade Organization (2003) refers to a public contract as the process by which a public institution contracts a product or a service for its use and the citizens' enjoyment. For Bueb (1998) a public contract is a contract that establishes a relationship between the contracting public institution and a firm that carries out the contract by providing goods or services.

In a legal contract, in spite of there being an agreement between the parties, the acquired commitments can be breached. This action would entail dishonest behavior on the part of some of the parties. Hence, an important factor associated with the uncertainty of the execution of the agreement will always be present.

Regarding the performance of the contract, this should be carried out mainly in a private way, since the submission of the contract terms to strict legal conditions is a very slow procedure and incurs high transaction costs. Indeed, the private parties, who know the high cost of using the public legal system, have an incentive to structure contracts to avoid these procedures. And, vice versa, in order to enforce a legal contract, the lawyers interested in the execution of the contract have an incentive to prefer expensive public mechanisms of enforceability. Besides, the government does not assume the real cost of the contract enforceability since the firms assume most of the performance costs. Therefore, private mechanisms are the primary mechanism since public mechanisms increase the effectiveness of the private mechanisms and provide an important support (Wiggins, 1991).

For that reason, contracts must be specified as clearly as possible, because, when the agreement conditions are not sufficiently specified at first (incomplete contract), problems can easily occur (Lambsdorff, 2002). It is precisely the commitment to performance which defines contracts with the firm and its relationships in the long term, the magnitude of the contract and the capabilities of the parties to commit to prices and future actions (Wiggins, 1991).

Breach of contract may occur because the agents have private information, because the effort cannot be accurately measured, or because some situations cannot be foreseen (Wiggins, 1991). Holmström (1999) also justifies the existence of some commitments that cannot be fixed by contractual means, as occurs with the work force, which cannot be measured in effort units. In the same way, there is no efficient level of investment, and as result underinvestment problems can occur (Tirole, 1986; Grossman and Hart, 1986; Riordan and Sappington, 1989 and Rogerson, 1989).

On the other hand, in the corrupt contract, we have two new figures, the briber and the bribed. Corrupt agreements may imply the payment of a bribe or commission by firms. When a contract of this type is made, the firm becomes a corrupt agent. Of course, this fact will depend on the firm characteristics and its attitude in a public contracting procedure.

As occurs in the legal contract, in the corrupt contract an agreement exists between the parties and the contract between the briber and bribed can also be breached or unfulfilled, given dishonest behavior by any party of the corrupt contract. Therefore, we see how the offer or the initial agreement is often not respected. In this sense, Williamson (1979) argues that corrupt officials have an incentive to renegotiate the contract clauses in their own benefit, instead of trying to force the firm to respect the offer. These incentives related to renegotiation transform the competitive bidding process in a game between the bidder and the public official, where the initial price does not matter. Of course, it could also be possible that the intention of the firms is not to respect the initial offer, but to renegotiate the condition terms such as quality, size of the offer, etc.

The corrupt contract can also count on contract enforcement mechanisms, even if it is an illicit relationship. In this sense, contract enforcement (both legal and corrupt) presents practically the same problems and also the same solutions. Both are private contracts. Both legal contracts and corrupt agreements must have a private enforcement mechanism. We insist on the private way because the legal mechanism is slow and very expensive (as pointed out previously) and because the legal mechanism is not possible for corrupt agreements since the illegal agreements cannot be defended nor can one force the other party to legally fulfill its part of a corrupt agreement. In relation to this, Lambsdorff (2005) points out that one way of guaranteeing the

performance is to tie the corrupt and the legal relations. This is a measure used to reduce the transaction costs and to thus guarantee contractual performance. We should thus speak about relations that combine both legal and corrupt aspects when talking about guaranteeing contract performance.

Finally, we must point out that firms should seriously decide the role that they should take in this process related to bribes. In this sense, one of the most important decisions that firms should take in a corrupt context is whether to participate actively, refuse to participate or to denounce the corruption to the local authorities and outside of the country (Rose-Ackerman, 2002). The decision to refuse is the worst option since the firm not only loses the opportunity to negotiate, but furthermore does not do anything to improve the situation. On the other hand, denouncing the situation is a responsibility that can lead to an international condemnation of the corrupt officials, which could bring about reforms.

Now that we have analyzed the characteristics of both types of contracts, the next step is to think about why corrupt agreements exist, which leads us unfailingly to a cost-benefit analysis of the problem.

The raison d'être of corrupt agreements

To analyze the role that firms play when they make contracts with the government and the process of corruption that occurs in this managerial context, we must consider the motivations and the control mechanisms of firms in order to outline a cost-profit analysis of the problem. Some justify managerial corruption in public contracting. This is the result of a cost-profit analysis that could be applied to any other aspect of managerial corruption. This would also explain its justification in the public contracting context (even in international transactions).

When a bribe is established, consciously or unconsciously, both the official and the firm will consider and will value the set of benefits and costs related to the process in order to choose the contract profile to carry out. This way, when a corrupt relation is established, a priori, certain benefits are expected. The beneficiaries of corrupt contracting would be the firms, the middlemen and the officials that receive the bribes. The losers will be the government and the taxpayers (since the total price of the project increases and, therefore, there will be less available funds for other projects) and the losing firms in the bidding.

The Benefits

The principal benefit for the firm is being awarded the contract by the public administration. This contract can be more or less lucrative depending on the characteristics and volume of the contract, and possibilities of renegotiation once the contract has been obtained[4]. This is a clear benefit for the firm that is derived from the contracting *per se*, regardless of whether it is legal or corrupt. For a long time, firms thought that bribes were an additional way of competing or an additional input of the product. This facilitated transactions and market access. Corruption was justified especially when other firms in the sector obtained their bids in an illegal way. In this case, the firm becomes a "victim of the system"

The benefit for the public official is a clear increase in the rents which are obtained, for example, through bribes. As was observed, this is a very opportunistic and risky position and short term oriented.

The middleman (when there is one) also benefits from the process. For example, he can act as a buyer (acquiring contracts for himself by paying bribes) and later on sell the contract to the firm that first wanted to obtain it. In such a situation, the contracts can be established between the firm and the middleman at a prefixed price and conditions, containing a compensation for the bribe. The use of middlemen is a procedure often used to eliminate the obstacles in international commercial transactions when the management pretends to be ignorant of the firm activities in order to avoid legal responsibility.

The Costs

The costs of a corrupt process affect society as a whole although the main elements of the agreement also support their corresponding quotas.

Thus, the costs for the firms and for the official are, among other things, the risk of being discovered and of losing future wages, a lost reputation and even job loss, the high transaction costs, the sanctions, etc. (Carrillo, 2000, Noonan, 1984)[5]. There is no doubt that paying bribes affects a firm's reputation very negatively: companies know that being considered unethical can lead to high costs for them.

The transaction costs of corrupt agreements differ from those of legal ones because in the former there is a need to camouflage the costs and because the partners in such an agreement have potentially harmful information over each other. Lambsdorff (2005) argues that corrupt agreements require high transaction costs, because: 1) the agreements need secrecy, 2) the legal performance mechanisms are not applicable and 3) the corrupt partners are tied to each other even after the contract has been executed. Also, firms have another additional cost: the orchestrating of mechanisms to carry out corrupt activities as, for

[4] In a subsequent contracting the contract volume could be increased, or the quality of services could be reduced.

[5] Transaction costs are also supported by legal contracts. Thus for firms the costs of looking for partners, determining the contractual conditions and of fulfilling the contractual clauses are included.

example, collecting funds for paying bribes -slush funds- that are not visible in the accounting.

The costs for society are the most important ones, fundamentally because of their long-term nature. Eigen (1998) refers to how the costs of corruption in public contracts affect the citizens of a country. In a first stage, the government's expenses will increase. On the one hand, if corruption exists in the firm selection[6] phase, the preference for one of them will result in an absence of competition (injuring society). Also in this phase, there may be competition in the price determination that can also lead to collusion among the firms. In a second stage, if corruption appears during the execution phase of the contract, this will derive in a costs increment of the project or in a size reduction (in relation to the agreed terms) without the subsequent reduction in the contract price. As a result of this, the quality of the final products will decrease, the maintenance expenses will be higher and the realization of projects of inadequate size will lead to a high investment cost.

The cost-profit analysis[7] that the firm carries out is that the obtained benefits from government contracting (although in a non-orthodox way) will be higher than the costs of the firm being sanctioned, punished or simply damaged in value. Obviously, this analysis is often based on the short-term, on myopic behavior, on an immediate preference for the resolution of political decisions related only to the temporary period in which the politician remains in power, etc. However, firms should be aware that this behavior affects their reputation very negatively and that it can lead to the cost being too high for them in the future. In this sense, there are important international initiatives, such as those that are undertaken from the OECD, which, for example, try to put an end to tax-deductible bribery payments in the different countries and try to penalize the payment of bribes.

It seems clear, therefore, that corruption in public contracting affects both government revenue and expenditures. In addition, the more bribes in the transactions, the more regulations the public administration must establish on such transactions. Also, public officials will prefer projects providing them with easy incomes in the form of ¨commissions¨ (bribes), and hence the quality of the results will be affected. Moreover, the undue employment of scarce resources will have a negative effect on a country's development. This fact, and the lack of transparency in public procedures, will impede sustained economic growth and can finally lead to an increase in organized crime and the subsequent deterioration of democracy.

[6] According to Borrelli (1998), the public contracting process differentiates four stages: planning, selection of counterparts, execution of the project and test and final payment.

[7] See in this sense the papers by Bueb (1998), Lambsdorff (2002), Oldenburg (1987) and Bray (2005).

Microeconomic Analysis

Microeconomic analysis of preferences between legal and corrupt contracts

Nowadays, firms make decisions based on the established principal-agent relationship between owners and administrative officials. Within the Theory of the Firm, the Agency Theory is the most appropriate framework for analyzing the conflict of interests between economic agents (Jensen and Meckling, 1976). Agency Theory analyzes the relationships existing between parties in a contractual relationship. The agency problem takes places when the asymmetries in information between the agent and the principal appear. In such a situation, the principal delegates several responsibilities to the agent. Moreover, one has to design an incentive system for the agent to make decisions that maximize his utility function and minimize the total agency costs, and also to better align the interests of the principal and the agent[8].

The main objective of shareholders, as owners of the firm, is to maximize the firm value and the welfare of society in general[9]. Shareholders are supposed to stand for stable performances and against corruption, and to defend the social responsibility of the firm. Otherwise, the value of the firm would be damaged, among other negative factors (sanctions, lost of reputation, etc.).

On the other hand, managers are the decisions-makers when deciding to go for a corrupt contract and to offer bribes or not. The manager (agent) may be under pressure because of his result-oriented position in the firm, perhaps because it is a temporary position or the institutional environment is corrupt (for example, when asked to pay a bribe for the concession of a contract). When the main aim of the decision-maker is to become rich in the short term, we have what the literature calls myopia[10], where managers prefer projects with reduced costs but with incomes in the short run.

Managers are thought to be susceptible to this type of behavior[11]. Bray (2005) indicates that senior managers are the ones offering bribes to ensure a business contract. Rose-Ackerman (2002) says that most bribes are paid by employers or representatives, and not by top managers, but if the illegal payments help the enterprise to get a contract, managers and owners might facilitate the bribes to be paid by the subordinates, keeping themselves apart from the ¨details¨. Therefore, we assume that managers and

[8] See the agency position described by Jensen and Meckling (1976) referring to the entrepreneurial area.

[9] If this were not so, the conflict would be between social and entrepreneurial well-being.

[10] See Jensen (1986) and Byrd et al. (1998).

[11] If corruption exists in small enterprises, the decisions of shareholders and managers are taken in the same direction.

employees may be short term oriented, and they have the same interests, considering that managers are the ones pushing employees to use bribes and, on the other hand, employees have incentives to make a career for themselves inside the enterprise.

If corruption exists (any kind of corruption), this might be due to the fact that the earnings obtained by an agent committing an ¨illegal act¨ (or because of the potential damages when not participating in the corruption process) are higher than the costs. In addition, it is possible that managers will choose a corrupt contract, not only because of the advantages derived from the cost-benefit analysis made in the previous section but because firms have considered this option, for a long time, as necessary to survive in such an environment.

In this context, we assume that a firm makes both legal and corrupt contracts. To perform a microeconomic analysis of managers' preferences when choosing between both types of contracts, we are going to use Consumer Behavior Theory. In this case, the manager will be the consumer, choosing between legal and corrupt contracts. His decisions will depend on his preferences, the available budget and some externalities[12].

In this sense, we may find two different situations to be analyzed: 1) Posing of a model allowing the use of both types of contracts -corrupt and legal- where we will study two different possibilities depending on the utility function proposed, and 2) Modification of the proposed models, following the desired social codes of conduct, as for example an awareness-raising campaign against corruption, studied through an analysis of the modification of contract prices.

Situation 1

A firm's decisions depend on two factors: the available budget and the preferences of the decision-maker.

The budget is the amount of wealth in a firm available for bidding for a public procurement contract. We assume that the budget used to cover both transaction costs and the performance of both legal and corrupt contracts is constant (M). Therefore, bribes to be paid in the case of a corrupt contract are included in the budget.

The budget line would be the following:

$P_l \cdot C_l + P_c \cdot A_c = M$

where:

C_l= amount of legal contracts obtained by the firm

A_c= amount of corrupt contracts obtained by the firm

P_l = transaction and accomplishment costs of legal contracts

P_c = transaction (including bribes) and accomplishment costs of corrupt contracts or agreements

Figure 1 shows how the budget may be totally used for legal contracts (horizontal axis), corrupt contracts (vertical axis) or a combination of both types of contracts.

Place FIGURE 1 about here…

In the next section we will analyze a firm's decisions when contracting with the public administration, considering the existence of both legal and corrupt contracts and the perfect substitution, or not, of both. We will analyze two types of situations: a) when decision-makers' preferences follow a Cobb-Douglas distribution, and b) when contracts are substitutives.

1) Cobb-Douglas Preferences

In this case, managers prefer to combine legal and corrupt contracts instead of making only legal or only corrupt contracts. These preferences are represented by the indifference curves of the Cobb-Douglas function

$$U(C_l, A_c) = C_l^{\alpha} A_c^{1-\alpha.}, \ \alpha \in (0,1)$$

Where α is a constant parameter representing the weight of factors included in the function.

In this case, indifference curves (Figure 2) are convex, which means that managers prefer to consume a constant quantity in every state instead of a large amount in one and a small amount in the other. Firms prefer to carry out a percentage of corrupt contracts even if this implies dishonest and opportunistic behavior.

Place FIGURE 2 about here…

In this context, the Marginal Rate of Substitution (MRS) between the two different types of contracts is measured by the slope of the indifference curve. We have to take into account that the MRS, within Consumer Theory, measures the quantity of good 1 that we are willing to substitute for good 2.

Thus, the MRS is given by the utility function as follows:

$RMS = \Delta A_c / \Delta C_l$

In our case, it shows the amount of legal contracts that we are willing not to make in exchange for a marginal quantity of additional consumption of corrupt contracts.

The real amount to be paid for a given amount of additional consumption may be different to what we are willing to pay. The real amount to be paid will depend on the price of the good (in our case transaction and performance costs). On the other hand, the amount we are willing to pay depends only on our preferences, not on price.

[12] For example, we will later consider the possibility of an awareness-raising campaign about the negative effects on society, or that there is an increase in the transaction costs of corrupt contracts (including bribes).

The manager will be willing to substitute C_l for A_c till the indifference curve is tangent to the budget line, so the MRS will be equal to the ratio of market prices ($-P_l/P_c$). So, we can say that as long as the MRS is not equal to the price ratio, the manager has not made an optimal choice. In fact, if the budget line is not tangent to the indifference curve, there would always be a point near to the line, above the indifference curve, meaning that this is not an optimal choice.

However, the tangent condition is necessary but it is not sufficient for optimality, although when the indifference curve is convex, this condition is acceptable. In this case, any point satisfying the tangent condition is an optimal choice.

The amount of contracts made in the optimal choice are:

$$C_l = \frac{\alpha.M}{(1-\alpha).P_l}$$

$$A_c = \frac{(1-\alpha).M}{\alpha.P_c}$$

Thus, the manager will always use part of his budget to carry out corrupt contracts, but this will be conditional both on the price of the corrupt contracts ($\uparrow P_c \rightarrow \downarrow A_c$) and on α ($\uparrow \alpha \rightarrow \downarrow A_c$).

2) Legal and corrupt contracts as substitutives

This is the case when the manager is willing to substitute legal contracts for corrupt contracts always at the same rate regardless of the initial level (constant marginal rate of substitution), and the use of one type or other (corrupt or legal contracts) will depend on the manager's preferences and their relative prices. Thus, a manager could prefer a) to make legal contracts or b) to make corrupt contracts[13].

Here comes the real problem, when the manager, after making the cost-benefit analysis, decides to go for the corrupt contract. Moreover, the manager may not be interested in refraining from entering into corrupt contracts for different reasons. This would be the case of firms finding it hard to survive in such a corrupt environment without paying bribes when bidding for a public contract (this could explain why some firms that do not pay bribes in the firm's country do offer and pay bribes in the bidding process in other countries[14]); or it could be the case that firms not paying the demanded bribe would win fewer present or future biddings.

Now, we are going to analyze this situation in cases where legal and corrupt contracts are substitutives at a constant rate of substitution.

In the figure below, budget is represented with a blue line, and the manager's preferences may be given by a utility function like the following:

$U(A_c, C_l) = a.\ A_c + b.\ C_l$

where a and be are constant positive parameters representing the weight of the factors in the function.

In this case, indifference curves are straight lines with negative slope.

In Figure 3 we can see that the combination between the prices of the two types of contracts and the parameters of the utility function leads to a corner solution, in which the manager only enters into corrupt contracts. This may occur either because there is a reduction in the prices of the corrupt contracts or because the manager's preferences are oriented to corrupt contracts. This would be the case of, for example, a big multinational firm interested only in contracts with fewer transaction costs[15].

Place FIGURE 3 about here…

Situation 2

As stated before, justification of a corrupt agreement could be found in the cost-benefit analysis. Managers would like to continue using corrupt agreements in order to guarantee the awarding of the contract (even when taking on big risks) or, among other reasons, they expect to get an income from the bribe paid which will be manifest in the later renegotiations of the contract, both in the size and quality of the materials used in the performance of the contract.

The point is how to reduce this type of corrupt contracting. The solution will come, in our opinion, from trying to moderate or modify the cost-benefit relationship in such a way that corrupt agreements are no longer beneficial. In this sense, we can act on the budget line or on the agent's preferences. Acting on the budget line, as we will see below, does not solve the problem. On the other hand, the preferences of the decision-making agents are not easy to modify for the reasons explained previously (managers are under pressure to obtain greater profitability, even with not very orthodox procedures). In any case, imagine that the manager's preferences change, for example, through an awareness campaign.

How would a manager's performance change when an awareness and information campaign against corruption takes place? The objective of the campaign would be for managers to only enter into legal

[13] There are still countries, mostly underdeveloped ones, where society accepts the existence of some kind of bribes. Therefore, for a manager carrying out legal or corrupt contracts (via bribes, commissions, etc), both types of contracts could be substitutable.

[14] According to Transparency International, countries with less corruption are those whose enterprises are the most corrupt ones abroad.

[15] If, on the contrary, there were an increase in the prices of corrupt agreements or preferences were oriented to the realization of legal contracts, the optimal choice would be at the other corner.

contracts and reject and denounce corrupt contracts. This could be done by getting managers to understand that corrupt contracts are detrimental to society in general and to the firm in particular, discouraging them from carrying out such contracts.

Let us thus assume that at one point the prices of corrupt contracts increase, owing to higher transaction costs (including bribes) and performance costs of the corrupt contracts. This would be a measure to be taken against corruption. If the awareness campaign were successful, there would be fewer corrupt public officials, meaning that the costs of identifying and finding an adequate partner in the corrupt agreement would be very high for firms.

Now, we are going to look at the analysis of this kind of situation, observing how the amount of corrupt contracts varies when there is a variation in price.

1) Cobb-Douglas Preferences:

Suppose that there is a variation in prices so that $P_c' > P_c$.

The budget variation is represented in Figure 4 with a red arrow, and the resulting budget is represented with a red line.

This results in a change in the manager's optimal choice, in the following way:

$$C_l = \frac{\alpha.M}{(1-\alpha).P_l}$$

$$A_c = \frac{(1-\alpha).M}{\alpha.P_c'}$$

where $P_c' > P_c$ and, also, $P_c' > P_l$

Place FIGURE 4 about here…

The variation in the price of one of the goods gives rise to two different effects (see Figure 5): it results in a change in the marginal substitution rate (MSR) and the acquisition power of our budget is also altered. The change in the demand due to a change in the MSR is called a ¨substitution effect¨. The second effect, the change in the demand due to a lower acquisition power is called an ¨income effect¨.

We can see both effects in Figure 5:

Place FIGURE 5 about here…

First, the budget line pivots around the original choice, and then this line shifts outward to the new demanded bundle (Varian, 1990) The first step- the pivot- is a movement where the slope of the budget line changes while its purchasing power stays constant, while the second step is a movement where the slope stays constant and the purchasing power changes.

In the optimal choice, the relative weight of corrupt contracts will be lower. But it is worthwhile to observe that in this case, even if the costs of corrupt contracts are higher, managers will still demand them (even if less so than before). This means that our problem would not be completely solved. This is due to the shape of the indifference curves, i.e. to the manager's preferences, which are independent of the available budget.

If the price of corrupt contracts increases to extreme situations (see Figure 6) (due to greater control on the part of the administration, awareness campaigns, an increase in the bribes to be paid to compensate the risk of being discovered, etc.), we will find situations in which consumption of corrupt contracts will be drastically reduced. However, because of the characteristics of the Cobb-Douglas functions, we will never get a corner solution where consumption of corrupt contracts is zero. This is due to the fact that the consumers always prefer to consume a certain amount of both contracts, instead of only legal contracts or only corrupt ones.

Place FIGURE 6 about here…

2) Legal and corrupt contracts as substitutives

When dealing with substitute products with a constant rate of substitution, consumers will choose the cheapest one. In this way, if our purpose is to make managers replace corrupt contracts with legal ones, we need to find the way to reduce the costs of legal contracts.

Let us analyze the consumption of the corrupt contracts depending on the price variations, always assuming that legal and corrupt contracts are substitutives at a constant rate of substitution.

In this way, consumers will demand the following amount of corrupt contracts:

M/P_c when $P_c < P_l$

$0 < x < M/P_c$ when $P_c = P_l$

0 when $P_c > P_l$

Let us focus on the third possibility, where the price of corrupt contracts becomes higher than the price of legal contracts ($P_c > P_l$) (see Figure 7). In this case, managers will only consume legal contracts, which is what we are looking for.

Place FIGURE 7 about here…

So, the substitution problem of corrupt contracts for legal ones would be solved by increasing the costs of the corrupt contracts, in cases where corrupt contracts and legal contracts were substitutives at a constant rate of substitution in the minds of managers. We note that the modification of the indifference

curves would be a way of solving the problem of corruption in public procurement[16].

3) When corrupt contracts become ¨bads¨

Now, we raise the question of how managers' decisions would change if an awareness and information campaign created in the mind of managers the idea that corrupt contracts are ¨bads¨ (until now both corrupt and legal contracts were considered as ¨goods¨) for society in general and for firms in particular. This means that the consumption of corrupt contracts creates a disutility or negative utility to managers. In this case, managers would be interested in consuming as few as possible of this type of contracts.

In this case, managers' preferences would change, independently of the variation in the prices of the contracts and the budget line. Even changing the budget line, the optimal choice would be the same; there would be a consumption of only legal contracts (see Figure 8). This change in preferences is translated into a change in the indifference curve, which will now have a positive slope, which means that the acceptance of an additional amount of corrupt contracts would only be compensated (in the mind of managers) with an additional amount of legal contracts.

This would be the case of those situations where managers adverse to corrupt contracts are in negotiations with public officials in which the existing legal bonds would be reinforced by the corrupt agreements (Lambsdorff, 2005). Corrupt contracts are ¨bads¨ and legal contracts are "goods". Therefore, points on the right of the indifference curve would be better choices for managers and points on the left of the indifference curve, worse choices (see Figure 8).

The optimal choice would be the one in which managers spend their budget only on ¨goods¨ (legal contracts), as seen in the figure below:

Place FIGURE 8 about here…

The budget line is represented by the blue line. Managers' preferences will give a corner optimal choice.

Microeconomic analysis of the risk of non-performance of contracts

As already stated, the managers of the firm are the ones making decisions to carry out corrupt agreements or not. Even under the pressure of being asked for a bribe by a public official, managers always have the option and capability to accept or refuse a corrupt contract. The decision will depend on their preferences, the available budget and some externalities (variation in the prices of the contracts, higher sanctions when discovered, an awareness campaign on the negative effects of corruption, etc.).

Once a firm decides to carry out a corrupt contract in a public procurement procedure, there are some factors that need to be taken into consideration: dishonest acts committed by public officials (renegotiation of the contract, further bribes, non-performance of the corrupt contract, threat of public advertising of the corrupt agreement) or by third parties (blackmail and extortion by third parties who have confidential information on the corrupt agreements being carried out and who threaten to denounce them publicly), damaging the public image of the firm and possibly, the unenforceability or loss of the contract.

Thus, in this section, we are going to analyze the behavior of the firm or of the manager in relation to the decisions to be taken under uncertainty in a public procurement contract procedure. The performance or non-performance of a contract is related to the uncertainty as to whether dishonest acts by public officials or third parties would occur in the contracts carried out by the firm[17].

In order to analyze the risks associated with the non-performance of a contract, we need a model that considers risk explicitly. This model is the portfolio selection model, provided by Finance Theory. Based on this model, we can analyze the selection of portfolios and apply the principles of the model to the selection of contracts to be carried out by the firm.

In our model, there are only two assets to invest in. One of them is the risk-free asset with a fixed rate of mean income, r_f . In our case, the legal contract is associated with less risk, so we can approximate its behavior to the risk-free asset. The second asset is a risky one (in our case, the corrupt contract). In general, firms can decide to spend the budget on both corrupt and legal contracts.[18]

Therefore, we have a new situation in which our axes measure the risk and income associated with a specific portfolio selection. There is a linear statistical dependency that expresses the expected income of a mixed portfolio of both types of contracts[19] and describes the balance of the market between risk and income in the adoption of different contract profiles. The slope is now positive, as a higher risk is

[16] This statement could offer an argument to justify the fact that, from the theory of the firm, the control of management will stand out as a mechanism of control of inefficient behavior.

[17] In order to analyze the risks associated with the performance of a contract, we will study the case of the corrupt contract, although all the reasoning could be applicable to the legal contract as well.

[18] In both cases, the performance or non-performance of the contract could occur. If the behavior of the parties is honest, the firm will have good results. If contracts are not performed, the results of the firm will get worse.

[19] Such reasoning is based on the definition of *capital market line* or *securities market line*, which expresses the theoretical condition of equilibrium between income and risk for the individual assets or a portfolio.

associated with a higher income of the portfolio. In some way, it measures the cost of a portfolio of having a higher expected income in relation to the higher associated risk or standard deviation.

If we invest x in the risk asset and (1-x) in the risk-free asset, the mean expected income of our portfolio will be a weighted mean of expected means. In this way,

If x=1, we decide on the risk asset A_c and we have a standard deviation and an expected income (σ_c, r_c).

If x=0, we invest all the budget in the risk-free asset C_l and have a standard deviation and an expected income (0, r_f).

If 0<x<1, we have a portfolio of legal and corrupt contracts.

where

r_f is the income of the risk-free asset

r_c, is the expected income of the risk asset (corrupt agreement)

σ_c is the standard deviation of the income of the corrupt agreement.

It is easy to understand that the income of the risk asset is higher than that of the risk-free asset income ($r_c > r_f$), due to the fact that an investor adverse to the risk would not acquire a risky asset if it had a lower expected income than the income of the risk-free one. Thus, the additional risk would be compensated by a higher expected income.

From a microeconomic point of view, it seems feasible to postulate that a decision-maker in a firm is interested in knowing the probability distribution of an agreement or contract being honest or dishonest. Thus, the manager in charge of signing a contract will decide to do it in a legal or corrupt way based on the probability of the performance of each one.

Among all the alternative functions of utility relating to managers' preferences, in this case, the convex shape would be the most appropriate, meaning that the manager would prefer a constant quantity of both types of contracts to a larger amount of one type of contract and a smaller amount of the other ones; firms would prefer to carry out a percentage of corrupt contracts even if there is the possibility of dishonest or opportunistic acts[20].

We can establish indifference curves showing managers preferences for risk and income[21]. If managers are adverse to risk, a higher income will improve their well-being and a higher standard deviation will make it worse. This implies that a model of risk aversion has a positive slope, as shown in Figure 9.

Place FIGURE 9 about here…

When optimally choosing a portfolio, the slope of the indifference curve must be tangent to the portfolio line (Figure 9). The slope measures the price of risk, or what is the same, the amount of risk and income that can be interchanged, when choosing a portfolio. Therefore, our optimal portfolio choice is the one where the marginal rate of substitution between risk and income is equal to the price of the risk.

Analyzing the figure, we find that the price of the risk is the following:

$$Pendiente = \frac{r_c - r_f}{\sigma_c}$$

Therefore, based on the financial models, we can analyze the formation of contract portfolios, which would justify the choice of both types of agreements (even though the corrupt ones are not desirable) or the choice of them associated with greater or smaller risk and uncertainty, both to satisfy the manager's (or public official's) preferences, and to guarantee the performance of the contracts.

Firms, while choosing between the two different contracting profiles are, in fact, choosing income as a function of the risk they are willing to accept. We understand that corrupt agreements always have more risk (the risk of been discovered, sanctions, loss of reputation, etc.). This way, firms choose the risk they want to assume and create diversified portfolios in this sense and even defend the formation of diversified portfolios on a specific occasion.

In summary, when we accept the fact of a possible "atypical" contracting by firms, we advance one more step in our research and try to understand why corruption persists in the firm context. It seems that, up to now, we have seen that if individual choices do not change, the problem of corrupt contracts continues. If this is the case, we wonder whether the firm may not be interested in putting an end to corrupt contracts for the different reasons previously argued. In this situation, we pose an analysis in which it could occur that the decision-making agents in firms, seeking to maximize firm profitability in the short or medium term and without taking into consideration the shareholders' objective to create wealth in a long term, would try to obtain a contracts portfolio that guarantees maximum profitability and minimum risk, even though the portfolio includes corrupt contracts.

Conclusions

In this paper, we have analyzed the role that firms play in the process of public contracting and we have tried to understand why corrupt deals exist and persist in companies. The literature often refers to the phenomenon of corruption in relation to public

[20] Nevertheless, and depending on managers' preferences, other utility functions could be used.

[21] This model assumes that managers' preferences depend only on mean income and variance.

contracts but nevertheless contributions hardly exist concerning the role of firms contracting with the government and the corruption process that takes place in this managerial context.

In this line, we wondered whether the firm would sometimes be motivated to not stop corrupt contracts for different reasons. It could happen that a firm would have difficulty in surviving within a certain environment, if, for example, it did not pay bribes or share the principles demanded by that society, or if it could not otherwise have access to public contracting because some countries or public officials demand that it be this way, or if the company were to obtain fewer present or future bids if it did not pay the bribe demanded, etc.

In order to analyze these phenomena, we first reflected on the coexistence of corrupt and legal deals in the relationships between the firm and the government, taking special account of their performance. In a second stage, we examined why corrupt contracts take place and by means of a cost-profit analysis we observed that corrupt contracts could be justified in some contexts.

Microeconomic analysis provides a very useful tool for analyzing the coexistence of legal and corrupt agreements. It even helps us to understand the reason why managerial corruption is often justified in this public contracts context. That is why we first tackled the role that firms play in this context, and then an analysis was outlined in which we explained the choices a firm makes when dealing with the government, taking into account the existence of legal and corrupt contracts and the substitution or not of both.

In a first stage, we posed a model that allows us to analyze management preferences depending on the utility function they have. In a second stage, we posed the modification of the models when the established rules of society are pursued, for example, in the realization of anticorruption campaigns or the modification of contract prices. Furthermore, the costs or sanctions could increase for contractual non-performance, a new bribe could be demanded of the firm or the transaction costs in the company may simply increase.

The model shows how modifications in the (available) budget of the firm are not relevant in mitigating corruption problems. However, it is possible to act on managerial preferences so that, at least in the long term, the preferences of the management will be modified and, in this way, the portfolio of corrupt contracts will be reduced and corruption will be lessened. We thus outline a first means for getting closer to legal (desirable) contracting by modifying individual choices.

Thus, when individual preferences adopt a Cobb-Douglas distribution, the optimal choice will lead us to a decrease in the relative weight of corrupt deals. But our problem would not be totally solved since even though the costs of corrupt agreements increase, the management will continue to demand them. This is due fundamentally to the form of the utility function, i.e., to managers' preferences, regardless of the budget they manage. However, when in the model legal and corrupt contracts are substitutive goods, our problem of substitution of legal contracts for corrupt agreements would be solved with an increase in the corrupt agreements costs. As proof of the relevance of the preferences we have the following situation in which we suppose that, through an awareness campaign, the corrupt agreements become ¨bads ¨, so that with the variation in the management utility curves, any modification in the budget would also lead to a resolution of the problem.

Once we outlined the possible atypical contracting by firms, we went a step further in the study and attempted to understand why corruption persists in the managerial context and why contractual non-performance takes place. Decision-makers may have difficulties in modifying their preferences because they prefer their firms to continue diversifying portfolios that maximize short-term profits. That is why we analyzed a model in which firms pursue a contracts portfolio to guarantee maximum profitability and minimum risk, even though the portfolio includes corrupt contracts. Hence, based on the portfolio models that financial theory proposes, we have analyzed firm behavior related to public contracting decisions in an uncertain context. In this sense, we describe a new situation in which we observe the risk and profitability associated with a portfolio. We can thus analyze the formation of portfolios and this would justify the choice of both corrupt and legal contracts or the choice of contracts associated with greater or smaller risk and uncertainty.

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Figure 1

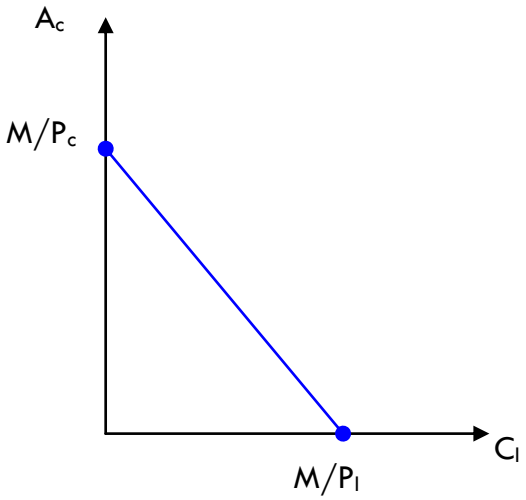
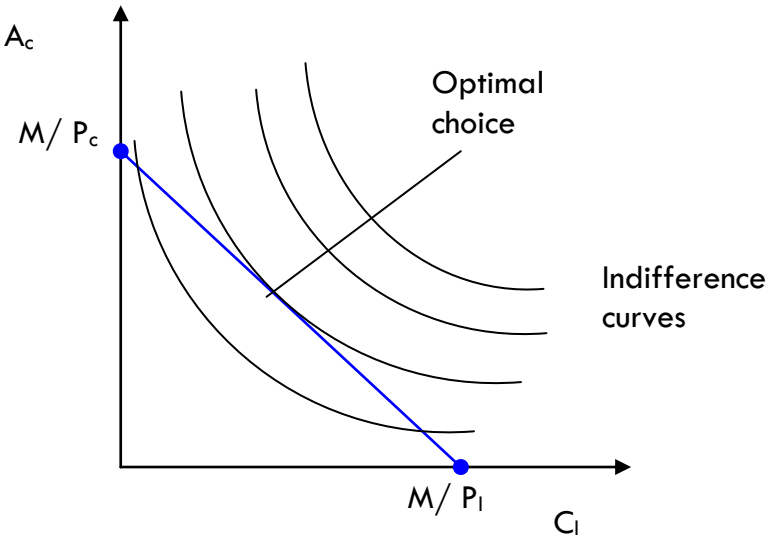


Figure 2



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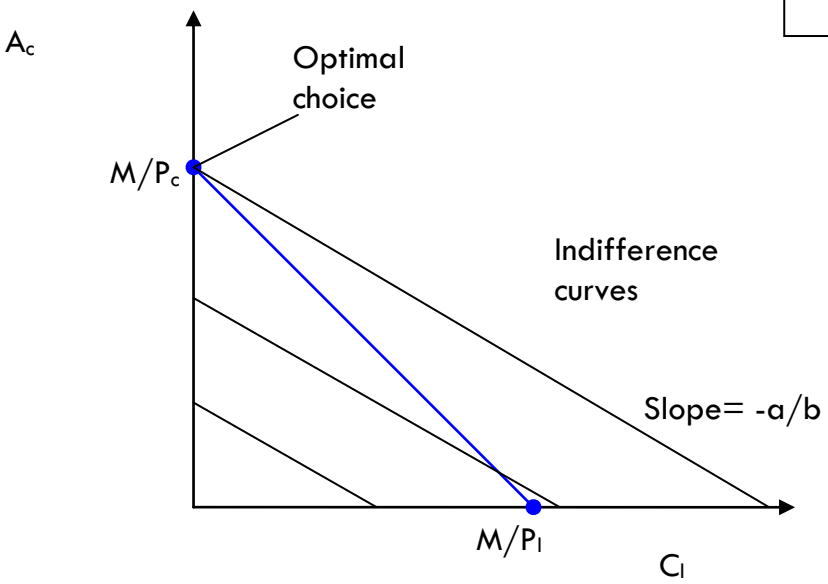

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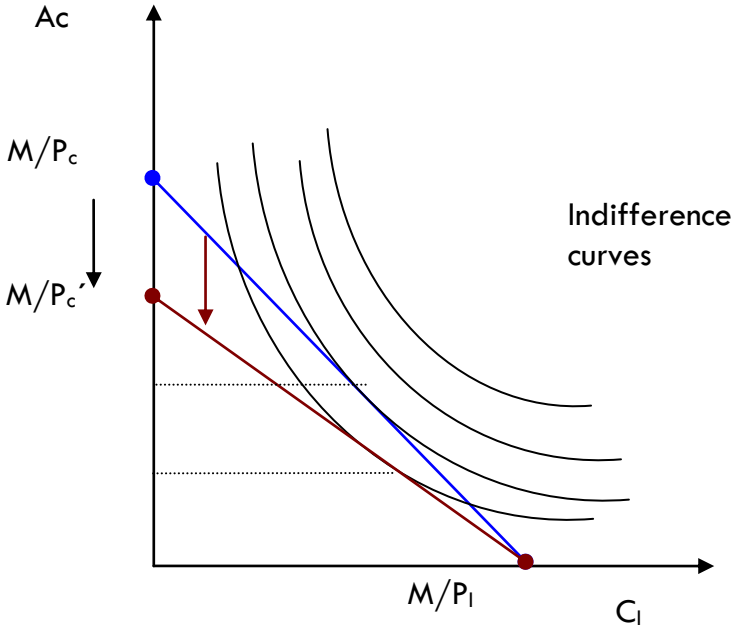

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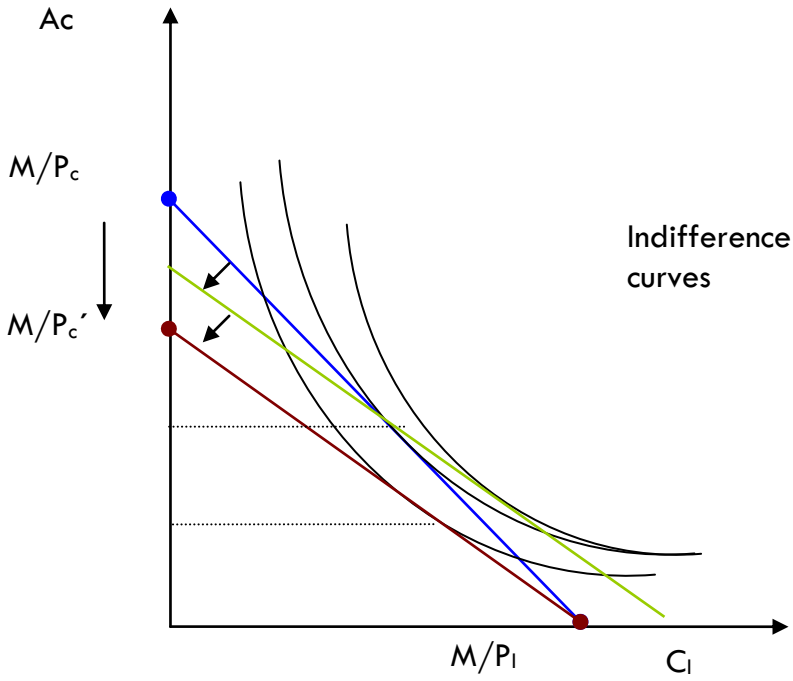

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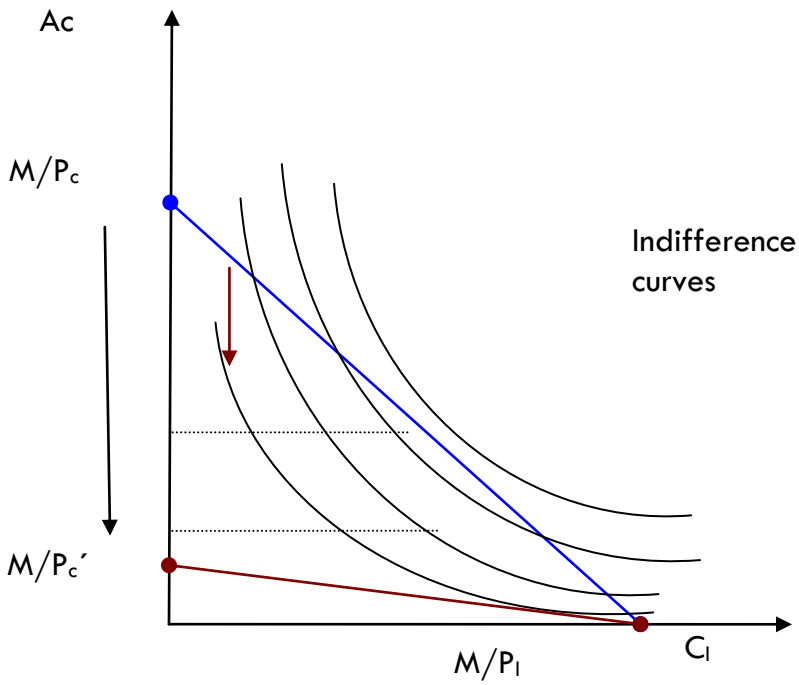

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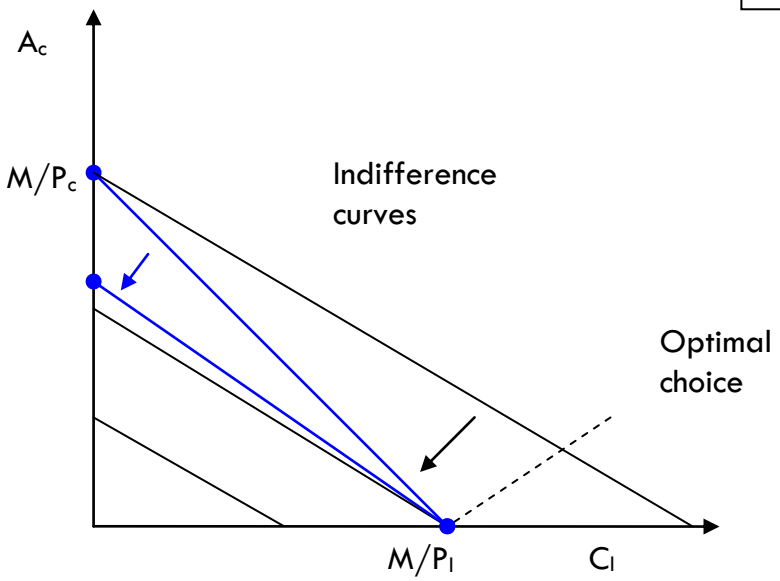

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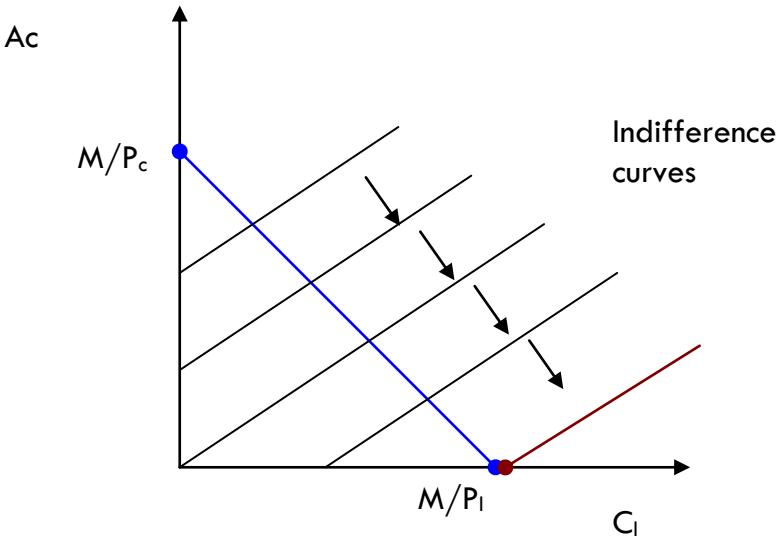

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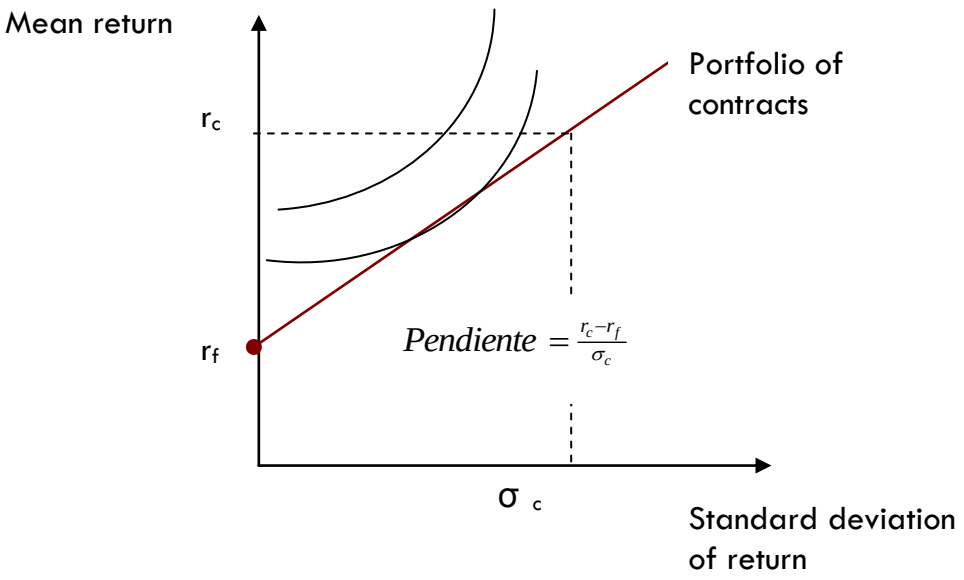

INSIDER TRADING BY DIRECTORS AND SENIORS OFFICERS BEFORE SEASONED EQUITY OFFERINGS

Loretta Baryeh, Peter DaDalt**, Varda Yaari****

Abstract

An important aspect of corporate governance is how directors discharge their duty to shareholders as monitors of management's opportunistic behavior. The insider trading by officers and directors before seasoned equity offerings (SEO) provide an opportunity to examine this issue, because insiders' sales of the firm's stock are incongruent with the objective of the firm to maximize the proceeds of the SEO. Since the market is aware that firms attempt to inflate their proceeds by managing earnings upwards, these trades may signal that the stock is overvalued. In this study, we compare the earnings management activity and the corresponding market response to earnings management and sales by senior officers and directors. We study a sample of 233 firms that conducted SEOs in the 1987-2004 period and either their directors and/or their senior officers traded in the firm's shares. We find that 15% have insider trading by directors only, and 85% by both directors and senior officers. The market discounts the insider trading at the issuance date (the discount increases in the volume of insiders sales), but it treats insider trading by directors as a favorable signal that reduces the discount. Our study then identifies two ways directors monitor opportunistic insider trading before SEO. One is to ban it, as evident by the fact that under our selection criteria, 791 firms conducted SEOs in the 1987-2004 period. The other is to trade too as a positive signal to the market.

Keywords: internal governance, insider trading, seasoned equity offering, earnings management

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1. Introduction

In this study, we examine the association between insiders' trading before seasoned equity offerings (SEO) by directors and senior officers and the proceeds of the SEO, given that firms inflate earnings. The seasoned equity offerings (SEO) event is an important event in the life of the firm. Some firms conduct SEOs to finance working capital and to prolong their survival, while others use the infusion of capital to finance expansion. Naturally, the interests of the company and its incumbent shareholders are to maximize the proceeds of the SEO. For this reason, firms try to time the SEO to occur when the stock is overvalued,[22] and may inflate reported earnings to obtain a higher valuation.[23] To the extent that good corporate governance requires "the board and management to pursue objectives that are in the interests of the company and its shareholders" (OECD p. 3), insider selling seems to be a poor governance practice, since such sales signal to the less-informed but suspicious market that the stock is indeed overvalued.[24] What is more puzzling is that some of the insiders are directors, whose role in the corporate

22 Myers and Majluf, 1984; Loughran and Ritter, 1995; Lee, 1997; Jiandra 2000, Clarke, et al. 2001; Farinos et al., 2005; Jenter, 2005; Jiang, 2008; and Wagner, 2008.

23 Loughran and Ritter 1995; Teoh, Welch, and Wong, 1998; Rangan, 1998; Shivakumar, 2000; Marquardt and Wiedman, 2004; Farinos et al., 2005; Kim and Park, 2005; and Anthony et al., 2006; see also Ronen and Yaari, 2008

24 The market's suspicion is evident in the about 3% negative abnormal returns around the announcement of the issue [e.g., Altınkılıç, and Hansen, 2002]. Moreover, this suspicion is important because SEOs are cancelled when the discount is too large (Clarke et al., 2001).

governance is to monitor management and to watch for the interests of shareholders. If they so wish, the boards can ban insider trading before the SEO.

We examine earnings management and insider trading around seasoned equity offerings (SEOs) by a sample of 233 firms out of a population of 791 firms that conducted SEOs in the 1987-2005 period at least once. We first examine the pattern of insider trading and earnings management, arguing that firms who inflate earnings induce their insiders to sell shares and profit. We then check the market's response around the issuance of the shares given the observable insider trading signal and the earnings management activity of the firm, assuming that as a rational player, it discounts the insiders' sales and the managed earnings.

The majority of firms do not have insider trading. An examination of the firms with insider trading by directors, senior officers, and/or blockholders, shows a different pattern of earnings management inter-temporally: Firms whose insiders sell manage earnings more aggressively than firms whose insiders purchase shares and hence, the former (latter) have negative (positive) abnormal accruals at the year the firm conducts the SEO and in the following year. This pattern is consistent with the incentives of the traders to move the price in the direction that increases their wealth. Sellers would like to inflate earnings to increase the price they sell the firm's stock, hence they "borrow" reported earnings from future periods more aggressively. Buyers prefer the price before the SEO to be as low as possible to increase their wealth when they sell shares in the future. They also manage earnings upwards to inflate the stock price of the SEO, but not that aggressively.

Our major findings are as follows. We find that insider selling is negatively associated with the cumulative abnormal returns around the issuance of the SEO. When we consider insider trading by both directors and senior officers (in 85% of the subsample of 233 firms), we find that the market's discount is lower. That is, the market views insider trading by directors as a favorable signal that the trading is innocuous in that it is not driven by a collusion between directors and managers to manager earnings and make profitable trading gains at the expense on investors.

This study makes several contributions. First, we augment scholarship by examining empirically the theoretical papers by Ronen, Tzur, and Yaari (2006, 2007). These two studies advance the notion that directors who wish to make insider trading gains, do not take steps to curb the misleading earnings management by privately-informed managers. Our findings provide some support to this theory since we find that the market does not discount the earnings management by firms whose insiders sell stock despite the fact that these firms manage earnings more aggressively. This finding is consistent with the disincentives of the directors to expose the true magnitude of earnings management, and explain why insider trading is profitable.

Second, we contribute to the governance literature by focusing on the directors' role in the insider trading around the SEO event. Hillier and Marshall's, 2002, finding that directors' trades is not always informative raises the question of why do they trade then. One explanation in the US context is that the trading is not voluntary. That is, the insider trading laws that are enforced by the Security and Exchange Commission; induce insiders to make trading plans wherein they commit to sales' volume on a quarterly basis as a means to avoid the charge of illegal trades. Our results provide another explanation. Directors can fulfill their role in governance either by banning trades, or by participating it to signal the market that the trade is not driven by opportunistic motivation.

This study proceeds as follows: Section 2 presents our hypotheses. Section 3 presents the sample selection and the methodology. Section 4 presents the results, which are concluded in Section 5.

2. Hypotheses Development

In this section, we present our hypotheses regarding the relationship between earnings management, insider trading, and the market's response.

The common wisdom is that firms manage earnings to inflate the issuance price of the SEO (Loughran and Ritter 1995; Teoh, Welch, and Wong, 1998; Rangan, 1998; Shivakumar, 2000; Marquardt and Wiedman, 2004; Farinos et al., 2005; Kim and Park, 2005; and Anthony et al., 2006; see also Ronen and Yaari, 2008). The reason is that investors pay attention to earnings because earnings are a value relevant signal; as explained by the Gordon[25] formula. The stronger the reported performance before the SEO, the higher the firm's valuation, and the corresponding issuance price (see e.g., Kim and Park, 2005). Being rational, firms have incentives then, to inflate earnings in order to enhance their perceived performance and increase the proceeds.[26] This dynamics implies that firms hoard reported earnings for the SEO year before the event, present high earnings in the event year and then report low earnings after the SEO event since accruals must reverse.[27]

25 Gordon formula states that V= E(x)/(r-g), where V = value of the firm, x = (permanent) earnings, r= discount rate, and g = growth of earnings.

26 While the Sarbanes-Oxley Act reduced the scope of earnings management, it did not eliminate it completely (Cohen, Dey, and Lys, (2005a).

27 The initial interest in earnings management in SEOs was motivated by an attempt to explain the underperformance of SEOs firms. Loughran and Ritter (1995) examined companies that issued stock during the 1970-1990 periods. They found that investors obtained only 7% return for SEO.

The argument that firms manage earnings to inflate the price implicitly assumes that firms manage earnings overtly and hence can fool the market. For example, during the recent market bubble's, firms who managed earnings the most experienced higher returns than firms that managed earnings the least (Huddart and Louis, 2006). We propose the following hypothesis:

H1: The market price around on the SEO's issuance date does not discount earnings management.

There is an extensive literature that shows that insiders' trades are informative. For example, they are profitable contrarian traders: they sell when performance is strong while other investors buy and they buy when performance is poor while other investors sell (Jenter, 2005, Sawicki, 2005, Lakonishok and Lee, 2001, and others), and this strategy earns them abnormal returns (Seyhun, 1982, 2000).

Since firms try to time the SEO to occur when the stock is overvalued (Myers and Majluf, 1984; Loughran and Ritter, 1995; Lee, 1997; Jiandra 2000, Clarke, et al. 2001; Farinos et al., 2005; Jenter, 2005; Jiang, 2008; and Wagner, 2008), insiders can use their superior information that the stock is overvalued to sell shares before the SEO (Karpoff and Lee, 1991; Clarke et al. 2001). [28],[29],

The US environment is litigious. That is, if insiders sell their shares and the price dropped precipitously, they might be sued by investor for illegal insider information (Karpoff and Lee, 1991; Gombola, Lee, and Liu, 1997; Jones and Weingram, 1999). The awareness that the firm is subject to scrutiny by their investors following the SEO event, puts pressure to perform well and present high earnings after the SEO event. This motivation is exacerbated when insiders plan to sell shares after the SEO events, where they have incentives to manage earnings upwards in order to inflate the price (Huddart and Louis, 2006). As discussed above, the market is rational. Hence, it uses the insider trading as a signal (John and Mishra, 1990; Ching et al. 2006). If insiders sell, their trading indicates that the price is overvalued and discounts it. We therefore propose the following hypotheses:

H2: Firms whose insiders sell shares before the SEO, manage earnings less aggressively.

H3: Insiders' selling reduces the proceeds of the SEO.

The law defines insiders as blockholders, management, and directors. The directors are expected to mitigate the agency conflict between shareholders and managers (Jensen and Meckling, 1976). So far, we focused on motivation for the insider trading to make profits by all groups, including the directors (Ronen, Tzur, and Yaari, 2006, 2007). However, as Hillier and Marshall, 2002 have shown, trade by directors is not fully explained by greed. Hence, we look for another explanation for insider trading.

The agency theory of insider trading that focuses on the impact of allowing the managers to trade on the ability of shareholders to align the interests of the managers with their interests, offers a new perspective. Shareholders are willing to allow managers to trade because they can benefit from it. Such trades reveal information that is valuable for contracting with the managers (Dye, 1984), and for inducing the manager to make decisions that maximize shareholders' value when their attitude towards risk differs from that of shareholders. But because shareholders do not have full control over the manager's insider trading and he trades to maximize his personal wealth, this policy might also have some costly repercussions on shareholders' wealth (Bagnoli and Khanna, 1992, Bebchuk and Fershtman, 1991, 1993, 1994; Elitzur and Yaari, 1995). Since directors represent shareholders, directors' trade can construe a signal to shareholders that they do not to have to worry that managers do not act in their best interests, since shareholders can observe this trade but not the decisions done behind the closed doors of the boardroom. This discussion lends the following hypotheses:

H4: The market discount of insider selling is lower when the directors trade too.

3. Sample selection and methodology

3.1. Sample selection

The initial sample contains 10,787 firms issuing seasoned equity offerings between 1985 to 2004, from the Thomson SDC Platinum new issues database. The cut-off of 1985 coincides with calculating accruals from the statement of cash flows. We deleted firms under the following filters: we take the first SEO if the firm conducts multiple SEO (2) We delete financial institutions (SIC codes 6000-6999), and regulated industries (SIC codes 4900-4999), since their accounting is different from other industries.

If investors had instead of investing in these issuers invested the same amount in a non-issuing firm which was equal in size they would have received returns of 15% per year.

28 In the discussion of H1, we focused on the SEO as the motivation for earnings management. The association could be that insiders who plan to sell shares before the SEO attempt to manage earnings to increase their trading profits (Beneish and Vargus, 2002; Park and Park, 2004; Ronen, Tzur, and Yaari, 2006, 2007).

29 There is a debate in the literature regarding the timing of selling, because postponing the sale to after the SEO event can spare the insiders from costly litigation for illegal insider trading (Gombola et al. 1997), but selling before the SEO might be more profitable, because there is usually a price run-up before the announcement of the event.

After deleting firms with missing data on CRSP or COMPUSTAT, the sample includes 791 firms that are divided between 233 firms with insider trading and 558 firms without insider trading.

Insert Table 1 about here

For each SEO, we identified all non-issuing firms sharing the same three-digit SIC code as the issuing firm in the year prior to the SEO to derive our measures of earnings management as detailed below.[30]

Insert Table 2 about here

The data for insider trading is obtained from the Thompson Financial (TFN insider Filing Data), which contains information on all publicly traded U.S. companies. We use their insider trading definition and define corporate insiders broadly to include those that have "access to non-public, material, insider information."

3.2. Methodology

We measure earnings management using the cross-sectional variant of Jones (1991) methodology developed in Teoh, Welch, and Wong (1998) and Kothari, Leone, and Wasley (2005). These approaches separate accruals into two components; normal, or non-discretionary, accruals that results as a natural consequence of business structure and operations common to the industry (i.e. credit policy, business conditions, etc…) and abnormal, or discretionary, accruals that arise from earnings management. We identify abnormal accruals (the proxy for earnings management) using a two-step process. Following Hribar and Collins (2002), Total Accruals are the difference between Net Income and Cash flow from operations (Compustat items # 172 - #308).

We define Current Accruals, CA, as:

Current Accruals = Total Accruals +Depreciation expense (#196) + loss/gain on Sale of Property Plant and Equipment (#213).

We decompose current accruals into its discretionary and non-discretionary components in a two-stage procedure as follows. In the first stage we regress accruals on a model that links normal accruals to change in cash (Sales change less change in accounts receivables) and to lagged return on assets (proposed by Kothari et al. to account for the non-linear relationship between accruals and performance). To alleviate heteroskedasticity, we scale all variables by lagged total assets (Compustat item #6), A_{t-1}. For each SEO firm, we estimate a regression, using all non-SEO firms in the same 3-digit SIC code as the SEO firm in the year prior to the issuance of the SEO. In the second stage of the estimation, we use the coefficients from the first regression in the first equation to calculate discretionary current accruals (DCA) as follows:

$$DCA_{it} = \frac{CA_{it}}{A_{i,t-1}} - \left[\hat{\beta}_0 \frac{1}{A_{t-1}} + \hat{\beta}_1 \frac{\Delta Sales_{it} - \Delta AR_{it}}{A_{t-1}} + \hat{\beta}_2 ROA_{t-1} \right] \quad (1)$$

In equation (2), discretionary current accruals deflated by lagged total assets (henceforth referred to as DCA) are defined as the difference between total current accruals and "non-discretionary" or "normal" accruals (the bracketed term on the right hand side of the equation). They represent the "abnormal" or managed component of current accruals and is used as our proxy for earnings management.

To analyze the pattern of insider trading of issuers of seasoned equity offerings, we adopt the insider purchase ratio used by Piotroski and Roulstone, (2005) and Sawicki, (2005) that measures insider trading behavior. We calculate the insider purchase ratio (IPR) as follows;

$$IPR_t = \frac{BUY_t}{BUY_t + SELL_t}$$

Where BUY_t and $SELL_t$ are (respectively) the number of shares purchased (sold) in open market transactions by registered insiders of a firm during a given fiscal year relative to the year in which the SEO occurs.

To test for the impact of insider trading on the SEO's proceeds, we measure the cumulative abnormal returns around the SEO issuance date. A matching of firms with insiders trading to firms without insider trading--the matching is based on firms conducting an SEO in the same year and within the same industry--, does not yield a meaningful sample. The benefit of using CARs is that they capture the change in returns relative to the time when insiders traded. To sharpen this point, observe that insider trading takes place out of the issuance window, so that the information of the trade is already compounded in the price. This will impact the direction of the expected signs of the coefficients in our regression models, as discussed below.

4. Results

To test H1 and H3, we segregate insiders according to their cohorts where top management is made up of Chairman, Chief executive Officer (CEO), Chief Operating Officer (COO) and President. Top

30 While many prior studies match on 2 digit SIC codes (e.g. Teoh et. al, 1998), this results in SEO firms being matched with firms in widely varying industries. Using 4 digit SIC codes provides a closer match, but shrinks our sample size considerably. We therefore employ 3 digit SIC codes as a compromise between increased accuracy and sample size. Table 2 however aggregates our sample using their 2 digit SIC code for presentation purposes.

financial officers are the Chief financial Officer (CFO) Controller and Treasurer. The category of all officers are the corporate officers, top management, principal financial officer, principal accounting officer, vice presidents in charge of principal business units, divisions or functions and other persons who perform a policy making function. All directors' category includes members of the company's board. Block holders are beneficial owners of 10% or more of the company's outstanding equity. Insiders were segregated according to cohorts to find out if the different types of insiders had different trading patterns which in turn influenced market returns differently. Also, since not all the insider groups are equally knowledgeable about earnings manipulation, segregation according to cohorts would also bring to light differences in trading patterns which might affect market returns. Specifically, we run the following model:

$$CAR_{11} = \alpha_0 + \alpha_1 IPR + \alpha_2 DCA + \alpha_3 TA + \alpha_4 MV + \varepsilon_t, \quad (4)$$

where CAR is the eleven- day cumulative abnormal returns and the independent variables are the insider purchase ratio IPR, discretionary accruals for the year before the SEO, DCA, multiplied by 100, and the standard controls for size: total assets (Compustat # 6) and market value (Compustat item #24 times Compustat item #25) divided by 100.

By H1, we expect that the sign on DCA to be non-significant, and the signs on both control variables to be positive. The sign on IPR is a bit tricky. We measure insider trading for trades that take place one year before the issuance. We wish to focus on the impact of insiders sales on the negative announcement effect on the market price. Since by the time the firm makes the issuance, the information that the sale is overvalued is already filtered into the market price for no other reason than that insiders' trades are informative and public. Hence, if indeed sales have a negative impact on the proceeds of the SEO, the sign on IPR should be negative.[31]

Insert Table 3 about here

The results show insignificant association between market returns and earnings management, which confirm H1. Since, in untabulated results, we find that firms manage earnings upwards in the same fashion as described in Teoh, Welch, and Wong, 1998, this result is consistent with firms managing earnings to appear stronger performers than they really are.

For all cohorts, we find significant negative association between CAR and IPR. The coefficients for managers' cohort, directors' cohort, blockholders' cohort, and all officers' cohort are -0.38, -0.49, -0.67, and -0.39, respectively with the associated t-statistics of -1.59, -2.10, -2.37, and -1,75, respectively. These findings confirm H3. The market regards insiders selling as a signal that the stock is overvalued and discounts the price accordingly.

To test H2, we divide the sample of firms with inside trading into quintiles. Quintiles 1 and 2 include SEO firms with high IPR ratios, which represent the majority sales group; quintiles 4 and 5 represent firms with low IPR ratios, which represent concentration of purchases, quintile 3 is neutral. In each quintile, the firm manages earnings upwards, consistent with prior studies cited in section 2. As postulated by H2, firms with insiders' sales are more aggressive prior to the SEO in that their abnormal accruals are negative subsequently (DCA in period t—the year the SEO is done— and t+1, in quintile 1 are -0.00026 and -0.00017, respectively, while firms with insiders purchases manage earnings less aggressively. The abnormal accruals, in period t and t+1, as a fraction of lagged assets in quintile 5 are 0.00103 and 0.00141, respectively.

Insert Table 4 about here

To test for H4, we run the following model:

$$CAR_{11} = \alpha_0 + \alpha_1 IPR + \alpha_2 DCA + \alpha_3 DUM + \alpha_4 TA + \alpha_5 MV + \varepsilon_t,$$

where *DUM* is a dummy variable that takes the value of 1 if both directors and senior officers trade and zero if only directors do. The results support H4. Insider trading by directors in companies where both the senior officers and the directors trade has weaker impact on the negative impact of insiders' sales. The coefficient on the dummy variable is significantly positive, it is 0.5 with a t-statistics of 2.55. Given that the total sample of firms with and without insider trading is 791 firms, this result shows that insiders control pernicious insider trading by officers in two ways: one is banning it, and the other is to trade themselves and signal that the trade may be driven from reasons other than greed.

Insert Table 5 about here

5. Summary and Conclusions

Since firms conduct seasoned equity offerings to raise much needed capital, insider selling seems a self-

31 A numerical example illustrates this issue. Consider a firm that announces an SEO on December, where the announcement price should be 5 dollars a share. In one scenario, the firm's insiders did not sell shares before that, and hence, the price before the announcement was 10. In another scenario, the firms insiders sold shares before the announcement and the price dropped to 9. Since Eventus uses the data during the trading period to calculate the betas for the CARs around the issuance date, it will yield higher abnormal returns for the firms whose insiders sell shares and these trades depress the price out of the window of the announcement period. The abnormal returns in the first scenario are (5-10=)-5, and in the second scenario, they are (5-9=)-4 >-5.

defeating practice because it conveys to the market that the price of the firm's shares is overvalued. In this study, we examine insider trading a year preceding the issuance of stock at a SEO event and the proceeds of the SEO; the link between insider trading and earnings management, and the role of directors in the occurrence of insider trading before the SEO. Our main findings are that firms whose insiders sell shares manage earnings more aggressively, but that this information is ignored by the market. The market takes into account the information content of insiders' sales, but directors' sales play a mitigating role, in that the discount is lower for firms with both managers and directors' trades. Our results then indicate that directors can control the unfavorable impact of insider trading on the proceeds of an SEO in two ways: one is by banning it, and the other is by trading themselves and conveying to the market that not all trades are motivated by opportunistic greed.

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Appendices

Table 1. Sample Selection

Sample	Number of Firms
Total SEO firms	10,787
SEO firms without multiple issues	6,100
*SEO firms less financial institutions and regulated industries	6,077
SEO firms with necessary data on Compustat	791
SEO firms with necessary data on CRSP	233
* financial institutions (SIC 6000-6999); regulated industries (SIC 4000-4999)	

Table 2

SIC	Frequency	Percent	Cumulative Frequency	Cumulative Percent
10	5	0.63	5	0.63
13	54	6.83	59	7.46
15	3	0.38	62	7.84
20	7	0.88	69	8.72
25	1	0.13	70	8.85
26	1	0.13	71	8.98
27	1	0.13	72	9.1
28	118	14.92	190	24.02
29	5	0.63	195	24.65
30	4	0.51	199	25.16
33	10	1.26	209	26.42
35	49	6.19	258	32.62
36	102	12.9	360	45.51
37	14	1.77	374	47.28
38	73	9.23	447	56.51
39	3	0.38	450	56.89
42	10	1.26	460	58.15
45	5	0.63	465	58.79
48	43	5.44	508	64.22
49	43	5.44	551	69.66
50	19	2.4	570	72.06
51	2	0.25	572	72.31
53	1	0.13	573	72.44
54	4	0.51	577	72.95
56	1	0.13	578	73.07
57	1	0.13	579	73.2
58	15	1.9	594	75.09
59	13	1.64	607	76.74

62	2	0.25	609	76.99
63	13	1.64	622	78.63
64	7	0.88	629	79.52
67	19	2.4	648	81.92
70	4	0.51	652	82.43
73	105	13.27	757	95.7
78	2	0.25	759	95.95
79	8	1.01	767	96.97
80	7	0.88	774	97.85
87	17	2.15	791	100

Table 3. Regression of Eleven Day CAR, to Insider purchase ratio, Discretionary Current Accruals and Control Variables for Insiders

$$CAR_{11} = \alpha_0 + \alpha_1 IPR + \alpha_2 DCA + \alpha_3 TA + \alpha_4 MV + \varepsilon_t$$

Panel A: Top managers				
Independent Variable	α	Standard error	t-Value	Pr > |t|
Intercept	0.11085	0.10648	1.04	0.2991
IPR	-0.37872	0.22383	-1.69	0.0922
DCA_{t-1}	-0.06631	0.06186	-1.07	0.2851
TA	0.00000578	0.00002643	0.22	0.8272
MV	0.00126	0.00426	0.30	0.7683
N = 201		R^2 = 0.02	Adj R^2=0.001	
Panel B: The directors				
Independent Variable	α	Standard error	t-Value	Pr > |t|
Intercept	0.11052	0.09606	1.15	0.2512
IPR	-0.44322	0.21132	-2.10	0.0371
DCA_{t-1}	-0.02937	0.05495	-0.53	0.5935
TA	-0.00001991	0.00001838	-1.08	0.2799
MV	-0.00060155	0.00134	-0.45	0.6547
N = 233		R^2 = 0.03	Adj R^2=0.012	
Panel C: Blockholders				
Independent Variable	α	Standard error	t-Value	Pr > |t|
Intercept	0.21560	0.15209	1.42	0.1595
IPR	-0.66770	0.28211	-2.37	0.0199
DCA_{t-1}	0.00624	0.09910	0.06	0.9499
TA	-0.00008973	0.00010355	-0.87	0.3883
MV	0.00367	0.00560	0.66	0.5135
N = 103		R^2 = 0.063	Adj R^2=0.024	
Panel D: All officers				
Independent Variable	α	Standard error	t-Value	Pr > |t|
Intercept	0.12091	0.10538	1.15	0.2526
IPR	-0.39082	0.22270	-1.75	0.0808
DCA_{t-1}	-0.06439	0.06151	-1.05	0.2964
TA	0.00000559	0.00002635	0.21	0.8322
MV	0.00115	0.00425	0.27	0.7876
N = 203		R^2 = 0.02	Adj R^2=0.001	

CAR_{11} = Eleven day cumulative abnormal return; IPR= Insiders purchase ratio, DCA_{t-1} = Discretionary current accruals multiplied by 100; TA = Total Assets, Compustat item #6; MV= Market value, Compustat item #24 times Compustat item #25 divided by 100. The sample comprises of firms that conducted an SEO in the 1985-2004 period whose insiders trade in the firm's share.

Table 4. Insider purchases and sales and earnings management

Quintiles	Variable	N	Mean	Std. Dev.
1	DCA_{t-1}	30	0.00036	0.01982
	DCA_t	60	-0.00026	0.01755
	DCA_{t+1}	60	-0.00017	0.00577
2	DCA_{t-1}	44	0.00373	0.01196
	DCA_t	62	0.00165	0.02009
	DCA_{t+1}	62	0.00076	0.00344
3	DCA_{t-1}	51	0.00241	0.01357
	DCA_t	62	0.00504	0.01839
	DCA_{t+1}	57	0.00058	0.00604
4	DCA_{t-1}	54	0.00245	0.01491
	DCA_t	60	-0.00284	0.03373
	DCA_{t+1}	56	0.00113	0.00353
5	DCA_{t-1}	54	0.00108	0.01259
	DCA_t	62	0.00103	0.02046
	DCA_{t+1}	62	0.00141	0.00315

DTA_{t-1} Discretionary total accruals in the year before the SEO
DTA_t Discretionary total accruals in the year of the SEO
DTA_{t+1} Discretionary total accruals in the year after the SEO
Quintile 1 and 2 represents the majority sales group
Quintiles 4 and 5 represents majority purchases
Quintile 3 is neutral

Table 5. Regression of Eleven Day CAR, to Insider purchase ratio, Discretionary Current Accruals and Control Variables for directors and senior officers

$$CAR_{11} = \alpha_0 + \alpha_1 IPR + \alpha_2 DCA + \alpha_3 TA + \alpha_4 MV + \varepsilon_t$$

Dependent variable CAR_{11}				
Independent Variable	α	Standard error	t-Value	Pr > |t|
Intercept	-0.342	0.22	-1.71	0.089
IPR	-0.42549	0.209	-2.03	0.043
DCA_{t-1}	-0.04344	0.0546	-0.795	0.427
DUM	0.509	0.2	2.55	0.011
TA	-0.000021	0.0000184	-1.12	0.26
MV	0.00052	0.001356	0.382	0.7026
N = 233		R^2 = 0.055	Adj R^2=0.034	

CAR_{11} = Eleven day cumulative abnormal return; IPR= Insiders purchase ratio, DCA_{t-1} = Discretionary current accruals multiplied by 100; TA = Total Assets, Compustat item #6; MV= Market value, Compustat item #24 times Compustat item #25 divided by 100. The sample comprises of firms that conducted an SEO in the 1985-2004 period whose insiders trade in the firm's share.

THE PRICE AND VOLUME EFFECT OF INITIAL SINGLE STOCK FUTURES TRADING

***Johan de Beer** **

Abstract

The introduction of single stock futures to a market allows for a per company impact-assessment of futures trading activity. Thirty-eight South African companies were evaluated in terms of a possible price and volume effect due to the initial trading of their respective single stock futures contracts. An event study revealed that SSF trading had little impact on the underlying share prices while a normalised volume comparison pre to post SSF trading showed a general increase in spot market trading volumes.

Keywords: Single stock futures, equity shares, event study, price effect, volume effect, spot market, futures market

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1 Introduction

Single stock futures (SSF) are traded on relatively few exchanges, with the National Stock Exchange (NSE) of India and the Russian Trading System (RTS) Stock Exchange accounting for the majority of global volumes initially. SSF contracts were introduced to the South African market in 1999. The WFE/IOMA Derivatives Market Survey 2006 (WFE & Davydoff 2007:16) reported that the National Stock Exchange of India (NSE) was the most active exchange in the world for stock futures trading in 2006. The 2007 WFE Annual Report (WFE 2008:46) confirmed that since then the JSE Limited has overtaken its Indian counterpart, showing a two-hundred and eighty percent year-on-year (2006-2007) growth in activity, which established the JSE as number one in SSF contracts traded (265 million contracts per annum). However, if the smaller contract size adopted by the JSE is taken into account, it still lags behind the Spanish Official Exchange for Financial Futures and Options (MEFF), which took fifth place in the rankings in terms of value traded with the NSE in first place (WFE 2008:109). In the United States the trading of single stock futures was allowed with the passing of the Commodity Futures Modernization Act of 2000 by the US Congress and only launched on November 8, 2002 (Salcedo 2003:56). SSF contracts trade as universal stock futures in the United Kingdom on the London International Financial Futures and Options Exchange (LIFFE). The underlying securities are some of the world's largest companies and not limited to shares traded on the London Stock Exchange (LSE). In May of 1994, the Sydney Futures Exchange introduced futures contracts, known as individual share futures, on selected issues of common stock in Australia (Peat and McCorry 1997) and the majority of studies done on the impact of single stock futures trading originated from the Australian market.

The trading of a SSF-contract, the price of which is derived from an underlying equity share, may conceivably impact on the underlying spot price as a result of price discovery and the setting of a future spot price. Similarly, trading volume in the futures market may either generate (equivalent trades to cover positions) or curtail (substituting one market for another) spot activity. Many past studies, mainly on share indices, investigated the impact of derivatives trading on the underlying with regards to a possible price and volume effect. The introduction of single stock futures presents an opportunity to revisit this subject from an individual company perspective. The following papers provide an overview of the results on price and volume effects experienced with initial futures trading.

2 Literature review

Robbani and Bhuyan (2005), using a two-sample (pair-wise) t-test and the Wilcoxon signed-rank test, found evidence that the average daily rate of return on the thirty underlying component shares of the Dow Jones Industrial Average (DJIA) decreased significantly following the introduction of futures and

options. They also noted a significant increase in the daily trading volume for the majority of index constituents (23 from 30 shares).

An event study (market-adjusted model) conducted by Aitken and Segara (2005), likewise, reported the introduction of warrants on individual equity shares in Australia to be associated with a negative price effect. Their finding was corroborated by Clarke, Gannon and Vinning (2007) in an event study (mean reversion and market models) showing generally negative abnormal returns around the date of warrant issuance. These two studies contradicted an earlier event study (market model) by Faff and Hillier (2003) that revealed positive abnormal returns by newly optioned shares (in the United Kingdom) even though no discernable trend in the magnitude of these returns over time were recorded. Concerning any volume effect, Faff and Hillier (2003) witnessed an increased trading volume in the ten-day period immediately subsequent to options introductions (dummy variable regression), while Aitken and Segara (2005) established that the relative trading volume (trading volume divided by total number of securities outstanding) in the underlying share following warrant listing was significantly greater than in the pre-warrant listing period (Wilcoxon rank-sum test). Clarke et al (2007) in this instance disagreed, providing evidence that when adjusting for the inherent upward trend in volume, warrant introduction generally causes a decrease in trading volume.

Peat and McCorry (1997) pioneered research on the listing-effect of single stock futures (SSF) and found no significant change in the underlying price level. This market-adjusted-model event study examined the impact on ten individual equity shares trading in Australia. A significant increase in trading volume was evidenced from a t-test for change in mean performed on the ten individual underlying shares. This was confirmed by Lee and Tong (1998) with an equal means and equal variances t-test and rank sum tests, accounting for the (G)ARCH effect and using a control group to rule out confounding events. Their evidence suggested that volume distributions have significantly changed after the inception of single stock futures and that post-futures volumes have higher means but smaller variation.

The only reported study in South Africa on the volume effect of futures trading was done by Swart (1998) who concluded from a regression analysis (spot volume regressed on futures volume and value) on three share indices (South African All Share, Gold and Industrial Index) that index futures trading resulted in greater volume (liquidity) in the South African equity market. The limited research in South Africa focused on the volatility effect of futures trading (see Oehley 1995; Parsons 1998; Smit & Nienaber 1997; Vanden Baviere & De Villiers 1997; Swart 1998; Kruger 2000) and no studies on any possible price effect were published.

3 Research methodology

An event study was conducted in an attempt to detect a possible price effect with the introduction of futures trading (i.e., the event) to the South African equity market. A market model was used to generate the abnormal returns required to analyse the impact. The average normalised trading volume pre and post SSF-introduction was evaluated using a dummy variable with trend coefficient regression to uncover any volume effect – that is, significantly changed trading volumes in the respective underlying shares.

3.1 Price effect

The effect of a financial event on the value of a listed company can be measured using financial market data in an event study (Campbell, Lo & MacKinlay 1997:149). The effect of a firm-specific event (e.g., introduction of a single stock futures contract on a share) should reflect as an abnormal or unexpected change (positive or negative) in the firm's share price.

Event study methodology encompasses the econometric techniques used to estimate and draw inferences from the impact of an event or multiple identical events in a particular period. A viable and effective event study requires the isolation of the event to the greatest degree possible, independence of individual company returns, and the assumption of constant systematic risk as represented by the beta coefficient used to determine the "normal" return. Wells (2004:66-67) states that samples should be from different industries, with each sample security having a different event day, and a large sample size.

Horizon length has a big influence on event study properties and largely determines the specification level, power, and sensitivity of test statistic specification. These possible problems do not apply to short-horizon event studies (less than 12 months) as these methods are relatively straightforward and trouble-free. Short-horizon event methods are powerful if the abnormal returns are concentrated in the event window. Also, the specification of the test statistic is not highly sensitive to the benchmark model. A problem shared by both short- and long-horizon studies is the possible increase in the variance of the security's abnormal returns conditional on the event. As a result, test statistics can be miss-specified and the null hypothesis rejected too often (Kothari & Warner 2006:15-18, 50).

A market model approach was used to generate company betas and calculate normal and subsequently abnormal returns (i.e., actual minus normal). The market model is a risk-adjusted statistical model that relates the return of any given security to the return of the market portfolio. A one-factor OLS regression analysis generates the intercept or alpha (α_i), and

slope or beta (β_i), thereby incorporating a risk adjustment component to the estimate of returns.

3.1.1 The market model

The concept of abnormal returns is the central element of event studies and the benchmark or model generating normal returns is consequently central to conducting an event study. The chosen model for this study is the market model, specified as follows:

For any security i the market model is:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

$$E(\varepsilon_{it}) = 0 \qquad \text{var}(\varepsilon_{it}) = \sigma^2_{\varepsilon_i}$$

Where:

R_{it} = Period-t returns on security i (dependent variable)

R_{mt} = Period-t returns on the market portfolio m (independent variable)

ε_{it} = Error or disturbance term representing unsystematic risk

α_i = Intercept term (alpha – minimum return of security when market return is zero)

β_i = Slope coefficient (beta – systematic risk)

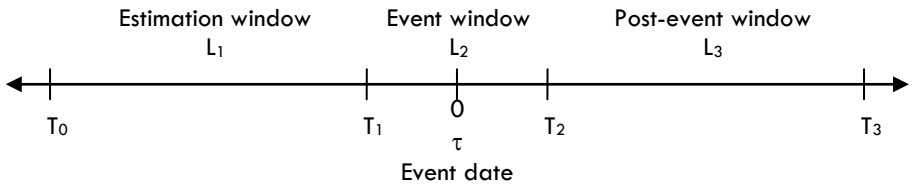
$\sigma^2_{\varepsilon_i}$ = Variance of the disturbance term

The parameters of the model (α_i, β_i and $\sigma^2_{\varepsilon_i}$) are estimated by means of ordinary least squares (OLS) regression and used to calculate the residuals or abnormal returns.

3.1.2 Measuring and analysing abnormal returns

The key focus of an event study is to measure the sample securities' average and cumulative average abnormal returns around the time of an event (Kothari & Warner 2006:7). Time is redefined relative to the day of the event and the average security price-movement for the sample securities is examined during specific days around the event month.

Figure 1. Time line for an event study



Returns indexed in event time using τ
Event date defined as $\tau = 0$

Estimation window: $L_1 = T_1 - T_0$ represented in event time by $\tau = T_0 + 1$ to $\tau = T_1$

Event window: $L_2 = T_2 - T_1$ represented in event time by $\tau = T_1 + 1$ to $\tau = T_2$

Post-event window: $L_3 = T_3 - T_2$ represented in event time by $\tau = T_2 + 1$ to $\tau = T_3$

The residual $\varepsilon_{i\tau}$ from the market model corresponding to day τ is the estimator of the abnormal return for security i during event day τ. This, according to Binder (1998:112-113), removes the effect of economy-wide factors on the return of the security and retains the portion of the return attributable to firm-specific information.

The design of the time line (timing sequence) eliminates any overlap between the estimation window and event window, ensuring that the estimated parameters of the normal return model are uninfluenced by the returns around the event. The exclusion of the event window when measuring the normal returns upholds the assumption that the abnormal returns will capture the impact of an event. The estimation framework will include the event window if the null hypothesis is expanded to accommodate any changes in risk (variance) of a firm due to the event. The post-event window data may also be included with the estimation period to estimate the normal return model (MacKinlay 1997:20).

3.1.3 Estimation of the market model

The relationship between a security's returns and returns on the market is estimated by ordinary least squares (OLS) regression and this relationship is used to estimate expected returns, given returns on the market.

For the i[th] firm in event time, the OLS estimators of the market model for an estimation window of observations are:

$$\hat{\beta}_i = \frac{\sum_{\tau=T_0+1}^{T_1} \left(R_{i\tau} - \hat{\mu}_i\right)\left(R_{m\tau} - \hat{\mu}_m\right)}{\sum_{\tau=T_0+1}^{T_1} \left(R_{m\tau} - \hat{\mu}_m\right)^2} = \frac{\text{cov}_{R_{i\tau},R_{m\tau}}}{\text{var}_{R_{m\tau}}} \quad (2)$$

$$\hat{\alpha}_i = \hat{\mu}_i - \hat{\beta}_i\hat{\mu}_m \quad (3)$$

$$\hat{\sigma}^2_{\varepsilon_i} = \frac{1}{L_1 - 2}\sum_{\tau=T_0+1}^{T_1}\left(R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau}\right)^2 = \frac{1}{L_1 - 2}\sum_{\tau=T_0+1}^{T_1}\left(\varepsilon_{i\tau}\right)^2 \quad (4)$$

Where: $\hat{\mu}_i = \frac{1}{L_1}\sum_{\tau=T_0+1}^{T_1} R_{i\tau}$

and $\hat{\mu}_m = \frac{1}{L_1}\sum_{\tau=T_0+1}^{T_1} R_{m\tau}$

$R_{i\tau}$ = Event-period-τ returns on security i

$R_{m\tau}$ = Event-period-τ returns on the market portfolio m

Source: MacKinlay (1997:20)

Beta is calculated as the covariance between the market and the security during the estimation period, divided by the variance of the market in that period. The intercept term (alpha) is the difference between the average return (μ) on the security and the estimated return on the security as determined by the market return and calculated beta.

3.1.4 Statistical properties of abnormal returns (AR)

The parameter estimates of the market model allow the measurement and analysis of the abnormal returns. The abnormal return $\left(AR_{i\tau}\right)$ is the disturbance term $\left(\varepsilon_{i\tau}\right)$ of the market model, calculated on an out-of-sample basis:

$$AR_{i\tau} = R_{i\tau} - \left(\hat{\alpha}_i + \hat{\beta}_i R_{m\tau}\right) = \varepsilon_{i\tau} \quad (5)$$

The abnormal returns are jointly normally distributed with zero conditional mean and conditional variance, $\sigma^2_{AR_{i\tau}}$, where:

$$\sigma^2_{AR_{i\tau}} = \sigma^2_{\varepsilon_i} + \frac{1}{L_1}\left[1 + \frac{\left(R_{m\tau} - \hat{\mu}_m\right)^2}{\hat{\sigma}^2_m}\right] \quad (6)$$

The conditional variance comprises the disturbance variance $\sigma^2_{\varepsilon_i}$ from (1) and the additional variance due to the sampling error in α_i and β_i. This sampling error leads to serial correlation of the abnormal returns even though the real disturbances are independent through time. However, the sampling error of the parameters disappears with a large estimation window $\left(L_1\right)$ and this additional variance then approaches zero. The variance of the abnormal return will therefore be $\sigma^2_{\varepsilon_i}$ and the abnormal return observations will become independent through time (MacKinlay 1997:21). These distributional properties are used to draw inferences over any period within the event window.

Under the null hypothesis (H_0 = Event has no impact on the behaviour of returns) the distribution of the sample abnormal returns of a given observation in the event window is:

$$AR_{i\tau} : N\left(0, \sigma^2_{AR_{i\tau}}\right) \quad (7)$$

Where: $\sigma^2_{AR_{i\tau}} = \sigma^2_{\varepsilon_i}$ with a large estimation window $\left(L_1\right)$

3.1.5 Aggregation of abnormal returns (CAR)

In an event study the focus is on the mean and the cumulative mean of the dispersion of abnormal returns. The abnormal return observations must be

aggregated across observations of the event in order to draw overall inferences for the event of interest. Aggregation may occur along two dimensions – through time and/or across securities. This study focuses on the impact of a single event on several different firms (i.e., aggregation across securities). The event windows of the included securities should not overlap (no clustering assumption). The absence of any overlap and the distributional assumptions imply that the abnormal returns and the cumulative abnormal returns are independent across securities. The individual securities' abnormal returns are aggregated and averaged (8).

The cross-sectional average abnormal returns (residuals) in common event time:

$$\overline{AR}_{\tau} = \frac{1}{N}\sum_{i=1}^{N} AR_{i\tau} \qquad (8)$$

For a large estimation window, L_1, the variance is:

$$\text{var}\left(\overline{AR}_{\tau}\right) = \frac{1}{N^2}\sum_{i=1}^{N}\sigma_{\varepsilon_i}^2 \qquad (9)$$

Where:

N = Number of firms in the sample

τ = Event date

The average abnormal returns per event day are summed across days to measure the average cumulative effect of an event on the sample securities from day τ_1 to day τ_2. Cumulating these periodic average residuals over a particular time interval (number of days in the event window) allows for inferences concerning the general impact of the event.

The aggregated average abnormal returns over the event window:

$$\overline{CAR}_{\tau_1,\tau_2} = \sum_{\tau=\tau_1}^{\tau_2}\overline{AR}_{\tau} \qquad (10)$$

Variance:

$$\text{var}\left(\overline{CAR}_{\tau_1,\tau_2}\right) = \sum_{\tau=\tau_1}^{\tau_2}\text{var}\left(\overline{AR}_{\tau}\right) = \frac{1}{N^2}\sum_{i=1}^{N}\sigma^2_{i_{\tau_1,\tau_2}} \qquad (11)$$

Where $T_1 < \tau_1 \pounds \tau_2 \pounds T_2$

3.1.6 Tests for significance

A test statistic is calculated and compared to the assumed distribution under the null hypothesis that the event has no impact on the behaviour of returns (i.e., the mean abnormal return equals zero). The null hypothesis is rejected if the test statistic exceeds a critical value corresponding to the specified test level or size of the test. The standard test statistic is obtained by dividing the average or cumulative average abnormal return by the relevant standard deviation (13).

Inferences about the cumulative average abnormal returns are drawn using:

$$\overline{CAR}_{\tau_1,\tau_2} : N\left[0, \text{var}\left(\overline{CAR}_{\tau_1,\tau_2}\right)\right] \qquad (12)$$

H_0 (Event has no impact on the behaviour of returns) tested using:

$$\theta_1 = \frac{\overline{CAR}_{\tau_1,\tau_2}}{\text{stdev}\left(\overline{CAR}_{\tau_1,\tau_2}\right)} : N(0,1) \qquad (13)$$

A possible modification of the basic approach that may lead to more powerful tests (i.e., the ability to detect non-zero abnormal returns) is to standardise each abnormal return using an estimator of its standard deviation (MacKinlay 1997:24). The purpose, according to Serra (2002:5) is to ensure that each abnormal return has the same variance. By dividing an abnormal residual by its standard deviation, each residual has an estimated variance of one. An amended test statistic of the hypothesis that the average standardised residual of a firm is equal to zero is calculated (not shown).

A two-sided test of the null hypothesis on the cumulative abnormal return based statistic θ_1 from (13) is used. A confidence-interval approach as shown in (14) is used and values lying in this interval are plausible under H_0 with 100(1–α)% confidence. Hence, do not reject the null hypothesis if the value lies within this region. Outside the interval it may be rejected.

The null distribution is standard normal for a two-sided test size of α and the null hypothesis will be rejected if θ_1 lies in the following critical region:

$$\theta_1 < c\left(\frac{\alpha}{2}\right) \text{ or } \theta_1 > c\left(1-\frac{\alpha}{2}\right) \qquad (14)$$

Where $c(x) = \Phi^{-1}(x)$

[$\Phi(x)$ is the standard normal cumulative distribution function (CDF)]

3.2 Volume effect

Share trading volume is a highly volatile factor, according to Clarke et al (2007:30), often resulting in large variances, generally non-normal distributions and many outliers. An exponential smoothing process was applied to the data to normalise the volume and these normalised volume figures were used in the analysis.

An exponentially weighted moving average (EWMA) process assigns exponentially decreasing weights to older data. The single exponential smoothing method is appropriate for a series that moves randomly above and below a constant mean with no trend or seasonal patterns. A double smoothing method is appropriate for a series with a linear trend. The smoothed series is calculated recursively, by evaluating the formula presented in (15). The forecasted value is a weighted average of the past values of the series where the weights decline exponentially with time. The smaller the damping or smoothing factor, the more smoothed the eventual forecasted series (NIST 2006).

Single exponential smoothing formula:

$$s_t = \alpha y_t + (1 - \alpha) s_{t-1} = s_{t-1} + \alpha (y_t - s_{t-1}) \quad (15)$$

Where:

y_t = Raw data

s = Output of the exponential smoothing algorithm

α = Smoothing factor $(0 < \alpha \leq 1)$

Sources: EViews (2007:356) and NIST (2006)

To determine whether the event caused a permanent change in volume, the average normalised volume in a specified number of days prior to the event was compared to the average normalised volume in the period subsequent to the event. Trading volume generally tends to increase over time and a dummy variable regression (16) considering this trend was used, as this is not captured by a t-test for change in mean.

Equation used to estimate volume:

$$V_{it} = \alpha_i + \beta_i T_{it} + \delta D_F + \varepsilon_{it} \quad (16)$$

Where:

V_{it} = Normalised volume for security i at time t

α_i = Intercept

$\beta_i T_{it}$ = Trend (day) coefficient and variable

δD_F = Dummy coefficient and variable

The dummy variable takes the value of zero for the pre-event period and one for the post-event period. The coefficient is interpreted as a change in trading volume after considering any underlying trend which may bias the results of the dummy variable. The level of significance is indicated by the relevant p-value of the statistical output.

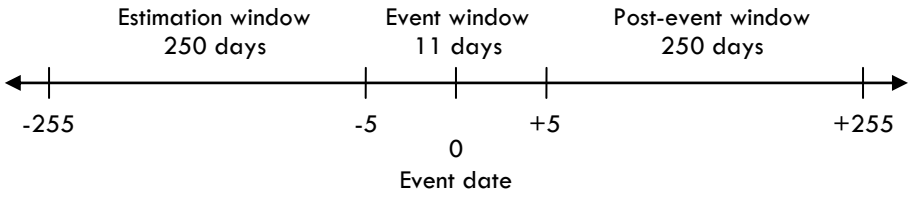
4 Data and statistical analysis

The South African market saw three-hundred and fifty-seven (357) first-time introductions (available for trade) of physically-settled SSF contracts from 1999 to 2007. Ninety-nine (99) cash-settled SSF contracts (dual issues) have been introduced since February 2007. Two (2) inward listed contracts (i.e., based on foreign reference assets or issued by foreign entities and listed on the JSE) were made available for trade in this period. These potential candidates for inclusion in the study were subjected to the following selection criteria:

- No corporate actions or events that may have affected the shareholder's entitlement to benefits (i.e., share splits, capitalisation/rights issues, unbundling, mergers, or takeovers).
- No direct or indirect prior introductions of SSF contracts.
- Trading activity – available for trade and the actual trading of contracts occurring within a two week period.
- No overlapping of the 11-day (including day zero) event periods – no clustering assumption
- 250 days (excluding the event period) of spot trading before and after the event.

Thirty-eight (38) companies matched all the selection criteria, representing seven (7) different industries which in turn translate to twelve (12) supersectors, eighteen (18) sectors, and twenty-five (25) subsectors (refer to Appendix A). This satisfies the event study requirement that samples are from different industries and not focused on a specific industry.

The company returns were regressed on the returns of the market (All Share Index – ALSI), thereby determining the company's beta (slope coefficient – sensitivity to return of the market) in order to establish the "normal" daily returns of a company during the event period. The difference between this normal or anticipated return (beta times the market return) and the actual return of the company, represents the abnormal return on a specified day.


Estimation window
250 days
Event window
11 days
Post-event window
250 days
-255
-5
+5
+255
0
Event date

The 250 daily returns of the company and the ALSI preceding the event period (ten days excluding the event date) were used in the market model regression (while there are 365 days in a year, only approximately 250 of them are trading days, thus representing a one-year period of trading data before and after an event or event window). The abnormal returns (actual minus normal) five days before (pre-SSF period), on the actual first trading day (day 0), and after (post-SSF period) the event were calculated and assigned to either a one-, five- or ten-percent level of significance, or as non-significant (too small relative to the standard deviation). These daily abnormal returns for each company were averaged (average abnormal return – AAR), cumulated (cumulative average abnormal return – CAAR) and evaluated for statistical significance.

The selected model (market model), generating individual company betas, was not assessed in terms of "goodness-of-fit" (R-squared) in each instance, but simply used to establish a normal return as determined by the market, to be compared with the actual return from the movement in individual share prices. The discrepancies between the relative and actual company returns during the event period are presented and attributed in the following table (table 1). Inferences regarding the statistical validity of each abnormal return and the conclusion reached on the impact of initial SSF trading on the underlying share price follow the statistical output.

In general, most daily abnormal returns proved to be non-significant, not exceeding the 1,68 critical value cut-off for a 10%-level of significance (90% confidence level). SSF trading, according to this event study, had no effect (no significant abnormal returns during the event period) on the share prices of eighteen (out of thirty-eight) companies included in this study.

INSERT TABLE 1 ABOUT HERE

The following fourteen companies showed a statistically significant abnormal return on a single day during the event period under investigation – Allied Technologies (3 – ALT), Amalgamated Appliance Holdings (4 – AMA), Argent Industrial (6 – ART), Brandcorp Holdings (7 – BRC), Cadiz Holdings (8 – CDZ), Enterprise Risk Management (15 – ERM), Grindrod (18 –GND), Jasco Electronics (21 –JSC), Liberty Holdings (25 – LBH), Lonmin (26- LON), Prism Holdings (30 – PIM), Pick and Pay Holdings (31 – PWK), Simmer and Jack Mines (34 – SIM) and UCS Group (37 – UCS). With only one day showing a statistically significant deviation from the normal return, it can be concluded that the advent of SSF trading had very little effect on the share prices of these fourteen companies.

EOH Holdings (14 – EOH) and Paragon Holdings (29 – PCN) each exhibited only two days of statistically significant abnormal returns, providing virtually no evidence that SSF trading had influenced their share prices. Similarly, only three days of sufficiently sized abnormal returns reported by Shoprite Holdings (33 – SHP), Super Group (36 – SPG) and Winhold (38 – WNH) confirmed that SSF trading had little effect on the returns of these companies.

Hudaco Industries (19 – HDC) was the only company to reveal some share-price impact caused by initial SSF trading. Showing abnormal returns on six days (including day zero), Hudaco Industries mainly experienced abnormal share-price activity in the five-day period leading up to the availability of SSF contracts on its equity shares. Only three companies displayed statistically significant abnormal returns on trading-day zero, namely Hudaco Industries, Pick and Pay Holdings, and Winhold.

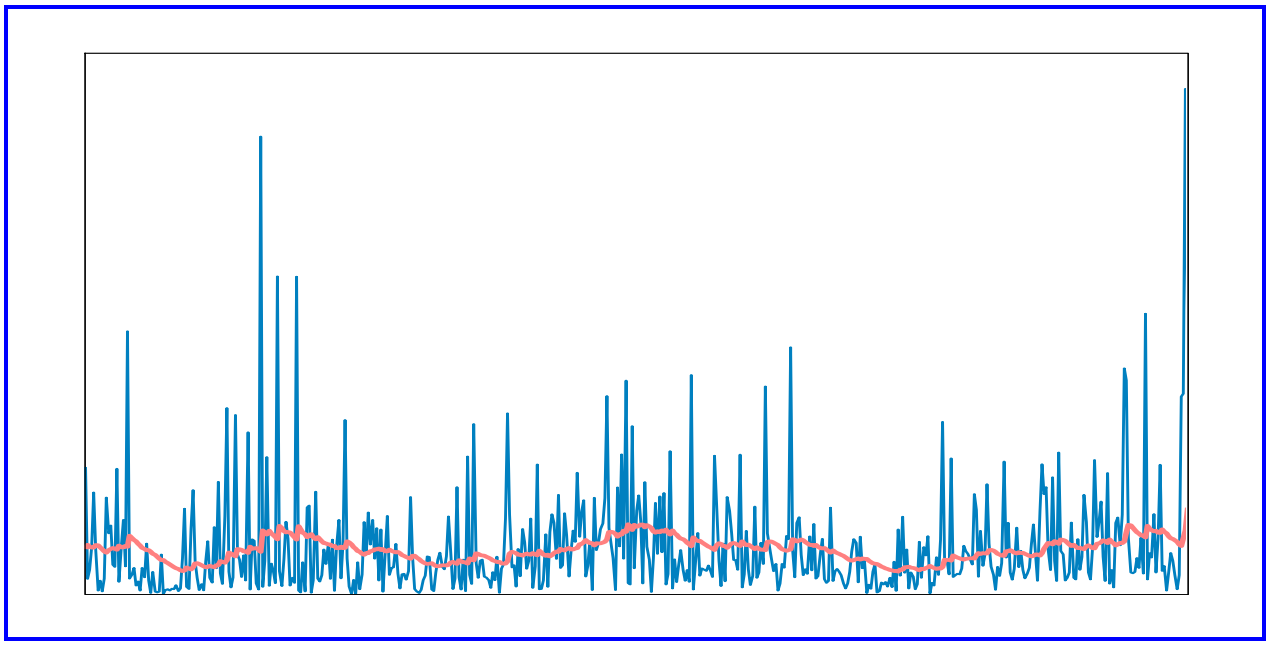
On an individual company-by-company basis it is clear that the introduction (trading) of single stock futures had little or no impact on the underlying companies' share prices and the event study presented no conclusive evidence to establish either a positive or a negative price effect due to SSF trading.

However, in an event study the focus is on the mean and the cumulative mean of the dispersion of abnormal returns. The individual securities' abnormal returns are aggregated and averaged. These average abnormal returns per event day are summed across days to measure the average cumulative effect of the event on the sample securities for the whole event period or a variety of periods within the event window. Cumulating these periodic average residuals over a particular time interval (number of days in the event window) allows for meaningful inferences concerning the general impact of the event. If the initial SSF trading caused a price effect, significant abnormal returns on day zero and possible significant abnormal returns on day -1 and day +1 should be uncovered. Significance should be lower as one moves further from the event date and for longer periods or periods not including the actual event.

INSERT TABLE 2 ABOUT HERE

Table 2 shows that the only significant average abnormal return was recorded on day +3 of the event period. Periods (-5 to -3), (-5 to -2), (-5 to -1) and (-5 to 0) all showed significant cumulative average abnormal returns. Results indicate a 10% significance level for a period that includes the event day (-5 to 0), but for shorter periods inclusive of day zero [(-3 to 0), (0 to +3), (-1 to 0) and (0 to +1)] no significance is evidenced. Shorter time periods (-5 to -2) and (-5 to -3) do show increased significance, but do not include the actual event date. The most promising result, therefore, is the significant positive CAAR of 2,17% during the six-day (including the event day) pre-SSF period. Positive

Figure 2. Normalised (smoothed) volume



Source: McGregor-BFA (EViews6 generated)

, but non-significant, average abnormal returns on day -1 and 0, as well as positive, but non-significant, cumulative average abnormal returns in periods (-3 to 0) and (-1 to 0) tend to confirm the favourable impact of SSF trading on the underlying share price in the period immediately preceding the event and on the event day itself, as shown by the significant (-5 to 0) subperiod.

Diminishing significance for shorter periods closer to the event implies that no clear evidence to suggest any price effect (positive or negative) on the underlying due to the introduction of single stock futures resulted from this study.

The effect of SSF trading on the spot market volume of the underlying company before and after the first futures market transaction was tested by comparing the average normalised trading volume pre- and post-SSF with a dummy variable and trend coefficient (a time series variable that checks for a trend) regression to determine whether the volume significantly changed after accounting for the tendency of the volume to increase (trend) over time.

Figure 2 depicts the normalised daily trading volume (red) of AECI Holdings (1 – AFE), used as an example, after an exponential smoothing process was performed on the actual data (blue). The forecasted value is a weighted average of the past values of the series where the weights decline exponentially with time (higher weight allocated to more recent data).

Trading volume generally tends to increase over time and a dummy variable regression considering this trending nature of volume is used, as this is not captured by a t-test for change in mean. The dummy variable regression is augmented with a trend (day) coefficient to isolate the size of the increase/decrease in trading volume witnessed after initial SSF trading. The dummy variable takes the value of zero for the pre-SSF period and one for the post-SSF period. The coefficient is interpreted as a change in trading volume after considering any underlying trend which may bias the results of the dummy variable.

INSERT TABLE 3 ABOUT HERE

In line with the dummy variable regression (with trend), the number of companies showing a significant increase in average normalised volume is nineteen (three non-significant increases). Fifteen companies exhibited a significant decrease in average normalised trading volume (one non-significant decrease). A small majority of companies (19 vs. 15), therefore, experienced a significant increase in trading volume following the onset of single stock futures trading.

A t-test for change in mean (not accounting for any trend) confirmed that the majority of companies (27 of 37 significant results) experienced highly significant increases in normalised trading volume after the introduction of SSF-trading (De Beer 2008:78).

5 Summary of results

A pre-SSF (estimation period) regression analysis generated beta coefficients for each of the thirty-eight individual companies and established normal daily returns via the market return during the event period. The difference between this normal return and the actual return of the company represented the abnormal return (AR) on a specified day. Average abnormal returns (AAR) and cumulative average abnormal returns (CAAR) for the sample were also calculated. The abnormal return in excess of the relevant standard deviation (acceptable divergence) determined statistical significance.

Fourteen companies (37%) showed a statistically significant abnormal return (AR) on a single day during the event period under investigation. Two companies (5%) exhibited only two days of statistically significant abnormal returns. Three days of sufficiently sized abnormal returns were reported in three instances (8%). Only one company (3%) revealed some share-price impact caused by initial SSF trading, showing abnormal returns on six days (including day zero), and mainly in the five-day period leading up to the availability of SSF contracts on its equity shares. Only three companies (5%) displayed statistically significant abnormal returns on the day of the event itself. The only significant average abnormal return (AAR) was recorded three days after the event. Significant cumulative average abnormal returns (CAAR) were recorded for longer periods and periods further away from and before the event. The six day pre-event period that included the event day showed statistical significance, but no shorter periods inclusive of day zero displayed any significance.

Figure 3. Changes in normalised trading volume

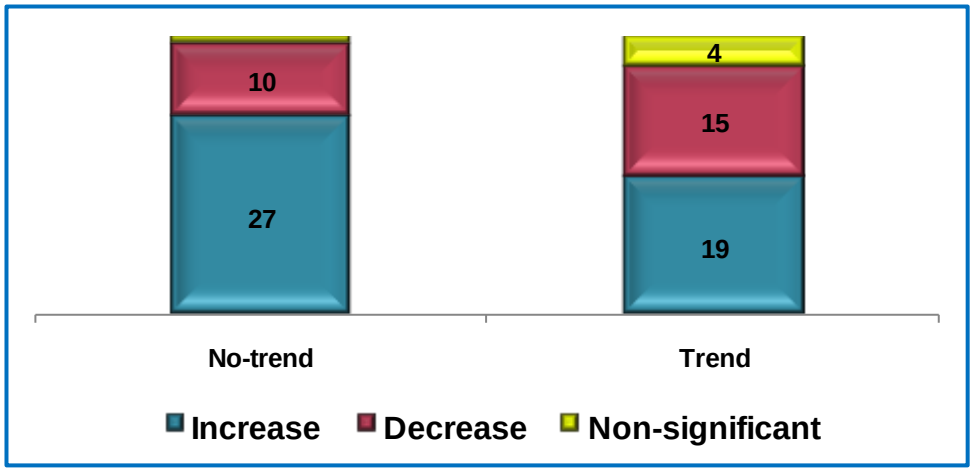


Figure 3 illustrates the result from the t-test (no-trend) compared to that of the dummy regression with trend coefficient. A t-test for change in mean showed that the introduction of SSF trading resulted in a highly significant increase in normalised trading volume in the majority (71%) of cases. A smaller majority (56%) of statistically significant outcomes from the dummy variable with trend coefficient evaluation indicated an increase in trading volume following the onset of single stock futures trading.

6 Conclusion

Judged on an individual company-by-company basis, the introduction (trading) of single stock futures had little or no impact on the underlying share prices.

In addition, the pattern of significant cumulative average abnormal returns implies that no clear evidence exists that SSF trading in general has had any price effect (positive or negative) on the underlying. The diminishing significance exhibited for shorter periods closer to the event is in contrast to the conditions required to conclude a general price effect, namely significant abnormal returns on day zero and possible significant abnormal returns on day -1 and day +1. Significance should be lower with increasing distance from the event date and for longer periods or periods not including the actual event.

However, it was concluded that SSF market activity in general led to increased trading activity in the underlying market, even allowing for the natural increase in spot volume over time.

Note

This article is based on a study done on the impact of single stock futures on the South African equity market that also reported on any changes in the level and structure of volatility post initial single stock futures trading.

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Appendices

Table 1. Price effect – Abnormal returns

Abnormal returns (AR) as calculated from a market model ($R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$) for all companies on a specific day during the event period.

No	Days										
	-5	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**+5**
1	1.24% (0.79)	2.11% (1.34)	0.14% (0.09)	-0.33% (-0.21)	-0.43% (-0.27)	-1.00% (-0.64)	-0.56% (-0.35)	-1.79% (-1.14)	-1.47% (-0.94)	-0.15% (-0.10)	-0.37% (-0.24)
2	-1.78% (-0.37)	0.62% (0.13)	1.38% (0.29)	-5.08% (-1.07)	-3.32% (-0.70)	-0.28% (-0.06)	-3.42% (-0.72)	-5.13% (-1.08)	2.25% (0.47)	5.98% (1.25)	-3.44% (-0.72)
3	-0.01% (0.00)	1.12% (0.75)	2.22% (1.47)	-1.11% (-0.74)	-0.01% (0.00)	0.66% (0.44)	1.53% (1.01)	-2.25% (-1.49)	-1.30% (-0.87)	3.53% (2.35) **	-0.49% (-0.32)
4	-0.46% (-0.23)	-1.09% (-0.54)	0.42% (0.21)	-1.58% (-0.78)	0.72% (0.36)	-0.24% (-0.12)	-0.53% (-0.27)	0.66% (0.33)	3.41% (1.69) *	5.46% (2.71) ***	-0.55% (-0.27)
5	-0.97% (-0.33)	2.71% (0.92)	-0.75% (-0.26)	-0.27% (-0.09)	0.64% (0.22)	-0.75% (-0.25)	-0.85% (-0.29)	-0.67% (-0.23)	0.78% (0.26)	-0.02% (-0.01)	1.07% (0.36)
6	-0.27% (-0.13)	0.06% (0.03)	3.51% (1.67) *	-0.31% (-0.15)	1.08% (0.52)	-0.52% (-0.25)	-1.28% (-0.61)	-1.04% (-0.49)	0.29% (0.14)	-1.19% (-0.57)	-2.04% (-0.97)
7	3.19% (1.31)	1.03% (0.42)	-0.51% (-0.21)	1.22% (0.50)	1.20% (0.49)	-1.00% (-0.41)	-0.79% (-0.33)	-4.32% (-1.77) *	3.64% (1.49)	2.20% (0.90)	1.05% (0.43)
8	0.32% (0.13)	-1.18% (-0.49)	3.19% (1.33)	5.13% (2.14) **	0.01% (0.00)	-0.44% (-0.18)	-1.45% (-0.60)	3.79% (1.58)	-0.45% (-0.19)	-0.10% (-0.04)	-0.21% (-0.09)
9	0.15% (0.08)	-0.94% (-0.49)	-0.48% (-0.25)	0.53% (0.28)	-0.21% (-0.11)	1.74% (0.91)	2.63% (1.37)	0.51% (0.27)	-0.33% (-0.17)	0.19% (0.10)	0.02% (0.01)
10	1.10% (0.65)	0.59% (0.35)	0.29% (0.17)	1.42% (0.85)	-0.10% (-0.06)	0.64% (0.38)	-0.23% (-0.14)	0.57% (0.34)	-0.09% (-0.05)	-0.18% (-0.11)	0.32% (0.19)
11	1.58% (0.60)	1.92% (0.72)	-2.23% (-0.84)	-2.31% (-0.87)	-2.19% (-0.82)	-0.93% (-0.35)	-0.17% (-0.07)	-3.49% (-1.32)	-1.33% (-0.50)	-2.24% (-0.84)	1.15% (0.43)
12	1.19% (0.42)	-0.01% (0.00)	-1.51% (-0.53)	-0.20% (-0.07)	-0.60% (-0.21)	3.90% (1.38)	3.34% (1.18)	-3.41% (-1.21)	-0.18% (-0.06)	1.97% (0.70)	2.32% (0.82)
13	0.16% (0.03)	-2.17% (-0.41)	1.29% (0.25)	-2.31% (-0.44)	-0.47% (-0.09)	-1.07% (-0.20)	-4.20% (-0.80)	0.67% (0.13)	-2.48% (-0.47)	-0.37% (-0.07)	-0.56% (-0.11)
14	-1.75% (-1.34)	-0.54% (-0.42)	3.08% (2.36) **	-0.10% (-0.08)	-0.56% (-0.43)	-0.82% (-0.63)	2.72% (2.08) **	0.43% (0.33)	0.01% (0.01)	-1.77% (-1.35)	1.32% (1.01)
15	1.40% (0.58)	-1.72% (-0.72)	1.53% (0.64)	-0.11% (-0.05)	-2.32% (-0.97)	1.25% (0.66)	-3.09% (-1.28)	-0.88% (-0.37)	5.92% (2.46) **	-0.85% (-0.36)	0.86% (0.36)
16	-0.19% (-0.07)	0.90% (0.31)	-0.16% (-0.05)	-0.32% (-0.11)	-0.18% (-0.06)	1.09% (0.38)	-0.57% (-0.20)	-0.48% (-0.17)	-0.75% (-0.26)	0.38% (0.13)	-0.14% (-0.05)
17	0.06% (0.01)	-1.65% (-0.30)	0.18% (0.03)	1.85% (0.33)	3.45% (0.62)	1.84% (0.33)	1.74% (0.31)	-6.61% (-1.19)	1.74% (0.31)	1.77% (0.32)	0.18% (0.03)
18	2.18% (0.91)	4.70% (1.96)	1.42% (0.59)	-1.79% (-0.75)	-3.27% (-1.37)	2.25% (0.94)	-2.41% (-1.01)	1.49% (0.62)	-0.37% (-0.15)	-0.39% (-0.16)	3.90% (1.63)

Abnormal returns (AR) as calculated from a market model ($R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$) for all companies on a specific day during the event period.

No	Days										
	-5	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**+5**
		**									
19	3.01% (2.49) **	-4.18% (-3.46) ***	3.99% (3.30) ***	2.65% (2.20) **	-0.26% (-0.21)	-4.30% (-3.56) ***	-1.56% (-1.29)	1.39% (1.15)	1.41% (1.17)	2.68% (2.22) **	-0.75% (-0.62)
20	4.43% (1.15)	2.32% (0.61)	-0.37% (-0.10)	0.94% (0.24)	-0.51% (-0.13)	4.13% (1.08)	-0.33% (-0.09)	-4.45% (-1.16)	2.28% (0.60)	1.02% (0.27)	1.90% (0.50)
21	-2.69% (-0.88)	3.28% (1.07)	2.09% (0.68)	-3.08% (-1.00)	-0.31% (-0.10)	-2.10% (-0.68)	5.29% (1.73) *	-1.79% (-0.58)	0.99% (0.32)	-1.89% (-0.62)	0.23% (0.07)
22	-2.07% (-0.36)	0.59% (0.10)	1.24% (0.22)	3.30% (0.58)	-1.28% (-0.23)	-1.68% (-0.30)	-1.25% (-0.22)	-3.29% (-0.58)	-0.51% (-0.09)	0.66% (0.12)	5.76% (1.02)
23	-1.90% (-1.01)	-1.42% (-0.76)	-0.79% (-0.42)	0.85% (0.46)	-0.13% (-0.07)	0.10% (0.05)	-0.22% (-0.12)	-0.10% (-0.05)	0.72% (0.38)	0.89% (0.47)	-1.19% (-0.64)
24	-2.66% (-1.54)	-0.01% (-0.01)	0.18% (0.10)	-0.20% (-0.12)	0.17% (0.10)	-0.18% (-0.10)	-0.06% (-0.04)	-1.92% (-1.11)	0.17% (0.10)	-0.48% (-0.28)	0.26% (0.15)
25	-0.68% (-0.45)	-1.30% (-0.85)	0.42% (0.28)	0.23% (0.15)	4.01% (2.63) ***	-0.71% (-0.46)	0.84% (0.55)	0.55% (0.36)	0.40% (0.26)	-1.41% (-0.92)	-0.82% (-0.54)
26	-3.78% (-1.67) *	1.51% (0.66)	1.38% (0.61)	0.93% (0.41)	-1.15% (-0.51)	-0.07% (-0.03)	0.62% (0.27)	0.15% (0.06)	-0.93% (-0.41)	-0.53% (-0.23)	1.40% (0.62)
27	-3.05% (-0.84)	-2.19% (-0.60)	-1.22% (-0.34)	-1.05% (-0.29)	-1.46% (-0.40)	-3.28% (-0.90)	-3.56% (-0.98)	1.00% (0.28)	0.64% (0.17)	-0.45% (-0.12)	-2.97% (-0.82)
28	0.48% (0.21)	-1.20% (-0.54)	-0.49% (-0.22)	-1.21% (-0.54)	-0.15% (-0.07)	-0.66% (-0.30)	-0.18% (-0.08)	-0.36% (-0.16)	-0.84% (-0.38)	0.22% (0.10)	0.01% (0.00)
29	4.68% (1.28)	0.05% (0.01)	3.99% (1.09)	-7.29% (-2.00) **	6.95% (1.91) *	-4.86% (-1.33)	0.90% (0.25)	-0.21% (-0.06)	-3.45% (-0.95)	-0.24% (-0.07)	-1.15% (-0.32)
30	7.46% (1.48)	2.24% (0.45)	-5.51% (-1.10)	2.40% (0.48)	4.23% (0.84)	4.71% (0.94)	1.72% (0.34)	-6.33% (-1.26)	8.72% (1.73) *	-1.96% (-0.39)	-11.63% (-2.31) **
31	-0.31% (-0.23)	0.18% (0.14)	0.74% (0.55)	-0.94% (-0.70)	0.69% (0.51)	2.37% (1.77) *	-0.13% (-0.10)	-2.70% (-2.01) **	1.23% (0.92)	-1.24% (-0.92)	1.90% (1.42)
32	2.86% (0.72)	0.15% (0.04)	0.13% (0.03)	-0.21% (0.05)	-1.19% (-0.30)	1.15% (0.29)	2.84% (0.71)	0.20% (0.05)	5.86% (1.47)	5.25% (1.32)	-1.39% (-0.35)
33	-0.23% (-0.14)	3.09% (1.88) *	-0.71% (-0.43)	0.27% (0.17)	2.79% (1.70) *	1.82% (1.11)	1.17% (0.71)	2.31% (1.41)	-0.82% (-0.50)	-1.51% (-0.92)	-3.82% (-2.32) **
34	1.43% (0.20)	18.05% (2.53) **	11.18% (1.57)	2.41% (0.34)	-1.52% (-0.21)	1.24% (0.17)	1.51% (0.21)	4.98% (0.70)	3.68% (0.52)	5.76% (0.81)	5.18% (0.73)
35	0.72% (0.34)	-0.02% (-0.01)	0.76% (0.36)	0.62% (0.29)	-1.24% (-0.58)	-0.29% (-0.14)	-2.01% (-0.95)	-3.37% (-1.59)	-0.12% (-0.06)	-0.98% (-0.46)	-1.28% (-0.60)
36	3.28% (1.72) *	-0.15% (-0.08)	-1.06% (-0.55)	-2.06% (-1.08)	-2.19% (-1.15)	-0.38% (-0.20)	-4.32% (-2.26) **	4.29% (2.24) **	0.89% (0.47)	0.23% (0.12)	-2.90% (-1.52)

Abnormal returns (AR) as calculated from a market model ($R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$) for all companies on a specific day during the event period.

No	Days										
	-5	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**+5**
37	-2.93% (-1.05)	1.31% (0.47)	1.11% (0.40)	-0.23% (-0.08)	3.29% (1.17)	-0.70% (-0.25)	0.39% (0.14)	2.83% (1.01)	-0.55% (-0.20)	3.42% (1.22)	4.97% (1.78) *
38	-0.17% (-0.07)	0.33% (0.14)	0.82% (0.34)	0.28% (0.12)	-0.06% (-0.02)	7.19% (2.99) ***	-5.60% (-2.33) **	-0.85% (-0.35)	6.18% (2.57) **	0.16% (0.07)	-4.20% (-1.75) *

(z-stat)	1% level of significance	(z-stat)	5% level of significance	(z-stat)	10% level of significance
***		**		*	

Table 2. Price effect – Average and cumulative abnormal returns

The table shows the average abnormal returns (AAR) for all companies on a specific day during the event period and the cumulative average abnormal returns (CAAR) for the whole period as well as over a variety of time periods within the event window.

Day	AAR (z-stat)	Period	CAAR (z-stat)	Period	CAAR (z-stat)
-5	0.40% (0.77)	**-5** to **-5**	0.40% (0.77)	**-1** to **+1**	0.07% (0.08)
-4	0.77% (1.49)	**-5** to **-4**	1.16% (1.60)	**-2** to **+2**	-0.88% (-0.77)
-3	0.81% (1.59)	**-5** to **-3**	1.97% (2.22)**	**-3** to **+3**	0.86% (0.63)
-2	-0.18% (-0.34)	**-5** to **-2**	1.80% (1.76)*	**-4** to **+4**	2.25% (1.46)
-1	0.11% (0.21)	**-5** to **-1**	1.91% (1.66)*	**-5** to **+5**	2.48% (1.46)
0	0.27% (0.52)	**-5** to **0**	2.17% (1.73)*	**-5** to **0**	2.17% (1.73)*
+1	-0.30% (-0.59)	**-5** to **+1**	1.87% (1.38)	**0** to **+5**	0.58% (0.46)
+2	-0.78% (-1.52)	**-5** to **+2**	1.09% (0.75)	**-3** to **0**	1.01% (0.99)
+3	0.93% (1.81)*	**-5** to **+3**	2.02% (1.31)	**0** to **+3**	0.11% (0.11)
+4	0.63% (1.22)	**-5** to **+4**	2.64% (1.63)	**-1** to **0**	0.37% (0.52)
+5	-0.16% (-0.31)	**-5** to **+5**	2.48% (1.46)	**0** to **+1**	-0.04% (-0.05)

(z-stat)*** - 1% significance (z-stat)** - 5% significance (z-stat)* - 10% significance

Table 3. Volume results

The results from a dummy variable regression that checks for an underlying trend that may have resulted in the trading volume of a share naturally increasing (or decreasing) between the periods. The dummy tests for a structural break in the trend around the initial trading of single stock futures. The equation $V_{it} = \alpha_i + \beta_i T_{it} + \delta D_F + \varepsilon_{it}$ included a time series variable (T) that checked for a trend and a dummy variable to differentiate between the two periods.

No	JSE Code	Company	Constant	Trend	Change
1	AFE	AECI Limited	158 205.8	-7.04	11 441.80
			(0.0000)***	(0.7832)	(0.1229)
2	AFL	The Afrikander Lease Ltd	763 589.7	84.47	-209 287.90
			(0.0000)***	(0.7099)	(0.0015)***
3	ALT	Allied Food Technologies Limited	69 614.9	-21.86	21 420.91
			(0.0000)***	(0.0009)***	(0.0000)***
4	AMA	Amalgamated Appliance Holdings Limited	327 494.9	511.50	56 956.11
			(0.0000)***	(0.0000)***	(0.0000)***
5	APK	Astrapak Limited	143 858.9	112.73	31 874.35
			(0.0000)***	(0.0387)**	(0.0435)**
6	ART	Argent Industrial Limited	109 958.7	-94.63	86 738.92

The results from a dummy variable regression that checks for an underlying trend that may have resulted in the trading volume of a share naturally increasing (or decreasing) between the periods. The dummy tests for a structural break in the trend around the initial trading of single stock futures. The equation $V_{it} = \alpha_i + \beta_i T_{it} + \delta D_F + \varepsilon_{it}$ included a time series variable (T) that checked for a trend and a dummy variable to differentiate between the two periods.

No	JSE Code	Company	Constant	Trend	Change
			(0.0000)***	(0.1439)	(0.0000)***
7	BRC	Brandcorp Holdings Ltd	65 699.0	15.40	-652.87
			(0.0000)***	(0.0000)***	(0.0586)*
8	CDZ	Cadiz Holdings Limited	171 395.4	268.19	51 405.31
			(0.0000)***	(0.0000)***	(0.0000)***
9	CPT	Capital Alliance Holdings Limited	198 929.7	315.92	-15 059.80
			(0.0000)***	(0.0000)***	(0.0009)***
10	CSB	Cashbuild Limited	24 061.8	-1.39	477.01
			(0.0000)***	(0.0000)***	(0.0000)***
11	DDT	Dimension Data Holdings Limited	1 385 476.0	2 632.65	-147 731.90
			(0.0000)***	(0.0000)***	(0.0560)*
12	DGC	Digicore Holdings Limited	82 987.6	-1 098.69	375 229.80
			(0.0000)***	(0.0000)***	(0.0000)***
13	DUR	Durban Roodepoort Deep	173 906.4	115.23	123 640.30
			(0.0000)***	(0.2110)	(0.0000)***
14	EOH	EOH Holdings Limited	82 169.9	-1.41	1 687.96
			(0.0000)***	(0.1722)	(0.0000)***
15	ERM	Enterprise Risk Management Limited	166 149.6	83.70	1 994.31
			(0.0000)***	(0.0000)***	(0.2170)
16	GDF	Gold Reef Casino's Resorts Limited	144 191.1	-16.63	894.98
			(0.0000)***	(0.0000)***	(0.0063)***
17	GIJ	Gijima AST Group Limited	629 430.4	410.04	160 480.00
			(0.0000)***	(0.1413)	(0.0470)**
18	GND	Grindrod Limited	66 352.8	145.92	60 929.19
			(0.0000)***	(0.0000)***	(0.0000)***
19	HDC	Hudaco Industries Limited	55 036.7	-17.12	-12 211.89
			(0.0000)***	(0.0218)**	(0.0000)***
20	JCD	JCI Limited	3 089 814.0	1 287.41	-771 797.30
			(0.0000)***	(0.1146)	(0.0011)***
21	JSC	Jasco Electronics Limited	36 622.3	-85.22	49 330.38
			(0.0000)***	(0.0000)***	(0.0000)***
22	KAP	KAP International Holdings	328 572.4	1 674.91	-14 667.84
			(0.0000)***	(0.0000)***	(0.6367)
23	KGM	Kagiso Media Limited	112 820.7	6.54	-4 803.55
			(0.0000)***	(0.0040)***	(0.0000)***
24	KWV	KWV Investments Limited	14 363.6	5.45	-339.41
			(0.0000)***	(0.0000)***	(0.0000)***
25	LBH	Liberty Holdings Limited	15 951.2	36.60	2 386.05
			(0.0000)***	(0.0000)***	(0.0014)***
26	LON	Lonmin PLC	9 446.3	-167.02	48 085.26
			(0.0001)***	(0.0000)***	(0.0000)***
27	MCE	M-Cell Limited	1 878 747.0	2 843.96	-528 433.70
			(0.0000)***	(0.0000)***	(0.0000)***
28	OMN	Omnia Holdings Limited	81 503.2	-222.15	17 707.26
			(0.0000)***	(0.0000)***	(0.0000)***
29	PCN	Paracon Holdings Limited	172 809.2	353.01	21 137.59

The results from a dummy variable regression that checks for an underlying trend that may have resulted in the trading volume of a share naturally increasing (or decreasing) between the periods. The dummy tests for a structural break in the trend around the initial trading of single stock futures. The equation $V_{it} = \alpha_i + \beta_i T_{it} + \delta D_F + \varepsilon_{it}$ included a time series variable (T) that checked for a trend and a dummy variable to differentiate between the two periods.

No	JSE Code	Company	Constant	Trend	Change
			(0.0000)***	(0.0000)***	(0.0007)***
30	PIM	Prism Holdings Limited	560 205.7	-17.19	16 990.66
			(0.0000)***	(0.0016)***	(0.0000)***
31	PWK	Pick And Pay Holdings Limited	198 642.5	-337.35	14 920.04
			(0.0000)***	(0.0000)***	(0.5087)
32	SGG	Sage Group Limited	127 997.1	-105.90	-43 728.75
			(0.0000)***	(0.0401)**	(0.0035)***
33	SHP	Shoprite Holdings Limited	991 653.3	22.86	-4 739.76
			(0.0000)***	(0.0000)***	(0.0007)***
34	SIM	Simmer and Jack Mines Ltd	398 052.0	-3 566.00	3 641 565.00
			(0.0410)**	(0.0031)***	(0.0000)***
35	SLM	Sanlam	4 807 648.0	-1 033.15	-572 519.10
			(0.0000)***	(0.0048)***	(0.0000)***
36	SPG	Super Group Limited	546 217.5	1 289.45	-80 435.78
			(0.0000)***	(0.0000)***	(0.0074)***
37	UCS	UCS Group Limited	207 701.9	79.77	-6 948.04
			(0.0000)***	(0.0000)***	(0.0000)***
38	WNH	Winhold Limited	103 075.0	23.79	-2 832.91
			(0.0000)***	(0.0000)***	(0.0000)***

(p-value)*** 1% significance; (p-value)** 5% significance; (p-value)* 10% significance

Appendix A: Industry and trading date information

No	INDUSTRY (abbreviation): Supersector – Sector – Subsector		Introduction	Trade date
	BASIC MATERIALS (BM)			
	Basic Resources – Mining – Gold Mining			
2	AFLQ	The Afrikander Lease Limited	06/02/2003	10/02/2003
13	DURQ	Durban Roodepoort Deep	07/11/2001	08/11/2001
20	JCDQ	JCI Limited	13/08/2003	14/08/2003
34	SIMQ	Simmer and Jack Mines Limited	09/01/2006	09/01/2006
	Basic Resources – Mining – Platinum & Precious Metals			
26	LONQ	Lonmin PLC	19/11/2003	19/11/2003
	Chemicals – Chemicals – Speciality Chemicals			
1	AFEQ	AECI Limited	28/06/2004	13/07/2004
28	OMNQ	Omnia Holdings Limited	22/07/2003	22/07/2003
	CONSUMER GOODS (CG)			
	Food & Beverage – Beverages – Distillers & Vintners			
24	KWVQ	KWV Investments Limited	14/11/2006	14/11/2006
	Personal & Household Goods – Leisure Goods – Consumer Electronics			
4	AMAQ	Amalgamated Appliance Holdings Limited	05/07/2005	06/07/2005
	CONSUMER SERVICES (CS)			
	Media – Media – Broadcasting & Entertainment			
23	KGMQ	Kagiso Media Limited	13/05/2005	13/05/2005
	Retail – Food & Drug Retailers – Food Retailers & Wholesalers			

No	INDUSTRY (abbreviation): Supersector – Sector – Subsector		Introduction	Trade date
31	PWKQ	Pick and Pay Holdings Limited	16/04/2005	19/04/2005
33	SHPQ	Shoprite Holdings Limited	28/11/2002	28/11/2002
	Retail – General Retailers – Broadline Retailers			
7	BRCQ	Brandcorp Holdings Limited	22/11/2004	23/11/2004
	Retail – General Retailers – Home Improvement Retailers			
10	CSBQ	Cashbuild Limited	22/02/2005	23/02/2005
	Travel & Leisure – Travel & Leisure – Gambling			
16	GDFQ	Gold Reef Casinos Resorts Limited	02/06/2004	04/06/2004
	FINANCIALS (F)			
	Financial Services – General Financial – Investment Services			
8	CDZQ	Cadiz Holdings Limited	03/08/2005	04/08/2005
	Financial Services – General Financial – Speciality Finance			
15	ERMQ	Enterprise Risk Management Limited	04/10/2005	06/10/2005
	Insurance – Life Insurance – Life Insurance			
9	CPTQ	Capital Alliance Holdings Limited	17/09/2003	17/09/2003
25	LBHQ	Liberty Holdings Limited	06/10/2003	06/10/2003
32	SGGQ	Sage Group Limited	21/01/2004	23/01/2004
35	SLMQ	Sanlam	21/07/2000	03/08/2000
	INDUSTRIALS (I)			
	Industrial Goods & Services – Electronic & Electrical Equipment – Electrical Components & Equipment			
21	JSCQ	Jasco Electronics Holdings	23/01/2006	23/01/2006
	Industrial Goods & Services – Electronic & Electrical Equipment – Electronic Equipment			
12	DGCQ	Digicore Holdings Limited	22/08/2005	22/08/2005
	Industrial Goods & Services – General Industrials – Containers & Packaging			
5	APKQ	Astrapak Limited	19/08/2004	19/08/2004
	Industrial Goods & Services – General Industrials – Diversified Industrials			
6	ARTQ	Argent Industrial Limited	22/09/2004	27/09/2004
22	KAPQ	KAP International Holdings	18/01/2005	28/01/2005
	Industrial Goods & Services – Industrial Engineering – Industrial Machinery			
19	HDCQ	Hudaco Industries Limited	04/04/2005	04/04/2005
	Industrial Goods & Services – Industrial Transportation – Marine Transportation			
18	GNDQ	Grindrod Limited	24/03/2004	24/03/2004
	Industrial Goods & Services – Industrial Transportation – Trucking			
36	SPGQ	Super Group Limited	26/02/2004	26/02/2004
	Industrial Goods & Services – Support Services – Industrial Suppliers			
38	WNHQ	Winhold Limited	14/08/2006	14/08/2006
	TECHNOLOGY (T)			
	Technology – Software & Computer Services – Computer Services			
11	DDTQ	Dimension Data Holdings Limited	08/02/1999	08/02/1999
14	EOHQ	EOH Holdings Limited	07/02/2006	10/02/2006
17	GIJQ	Gijima AST Group Limited	12/09/2005	13/09/2005
29	PCNQ	Paracon Holdings Limited	23/11/2005	23/11/2005

No	INDUSTRY (abbreviation): Supersector – Sector – Subsector		Introduction	Trade date
	Technology – Software & Computer Services – Software			
30	PIMQ	Prism Holdings Limited	10/11/2004	10/11/2004
37	UCSQ	UCS Group Limited	14/12/2005	14/12/2005
	Technology – Technology Hardware & Equipment – Computer Hardware			
3	ALTQ	Allied Technologies Limited	21/05/2003	22/05/2003
	TELECOMMUNICATIONS (TC)			
	Telecommunications – Mobile Telecommunications – Mobile Telecommunications			
27	MCEQ	M-Cell Limited	08/08/2000	22/08/2000

Source: JSE Limited (2005)

CORPORATE GOVERNANCE IN POLAND

Tom Mortimer*

Abstract

This article considers the traditional approach to the 'state' Models of corporate governance, namely shareholder Model and stakeholder Model. It then considers the extent to which developments in a recent accession EU country, Poland, reflects either of these Models or adopts a hybrid approach. It then offers proposals for the future development of corporate governance within Poland.

Keywords: corporate governance; shareholder; stakeholder; Poland

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1. Introduction

Corporate governance has been much debated in many arenas in recent years. This has been brought back into the limelight by the current global economic crisis.

The purpose of this article is to review and evaluate the current position with regard to the development of corporate governance in a recent accession member state to the EU - Poland.

This article is divided into two parts: the first presents a brief overview of the main theories and models of corporate governance. Traditionally, these are categorised into two main camps: the shareholder or stakeholder. It is not the purpose of this article to review whether this static approach to corporate governance is appropriate, effective or realistic (for example, see Griffin and Mahon, 1997; Prabhaker, 1998; Friedman and Miles, 2002). Rather, the position in Poland will be examined to see which of these 'traditional' approaches, if either, is being adopted within Poland.

It will be posited that Poland is not 're-inventing the wheel'. That it is, in fact, drawing from these existing approaches. Conclusions will be offered as to the extent to whether this is necessarily the best way forward for a developing country in a relatively young, free market economy. That one cannot ignore corporate governance regimes internationally is noted by Detomasi, (2006, p.225) who states: "It is difficult to avoid the topic of corporate governance". This is also the case domestically in order to understand processes of regime change and transformation (Roe, 2003; Gourevitch and Shinn, 2005). But this is especially the case in emerging markets, where national systems of corporate governance are not as well institutionalised and where the costs of corporate governance failure are very high. This can be seen in the economic consequences of the East Asian financial crisis of the late 1990s which resulted in the five most heavily affected countries losing more than 60 per cent of their combined gross domestic product (Schwab, 2003).

For a country such as Poland a new accession state in the European Union, the pressure to converge in financial regulation and corporate governance so that it can compete for investors and capital with established markets is significant. According to Reed (2002, p.223) corporate governance reforms in developing countries "occur in a larger context that is primarily defined by previous attempts at promoting 'development' and recent processes of economic globalisation".

One would assume for a topic which has been thoroughly debated and examined in many fora for many years that the concept of corporate governance would be clear. It still seems to be though a concept discussed in terms of generality as we shall see below. Nonetheless, it is accepted that corporate governance is not simply for the benefit of companies themselves but also for the whole market and society (Mueller, 2006, .p 207).

In light of this, the next section will consider the 'traditional' models from which to choose.

2. Models of corporate governance

2.1 Introduction

Traditionally, it is assumed that corporate governance is based *either* on the shareholder model *or* the stakeholder model.

The shareholder model is most common in 'liberal market economies' such as the USA and the UK. The stakeholder model a feature of more 'co-ordinated market economies' like Japan and Germany (Hall and Soskice, 2001). This split is also referred to as: 'stock market capitalism' versus 'welfare capitalism' (Dore, 2000) and even 'Anglo-Saxon' versus 'Rhineland' capitalism (Albert, 2003). An interesting recent development in this debate has been to describe this split as being 'market-centred' or 'bank-centred' (Allen and Gale, 2000).

This approach has been criticised as being 'too simplistic' (La Porta et al, 2000) and a more appropriate way of explaining this distinction being to consider the extent to which investors enjoy legal protection (La Porta et al, 1999).

A further recent debate has struck at the very essence of the assumptions above. That is, that whilst traditionally the UK and USA are seen as one 'Anglo-American' Model there are now fundamental differences being identified *within* this Model, (Aguilera et al, 2006; Toms and Wright, 2005). It is suggested that whilst there are differences in the regulatory methods and approaches adopted by each country this is more to do with the enactment of legislation in the wake of recent US corporate scandals. But, whilst this distinction is not significant in terms of the 'social purpose' of the two traditional Models it does represent an interesting distinction particularly for emerging markets undergoing corporate governance reform. We will return to this discussion subsequently.

2.2 Stakeholder and Shareholder Models

2.2.1 Stakeholder Model

Essentially, this is based on the notion that private ownership results in a fundamental desire of social order and an efficient economy. This can be seen in relation to a company in that the right to incorporate is a right to own property and therefore corporation should be seen is a legal extension of their owners (Allen, 1992). Since shareholders are the owners of the company, the company has legitimate obligations and the managers have a fiduciary duty to act in the interest of the shareholders (Barker, 1958; Mayson et al 1994). This is the Chicago School of Law and Economics. Under this theory, assets of the company

are the property of the shareholders. Directors and managers, as agents of the shareholders, have no legal obligation to any other stakeholders (Allen, 1992; Blair, 1995). This approach is supported by neoclassical economists such as Hayek and Friedman. For Hayek (1969) this approach of pursuing self interest is the most efficient way to manage economic activities - thus, the company must use shareholders capital to maximise profits in order to enhance shareholder value. Any 'social purpose' beyond the shareholders interest could be viewed as an abuse of power as it will not lead to efficient use of corporate resources.

This view is developed by Friedman (1962, 1970) who asserts that other stakeholder interests are looked after by contracts or government regulation. These are not the remit of corporate governance.

This approach has been defended recently by Sternberg (1998, 2000) who asserts that considering interests beyond the shareholders undermines private property, agency duty and value-creating capabilities of a business. To address the problem of potential 'abuse' she suggests internal monitoring through non-executive directors, voting rights and information disclosure to shareholders. This method of protection is also posited by Malegam (2008).

So, this Model regards the company as an extension of its owners and that only market forces can achieve efficiency (West, 2006). To resolve any potential conflict between the owners and managers rewards are linked to corporate performance (Letza et al, 2004).

2.2.2 Stakeholder Model

This Model is directly at odds with the notion of inherent property rights. It regards the company not as a private association united by individual property rights but rather as a public association constituted through political and legal processes and as a social entity for pursuing collective goals with public obligations (Gamble and Kelly, 2001 p.115).

This approach is summed up by Sullivan and Conlon: "The standard of a corporations usefulness is not whether it creates individual wealth but whether it helps society gain a greater sense of the meaning of community by honouring individual dignity and promoting overall welfare" (1997, p. 713).

Thus, the corporation is a 'social entity'. It is responsible to and accountable to a broader set of actors than its owners (Wieland, 2005). These actors include employees, suppliers, local communities - indeed, anyone affected by the behaviour of the company (West, 2006).

In addition to the considerable literature on the characteristics of these Models (Donaldson and Preston, 1995; Letza et al, 2004) the assumptions made by these Models about the nature and purpose of a company and to whom it is ultimately responsible constitute key issues for the direction of corporate governance development in any developing jurisdiction.

3. Corporate Governance in Poland

Corporate governance was introduced to Poland by the July 13th 1990 Privatisation of State Owned Enterprises Decree. This also transformed the system from a centrally managed one with a planned economy to a free market one. The whole Polish adventure with corporate governance started with large companies, as these were expected to be at the forefront of implementing corporate policies. The initial step after the transformation was to create supervisory boards. One might ask why the building of corporate governance started in this way. The answer is that at that time all companies were national and had no private share. Many of them were massively privatised, therefore some supervisory body was essential to oversee and look after state-owned entities (SOE). A key task for the government was to find new and stable owners who would effectively run enterprises embraced by the privatisation process. Quite frequently these companies required considerable financial input in order to restore their full capacity or to improve obsolete technologies of production. Therefore, in order to assure success for the newborn Polish economy, the government had to search for financially sound investors with long-term goals. According to Koldakiewicz (2001) the nineties provided enough time to build the *basis* (emphasis added) of corporate governance, but much still remained to be done.

The whole process of privatisation not only in Poland but in all of Eastern and Central Europe is a great example of building different forms of corporate governance policies (Grosfeld and Hashi, 2007). Although these countries had similar economies and were culturally convergent, still their experiences soon after transformation were very different. The first completely new thing that post-socialistic countries had to face in their free markets was the separation of ownership from control, something well known to developed countries (Koldakiewicz, 2001) and discussed above. There was a lack of professional and experienced managers, so initially there was chaos in the markets. Governments launched mass privatisation programmes that ran through societies, which dispersed shares amongst a huge number of individuals, something that was totally new. In Poland alone, out of 29 million people entitled to participate in the privatisation programme nearly 26 million took part. The experience was very unusual and among certain groups was strongly criticised for its artificiality. However, there was a grain of truth in the criticism. The quick process of privatisation did not give law-makers and companies enough time to adapt themselves to the new conditions. There was insufficient time to build a

firm basis of corporate governance. This led to a large group of opponents forming the view that the Polish form of corporate governance failed in the nineties (Grosfeld and Hashi, 2007). To this day, politicians from the parliamentary lectern accuse the then government, with its prime minister at the vanguard, for the inept process of privatisation that cost the nation an unbelievable amount of money. Among those widely criticised was the then vice-prime minister and also the Secretary of the Treasury, who also became the subsequent president of the National Bank of Poland. He introduced a package of 11 new acts that were to transform the economy. The truth is that Balcerowicz had to act quickly. At that time inflation in Poland had reached an astonishing 650 per cent of the gross domestic product. There was not time to hesitate (www.prawo.uni.wroc.pl, 2008).

Before drawing any conclusions on how far Poland managed to get in terms of developing and implementing corporate governance, especially in comparison to the UK and the US, it is essential to consider all of the stages from the very beginning of the Polish free market. As mentioned previously, the process began in the early nineties with the reforms initiated by Leslaw Balcerowicz, and the subsequent creation of the financial system and capital market. The next phase was the transformation of state-owned companies into 'sole-shareholder companies of the State Treasury'. This was also the time that shareholders had their first general meetings and selected their supervisory boards. So far, however, the only shareholder was the State Treasury, so members were selected by the Secretary of the Treasury. On average, supervisory boards consisted of five to six members, out of which, one third were selected by employees (Koldakiewicz, 2001).

In Poland, initially only 512 state-owned companies were embraced by the privatisation programme. When compared to the significantly smaller Czech Republic which had 1700 companies on the list, this does not appear to be a strong response. However, the two economies went in different ways. In relation to Poland, 60 per cent of the equity stakes of 512 companies that were undergoing the privatisation process were given to 25 specially set up National Investment Funds (NFI). Exactly 33 per cent went to one particular NFI, and the remaining 27 per cent were proportionally split between the 14 remaining NFIs giving them slightly less than 2 per cent of the equity share. In this regard the NFI's share simultaneously made these separate 15 entities major shareholders. The remaining 40 per cent were split between the Treasury and employees, 25% and 15% respectively. The managerial functions over the new 15 NFIs were entrusted to commercial institutions, such as 'investment banks' and 'consulting firms', both Polish and foreign. The selection of managerial bodies was conducted 'through international tender offers'. The artificial split of shares between the NFIs was intended to prevent a high concentration of shares being held by one entity. However, neither in Poland nor the Czech Republic did this strategy succeed. By the end of 2000, through acquisitions and mergers, many single shareholders already had over 50 per cent of the equity share of particular companies. In effect, they could easily control companies from their portfolios and accordingly affect the managers' decisions. With regard to Poland, shareholders received one 'certificate' equal to 'one share' in each of the 15 Funds. As a result, they became 'indirect shareholders'. The NFIs were listed on the Warsaw Stock Market and certificates were exchanged to shares of NFIs in 1998 (Grosfeld and Hashi, 2007).

It is worth highlighting that these NFIs were simply conducting their business activities as investment funds, and fulfilled all the requirements to be classified as capital groups. Unlike in Western Europe or America, they came into existence immediately. In the UK or the US the process of creation of powerful capital groups lasts for many years. In the case of Poland this happened immediately and was a very new procedure, not only for Poles, but for all economies (Szczepkowska, 2003).

Poland made a huge effort from the very beginning in terms of implementing effective laws to protect the market and investors. This especially applies when Poland is compared to other Eastern and Central European countries. As Grosfeld and Hashi point out: "NFI managers and the stock exchange listing requirements were carefully designed to ensure the transparency of the process and to avoid expropriation of minority investors". The major concern of Polish authorities was on the one hand not to allow too high a dispersion of shares in order to keep some strategic investors as watchdogs, but on the other hand not to concentrate the ownership too much, so as to avoid "the potential danger of private" incentives with no regard to minority shareholders. Therefore, government implemented "the limit of 33 per cent on the lead fund's holding in each" privatised company (2007 p.522).

In the early stages of the new Polish economy, a major problem concerned the lack of independent institutions that could monitor the activities of companies in the market. This situation changed when the Securities Commission issued regulations in 1991. This provided regulations to assure fair competition and equal access to verified information in relation to the securities market. Also, more importantly, the new regulations touched upon minority shareholders' rights. Soon after, in April 1991, the Warsaw Stock Exchange (WSE) was established and still remains the major proponent of best business practices and corporate governance. What is more, the WSE imposes several obligations on companies floated on the stock market, e.g.

submission of quarterly and annual reports, with nonconformity penalised by fines.

Further developments of Polish corporate governance came in 1993 with the Act on the Financial Restructuring of Enterprises and Banks and Act on National Investment Funds and Their Privatisation. Both of these brought new and more efficient supervisory functions. Furthermore, they dealt with the problem of bad debts. At that time, banks had serious problems in judging whether to grant loans to companies to facilitate their further development. The new regulations of 1993 transformed the role of banks from 'a lender to an owner' with debts exchanged into shares of capital stakes. There were high hopes in relation to the new provisions. Regrettably, these expectations were not achieved in reality. There were no major changes in the ownership structure observed. Although the provisions were intended to encourage banks to take more risk and grant loans to finance more challenging projects, this did not happen to any great extent. Banks very rarely exchanged their debts for shares of their debtors. Inexperienced bank managers presumed that if a particular company could not pay off its liabilities, in the case of transfer of debts into shares. Bad debts would be exchanged for 'bad shares' (Koldakiewicz, 2001).

A major problem for Poland in the nineties concerned minority shareholders. Indeed, this is still a problematic issue. It is common that majority shareholders and minorities have divergent goals; however, this is not always the case. As already discussed, there can be very different institutional investors in the market. Some of them may want to have large numbers of shares in order to monitor the managers in control, some may want to diversify their portfolios in order to minimize risks, others may want to influence managers' decisions and pursue their interests (Grosfield and Hashi, 2001). Whatever the case, effective mechanisms providing protection for minority shareholders are a must. However, this issue is not the sole problem for Poland or other emerging markets, but all markets worldwide. All developed economies have to or have had to deal with this major problem. After all, minority shareholders are the group most vulnerable to abuse. With regard to the Polish market there are several examples of unfair transfer pricing, unjustified investment projects or excessive licence fees etc. However, it is very difficult to assess the scale of such behaviour in the market (www.pfcg.org.pl, 2008). What is even more difficult is to prove that motives were not genuine and the policies were not crried out with the best intentions.

As time went by, Polish law continuously altered and tried to accommodate itself to the needs of the market. A substantial number of these adaptations concerned effective supervisory mechanisms. In effect, several duties were imposed on supervisory boards, inter alia, control of balance sheets, compatibility of accounting books, assessment of management boards' reports and dealing with proposals for distribution of profits. An additional duty imposed on supervisory boards was to issue annual reports for shareholder's general meetings in respect of their work and conducted assessments. On top of the above, some judicial responsibilities included suspension of individual members and/or the whole board of management for important reasons and delegation of members of the board who are incapable of fulfilling such functions. Put simply, obligations that supervisory boards owe shareholders include:

- An information function: submission of quarterly reports about the company
- A review function: issuing opinions regarding the activities of the board of directors
- A reporting function: summaries of the activities conducted by the supervisory board itself (Koldakiewicz, 2001).

The report issued by The World Bank in 2005 on Polish compliance with standards and codes of corporate governance includes an assessment of Polish supervisory board institutions. Following The World Bank's guidelines, Polish law grants supervisory boards extensive powers. Boards play an important part in the selection of CEOs and also have the final say on companies' strategies. Also, they effectively monitor the flow of information within and outside companies. However, concern has grown about the level of professionalism and of independence of the SOE supervisory board members. It is very difficult to resolve this issue due to the fact that the state still owns a considerable stake in many companies. Therefore, politicians have an adverse influence on a company's performance and on the composure of its board.

The World Bank acknowledged that the Polish government had made a huge effort in terms of implementation of accurate corporate policies. Similarly, the authors of the guidelines noticed that ownership concentration, securities market regulation, levels of foreign investment and general patterns of corporate organisation are moving towards Continental European norms. So far, however, most probably due to the high state share in state-owned companies, the government plays the key role in the Polish scene of corporate governance. This situation may change with the growing powers of pension funds that currently correspond to 10 per cent of the capitalization of the market.

Since Poland joined the EU, market capitalization has nearly doubled year on year. By the end of 2004 it equalled $71billion, while by the end of 2007 it was already $330 billion. Approximately 55 per cent of this relates to foreign companies and foreign capital. These figures are enough to keep Poland at the forefront of the countries that acceded to the EU in 2004. Although capitalization of the market has accelerated enormously in the recent past,

it should be noted that there are a few large companies that themselves compose a significant stake in the market, for example, Unicredito, with a capitalization of approximately $90 billion (www.skarbiec.biz, 2008). Recently however, there have been changes. Due to the worldwide crisis, the capitalization of the market in Poland has dropped dramatically from $330 billion to approximately $150 billion. Bearing in mind that this happened in less than one year, this has had a dramatic effect on corporate governance development in Poland (www.gpw.com.pl, 2008).

Thus, the early nineties gave Poland the foundations of a capital market with basic institutions. Also, the freshly introduced concept of corporate governance had a chance to find its feet on the new ground. The second half of the 1990s brought further advances, especially thanks to the new legislation that came as the answer to the needs of that time, namely the Act of the Commercialisation and Privatisation of State Owned Enterprises, which came into effect from 30th August, 1996. This Act allowed employees of companies to supervise and control enterprises they worked in to a higher degree than ever before. Since then it has become the rule that employees select two out of the five members of supervisory boards. Also, the nineties set new goals for Poland due to the country's accession to the OECD and the resulting commitments made by the Polish government. The most influential from the standpoint of corporate governance were the introduction of the Act on Investment Funds on 28th August, 1997 and the Act on the Organisation and Functioning of Retirement Pension Funds. The above Acts introduced a very new group of institutional investors. Their major task involved effective investment of 'publicly collected' funds; therefore they became institutional shareowners rather than institutional shareholders. The latter Act also introduced retirement pension funds to the market. Their activity began on 1st January, 1999. The oversight functions over all the above investors were performed by the newly established Retirement Pension Fund Supervisory Authority and the Investment Fund Association incorporated as a joint stock company (Koldakiewicz, 2001).

Despite the Polish achievements of the last twenty years in relation to corporate governance, many issues still need improvement. The high dispersion of shares at the beginning of the privatisation process was quickly reduced and governmental restrictions did not prevent excessive acquisitions (ROSC, 2005). Although supervisory boards have wide powers, their efficiency needs to be enhanced. According to Koldakiewicz the Polish supervisory system of the nineties was very similar to the one in Germany, especially with regard to Treasury owned companies. Also, there were similar solutions in relation to the participation of employees in the process of privatisation. However, there were remarkable differences in banks' attitudes and their activities. In Poland, as mentioned previously, banks tended to invest very passively, restricting themselves to lending funds necessary for investment and development. Managers had no experience in investment banking and there was no such tradition, contrary to the situation in the German market. Additionally, certain banks that had considerable amounts of shares of other companies were not even privatised themselves. As a result, they had little interest in managing other companies.

The process of privatisation has been ongoing since the beginning of the 1990s. From this date until the end of August 2008, 5894 state-owned enterprises have been through the privatisation process. So far, 1688 companies have been fully commercialized and 2291 companies out of 5894 have been directly privatised as a result of the act of mass privatisation of state-owned companies. 2204 companies ceased to exist due to enhanced competition, ineffective management and so on (www.prywatyacja.msp.gov.pl 2008). In 1994, the state owned all of the 5894 companies and by the end of 2000, the government reduced the state's share in 99 companies to zero per cent. In the remaining entities the national share was reduced to 20 per cent (Grosfeld and Hashi, 2007).

Bearing in mind the above, currently there are over 1500 companies in which the Polish State Treasury still has a considerable share of around 20 per cent, which is one of the highest in Europe. Given this, Poland still has some way to go. The political party Platforma Obywatelska (PO) announced it will do its best to reduce the ratio to 10 per cent or even below (www.dziennil.pl, 2008). All the above has influenced the Polish corporate governance system. The direct connections between the world of politics and the economy are too strong. Many of the state controlled companies are in crucial sectors of the economy, e.g. finance, energy etc. What is more, according to the current regulations, managers of such companies which have a state share, cannot earn more than six times the average wage. The exact figure depends on whether the company is controlled directly or indirectly by the State Treasury. These restrictions may lead to more problems than benefits in the form of savings on managerial salaries. Representatives of PO say the wages of top management must be increased in order to attract highly skilled managers. They say this is part of the reason that these companies are struggling and cannot compete in the market. Therefore, Platforma Obywatelska is pursuing new legislation in order to change the situation (www.bankier.pl, 2008). Even international independent bodies highlight the fact that developing markets have to attract highly skilled managers and offer salaries comparable to those they can achieve abroad (Koldakiewicz, 2001).

4. Conclusion

As assessed by J.Szomburg (2001) and The World Bank (2005) Polish companies perform within the shareholder model of corporate governance. Ownership and control seems to be very concentrated in one place with little dispersion of shares, especially compared to the UK and the US. On average the biggest shareholder of any company owns nearly 40 per cent of its equity stake; some sources even say this ratio is as high as 45 per cent. With regard to smaller companies that are listed on the Polish stock market this ratio is even higher at 70 per cent (www.pfcg.org.pl, 2008). This shows how far Poland has to go to improve the situation.

Corporate ownership has a significant effect on corporate governance issues and is indirectly responsible for companies' results. For many years different bodies have interpreted and calculated the diverse costs of separation of control from ownership. At the very beginning of corporate governance it was widely acknowledged that highly concentrated control in the hand of a small number of investors had beneficial effects for companies. The above was explained by the effective monitoring of managers by investors. However, since the eighties another view has prevailed according to which highly concentrated ownership may be very costly, especially through the expropriation of minority shareholders (Grosfeld and Hashi, 2007). Therefore, since the eighties, both in the US and the UK, much has been done to improve the situation for minorities and to provide them with appropriate protection. This should be a goal for the Polish government over the coming years.

In the case of the US, dispersion of shares among investors of the largest companies is so high that neither investors nor companies have to disclose any information on the possessed package of shares. In the UK, the biggest investors, on average, own nearly 10 per cent of a company's equity stake, which still represents a high dispersion of shares in the market. In France this ratio is double that in the UK and equals 20 per cent. In Poland, Belgium and Austria it is 40, 50 and 52 per cent respectively (www.pfcg.org.pl, 2008). Szomburg et al raise the question of whether with such a concentration of shares and subsequently with such a level of control, these European companies are still public or already private, despite the fact they are being traded on public European stock markets.

Another issue relates to managers. In Poland, since the 1990s, many things have changed. Certain mechanisms were introduced to control executives and to align their interests with those of investors. A decade ago in Poland there were plenty of examples where companies were too large for their purpose and therefore not effective. Managers strived to gain more control and over invested in certain projects. This behaviour was well known in the American market in the past. Currently, major Polish investors have enough control and ownership due to low dispersion of shares to prevent managers from making damaging decisions. Therefore, many believe that for the Polish situation it is not essential to create complex motivational systems with highly complicated compensational schemes (ibid) and in fact, this has never been suggested. Institutional investors, however, must act very cautiously. Excessive pressures imposed on managers in control may also adversely affect their work and ultimately this will be reflected in poorer results. On the one hand, a high concentration of shares may discipline the management of companies, but on the other it may adversely affect liquidity in the market. A major problem for Poland is the small number of mid investors that would counterbalance the majority shareholders (Grosfeld and Hashi, 2007). Most governments of developing countries have still not found suitable and effective mechanisms to improve this situation.

Corporate governance systems, even if copied from developed countries and implemented directly in emerging markets, will not succeed and must be tailor-made. On the one hand developing markets offer many investment opportunities; on the other, these markets may be very insecure. However, in very general terms, potential shareholders are keen on buying shares of companies that invest in emerging markets because they expect quick and considerable returns. Although developing states have weaker economies, less enforceable laws and fewer options to gain capital for investments, they still attract investors. Shareholders of mature and developed markets are afraid that companies will over-invest in not very profitable projects due to the lack of attractive alternatives. Therefore, they may face slow growth or even a downturn. In such cases, firm corporate governance institutions should prevent managers of mature companies from making such wasteful investments. Therefore, experienced managers turn to developing markets in search of investment opportunities.

Developing countries should do their best to improve shareholders' protection and introduce strict and accurate regulations; otherwise they may face adverse long-term effects on the growth prospects of their economies. The biggest problem for these fresh developing markets is the lack of options for domestic companies to gain funds for investments. As Mueller says, there are 'four options for financing investment - cash flows, bank borrowing, bonds and equity and it is best if in a particular market, companies have all of the above to choose from. The best strategy for these governments would be to develop a large equity market through strong corporate governance institutions' (2006, p.217).

The likely direction of corporate governance within Poland is a general alignment with the shareholder Model. In time there may be greater

commitment to stakeholder interests relating to the country's developmental needs which suggest that a hybrid Model of corporate governance may be further developed reflecting the needs of an aspiring, emerging market.

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